



# NEWSLETTER

August 2022 Issue

## QUICK FACTS

An elephant drinks up to 160 litres of water per day.

Having a wingspan of only 1/2", the smallest butterfly in the world is found in South Africa. It is known as the Dwarf Blue Butterfly.

The roar of a lion can be heard over 8 kilometers away.

Giraffes have the same number of vertebrae in their necks as humans, seven in total, but much larger.

## DEAR OLIFANTS FAMILY

I hope you are all well. We are now over the mid-year hurdle and hurtling through the months at a seemingly rapid rate. Temperatures on the reserve are starting to read well into their thirties and the chills of winter are in the rearview mirror!

The reserve is in great condition with the vegetation slowly drying out but still incredibly thick for this time of the year. We have had an exciting July with our first Pedal Power event taking place, with more details below.

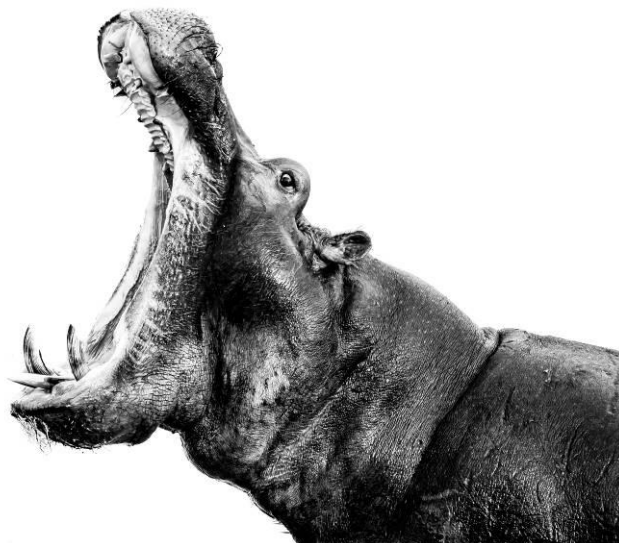
It's AGM season this month and we hope to see most of you at the event on the 17<sup>th</sup> of August in Johannesburg.

I hope you enjoy the August issue of the Newsletter!

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*“When you have caught the rhythm of Africa, you find out that it is the same in all her music.” – Karen Blixen*

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## ORGR GAME DRIVE

As per reputation, Olifants River Game Reserve still continuously delivers world-class game viewing. We have been very lucky with cheetahs in the last two months with sighting rates higher than previous years. The other big cats, leopard and lion, have provided us with many hours of excellent viewing over the last two months. Elephant numbers on the reserve remain quite high with large herds making their way along the riverine areas as well as in Lisbon. We can expect these numbers to increase in the coming months as the bush heads into its peak dry period. General game is in superb condition with good numbers of giraffe, kudu, waterbuck, and impala present on the reserve. We have also had some good presence of zebra and wildebeest around Sable dam and Wild Dog pan.



## FEATURE ARTICLE: GIRAFFE EVOLUTION – PIECES OF THE PUZZLE

Giraffe evolution has long fascinated biologists. Unique in the animal kingdom, their towering stature confers considerable advantages for access to out-of-the-way resources and vantage for spotting predators. Recent research delves into how giraffe genetics have shaped their ability to defy gravity. The giraffe's great height comes with significant physiological challenges, including maintaining the necessary blood pressure and bone density to support it.



Giraffes need to pump blood up to two metres above the level of the heart to supply the brain with oxygenated blood. This, in turn, necessitates pumping blood at a pressure double that of most other mammals – pressure that would cause severe damage to the human cardiovascular system.



### Factoring in growth

How the giraffe survives with such high blood pressure is a mystery slowly being unravelled by scientists.

Research had previously isolated a gene known as *FGFRL1* (the fibroblast growth factor receptor-like protein 1). In giraffes, this gene shows seven mutations not present in other ruminants. Given that different mutations in this gene are known to cause cardiovascular and skeletal defects in humans and mice, researchers hypothesised that the giraffe's exceptional *FGFRL1* must be responsible for some of its specialised adaptations.

To test this, the authors of the new study used cutting-edge technology to insert the giraffe gene into mice. The modified mice and a control group without the gene then received a drug to increase blood pressure. The results were pretty conclusive: the “giraffe-type *FGFRL1* mice” suffered less cardiovascular and organ damage than the normal mice. In fact, after 28 days of exposure to the angiotensin II drug, the modified mice showed no indications of hypertension – their blood pressure remained at the average.

Though the mechanisms behind this gene action are still not understood, the authors tentatively speculate that this research may well contribute to future gene therapies for humans suffering the adverse effects of high blood pressure.

### Dem bones

Giraffes have one of the highest skeletal growth rates of any mammal – a calf will double its height during its first year. As a general rule, fast skeletal growth rates are associated with decreased bone strength, but adult giraffes have average bone mineral density. Interestingly, the “giraffe-type *FGFRL1* mice” had significantly

higher bone mineral densities, bone volume/total volume ratios and average trabeculae (essentially, the supportive “struts” in bone) thickness than the normal mice. Thus, it seems highly probable that the *FGFRL1* gene in giraffes plays a role in maintaining compact and robust bones.

