

# **KRUGER2CANYON** NEWS

August 2024

The Farm House, R527, Zandspruit, Hoedspruit, Limpopo email: editor@kruger2canyon.co.za

## The elephants of the Kruger and Greater Kruger has the bell tolled?



Nature correspondent

Consider this: must we expect and accept that high intelligence animal welfare must receive priority over the less intelligent species?

The majestic African elephant, once a symbol of strength and grace, has become a harbinger of ecological distress in the Kruger National Park and Greater Kruger (KNPGK) area. With numbers soaring, the area and conservationists are grappling with a crisis that threatens not only its diverse wildlife but the very fabric of its ecosystem.

Let's try and just say it as it is. With this subject, a highly emotive cauldron of

opinion, we need to try and see all sides of the story! Last month the Kruger2Canyon News featured 'The myth of 'too many elephants" by Ross Harvey, and in response to reaction to that article we decided to feature, what could be seen as the 'other side' of the story.

In the big scheme of things, there are potentially two camps - the people that are accountable, that HAVE to manage the elephant population, national and provincial parks, park managers, farm owners, game farm owners all of whom are acting, or trying to act, in the best interest of conservation. And then there are the 'others' - the so called 'greens' and academics. The academics, to their credit, often obtain funding from 'green' organisations or people, and they often

produce papers that are essential in our understanding of the environment and animals as a whole. But there are times when we get the impression that in order to ensure the continued funding of their research, they seem to be coerced into producing a particular narrative that suits the agenda of the funder.

With that in mind, the view that there is no problem with the elephant population in the KNPGK is promoted, rightly or wrongly. There are reams of articles and papers that have been produced attesting to this opinion. The problem here, is that these people and organisations that produce this narrative are not the ones that are accountable. They are the ones literally living on the fringes and possibly ensuring that the funding continues.

The current elephant situation in the

KNPGK is going to get to a stage where, on a day, someone is going to stop and look at the decimated landscape and ask, "Well what happened here? Who allowed this to happen?" - if that has not happened already. If we are true to ourselves, management in whatever form, will have to take the fall, because no decision has been made concerning the problem, and all eyes will be on them.

Elephants are such wonderful, massive, gentle at times, almost humane animals, but they do bring with them huge management headaches - in high densities, they do not manage their environment and are destructive.

**BUILD BETTER WITH** 

Cont. on page 6&7



## Love the Hoed® Titbits

Can you believe we have gone over the hump and are now on the downward straight to Christmas! It's just moving too fast – as are the amount of people moving into town. Do you also get the impression we are bursting at the seams?

### Back in the day

We may have published this before – but it's a classic worthy of another peek. Check out the old menu from Skukuza back in the day – 1978 to be precise – 46 years ago! R2.50 for the supper, INCLUDING a cheese board! That equates to roughly R 111.44 today, inflation considered – so what happened there, we might get a plate of chips for that now!

A man on the way ...

The other Saturday I was on my way to Orpen, and I came across these jovial fellas celebrating the upcoming wedding of one of them, on the La Bamba intersection. Journalistic *faux pas* for not getting anyone's name – but then were they in the mood to do so? I promised to get them in the paper so here you go. Just to wish the lucky man congratulations from Kruger2Canyon News, good luck and onwards and upwards, filled with love, happiness and fertility!

### **Hospital news**

Anyone driving past the hospital site can see for themselves that the project is well and truly advanced, and all indications are that they will still be targeting the opening





in October 2024. I briefly bumped into the new hospital manager and recruitment is under way. The problem facing the staff is accommodation! What Hoedspruit needs is a simple set of townhouses that could go some way to alleviating this potential problem. Exciting times ahead.

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# Roots of change: Nourishing hope in the Greater Kruger

Deep in the Greater Kruger landscapes, a vibrant, youth led eco-village is uniting community and conservation efforts



Just across the road from the Timbavati and Thornybush private nature reserves lies Nourish Eco Village, a community development project connecting children to their wildlife heritage Image:Sabrina Chielens

### By Buntu Duku Kruger2Canyon News

A few years ago, Katekani Martin Mathabele, a young man from the village of Sigagule, found himself in a tense standoff with a pack of African wild dogs. On a crisp winter afternoon, Mathabele and his soccer team took a shortcut near a broken fence line, only to encounter these impressive hunters.

"Stay calm, stay together, move back slowly, and never run. You can't outrun wild dogs," Mathabele recalled. His quick thinking and calm demeanour helped his teammates navigate the encounter safely. Although their soccer match ended in defeat, Mathabele's actions that day were a testament to his growing connection with the wildlife around him.

### **Anxious novice**

Mathabele's journey from an anxious novice to a conservation and community upliftment ambassador, began in 2017 when he volunteered for work at Nourish Eco Village, that addresses community needs from 'cradle to career'.

The initiative started on a modest hectare of tribal land near the near Timbavati Safari Camp en route to Orpen Gate of the Kruger National Park. It has since expanded to over three hectares and features a range of facilities including an indigenous food garden, kitchen, crèche, and a Green Kidz aftercare programme that provides conservationbased environmental education, art and sporting activities.

### Expansion

The recent addition of a second eco-village in Makrapeni – a small rural village in Bushbuckridge – now enables Nourish to provide meals to over 350 children daily in the Greater Kruger area, also promoting wildlife awareness and conservation.





Up-cycled art such as this scrap metal rhino fashioned by Cottondale artist, Renek Mathebula, brings wildlife appreciation to the fore in a handson way Image: supplied

"I never looked back," he says. By expanding his skills and knowledge in wildlife conservation and education, Mathabele soon became an integral part of the Nourish team.

"It changed me profoundly," says Mathabele.



Passionate about his work at Nourish Eco Village, Katekani Martin Mathabele says he wants children in villages bordering the Kruger National Park to enjoy better opportunities than he did as a child. "I want them to grow up in a different way, and in a different environment, because when I was their age I didn't have these opportunities," he says

That Nourish's initiatives are bearing fruit can be seen in the achievements of individuals like Mathabele who was recently selected to represent Mpumalanga at the World Scouting Jamboree in Berlin.

"In the future, I would love for us to expand on Scouting," says Mathabele. "It could change many lives, including behaviour and growth, benefiting both the kids and the community."

### Genesis

Nourish was founded in 2011 by Sarah Bergs,

stewardship."

The eco-village was established with the support of traditional authorities, including the late Chief William Nyathi, who secured the initial hectare of land for the village. It began with modest facilities, including a food garden, a small kitchen, and a crèche. Over the years, it has expanded to include a football field, a curio shop, backpacker accommodations, and more.

"Our facilities, like the indigenous food garden and Green Kidz classroom, are designed to be multifunctional, supporting both conservation education and community upliftment," says Bergs. "We aimed to create a space that not only met immediate needs but also fostered long-term growth and education."



Rifumo Masinga reaps spinach at the Nourish's food garden which produces a harvest 40 kg of spinach a month, as well as several hundred kilograms of tomatoes, beetroot and onions.

At the recent official inauguration of the new Nourish enterprise hub in Makrapeni, local village headman, Induna Nabothi Mathonsi, paid tribute to Bergs' father, former ranger Steve Bergs, saying, "Without him, there would be no Sarah, no Nourish."

"It was the most special day of my life," recalls Bergs. "My work, my calling and my biggest fan - my dad - all came together. I would not be where I am today without my loving and supportive family, and this amazing broader community."



Makrapen village induna, Nabothi Mathonsi, recently paid tribute to former ranger Steve Bergs, who is currently braving the terminal phase of cancer. The induna honoured Bergs by bestowing upon him traditional headgear in recognition of his and his family's contributions to the community upliftment in the region. Looking on is Berg's wife, Kathy.

### Stakeholders' recognition

Nourish and Sarah Bergs were recently honoured at a gala Khetha Game Changers event where more than 65 leading conservation stakeholders gathered in Hoedspruit to pay tribute to unsung heroes in the Greater Kruger landscape. Khetha, which means "to choose," is a multi-

faceted WWF South Africa programme, funded by USAID, that drives meaningful change in ad-



Khetha Game Changers ebook : "Trailblazers of the wild"

who has implemented a large-scale sports programme under the umbrella of the Greater Kruger Environmental Protection Forum (GKEPF).

Additionally, a Southern African Wildlife College (SAWC) team was recognised for its comprehensive approach to wildlife conservation and community development. Jeremy Hancock spearheads the Protected Area Integrity Department; Johan van Straaten leads the K9 Unit with specialised off-leash tracking hounds; Bruce McDonald provides crucial aerial support and pilot training; and Sboniso Phakathi manages the RISE programme, focusing on community engagement and environmental education.

### Collaboration

Responding to her nomination, Bergs said the honour belonged to her entire team.

"They are the ones making it all happen on the ground, delivering impact daily," says Bergs. "My role is to keep the wheel turning – to find innovative and diverse ways to secure funding so, together we can keep making the magic happen."

She also stressed that the organisation's success is rooted in collaborations with traditional authorities, conservation organisations, and tourism operators. "These partnerships strengthen our educational programs and community engagement."

Nourish's initiatives are also supported by over 50 global volunteers annually, yet funding remains a significant challenge, says tourism coordinator, Loren Barougier. The organisation relies on a combination of local and international fundraising efforts, including the "Nourish-USA" initiative.