This particular finding goes to the heart of the basics of evolution and, in particular, evolutionary pleiotropy. Pleiotropy describes a situation where one gene impacts two or more seemingly unrelated physical traits. This may help explain how substantial phenotypic changes could have taken place over a relatively short evolutionary time.

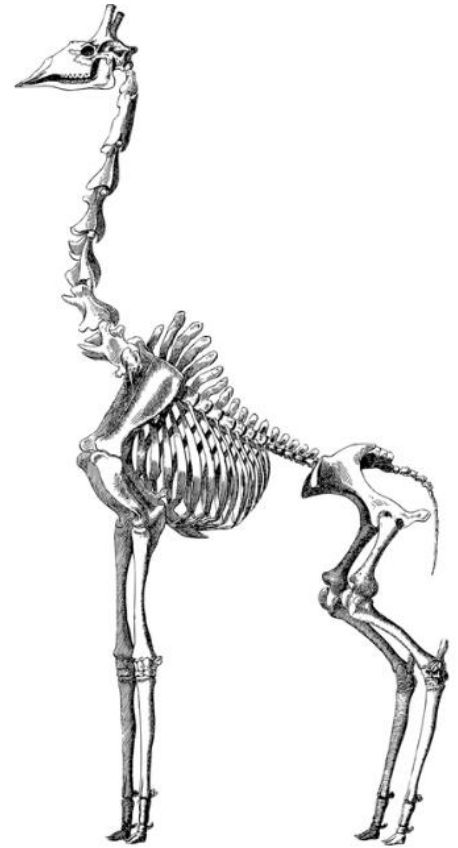
### **Constant vigilance**

In compiling the genome assembly, the study details how giraffes are adapted to have what is thought to be the best eyesight of any of the Artiodactyls (even-toed ungulates such as antelope and buffalo). This may be particularly important for giraffe because their reaction speeds are fractionally slower than most mammals because of a delay in neuron transmission caused by neuron length. Not only did the researchers identify several genes related to optical development, but they also showed that the giraffe has a reduced sense of smell. Compared to its closest relative, the okapi, the giraffe lacks at least 53 olfactory-related genes. This may well be a natural trade-off in sensory acuity seen in other animals (often arboreal species).

Unlike most other animals, a resting giraffe is not particularly well suited to rising quickly and gracefully, making them more vulnerable to predators. They also require high volumes of food. As a result, giraffe sleep durations are among the lowest recorded. The study outlines clear evidence of the rapid evolution of specific genes critical in maintaining circadian rhythms and sleep arousal systems. Thus, the giraffe’s genome allows for short and fragmented sleep.

### **A tall order**

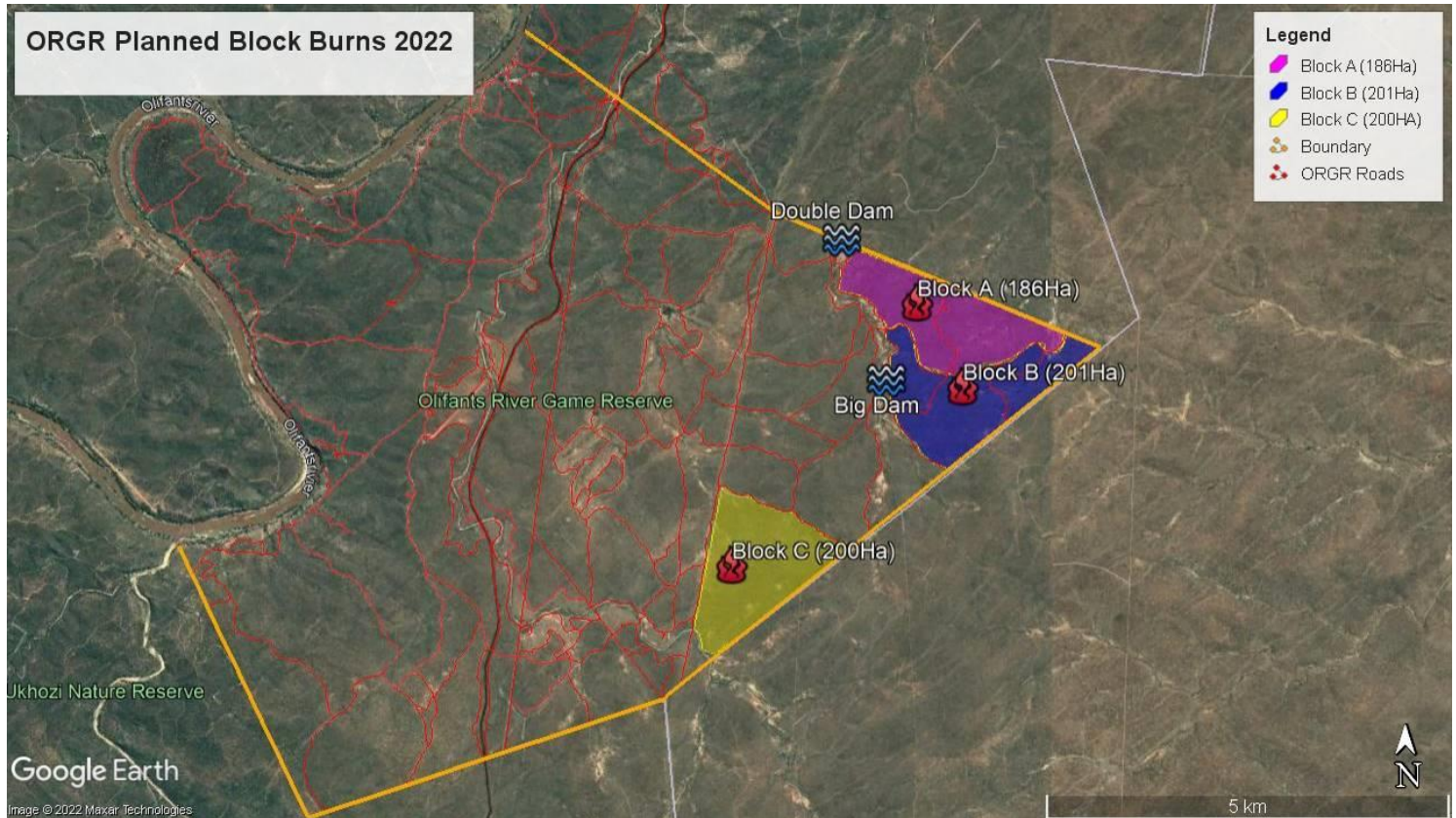
Though the mysteries of the giraffe’s great height are far from entirely revealed, this research goes a long way towards improving our understanding of evolution on a genetic level. In particular, it provides crucial insights into how pleiotropy and some “lucky” mutations produced one of the most fascinating creatures on the planet.