### Replication

Looking ahead, the organisation has hinted at plans to replicate their approach in Mozambique, or other SADC countries, where similar challenges exist. "Poverty and limited opportunities cripple our communities," says Rirhandzu Mnisi, a long-serving member of the eco-village. "If we had endless opportunities, people wouldn't resort to illegal activities."

"Our vision is to co-create a series of eco villages across sub- Saharan Africa, where wildlife and communities coexist," adds Bergs. "This is the journey for our future."

At the close of recent Khetha gala event, WWF-SA programme manager Lindie Botha paid tribute to all organisations and individuals, like Bergs and Mathabele, who are shaping a more connected future for both people and wildlife in the Greater Kruger.

"I want to thank all of you gathered here tonight for being game changers in your own sphere of life . . . May our stories multiply and create a mighty conservation conversation," said Botha. Mathabele agrees. It's all about the spirit of ubuntu, says Mathabele, referring to the age-old African proverb that individual well-being is intimately connected to the well-being of others. The activities of Nourish Eco Village and other leading game changers in the Greater Kruger embody this spirit in action, much the same way that African wild dogs thrive through teamwork and unity.

Chris Ngwenya, Green Kidz facilitators at the Makrepeni Nourish Eco Village proudly showcases the artwork of the children, who all walk to the centre from their various villages near Gowrie Gate on the outskirts of the Sabi Sands Game Reserve

### **Humble beginnings**

Initially tasked with escorting children from the Sigagule village to Nourish, Mathabele soon found himself drawn into its educational programmes.

When a Green Kidz facilitator left, Mathabele stepped up to fill the gap.

who grew up in the nearby Timbavati Private Nature Reserve. With her father serving as a ranger and her mother as a receptionist, Bergs gained a unique perspective on wildlife conservation from an early age. "My parents' work exposed me to the challenges and wonders of wildlife conservation" Bergs recalls. "It sparked a lifelong commitment to bridging the gap between local communities and conservation efforts."

Her formative experiences at Timbavati were pivotal in shaping her vision for Nourish. Bergs recognised the disconnect between local communities and the wildlife living nearby. "Growing up, I saw how communities just beyond the reserve's boundaries had little interaction with the wildlife they lived so close to," Bergs explains. "This realisation drove me to create a model that integrates conservation efforts with community development, addressing both poverty and environmental dressing wildlife crime and conservation challenges in the Greater Kruger.

All nominated Khetha Game Changers shall feature in a Khetha eBook titled "Trailblazers of the Wild", said Roving Reporters director Fred Kockott, who leads the Khetha 2024 Story Project in partnership with science communication agency Jive Media Africa. "The aim is to encourage media outlets and journalists to write stories about the incredible work these game changers are doing."

Topping the charts of more than 25 nominated game changers were acclaimed conservationist Matt Lindenberg of Global Conservation Corps, known for the award-winning documentary Rhino Man; Rifumo Mathebula from Wild Shots Outreach; Marie-Tinka Uys, who has devoted two decades to nurturing future conservation leaders in the K2C Biosphere; Nkateko Letti Mzimba, a Transfrontier Africa anti-poaching ranger and educator, and Professor Mtungwa, Additional reporting, Fred Kockott, Roving Reporters. Buntu Duku is an emerging writer from Kruger2Canyon News enrolled on the Khetha New Narratives training project. This story was produced under guidance of Khetha writing coach, Matthew Hattingh.

Images: Supplied

## In a league of its own – the K2C Cycle Tour



The riders en-route on the trail Image: supplied

### Lovelle Henderson

Rotary Hoedspruit recently hosted its 9<sup>th</sup> annual K2C Cycle Tour, featuring a scenic route through Timbavati, Thornybush, and Kapama private reserves. The event has grown in popularity, with teams from across the country quickly filling up spots for 2025, prompting consideration of expanding participant numbers.

Cyclists and their support teams were captivated by wildlife sightings, including buffalo, elephants, lions, and various plains game, all from their bikes. Michael Henderson, the Rotarian project manager, expressed satisfaction with the community involvement this year, highlighting contributions from local residents such as elderly women from the old age home, who helped prepare the sauce for lunch for riders at Karula Bush Braai on Kapama. Rotary aims to engage the community fully and make the event a true Hoedspruit event.

At a chilly 05:30, 93 riders, their backup teams, support riders, photographers, and representatives from Hoedspruit Radio FM gathered around cozy braziers provided by Rotary, enjoying coffee and crumpets before embarking on the challenging route. The event featured striking gear adorned with a pangolin design by local artist Warren Cary and his team, and the riders appreciated their newly designed "postman" goody bags filled with essentials. The five pelotons were horned out by Alan Partington's impressive blowing of his Kudu horn, a tradition marking the tour's start.

At 16:00, the first peloton arrived as the Southern Cross School drummers performed a stirring welcome, moving some spectators to tears. Riders, exhausted but exhilarated from their 100 km journey, passed under the inflatable Hi Q finish arch, where they were greeted with drinks sponsored by Tire Mart.

Among the riders, many participated as groups of friends and colleagues enjoying the event together. The "Super Ballies" won the award for best group name. Only two Rotarians joined the ride: Hoedspruit Club past President Wilna Mew as a backup rider, and 81-year-old David Grant, a past Governor, who was honoured as the most compassionate and oldest participant. His fellow riders described him as an inspiration.

The total funds raised will be announced at a Rotary Awards evening hosted by President Christine du Preez on October 17<sup>th</sup>, where the date for the 2025 Rotary K2C Cycle Tour will also be revealed.



Alan Partington blowing his kudu horn Image: supplied



David Grant and Wilna Mew(above), around the fire (middle) and the Southern Cross Schools Drummers (above right)

Images: supplied

### CENTURY 21 Wildlife - Hoedspruit

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## CENTURY 21 Wildlife



**BLYDE WILDLIFE ESTATE** R 4 950 000 Bedrooms 4 | Bathrooms 3 | Floor size: 310 m<sup>2</sup>

The expansive property comprises main house and separate cottage. The main house features an open plan living area with lounge, kitchen and loft area. The covered patio has beautiful mountain views. A well-established garden, a large pool and built in braai are also found in the outdoor area. Ref: 2238263

Michelle Severin - 083 468 3821



25% SHARE, PRIVATE LODGE R 3 000 000 IN BIG 5 Beds 5 | Baths 5 | Traverse: 7,500 ha

This 25% share offers you usage every 4 weeks. The camp is fully fitted and includes a game vehicle and two staff members for housekeeping and main- tenance. The camp has 5 separate en-suite chalets, a central lounge and kitchen area, viewing deck, pool and boma have spectacular views. Rob Severin - 083 469 3820 Ref: 2289030



NTSIRI, GREATER KRUGER, R 8 000 000 BIG 5 Beds 4 | Baths 2.5 | Traverse: 3,651 ha

N'tsiri Nature Reserve is an exclusive, private use, Big 5 reserve where wildlife roams freely across the unfenced borders with the Kruger National Park, Klaserie & Timbavati. The kitchen is open plan to the living room with a separate scullery and storage area. There is a patio, boma braai and gazebo.

Yvette Thompson - 083 655 7176 Ref: 2263609



NDLOVUMZI NATURE R 4 458 000 RESERVE Beds 4 | Baths 4 | Floor: 176 m<sup>2</sup>

This tranguil home is situated overlooking the Olifants River and is surrounded by large riverine trees and rocky outcrops. The open plan living, dining and newly fitted kitchen are all under high vaulted ceilings that make this home light and bright, which makes this home appealing.

Jason Jones - 083 267 4794 Ref: 2152063



JEJANE, GREATER KRUGER, R 8 500 000 BIG 5 Beds 4 | Baths 4 | Traverse: 2,700 ha

A spacious, low maintenance home situated in a Big 5 reserve. It has wraparound patios, walkways, two boma areas and a viewing deck above the patio. It has a spacious lounge with an open plan kitchen. The home is fitted with 16 solar panels, inverter and batteries, as well as water storage. Rob Severin - 083 469 3820 Ref: 2289549



**BLYDE WILDLIFE ESTATE** R 4 324 000 Bedrooms 3 | Bathrooms 3 | Floor size: 360 m<sup>2</sup>

This home is privately situated and overlooks the wilderness area. The layout includes an open plan kitchen, living and dining room, as well as a separate scullery and a separate laundry. The living area and bedrooms all lead out to the large, covered patio with pool and elevated views.

Jason Jones - 083 267 4794 Ref: 2143428



HOEDSPRUIT WILDLIFE R 4 500 000 ESTATE Beds 6 | Baths 5 | Floor size: 234 m<sup>2</sup>

In a private location, the main house comprises 4 bedrooms, 3 bathrooms, open living area with lounge and kitchen with separate scullery. A free standing cottage comprises 2 bedrooms. bathroom, open plan living area and kitchenette. Double garage, 6 carports and storage room. Michelle Severin - 083 469 3821 Ref: 2258641



KHAYA NDLOVU GAME R 10 900 000 RESERVE Beds 4 | Baths 4.5 | Floor size: 450 m<sup>2</sup>

Beautiful home set on the banks of the dry riverbed. The large open plan entertainment area consists of a dining room, lounge and open plan kitchen. Khaya Ndlovu is a low density residential reserve with only 35 stands on 1.305 ha; it is home to 4 of the Big 5 animals.