# CONSERVATION

## OLIFANTS RIVER GAME RESERVE BURN PROJECT

Fire plays an important role in conservation management and with the last few years of excellent rainfall and the vegetation in its best condition for over 30 years on the Balule landscape, ORGR will be starting with planned burns as soon as the conditions are at their most optimal. The below map indicates the three blocks we have identified to start the program. Initially, we wanted to begin at the end of July but the veld was still too moist to have the desired impact. We are hoping by September we will be in a position to burn depending on the conditions and we may not get to all three blocks at the same time.



The goal is to remove the moribund in those areas to open the veld up making it more accessible to animals. Herbivores will naturally congregate on newly burned areas that are flushing as the veld is more palatable to them in these areas. In this way, management can manipulate game movement and veld utilization. Areas of over-utilization can be rested. Fire causes the natural cycling of nutrients. Old moribund grasses have nutrients that need to be recycled into the soils. Fire does this and creates new growth vigour. With good rains, this growth contributes towards the next fuel load required for subsequent burning, perhaps after two or three seasons of growth.

Fire is as natural as rain. Although it is not always nice to experience, it keeps the ecological cycle within the reserve turning. With palatable plant mass, the grazers can thrive and in doing so, the raptors and carnivores thrive too.



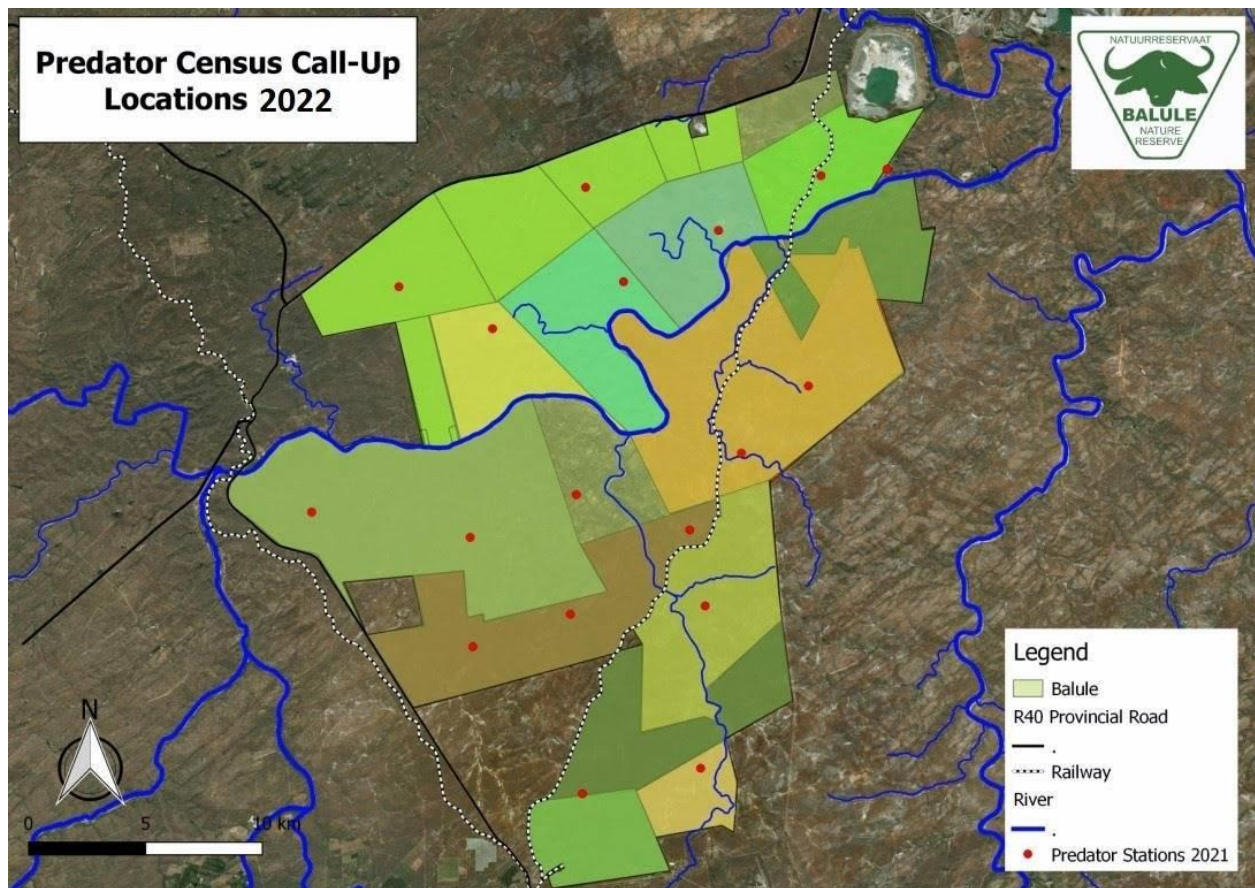
## BALULE PREDATOR AND GAME CENSUS

It is that time of the year again that Balule nature Reserve conducts its annual predator and general game census. The objective of this census is to present an 'as fair as possible' indication of the total game numbers on Balule Nature Reserve. We require this useful information for numerous management functions performed across the protected area. The collection of data is obtained from the following functions:

- Predator census
- Rotary aerial census
- Fixed wing photography count
- Avifaunal survey – Olifants river.

We will begin with the predator call-ups on ORGR in mid-August. The methodology that will be used is identical to 2019, 2020 and 2021 where the data was collected using a combination of call-up stations, camera trap photos, high-resolution photographs of known animals provided by regional wardens/landowners and confirmed sightings (concurrently with the call ups with photographs provided). Animals called up at specific locations were photographed and compared with the identity kits made up for the known animals in the various regions of BNR.