Yvette Thompson - 083 655 7176 Ref: 2209629



RAPTORS VIEW WILDLIFE R 5 600 000 ESTATE Beds 3 | Baths 3.5 | Floor: 330 m<sup>2</sup>

This home has an open plan living area with kitchen, dining area and lounge, as well as laundry, storage space and a guest toilet. A bar area looks onto the central courtyard. Stacking doors open to the courtyard, patio, pool and boma. Mountains views can be enjoyed from the patio and viewing deck. Ref: 2216389 Michelle Severin - 083 469 3821



HOEDSPRUIT WILDLIFE R 4 800 000 **ESTATE** Beds 4 | Baths 4.5 | Floor: 286 m<sup>2</sup>

COMMERCIAL - This fully furnished and recently renovated guest house offers an open plan living, dining and kitchen area, leading to a patio with a raised viewing deck. Two carports, swimming pool and a fire pit area add to the features.

Yvette Thompson - 083 655 7176 Ref: 2255810



**BLYDE WILDLIFE ESTATE** R 5 100 000 Bedrooms 4 | Bathrooms 4.5 | Floor: 320 m<sup>2</sup>

This spacious home offers you an open plan kitchen and living area which leads out to an elevated covered patio with views over the pool, boma area and trees around the home. The garage has space for 4 vehicles as well as a covered carport. Under the patio is a storage room & a bathroom. Jason Jones - 083 267 4794 Ref: 2268885



COMMERCIAL LODGE R 11 000 000 Beds 8 | Baths 8 | Floor: 980 m² | Land size: 21 ha

This lodge consists of a main owner's house, central lodge area and 5 luxury treetop chalets. Sold as a going concern; this lodge has bounced back after Covid and has great potential. There are future bookings and well-trained staff. Movable items and furniture included, as well as a bakkie. Ref: 2160187 Rob Severin - 083 469 3820











Available immediately, unfurnished, not pet friendly - This modern, newly built cottage has a separate entrance from the main house. It has an open plan lounge/dining area and kitchen. The kitchen is equipped with a gas stove and oven. There is a fire pit area to the side of the cottage. Michelle Herb - 071 652 9140 Ref: 2267362

KHAYAGELO VILLAGE R 11 500 pm HOEDSPRUIT Beds 2 | Baths 2 | Floor: 104 m<sup>2</sup>

Available immediately, unfurnished, not pet friendly - The unit has been newly renovated and painted. It has an open plan living area with kitchen, lounge and cosy outdoor patio. In addition, there is a huge loft area which can be used as a study and/or extra bedroom. Communal pool and braai. Michelle Herb - 071 652 9140 Ref: 2259760

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## The elephants of the Kruger and Greater Kruger -



### Cont. from page 1

In looking at this subject, a critical question has to be asked: are we happy with this continually soaring population of elephants and the continued destruction of the landscape and biodiversity, or are we going to opt for action to ensure the maintenance of greater biodiversity? A simple definition of biodiversity would be 'the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable'. A component of 'biodiversity' is what is known as 'structural diversity'. Species diversity means that one may have all the species present, but (as in the case of marulas and knob-thorns in some areas of KNP), one no longer has the tall trees upon which so many other species - birds, mammals, reptiles, insects, etc. - depend.

Elephants are known, at low densities, to be beneficial for biodiversity. They favour concentration in woodland species at low density. As their densities increase they start to benefit biodiversity by dispersing plant seeds and by providing the medium in which the seeds germinate, they knock trees over and provide additional browse for other animals like kudu and impala, and then trees that are killed by elephants provide a refuge and habitats for all different types of animals and insects. They also dig wells in river beds that other animals can benefit from, especially in the dry seasons.

But, as their numbers grow their density gets to a point on the other side of the bell curve, where they begin to have a negative impact on biodiversity. The habitat biodiversity drops because elephants begin knocking other species out of the system. As a function of their increased high density they move through the habitat and proceed to impoverish the landscape - and with that, there is the resultant transformation or conversion of the system from woodland to grassland over time. The result is that there is some eradication of favoured plant species - in the KNPGK trees like the marula and knob-thorn are common casualties. In the eastern Kruger (between lower Sabie and Satara) there are areas where marulas have been totally eradicated – literally wiped out of that landscape. The decimation of knob-thorns has a detrimental effect on the birds that favour those trees, like the Wahlberg and tawny eagles, and white-backed vultures.

over. Partially ring barked trees are very susceptible to fire and wood borers, which eventually kills the tree, again affecting eagles, vultures and many other species. There is also a loss of food resources that are supplied by the trees. The visual effects of a high density elephant population can be quite chocking, and can easily be seen when driving through or flying over the scarred landscape – the lack of tall trees, broken trees as far as the eye can see – almost a picture of Armageddon.

There are many fixed photographic points within the Kruger Park that clearly show the effects of high elephant density over decades. There is evidence of this across southern Africa, so this is not only a KNP-GK phenomenon.

In areas in Africa there has been a drastic decline in species of animals that were common in the now decimated areas of parks – solely as a result of high elephant concentrations. Take for example the Amboseli National Park in Kenya: giraffe down from 200 to 0, baboons down from 2500 to 300, lesser kudu, bushbuck and gerenuk from being common to non-existent (extirpated) - and the list continues. Then there are the plant species that park officials estimate has declined by 50%! According to park officials this decline is 'entirely due to the high density of unmanaged populations of elephants'.

### Do we manage a national park for elephants or do we manage it for biodiversity?

According to the national Environmental Management: Protected Areas Act the mandate of SANParks is to preserve ecological integrity and to oversee the conservation of South Africa's biodiversity, landscapes and associated heritage assets. Clearly overseeing biodiversity is an integral part of this mandate, and this is what managers of National Parks are mandated to do. But it seems their hands are tied. If managing for elephants is the preferred route, then we have to understand and accept that there will be biodiversity loss, that is an inevitability. But does this by extension mean that biodiversity becomes secondary? It shouldn't, especially in the KNPGK area that has for more than a century been revered as one of the most biodiverse-rich parks in Africa. But if the choice is to manage biodiversity, then in the current situation, something is going to have to be done about the elephants. This is non-negotiable. There are three options that are available to us,

### Amboseli National Park

all of which have their own pros and cons.

### **Elephant management options**

The first management option is translocation – moving the animals to somewhere else. This is a good humane option, it keeps families intact, is ethically and morally very acceptable, and possibly the preferred option.

The problems with this option is that it is a very expensive exercise and there is a limited market – there is currently little or no demand for elephants. The other issue, with respect to the KNPGK is that if there was the chance of translocation, and based on the number of elephants, the offtake would not be sufficient to bring the numbers down in any meaningful way. The population is simply too large.

The second option is contraception. Again, this is a good humane option, it keeps families intact, and is also ethically and morally acceptable.

It is a vaccine (follicular fluid), harvested from pigs ovaries at commercial abattoirs. It is known as porcine zona pellucida vaccine or pZP. It is delivered from a helicopter with a dart. It's a completely natural process, with really no altering of hormones – the female will come into oestrous, mate but not conceive. Then 15 weeks later the cycle will be repeated. A vaccination booster must also be administered in six weeks. After that it requires annual (or at least biennial) revaccination!

Over time the herd structure will be changed in terms of the number of calves in the herd – there is no evidence at this stage of what that change would mean to the herd, and how it would affect it. The one problem is that after a while, and with too much contraception, females can become sterile. The other issue is that 75% of breeding females have to be under treatment, just to stabilise the elephant population! This relates to about 40% of the normal elephant population. The challenges with the contraception option then are: cost, enough vaccine being available, and the logistics of being able to administer tens of thousands of doses over a short, repeated period of time, to tens of thousands of female individuals - an absolute logistical and costly nightmare! But, and here is the caveat, if you manage to cover 100% of the female population, one has to effectively wait for the elephants to die to start to see a decline in the population. Bear in mind that female elephants stay within the herd structure for life, and once born (unless the calf dies

Image: Harshil Gudka-Unsplash

somewhere along the line), the female elephant will be with the herd for the next 60 odd years!

This option will clearly take a very long time. The conclusion then is that this option is just not feasible in very large populations like that found in the KNPGK area, albeit very effective in small populations.

## Side note: the closure of water holes in the Kruger National Park (KNP) – stabilizing the elephant population?

There is a theory that the closure of manmade water holes and dams in the KNP will lead to the stabilisation of the elephant population in the park. This in theory is due to the food resources around the water points becoming depleted, increasing the distance between food resources and available water. As these distances increase it affects the animals because they need to trek further and further, the animals loose condition, starvation and thirst become a reality, females stop producing milk, calves cannot keep up with the herd and die, and mortality rates increase. Thus the theory is that the herd numbers are stabilized.

But this theory likely does not apply to the KNP or in fact the KNPGK area because there is more than sufficient naturally occurring water available (a very important point), and food resources are probably, at most, no further than 20km away. Conditions that for example are prevalent in the northern Botswana area, where this theory may find ground, are not prevalent in the KNP. Closing water holes will just mean that elephants will walk to other areas where water is available. The food situation in the KNP is also not limiting because the animals do not have to walk very long distances from water to find food. It could in fact be suggested that the closure of water holes could have a much greater impact on other species of animals and not the elephants. So closing the water holes specifically for elephant management in the KNP surely cannot hold any weight – it is far more important to ensure the survival of other antelope species.

Elephants (both females and bulls) kill trees by ring barking and pushing trees

In conclusion, it is unlikely that this strategy will stabilize the elephant population, but it will affect other antelope species.

### The third management option - culling

The third management option is culling, almost an unspoken word when mentioned in the same breath as elephants – ...Cont. on next page

## has the bell tolled?



Cont. from previous page ...

numbers in the KNP.

tions

for centuries?

time it has been proven that this management

tool has been effective in managing elephant

The sale of the byproducts can most definitely

offset the costs, not to mention the supply of

food to bordering communities that may re-

sult in a positive effect on reducing poaching and malnourishment – but there are ethical

and moral issues around the concept of culling.

This is where the heated debate takes place, in

part because they are cognitive-sentient ani-

mals. This means that they have the capacity

to experience feelings and have cognitive abili-

ties, such as awareness and emotional reac-

The big question that is asked, is it morally and

ethically justifiable to kill these animals? Most

conservationists have a great problem with

this concept. They do however not ignore the

fact that it works. The debate must ask which is

morally worse, to cull elephants or to do noth-

ing and allow loses of other species, even the

extirpation (local extinction) of species in areas

where they have been well known and seen

The answers to this conundrum is and will al-

ways be very diverse, and for many different

reasons, and it will always be highly morally

and ethically charged. We have to really and

deeply think about the consequences of too

many elephants and our actions going forward,

because only we can change the chronicle.

### the ugly 'C' word, and it is an ugly concept. The one fact that we all cannot ignore, is that over 1905 was the first red

1905 was the first record of elephants in the KNP. The first two KNP annual reports reported no elephants in the KNP. Gradually estimates were made and in 1964 the estimate was about 2000 elephants. The first actual census was done in 1967 where the number of elephants was put at surprising 6000!

Culling was then introduced, with the objective to keep the population between 6000 - 8 000 elephants. That was generally maintained through the process of culling, until in 1994 a moratorium on culling was brought in. KNP management were aghast, and the nett result is that in 30 years the population has increased to an estimated 30 - 34 000 elephants today – and it could be much more! There has been talk that the total elephant population within the KNPGK could be as high as 50 000!

Consider that elephant populations can increase up to 7% per annum, doubling their population every 10 years! That means that on the lower end of 30 000 elephants currently, there will be 60 000 elephants in 10 years. Considering the current devastation of the habitat, what would it look like by then?

### **Closed system**

The reality is that the KNPGK is a closed system, there are fences and because of that, it is essential that there be a level of fauna and flora management. Inclusive in that, has to be the management of the elephant population. An open environment would negate this requirement. There are voices that say that the KNP is 'going back to what it was before humans came on the scene' – but what was that? We do not know!

Interestingly, the bushman art in the KNP (well documented) show only three or four sites depicting elephants, which would seem to indicate a relatively low population density of elephants. In honesty, if those pictures were painted today, almost every one would depict elephants! The prevalence of baobabs in northern Kruger, icons that are thousands of years old, would also seem to indicate there were not a lot of elephants in the area in days past. If there were high density populations, it is likely those baobabs would not have survived.

When the KNP was proclaimed humankind was privileged to have a richly biodiverse area – one of the most richly biodiverse areas in Africa! It is world renowned for that. But are we happy for it to be transformed into a poor biodiverse system just for the sake of elephants?

There are those that will vociferously state that this makes no sense at all, no one knows how many elephants there were, no one knows what the KNP looked like centuries ago. There is no documentation, books, diaries, painting and the like, that points to any notion that there were teeming herds of elephants in the area hundreds of years ago. What we do know is that there were literally no elephants when the KNP was proclaimed! And now with human encroachment in Africa, we only have national park areas left – closed systems in confined spaces.

### Repercussions

To slowly bring the elephant population down to an 'acceptable' level, one would need to cull in excess of 4 - 5 000 elephants per annum – how will that be achieved? Would that be to try and get elephant levels back to the early 1960's levels, or to the levels of the 1990's, around 7 000, which might also be too high. Who knows?

What is of concern are the repercussions from animal rights organisations and the tourism backlash. That could be massive and seriously detrimental to the area as a whole. There may be a glimmer of some hope in a concept called 'natural resource management', where there is a possibility of sustainable harvesting of wildlife as part of a 'wildlife economy'. But only time will tell.

The other issue is to try to get publications to qualify and quantify their narrative to show the actual impact that elephants are having in a high density situation, as is currently being experienced in the KNPGK. This may just be too onerous for them. As was overheard once by a very reputable international scientist commenting: "Ethical science? What a novel idea!" This may seem harsh, but in instances is applicable.

### Dilemma

Of all the options available, it seems that the only one that might work to a degree, is culling. A massive ask. Logistically, how do we deal with this? Some experts believe it has been left too late – the KNPGK is possibly doomed to become a far less rich biodiversity than we have ever known it to be – sad but true. Trees will be a very small part of the landscape. If there is any grass, then grasslands will prevail, and the diversified game will diminish, and it will be done – forever! All for the sake of one species!

### NOTHING is being done NOW! What are our future generations going to say?

We might need to get people to step away from the concept of self-serving publications, research results, management and statements. It's not about them, it's not about funding, it's not about conforming to the popular trend – it's about the elephants and biodiversity, our heritage, our national asset.

What is needed is the courageous, to make the very hard decisions for the sake of our precious asset – someone, be it individuals or organisations, need to put up their hands and be counted! If they don't, and if there is no pressure for them to do so, the KNPGK could be in deep trouble in years to come.

The window for effective action is rapidly closing. The park's once-vibrant habitats are already showing signs of irreversible harm. If the current trajectory continues, future generations may inherit a landscape vastly different from the thriving wilderness and biodiversity that once existed.

The bell might well already have tolled!



## **Picky View - Harvest House Eatery**





Beautifully presented (even as a take-out). Pulled lamb flatbread, falafel bowl and chickpea burger

#### AE

Hello again fellow bushbabies! This month we did the inconceivable – we ordered take a ways! Not something that we EVER do – but with the weather a little inclement for Hoedspruit standards (as we have come to know), we decided to give it a bash.

The target of our 'inconceivability' was Harvest House Eatery – on the Zandspruit Boulevard, behind the Korongo House and the Farmhouse – the old Hogfather. We didn't look at décor, or service, or waitron attentiveness, or wine, or anything bar for the menu and take aways!

The menu was well structured, and the of-

fering all looked interesting, and the choice was varied – a pleasant surprise. And so to our orders:

One pulled lamb flatbread, two falafel bowls and one chickpea burger. We did not have to wait long for the delectables to be brought to us, and off we went to 'scoff' it all up. The takeaway presentation was fabulous – brown cardboard containers lined with grease proof paper with utensils.

The lamb flatbread was wonderfully constructed. The lamb had no 'growly bits' – it was delicious and cooked to perfection. It came with humus, micro greens, rocket, cherry tomatoes, pickled red onion, avocado and tzatziki. The flatbread was light and tasty, and together the whole offering was scrumptious.

The falafel bowls looked exciting – and so they were. We opted for the vegetarian option, but one can add grilled chicken breasts (at no cost!). The falafels were also light and tasty, and together with all the other goodies – baby spinach, feta cheese, red onion, radish, avocado and a creamy herbed dressing – it was fabulous! What a great taste sensation.

The chickpea burger looked enticing, and so it was. The bun was interesting, it had a 'herbiness' about it, but was tasty and fresh. The patty was accompanied by baby spinach, caramelised onion, Camembert



### Contact : +27 655 74 8374 eat@harvesthousehoedspruit.co.za

and aioli. It also came together with hand cut chips! This was amazing – the chips were crisp and the burger tasty, fresh and clearly homemade – a welcome change in Hoedspruit. as vegetarian patties go, this ranked right up there!

The timing was good, the presentation was good, and the ingredients were all super fresh and tasty .... and delivered with a smile!

This is a venue that needs to be explored and comes highly recommended. Well done to Danielle and Liam on a job well done.

Keep up the good work!

# Veggie Diva - delicious seed crackers



These are my new favourite crackers to eat. They are gluten free, wheat free, sugar and preservative free and are high in protein. Eat as a snack on the run, or top with a delicious variety of toppings.

### Ingredients:

1/2 cup cooked Quinoa

- ¾ cup sunflower seeds
- ¾ cup pumpkin seeds

<sup>1</sup>/<sub>2</sub> cup chia seeds

<sup>1</sup>/<sub>2</sub> cup sesame seeds (I used a mix of black and white sesame seeds)

¼ cup flaxseed (linseed)

1 teaspoon salt

1 ½ cups water

Herb salt or flavouring of choice

1 tablespoon dried herbs of your choice (I used thyme)

1 teaspoon chilli flakes (optional)

### Instructions:

- 1 Preheat oven to 170°C
- 2 Combine all the ingredients together and allow to stand for 10 15 minutes.
- 3 Line two baking trays with baking papers. Split the mixture in two and spread the mixture to around 3 - 4mm. Press firmly down so the mixture is nice and firm.
- 4 Bake for 1 hour. Remove and slice into squares, turn the squares over and bake for another 10 minutes till nice and crispy.
- 5 Allow to cool, top with your favourite toppings or just eat them as is.
- 6 Store in an airtight container.