The call-up station locations were decided on based on geographical separation and the predator activity observed by regional wardens in the days leading up to their respective call-up. This enables the best chances of 'verifying' the predators.



The ariel census will be conducted in September where all other game will be counted from both rotary and fixed-wing aircraft.

## REACHING OUT



Thank you, as always, goes to every member (and friends) who take the time to collect and drop off donations at the office. Thanks too to everyone who make financial contributions towards ongoing initiatives. Remember that the Balule Outreach Trust supplies Section 18A certificates (tax relief) for these type of donations, so please use your surname and unit number as a reference when making deposits (bank account details below).

### Maseke

This month we focused on the Maseke area, donating 40 new blankets for children and adults, an almost-new photocopier and paper, boxes of childrens picture books, puzzles and games.

On a more sustainable level, we once again donated a lot of wool, cotton, crochet hooks and knitting needles as well as embroidery cotton and kits, all brought from Bags of Love in Johannesburg for the ladies in the area. We are providing them with more means to earning a living through their skills. All items were collected from our ORGR office and delivered to the Drop-In Centre by ONGR Warden, Terry Schultz and were gratefully received by Mrs Sinah Magomane who runs the community centre. As per each month since the Covid pandemic arrived, the Balule Outreach Trust continues to provide food parcels to Maseke and Sigagule.



### Southern Cross School

Our five bursary learners are all doing well and their teachers and headmaster, Micky Viegas, are happy with their progress at this stage. Once the mid-year results are available we will receive copies of the reports as usual. This will enable us to get a better assessment of their progress.

### SAME Foundation Enviro Training Centre

The foundations for the new Balule Trust sponsored enviro lecture centre were in during early July and building has been completed. The first six students, who are doing the Field Site Guide course NQF2 did their final oral presentations on 27 and 28 July. Enviro Training Africa, the SAME partners on this venture, advise that these students, all orphans, formerly attendees at the After School Childcare centre, needed extra coaching due to their less than privileged backgrounds and we are all waiting expectantly for the results following the presentations. Enviro Training are confident that all of the students who pass will be placed in the Kruger Park and included in various KNP training courses.