## **Al's Thirst for Power: A Growing Concern**

AI perspective 'correspondent'

ΑΙ

Artificial intelligence (AI) has rapidly transformed our world, promising to revolutionize industries and solve complex problems. However, this technological marvel comes with a significant, often overlooked, cost: energy consumption. The immense power required to train and operate AI systems is raising concerns about environmental impact, economic implications, and potential bottlenecks to AI development.

At the heart of Al's energy appetite are data centres, the colossal facilities housing the computers that power AI models. These behemoths consume enormous amounts of electricity to cool their servers, perform complex calculations, and store vast datasets. The training of a single advanced Al model can consume as much energy as several homes over a year. As AI becomes increasingly sophisticated and ubiquitous, the collective energy demand of these systems is skyrocketing.

To put this into perspective, consider the following: the power required to train a state-of-the-art language model. It's estimated that such a model could consume the equivalent energy of hundreds of homes for a year. A single search on a popular AI chatbot can consume ten times the energy of a standard Google search. While these figures may seem insignificant individually, the cumulative impact of billions of AI interactions is substantial.

A recent report by Goldman Sachs estimates that AI-related data centre power consumption could increase by a staggering 160% between 2023 and 2030. This surge in demand is driven by the proliferation of AI applications and the increasing complexity of models.

The growing energy consumption of AI is a double-edged sword. On one hand, it threatens to exacerbate climate change as power plants, often reliant on fossil fuels, are pushed to their limits to meet demand. On the other hand, it could constrain AI development itself if energy costs become prohibitively high. This could lead to a concentration of AI power in the hands of a few tech giants with the resources to afford the exorbitant energy bills.

Furthermore, the concentration of energy consumption in data centres can strain local power grids, leading to potential blackouts and disruptions in essential services. As AI continues to advance, there is a risk of creating a digital divide, with regions possessing abundant energy resources benefiting disproportionately from AI advancements.

Moreover, the geographic distribution of data centres is uneven, with certain regions bearing the brunt of the energy burden. This can lead to disparities in economic development and environmental impact. As Al continues to advance, there is a pressing need to develop more energy-efficient algorithms and hardware. Additionally, exploring renewable energy sources to power data centres is crucial to mitigate the environmental consequences.

While AI holds immense potential to address global challenges, its energy consumption cannot be ignored. Finding a balance between technological progress and sustainability is imperative. The future of AI depends on our ability to harness its power responsibly and efficiently. Only through concerted efforts to reduce energy consumption and increase the use of renewable energy can we harness the power of AI without compromising our planet.

Credit: Gemini - gemini.google.com



Data server rack centre (above) and energy storage systems (below).Images: Canva





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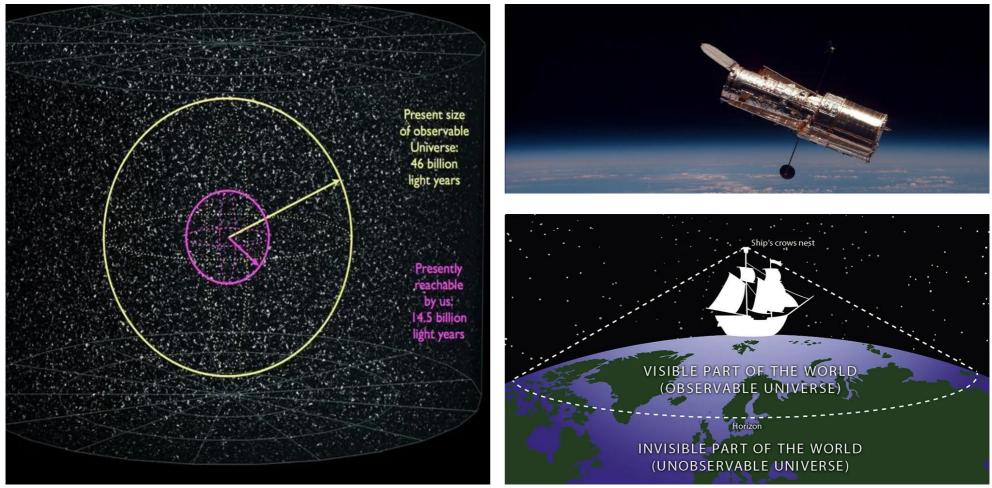
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## To infinity and beyond!



Observable universe (above left and right), Hubble space telescope (above top) and Hubble ultra deep field(below)

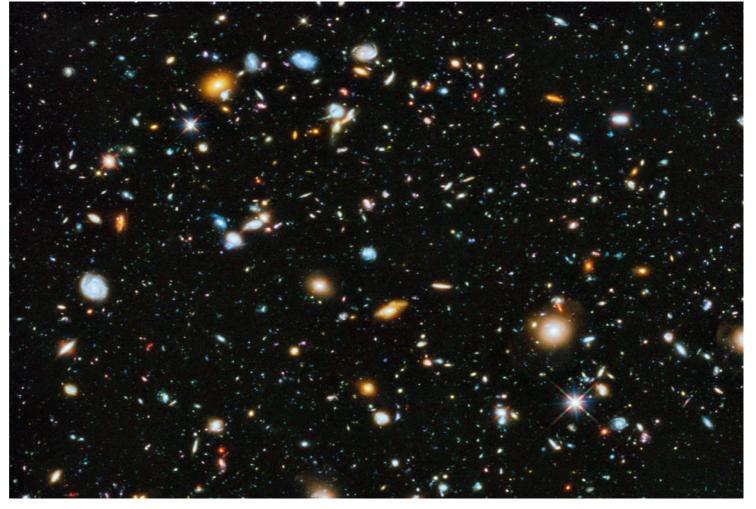
Images supplied: Ben Coley

### Ben Coley

Space is big .... maybe not infinite, but definitely big. The observable universe is thought to be a mind-boggling 90 billion light years in diameter, but likely only forms a part of a larger whole. The universe is 13.8 billion years old. With our understanding of the expansion rate of the universe, the distance to the furthest detectable objects has been calculated to around 45 billion light years away. Any light beyond that boundary simply has not had enough time to reach us since the universe began. Imagine being on a boat in the ocean; you can only see as far as the horizon in all directions, but the ocean is far greater. The same is true of our universe.

Despite the scale of this ocean of cosmic history laid out before us, we can extract a huge amount of information from its inky depths thanks to our understanding of light. Although incomprehensibly far away, these objects give off massive amounts of energy, right across the electromagnetic spectrum, meaning that we can see them. And if we can see them, we can capture their photons. However, there was one uncleanable greasy fingerprint on our cosmic lens: our atmosphere.

Our atmosphere does so much for us every second of every day, but its protective bubble both blocks and distorts the information being sent from the stars. In 1977. an ambitious joint project between NASA and the European Space Agency (ESA) sought to eradicate this problem. They started work on a giant space telescope that would orbit the Earth, high above its atmosphere, allowing astronomers to probe the darkness unhampered. Thirteen years later, the Hubble Space Telescope was launched. Thanks to various technical problems, it would take a further three years before it became operational, but when it did, the metaphorical heavens opened! Hubble has changed the way we understand our universe, and thanks to the unprecedented rise of visual media, its spectacular images have wowed billions of people, sparking a global interest in astronomy and cosmology. Throughout its lifetime (estimated to be until 2030) Hubble's 2,4m diameter mirror will record



collisions of galaxies, in unimaginable detail and beauty. It has aged the universe to 13,8 billion years and mapped its distribution of dark matter. But Hubble was about more than pretty pictures and science, it represented the discovery of the unknown.

our existence with over 2 trillion other gal-

everything from the birth of stars to the this information suggests we could share to refine much of what we had learned in the past two decades, and this trend is set to continue.

In 2014. NASA and the ESA released what is possibly the most humbling and thought-provoking space image ever taken. Combining ten years of data and over one million seconds of exposure, the Hubble Ultra Deep Field photo gave us our most profound look into the universe, and our past. Within an area of seemingly featureless black sky (about the size of a grain of sand at arm's length) Hubble revealed over 10 000 galaxies, their diversity in size, shape and form matched only by their sheer abundance. Combined with our mathematical models of the distribution of matter throughout the universe, axies, each containing 100's of billions of stars, and almost infinite possibilities.

Not only did the Ultra Deep Field expand our horizons, but it also allowed us to see back in time. Hubble was able to spot galaxies 13,5 billion light years away, meaning it saw what they looked like 13,5 billion years ago, only moments (cosmically speaking) after the Big Bang! By examining these images, astronomers have been able to literally see what the universe looked like soon after the first galaxies started to form, gaining a great understanding of the process of galactic evolution.

Then in 2022, the James Webb Space Telescope tried its hand at its first deep field image. Its enormous 6m diameter mirror and infra-red capabilities allowed it to see even further back than Hubble, shining yet more light into space's shadowy depths. Its more accurate data has already caused us

The technological advances of these, and other telescopes, have grown our cosmic neighbourhood to such a size that it seems highly improbable (to this writer at least) that we are alone. Despite the challenges of creating and sustaining life, there are thought to be as many as 1 000 000 000 000 000 000 000 000 (1 septillion) stars in the universe (more than ten times the number of cups of water in all the oceans of the world!), many of which harbour multiple planetary systems and moons. Whilst definitive evidence continues to elude us, we have but scratched the surface as to what might be out there, and who knows what else we will find as the eyes in the sky continue to peer into infinity and beyond.