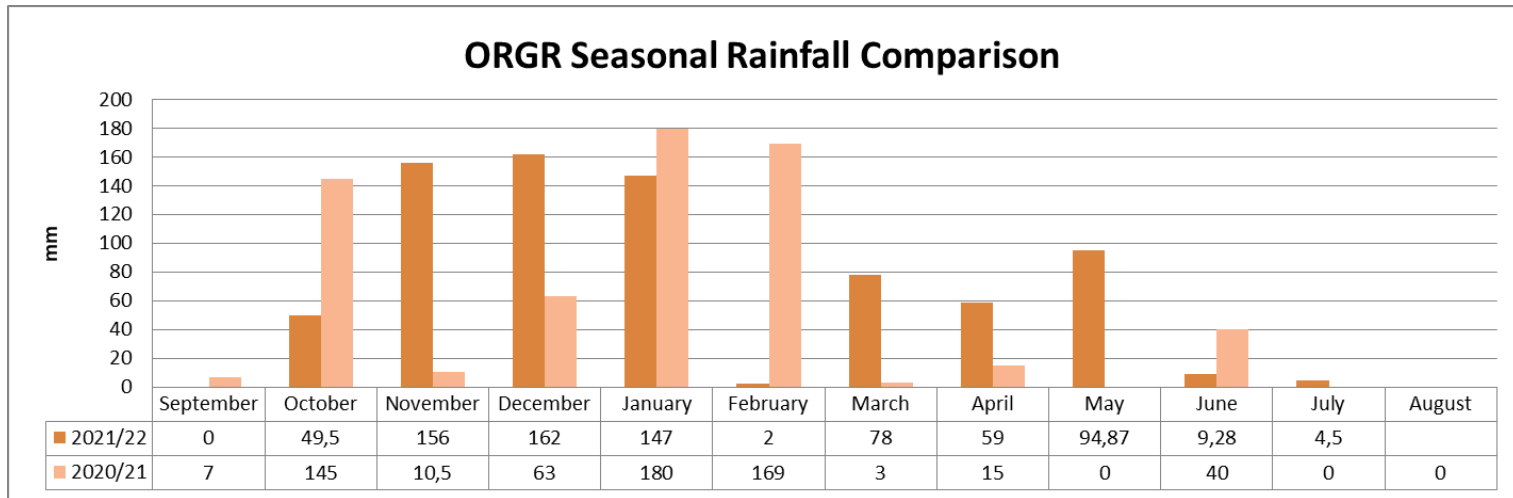
The next group of students will start the Cultural Site Guide course at the end of August. This course is orientated towards gaining knowledge on cultural heritage and successful candidates can expect to find employment not only in the KNP but also at various SANPARKS cultural sites such as Pilgrims Rest, Blyde River Canyon etc. Enviro Training Africa have several centres and are involved solely in environmental training of one kind or another entirely for previously disadvantaged persons. We support the SAME/Enviro Training initiatives because they offer good sound prospects for educating persons in matters environmental with the dual purpose of creating employment and, through which, these people will have the opportunity to pass on their knowledge to a larger audience.

# MEMBERS UPDATES



## THE WEATHER REPORT

July has been a mild winter month on the reserve with the lowest temperature at 6 degrees celcius and the hottest day seeing the mercury reach 30.9 degrees. We received some light winter rain over the last two months with 9,28mm falling in June and a further 4,5mm in July bringing our seasonal total up to 762,15mm. The bush is slowly drying out and the vegetation has managed to maintain a good level of moisture thus far with the excellent rainfall received this year.



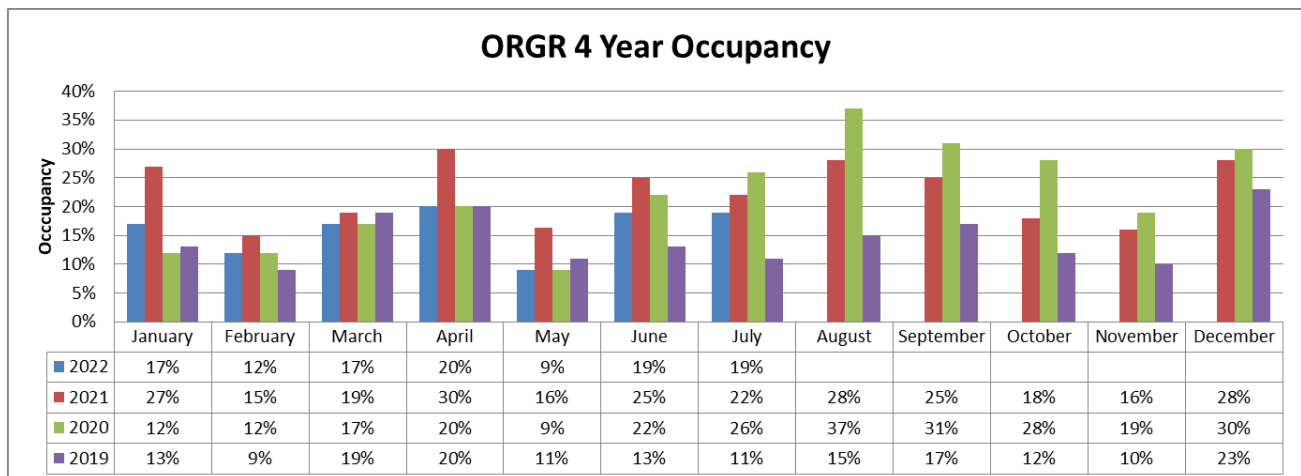
### Summary

July 1, 2022 - July 31, 2022

	High	Low	Average		High	Low	Average
Temperature	30.9 °C	6.2 °C	18.0 °C	Wind Speed	21.7 km/h	0.0 km/h	3.6 km/h
Dew Point	17.8 °C	1.8 °C	10.7 °C	Wind Gust	32.0 km/h	--	5.6 km/h
Humidity	99 %	20 %	66 %	Wind Direction	--	--	SSW
Precipitation	4.32 mm	--	--	Pressure	1,020.32 hPa	1,004.78 hPa	--

## OCCUPANCIES

June averaged out at 19% occupancy with the busiest day seeing 27 units in residence and the quietest day seeing 9 units occupied. July also averaged out at 19% occupancy with the busiest day seeing 27 units in residence, with the quietest day totalling 12 occupied units.



## OUR NIGHT SKY IN AUGUST

### Constellations

Constellations are groups of stars that form a picture. These pictures were given names and for millennia have been used as a tool for navigation and to share significant cultural stories.

Astronomers use these constellations to delineate portions of the sky and as a way for locating astronomical objects. In August the following constellations dominate the winter sky:

**Scorpius** – high overhead in the winter sky is Scorpius the Scorpion. The Scorpion is one of the easiest constellations to pick out as it is one of the few that does look like what it's supposed to represent. Look for the Scorpion's heart, the red supergiant star Antares, and follow the body along to the hooked tail and sting. The Scorpion plays a role in many myths, however it is best known in Greek mythology for its pursuit of Orion through the night sky.

**Sagittarius** – located just behind the sting of Scorpius is the centaur Sagittarius, sometimes referred to as 'The Archer'. However, this constellation looks more like a teapot than an archer. In Greek mythology, the archer is a centaur, pointing his arrow towards the heart of Scorpius.

**Ophiuchus** – an ancient constellation said to represent the mythical healer Aesculapius. It is now the thirteenth zodiac sign with the Sun, Moon and planets passing through it – the Sun from 30 November to the 17 December.

**Libra** – to the West of Scorpius is Libra the Scales. In the past Libra was part of Scorpius, forming the scorpion's claws however it was the Romans that separated Scorpius into the two distinct constellations we are familiar with today. The former association of Libra and Scorpius is reflected in the names of the two brightest stars in Libra – Zubenelgenubi and Zubeneschamali meaning the 'southern claw' and the 'northern claw' respectively.

**Southern Cross (Crux) and the Pointer Stars** – slightly to the West of South, you will see the Pointers Alpha and Beta Centauri. Follow the line of the Pointers down towards the southwest and there is the constellation Crux, better known to us as the Southern Cross.

**Centaurus** – surrounding the Southern Cross on three sides is Centaurus, the Centaur, said to represent the scholarly Chiron, tutor of many of the Greek gods and heroes. The Pointer Stars make up the front legs of the centaur.

### Planets

This month, Mercury and Saturn are in the evening sky while Venus, Mars and Jupiter are best seen in the early morning.

**Mercury** – is low in the western sky after sunset in the constellation of Leo, moving into Virgo towards the end of the month.

**Venus** – is in the eastern sky and moves from the constellation Gemini into Cancer in the second week before moving into Leo in the last week of the month. Venus is moving closer to the horizon and by month's end, will be lost in the bright morning twilight.

**Mars** – the red planet is in the northern morning sky, starting the month in the constellation Aries before moving into Taurus in the second week. From the 1st to the 3rd, Mars will be within 1.5 degrees of the planet Uranus. Binoculars will be needed to see the distant Uranus however, its proximity to Mars will make it easier to find.

**Jupiter** – the largest planet in our Solar System is in the north-western sky in the constellation Cetus. On the 15th, the waning gibbous Moon rises with Jupiter with the pair only one degree apart as seen from the eastern states of Australia.

### Some easy to identify bright stars

Rigel: blue supergiant in Orion

Betelgeuse: red supergiant in Orion

Procyon: yellowish white star in Canis Minor

Sirius: brightest star in the night sky, located in Canis Major

Antares: red supergiant in Scorpius

Arcturus: red giant in Boötes

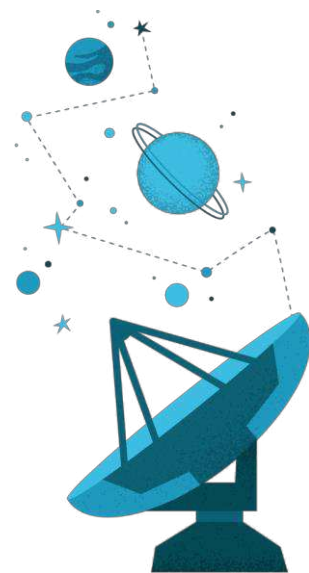
Spica: brightest bluish-white star in Virgo

Canopus: yellowish-white star in Carina

Altair: a white star, brightest in Aquila

Regulus: blue-white star and the brightest star in Leo

The Pointers: Alpha and Beta Centauri



Western states will see the pair separated by approximately two degrees.