### See Celestial Events SA advert for contact details

## Leopard DNA study in South Africa traces ancestry to ice age – and will guide conservation



Laura Tensen Post-doctoral Fellow, University of Copenhagen

An ice age almost one million years ago led to a meeting between leopards from central and southern Africa that were searching for grassland. New research into the leopards' genetics – their mitogenome - has revealed that the descendants of these two groups are the leopards found today in South Africa's Mpumalanga province. One of the researchers, molecular ecologist Laura Tensen, has been studying the genetic structure of South African leopards for 14 years. She explains how the new research can be used to help conserve the endangered big cats.

### What is a mitogenome?

DNA is found in the nucleus of cells and also in the mitochondrial genome, or mitogenome. Mitogenomes are DNA molecules that float around outside the nucleus of a cell. They store their own set of genetic information and are maternally inherited, which means they are only passed on from mother to offspring

Mitogenomes are a "genomic by-catch" when sequencing the whole genome. They are so abundant in cells that it is very easy to extract them.

Studying mitogenomes is a reliable way to track the ancestry of a species. This is because genes mutate (change) at a regular rate over time. The changes in the mitogenome provide a picture of leopard evolution over hundreds of thousands of years.

### How do you test a leopard's mitogenome?

We took tissue samples from nine leopards in Mpumalanga, South Africa that had been knocked down by cars and killed. This unfortunately still occurs a lot. In non-protected areas, road kills account for all accidental mortality of leopards.

#### The beautiful common file snake

them to a reference genome – one that has the exact positions of all the genes already. The reference genome was one that was previously sequenced and stored in an online database, Genbank, which is the collection of all publicly available DNA sequences. We then downloaded lots of other mitogenomes from online databases, provided by previous studies, to compare our samples from South Africa to the rest of the continent.

In doing this, we were able to discover how mutations that arose over time were sorted over geographical space. Some of the samples were from natural history museums, collected up to 150 years ago. They represented the genetic structure of leopards before their habitats were broken up by humans.

### What did you find?

We found that the South African leopards originated from two unique clades (or subfamilies) that were found in southern and central Africa approximately 0.8 million years ago. It is likely that these clades originated during the Mid-Pleistocene, a period between 1.6 million and 0.52 million years ago when the world experienced an unstable climate.

We were able to establish this by measuring the evolutionary timeline, that is, the dates when the leopard species diverged against existing Eurasian leopard genomes, as well as lion and tiger genomes. Earlier research had already shown when these animals diverged from each other.

In sub-Saharan Africa, the Pleistocene, often referred to as the Ice Age, was marked by cool and dry cycles alternating with warm and wet climates. This drastically changed the landscape across the African continent, leading to repeated expansions and contractions of savanna grasslands.

As a result, animals like leopards were prced to move around, looking for grass lands where their prey would be found. During dry periods, animal populations became isolated from each other as deserts took over the grasslands, becoming a barrier that kept leopards apart.

put together. It allowed us to properly classify these leopards for the first time. This is useful because it can help with further research into how leopards evolved. Knowing how a modern leopard population is related to ancient populations, and the geographical paths they may have taken to reach this point, helps with conservation efforts.

In conservation today, leopards often have to be moved away (translocated) to avoid conflict with humans in areas where the cats might come into contact with livestock and eat them. It is important to know which animals are genetically diverse so that we can maintain this diversity across large areas. When animals are genetically diverse, they have more chance of surviving disease outbreaks.

One of the most important aspects of our study was discovering that although the leopard clades may have evolved separately, they are part of the same, interconnected metapopulation that stretches across southern Africa, and can be conserved in the same way.

Image: Zixian-Getty Images-Canva

Laura Tensen does not work for, consult, own shares in or receive funding from any company or organisation that would benefit from this article and has disclosed no relevant affiliations beyond their academic appointment.

#### Partners

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The samples were taken to the University of Johannesburg Wildlife Genomics laboratory and stored at -20°C before DNA extraction.

To retrieve the mitogenome, we sequenced the whole nuclear genome. When scientists sequence a whole nuclear genome, it allows them to discover the DNA sequence of every gene in an organism's genome at once. This then allows us to figure out what these genes exactly code for. For example, in red leopards, we have found the gene and mutation that causes the colour red. We've also been able to determine which inherited genes may cause health defects in the red leopard. We could use the same technique to find genes that make the two clades (groups of related leopards) unique, or better adapted to local environments.

After extracting the mitogenomes from the data, we assembled them and aligned

Once the leopard populations became separated, their genes started to differentiate over time.

The same kind of leopard movements still happen in South Africa today. Mainly young males can walk up to 300 kilometres away from their homes, looking for new territory. When they find it, they mix with leopards from other parts of Africa. It doesn't take many leopards to diversify the genes of a population. Eventually, the populations connect over time and space.

### Why this matters

This is the first time that the leopard mitogenomes from South Africa have been

## Quite possibly THE most important creature on our planet – the humble bee

### Mark Bishop

In a world bustling with countless species, identifying the single most crucial creature on Earth is no small feat. However, a rising number of scientists, environmentalists, and farmers are rallying around an unexpected candidate: the humble bee. While larger, more charismatic animals often steal the spotlight, these small insects are the unsung heroes maintaining the intricate web of life that supports us all. Wildlife experts and scientists now warn that bees are facing significant threats and have been classified as endangered.

While it might seem overly ambitious to crown a single species as the most important, the evidence for the bee's pivotal role is overwhelming. In a world often captivated by the charisma of elephants or the intelligence of dolphins, a tiny, buzzing creature is quietly orchestrating life as we know it. The bee, often overlooked, is the unsung architect of our planet's ecosystems. Without their tireless work, our world's food supply, biodiversity, and even our very survival would be in peril.

These industrious insects are in crisis. Their populations are plummeting at an alarming rate, driven by a perfect storm of habitat loss, pesticide poisoning, climate change, and disease. Colony Collapse Disorder, a mysterious phenomenon that causes entire bee colonies to disappear, has become a growing concern. The consequences of this decline are far-reaching, threatening to unravel the intricate tapestry of life.

### Pollination: the foundation of life

At the heart of their significance lies pollination, a process essential for the reproduction of countless plant species.

As they flit from flower to flower, collecting nectar, bees inadvertently transfer pollen, enabling plants to reproduce. This essential process underpins the production of countless fruits, vegetables, and nuts. A world without bees would mean empty supermarket shelves, a drastic shift in our diets, and food prices would skyrocket.

But the impact extends far beyond our dinner tables. Bees are crucial for maintaining biodiversity. Wild plants, the foundation of many ecosystems, rely on pollinators for survival. A decline in bee populations can trigger a domino effect, with devastating consequences for wildlife and the environment.

### An economic powerhouse

The economic value of bees is staggering.



The pollination services they provide are estimated to be worth billions of dollars annually. From almond orchards to apple farms, agriculture relies heavily on these tiny insects. A world without bees would mean economic turmoil and food shortages.

### A call to action

The urgent crisis facing bees demands immediate and decisive action. We must

shift to sustainable agricultural practices, significantly cut down on harmful pesticides, and establish protected habitats where bees can thrive. It is essential that governments, businesses, and individuals must collaborate if we are to make any inroads into this problem.

The future of our planet is deeply intertwined with the survival of bees. By safeguarding these crucial pollinators, we are not only preserving our food supply and ecosystems but also ensuring the wellbeing of future generations. Now is the time to give bees the respect and protection they deserve—their role in supporting all life on Earth and their survival is critical and cannot be overstated.

More information is in Tim Baynhams' article "Expanding on the humble bee ..." below.

## Expanding on the humble bee ...





Tim Baynham Wildlife Safety Solutions

Honeybees have complex social structures and behaviours. The colony is comprised of three distinct castes of bees: each responsible for performing specific functions within the colony. First, there is the queen bee, as two thirds of the worker bees may leave with her. They will usually exit the hive as a 'cloud of bees '.

They will then typically go and settle in a tree or on a fence post fairly close to the original colony, forming a protective clump around the queen. At this point scout bees will fly off in search of a suitable location to establish the new colony. Once they find a potential location they return to the swarm and perform a 'waggle dance' in an attempt to convince other scout bees to investigate the new location. By performing the 'waggle dance' the scouts are able to communicate to the other bees both the direction and distance to the new hive location. Swarming bees are usually not aggressive or defensive as they don't have a hive to protect. If you do find a swarm that has settled on your property, just give them space and keep pets away and they should move off after a few days. If you have concerns that they may establish a hive close to your home, then call a beekeeper that can safely capture and relocate the swarm.

A swarm of bees in a tree (above left) and a beehive (above)

honeybee species. It is important to note however that some colonies may be more, or less aggressive than others. Below are a few helpful pointers regarding bee safety and awareness.