**Saturn** – the ringed planet is in the eastern sky after sunset in the constellation Capricornus. On the 15th, Saturn reaches opposition and is at its brightest for the year. On the 12th, the Full Moon rises close to Saturn, slightly below and to the right (south) of the ringed planets.

## PEDAL POWER 2022 UPDATE

The inaugural Olifants River Pedal Power event was staged on the reserve on 30 and 31 July 2022. We hosted 50 cyclists who experienced our remarkable slice of Africa from a unique perspective and the feedback received was extremely positive. We encountered elephant, buffalo, rhino and plains game en route without incident and only one or two minor injuries were sustained as a result of encounters with thorny bushes!

The welcome function and dinner were hosted at the clubhouse and both evenings were really stunning and a great opportunity for members and friends to meet and bond. The auction of unique experiences and some beautiful photo series by Gerald Hinde helped to raise substantial funds for our community outreach programs and our continued anti-poaching efforts.



This fundraiser event was a huge success and by all accounts an opportunity to repeat this in 2023. Our sincere thanks to our members and friends for their participation and support. A big thank you to the organising team and the management team for a wonderful event.

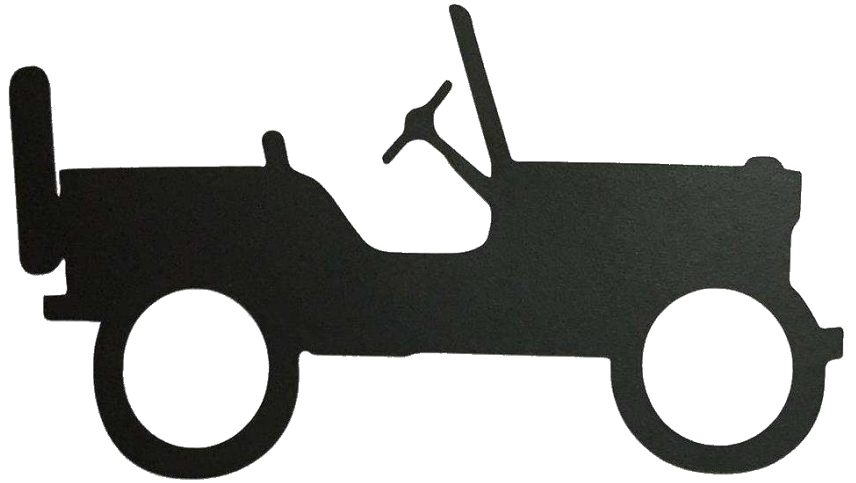
To see the Image Library for the event, please follow the link below. Photo credits: Susan Harwood.

<https://myalbum.com/album/ByQhLc4C7Ns8Kg>

## GAME DRIVE PROTOCOL REMINDERS

Here are a few quickfire reminders on some of our game drive protocols.

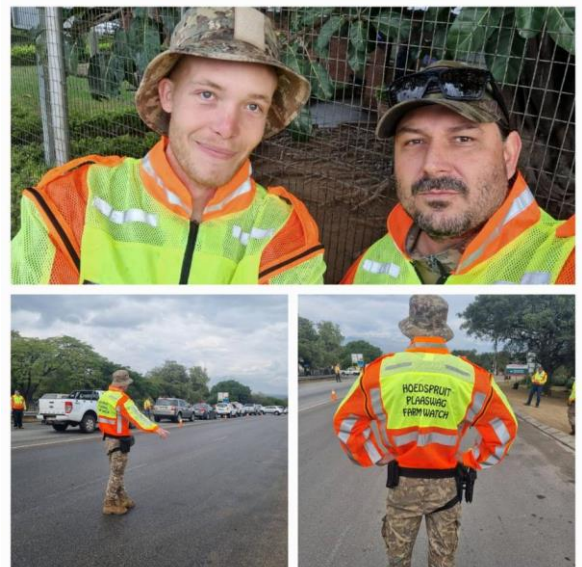
1. Please be reminded that exiting your vehicle within 200m of any waterhole is prohibited and is not permitted within sight of a waterhole unless there exists provision to do so, such as to enter a hide or at lookout points. Note that this does not apply to the river. The reason for this is that animals react differently to humans out of the vehicle and you may prevent animals from coming down to the watering holes to drink.
2. The unit number must be displayed on the rear and on the sides of vehicles including any vehicles temporarily being used for game drives.
3. Do not shine the spotlight into the eyes of the animals. Rather, when viewing animals at night, shine the spotlight slightly away from, or above the animal/s and view the animal/s in the peripheral to reduce harsh light. Use of two spotlights on a single vehicle is permissible when searching for game, but only one spotlight should be used at a sighting. When multiple vehicles are at a sighting, use of more than one spotlight is at the discretion of the person in control of the sighting. Do not shine spotlights at other vehicles, people or lodges. While at a sighting, the use of red filters is encouraged.