When partaking in outdoors activities such as hiking or fishing, pay close attention to your surroundings and listen for any distinct Images: Supplied

or car. If there is no shelter available running through thick bush may help to disorientate and disengage at least some of the attacking bees. Do not jump into water, the bees will hover above the water and wait for you to surface.

Bees have a barbed stinger and when they sting the stinger, a venom sac and a nerve

she is larger than the other bees and her sole function is to lay eggs for the colony. Next, we have the worker bees, which are all female. The worker bees form the bulk of the colony, are equipped with a stinger, and perform several different tasks within the hive. These tasks include packing nectar and pollen into the cells, cleaning, feeding the brood, building the wax combs, guarding the hive, water collection, and foraging for pollen and nectar. Lastly, there are the drones, which are the males and are stingless. Their sole focus is to mate with the queen during her nuptial/mating flights

September is the start of the main swarming season in South Africa. Swarming behaviour is part of the natural reproductive cycle of honeybee colonies. When a colony becomes overcrowded the original queen will depart the hive with the intention of establishing a new colony elsewhere. As many

### Bee safety

African honeybees are generally speaking, considered more defensive than other buzzing sounds. Stay away from any bee hives that you may encounter. Avoid applying strongly scented perfumes and wear light coloured clothing.

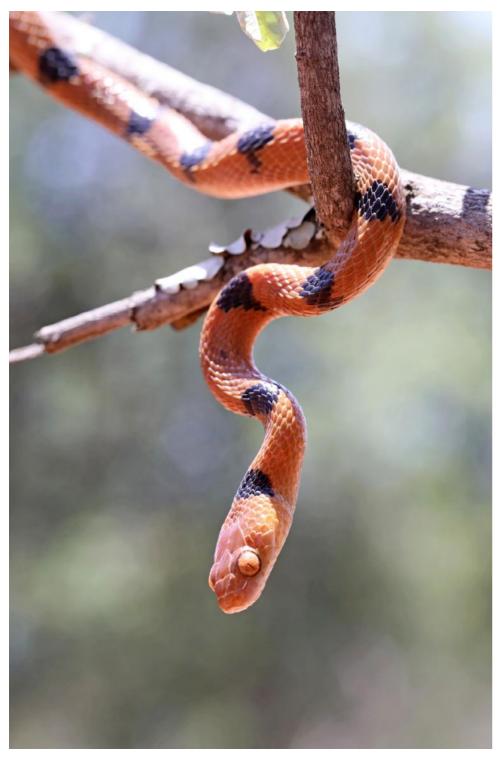
Be careful when using machinery such as chainsaws, weed-eaters, tractors, generators and lawnmowers. The noise, vibrations and smells produced by these pieces of equipment are well known to aggravate bees

If you un-expectedly disturb a colony immediately distance yourself from the hive, do not swat at any bees that maybe flying around you. The movement can aggravate the bees and crushed bees emit a pheromone that will attract other bees.

If you are attacked, quickly run away; try to protect the sensitive areas around your eyes, mouth, nose and ears by pulling your shirt or jacket over your head. If possible, run to the nearest shelter such as a building ganglion are left behind, embedded in the skin. It is important to remove the stinger as soon as possible, as venom will continue to enter the wound for a period after the sting. Avoid using tweezers or your fingers to remove the stinger. Rather make use of a straight edge such as a credit card, blunt knife or your fingernail to scrap the stinger out. If you are allergic to bee stings consult with your doctor immediately, and they will be able to advise you on any first aid measures you can implement.

For more information on venomous animals, awareness training and talks, as well as a professional 24hrs problem snake rescue service, contact the author at Wildlife Safety Solutions: 073 934 6156; info@ wildlifesafetysolutions.co.za; www.wildlifesafetysolutions.co.za, FB Wildlife Safety Solutions, Instagram wildlife\_safety\_solutions

## The eastern tiger snake - Telescopus semiannulatus





Eastern tiger snake Images: Johan Marais

### Sudoku solution

3	8	5	4	2	7	1	9	6
4	7	9	5	6	1	3	2	8
1	6	2	3	9	8	7	5	4
6	5	1	9	4	3	2	8	7
8	3	7	2	1	5	4	6	9
9	2	4	8	7	6	5	1	3
2	1	8	7	6	4	9	3	5
5	4	3	1	8	9	6	7	2
7	9	6	3	5	2	8	4	1

Luke Kemp African Snakebite Institute

An attractive yellow to orange snake with black "tiger-stripes" across the body. These are not to be confused with the highly venomous tiger snakes of Australia. The eastern tiger snakes are widespread in the eastern and northern parts of southern Africa, extending into the Kalahari regions. They are generally found in bushveld regions or areas with scattered trees or rocks.

These snakes are common in the lowveld, they are good climbers and often found in trees or climbing face brick walls and in the rafters or eves of buildings. They are slow-moving snakes but are quick to pull back into an s -shape, with the head held off the ground if confronted. They will also flatten the head and may have the mouth agape attempting to intimidate an attacker or threat. They also lunge forward in mock bands across the body. They are not danstrikes. If handled, they may be quick to bite but usually calm down after a while.

It is a nocturnal snake that hides during the day in rock cracks or beneath the bark of dead trees. At night they emerge to hunt geckos and other lizards as well as bats.

They average around 60 - 80 cm in length but may reach a meter in total length. Due to the distinct colouration and patterns, they are not easily misidentified. The eyes are golden brown and large, and have vertical pupils like a cat, which allows them to see better at night. There are four species of tiger snake across southern Africa, the other three species occur in the dry western half of South Africa and Namibia.

The eastern tiger snake lays around 3 - 20 eggs in early summer, and the eggs take around 90 days to hatch. The young will measure around 17 - 23 cm after hatching and are perfect replicas of the adults.

These little snakes are commonly encountered and easy to identify with the dark gerous to humans but best left alone.

The eastern tiger snake is mildly venomous to humans and bites cause light bleeding and occasionally slight swelling and redness or itching – less than a bee sting.

Check out the website on www.africansnakebiteinstitute.com – and get your FREE App on the link http://bit.ly/snakebiteapp



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## Yes, you can develop mathematical proficiency with numiknow<sup>™</sup>!

### Thias Taute

The first article in the December 2023 issue of Kruger2Canyon News, titled "The lack of mathematical proficiency in our society today-a counter-cyclical twist in this struggle offers hope," introduced the community to the Social Employment Fund (SEF) project and the numiknow<sup>™</sup> component, which deals with numeracy. The following articles (seven in all) introduced us to various facets of numiknow<sup>™</sup>, from the introduction, through games, and competition.

The final competition for the first SEF project was the Champ of Champions competition, where the ten best numiknow™ performers competed against each other in various numiknow<sup>™</sup> and mental mathematics games. Six school learners and four older participants competed for prizes worth R 15 000.00. One of the new games was the mental calculation of the cost of a shopping list with 43 items, within a limited time. The value was R1011.00 and two participants got it correct! The winners were, in first place, Maiden Moropane (SEF Project), in second place Sweetness Molobela (German S Chiloane Secondary School, and in third place, Neo Sekgobela (German S Chiloane Secondary School)

To determine if numiknow<sup>™</sup> really offers hope for people struggling with mathematical proficiency as mentioned in a previous article, the following results from the SEF participants were captured at the beginning and the end of the project:

Game scores in the seven games representing addition, subtraction, multiplication, division, fractions, ratios and percentages.

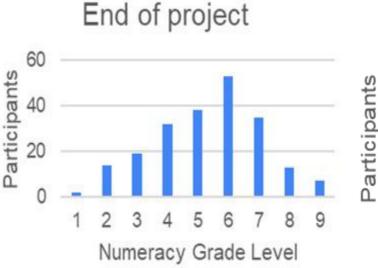
Their numeracy levels compared with school grades between Grades 1 and 9.

The game	Improvement
adda	55%
mina	49%
multa	47%
fracta	30%
rata	15%
diva	15%
perca	2%

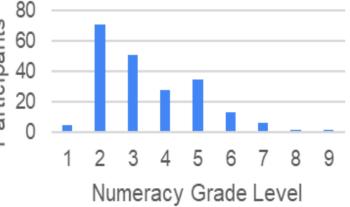
### Above: Improvement percentage per numiknow<sup>™</sup> game

From these results, the more noticeable improvements were made in the games that were introduced and played right from the very beginning - those being adda, mina and multa. It was also found that division-related games (diva, fracta, perca, and rata) require more explana-





Start of project



the most considerable improvement. Going forward then, we aim to introduce all the games simultaneously, so that each game gets the same time and attention.

The following set of results show the initial numeracy of the participants compared to school grades, at the beginning and the end of the project. The table below shows that most participants initially tested at a foundational numeracy level, and at the end of the project at a significantly higher level. The results from the numeracy assessment can, therefore, be interpreted as having been very positive after the implementation of numiknow<sup>™</sup>. At the end of the project, fewer participants tested at the Foundation Level and more tested at a higher level, showing their improvement in understanding.

The number of participants left in the Foundation Level (GR 1-3) decreased by 72% from 127 to 35 participants show- We look forward to the results of the ing a very positive outcome. Participants schools' project with the mentioned ad-

creased by 62% from 76 to 123 participants: another very positive outcome. Then onto the participants in the Senior Level (Gr 7 - 9) there was a substantial increase of 450% from 10 to 55 participants – a remarkable achievement!