## COMMUNITY SERVICE

The ORGR team recently assisted local law enforcement in Hoedspruit with visible policing and traffic checks.

We spent the day with the FarmWatch team and the Provincial Traffic Depart doing routine checks on vehicles and drivers' licences. It is always great to give back to our local community and strengthen our bonds with both the local law enforcement organisations and the Farm Watch.



### MASSIVE THANK YOU!!

**THE TANGLEWOOD FOUNDATION HAS DONATED R90000 (THE OTHER R10000 WAS USED FOR COVID TESTING ETC FOR ORGR STAFF DURING THE PANDEMIC) WHICH WILL BE USED FOR THE UPGRADES TO STAFF COMPOUNDS! MANY MANY THANKS TO PETER EASTWOOD OF TANGLEWOOD FOR HIS INCREDIBLE GENEROSITY!**

## TRIBUTE TO A FALLEN BROTHER

Anton Mzima once said, “I am not shy to say that I’m a hero, because I know that the poacher, before he shoots at the rhino, is going to shoot at me first.”

And this is exactly what happened outside his home in Edinburgh Trust near Bushbuckridge, Mpumalanga, at the end of July. The courageous head of ranger services at Timbavati reserve was gunned down in cold blood. His wife was also shot and is fighting for her life.

It is chilling to see what lengths the criminal syndicates will go to, to remove obstacles in their way. This incident will not deter our efforts and has brought the community closer together with a more focused approach to combating the rhino poaching crisis. In Anton’s name, we will not stand down!

We would like to pay tribute to this incredible man who paid the ultimate price for the work he has done in protecting wildlife. Rest in Peace Anton.



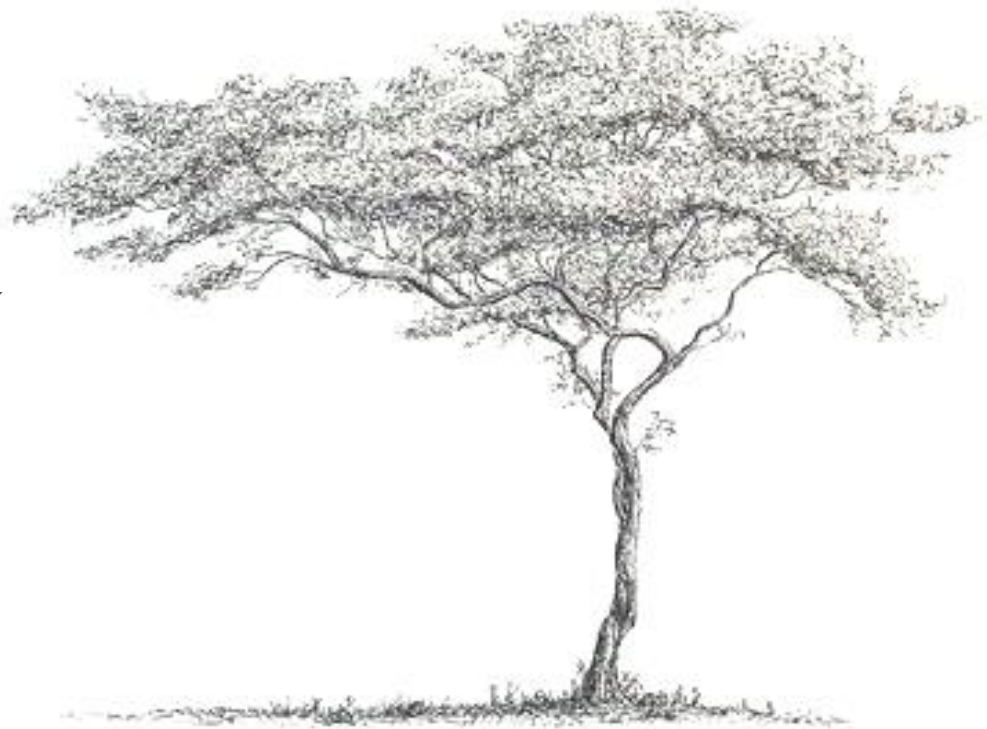
**Anton Mzimba**

## THE FINAL WORD

We hope you enjoyed the read and we will see you on the reserve soon!

In closing, lets take some advice from a tree.

- Stand tall and proud
- Go out on a limb
- Remember your roots
- Drink plenty of water
- Be content with your natural beauty
- Enjoy the view



Regards

Nick and the Olifants Team!

### BIBLIOGRAPHY

Giraffe Story – Africa Geographic