The data suggests that most of the SEF participants utilized the opportunity to noticeably improve their mathematical proficiency during the duration of the project.

At this stage, numiknow<sup>™</sup> has proven its role as a refreshing alternative to developing procedural fluency as a specific component of the mathematical proficiency of youth and adults. Further developments in the numiknow<sup>™</sup> compendium of games, to improve understanding and problem-solving, can contribute more to strategic competence and improved mathematical proficiency. in the Intermediate Level (Gr 4 - 6) in- justments to improve mathematical pro-

ficiency, which will be published in May 2025.

Thanks to the following partners and sponsors of the project: Partners

Stellenbosch Development Trust, Citizen Connect, Kruger to Canyons Biosphere Region, Lowveld Academy and the German S Chiloane Secondary School. Sponsors

Hoedspruit SPAR, Acornhoek SUPER-SPAR, Blydevallei Boerdery, Landman Group, BBI Packers, Kruger2Canyon News, PostNet, PAINTSMITHS, Thule, Koru Camp and Trophy Toyota.

To find out more about numiknow<sup>™</sup>, contact Thias Taute through the Hoedspruit Hub: 079 502 4727 or on email thias@hoedspruithub.com

tion, support, and practice. These were the areas in which players could make

love the Hoed

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## NOTICE GIVEN IN TERMS OF SECTION 86 OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT BY-LAW OF THE MARULENG LOCAL **MUNICIPALITY, 2016**

Tushiya Town Planners and Architects (represented by: Vukosi Ndalama Shimange); being the authorised agent for Parchi African Properties; hereby give notice that I/we have applied in terms of Clause 21 of the Maruleng Local Municipality Land Use Scheme, 2021 for Accommodation and Related Facilities for Visitors on Portion 11 of the Farm Rome 185 KT.

Any objection(s) and/or comment(s), including the grounds for such objection(s) and/or comment(s) with full contact details, shall be lodged with, or made in writing to- Manager: Department of Spatial Planning and Economic Development, 65 Springbok Street, PO Box 627, Hoedspruit, 1380 from the 30<sup>th</sup> August 2024.

Full particulars and plans (if any) may be inspected during normal office hours at the Municipal offices, for a period of 30 days from the date of first publication of the notice at the Department of Spatial Planning and Economic Development, 65 Springbok Street, PO Box 627, Hoedspruit, 1380.

Details of the Applicant are as follows: Contact Person: Vukosi Ndalama Shimange (Tushiya Town Planners and Architects), Postal Address: 1061 Mhala Road, Thulamahashe, 1365, Cell No.: 0658269251, Email: tushiyatpa@gmail.com.

### **KENNISGEWING GEGEE INGEVOLGE ARTIKEL 86 VAN DIE VERORDEN-**ING OP RUIMTELIKE BEPLANNING EN GRONDGEBRUIKBESTUUR VAN DIE **MARULENG PLAASLIKE MUNISIPALITEIT, 2016**

Tushiya Stadsbeplanners en Argitekte (verteenwoordig deur: Vukosi Ndalama Shimange); synde die gemagtigde agent vir Parchi African Properties; gee hiermee kennis dat ek /ons het ingevolge Klousule 21 van die Maruleng Plaaslike Munisipaliteit Grondgebruikskema, 2021 aansoek gedoen vir Akkommodasie en Verwante Fasiliteite vir Besoekers op Gedeelte 11 van die Plaas Rome 185 KT.

Enige beswaar(s) en/of kommentaar(s), insluitend die gronde vir sodanige beswaar(s) en/of kommentaar(s) met volledige kontakbesonderhede, moet ingedien word by, of skriftelik aan- Bestuurder: Departement Ruimtelike Beplanning en Ekonomiese Ontwikkeling, Springbokstraat 65, Posbus 627, Hoedspruit, 1380 vanaf 30 Augustus 2024.

Volledige besonderhede en planne (indien enige) kan gedurende gewone kantoorure by die Munisipale kantore besigtig word vir 'n tydperk van 30 dae vanaf die datum van eerste publikasie van die kennisgewing by die Departement Ruimtelike Beplanning en Ekonomiese Ontwikkeling, Springbokstraat 65, PO. Box 627, Hoedspruit, 1380.

Besonderhede van die Aansoeker is soos volg: Kontakpersoon: Vukosi Ndalama Shimange (Tushiya Stadsbeplanners en Argitekte), Posadres: Mhalaweg 1061, Thulamahashe, 1365, Sel No.: 0658269251, E-pos: tushiyatpa@gmail.com.

101 111 015 799 4000

071 519 7044

articipants crossing the finish line (top) nd others making their way en-route SINESS right). Riders relaxing (above) ECTOR

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SAPS Station Commander	082 565 8253

SAPS General

SPCA Phalaborwa

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DR D Verhagen	015 793 0606
DR A Polley	015 793 0606
DR Shivambu	013 793 0000
DR Werner Muller (Dentist)	015 793 1894
Hlokomela	072 698 6538
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Hoeds Wildlife Est Pharmacy	015 793 1427
J Coetzee (Clinical Psychologist)	015 781 0012
Kyk Oogkundiges (Optometrist)	060 548 5387
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Fire Brigade Maruleng

Fire Brigade AFB

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## The annual Wagters fees goes off with a bang



Hundreds of supporters and revellers turned up in support of Farmwatch at the annual Wagters Fees held on the Lowveld Academy grounds last Saturday.

There were shops lining the field, and drinks, 'boerie' rolls, burgers, chips and of course delicious pancakes for sale. A pantechnicon truck with stage in tow, served as the stage and was well visible for all who set up their gazebos and chairs in front of it, waiting in anticipation for the music to start.

About 700 tickets were issued, which showed that Hoedspruit locals and friends were in good support of the cause. At the stage of going to print we were not sure as to how much money had been raised, but for sure the highlight was the auctions - the bidding was competitive!

Everyone had a great time, and our hope is that a good amount of money was raised to support Farmwatch. If you did not get a



chance to come to the event, and you want to contribute, be sure to scan the QR code on Page 2 of this publication and donate. All donations are much appreciated.

Thanks to all the sponsors without whom this event would not have been possible

Snapshots of our community on the day at the Wagters Fees event. A well supported fabulous day filled with entertainment... well done to the organisers and sponsors!



# My 5 sent

### Oupa Bobbili

Olimpiese Spele - wat 'n gapsarra (gemors). Om 'n bespotting te maak van 'n geloof is absoluut net siek. Kyk, of jy glo aan God of nie, jy gaan Hom in die oë moet kyk eendag en rekenskap gee. Glo dit of nie. Einde van die deel van die storie.

Ek wil nou net weet. Waar is al die vrouens en die tannies wat so baklei teen 'GBV '(Gender Based Violence)? Daar was 'n stadium nie te lank terug nie wat 'n man nie eens na 'n vrou kon kyk en glimlag en kon wegkom met dit nie. Dan is dit seksuele teistering, aanranding, verkragting, of skending van vroulike regte en of net sommer van haar grimering 'n grap gemaak. Kyk dan

het 'n man lekker moeilikheid hoor.

Ek weet as 'n man kan jy nie meer 'n vrou 'n kompliment gee sonder reperkussies nie. En dan huil hulle, mans gee nie meer komplimente nie. En toe kom die Olimpiese spele komitee, (die selfde mense wat dit goed gekeur het om van God 'n bespotting te maak) en hulle sit iemand homself identifiseer as 'n vrou en boks teen 'n vrou en breek haar neus.

So die volgende keer as seun Gerhard saam met sy pêlle 'n paar biere gaan drink, en mamma wag hom in met die pan of besem, kan hy net sê "ek oefen vir die Olimpiese spele." Hy moet net vinnig van haar onderklere gaan aantrek en een van die letters alfabet kies 'A' (vir anders), 'V' (vir ver-

skillend), of 'Q' (vir 'queer'). En daar waai 'GBV' by die deur uit, sonder seremonie. Identifiseer in net wat jy wil. Maar ken jou plek. Daardie vroue bokser het hard gewerk om te kan deelneem op daardie vlak. En om so te verloor teen wat ek beskou as 'n man is absoluut vernederend.

Kom ons weer eerlik teenoor mekaar. Die onderwerp kan vir jare aangaan en almal kan puik opinies lewer oor hulle standpunte. En ek respekteer die debat heeltemal. Maar die einde van die saak is, as ons nie ons plek ken nie, en nie ander mense respekteer nie, sal daar altyd oorloë wees. Oorlog is nie altyd land teen land nie, dit is mens teen mens, geloof teen geloof, geslag teen geslag, ras teen ras, kultuur teen kul-

tuur.

As jy wil lyk soos mammie en piepie soos pappie, is dit jou saak. As jy 'n 'vegan' wil wees, wees een. As jy jouself wil identifiseer as 'n leeu, doen dit. Maar bly uit ander mense se spasie uit wat jou nie daar soek nie. As jou paadjie nog nie bestaan nie, maak een, los myne. Ek dwing nie my goed op ander mense af nie, so ek verwag dieselfde van jou. Ek is 'n Christen, ek doen wat reg is vir my en my familie. Jy betree my persoonlike spasie op eie risiko.

Stap op jou eie pad van die lewe, daar is geen kompetisie nie. Groete



