Singita

Lebombo male leopard – Photo by Amy Roberts

WILDLIFE JOURNAL
SINGITA KRUGER NATIONAL PARK, SOUTH AFRICA
For August, Two Thousand and Twenty-three

Temperature
Average Minimum: 15˚C (59.0˚F)
Minimum recorded: 11˚C (51.8˚F)
Average maximum: 28˚C (82.4˚F)
Maximum recorded: 39˚C (102.2˚F)

Rainfall Recorded
For the month: 0 mm
Season to date: 274.5 mm

Sunrise & Sunset
Sunrise: 06:06
Sunset: 17:39

It seems we have taken that step out of winter, where two jackets and thick blankets with hot water bottles were a necessity of our morning safari, and now the cool morning chill is mild and fresh before the heat starts to set in. We have, however, still had a few misty mornings, where the moisture settles on your eyelashes and highlights all the little spiderwebs in the vegetation which we normally cannot see very easily but now look like Christmas decorations covering the branches, illuminated by the morning sun.

Here's a Sightings Snapshot for August:

Lions

- The Shish Pride have been very present for the past month, with the ten cubs seemingly healthy and happy and well-provided for by their mothers. One of the seven lioness was seen mating with the Trichardt males for a few days, however she has since re-joined the rest of the pride. Mid-way through the month one of the females has been more scarce, seen once alone on Neokeng Ridge, so there is the possibility that one more female may be denning as the majority of more recent sightings of the pride has been five or six females, only seven when in close proximity to Neokeng, Ntsibitsane and Xinenene.
- The Trichardt males have also been seen regularly. Interestingly there have been multiple sightings further north close to Three-trees and Ntoma, even as far as Double Crossing, where they had an altercation with the Sweni male, leaving him running for his life as they announced their dominance powerfully from the ridge above Mhlangulene-Central Junction. They left their duties of defence for a Shish female on heat a little closer to home, where they stayed for a few days. The males appeared to enjoy the spoils of a meal shared with the Shish Pride in the valleys of Neokeng and Milkberry where they were seen lounging all together for a few days with full bellies. Soon after, the two males were found on a female giraffe carcass in Gumba drainage, where they stayed and gorged themselves for five days before leaving the vultures to come in and finish off the remains.
- The Maputo male has been seen in the far northern reaches of the reserve, but with no sign of his new coalition partner. We cannot disregard the fact that his coalition mate is normally more nervous of our safari vehicles, so he may have been in the vicinity but just keeping a safe distance and out of view.
- The Mananga Pride have once again been seen, usually within the north-central and west to Gudzane Dam. Their dynamic seem to still be uncertain and scattered, with different numbers of members seen in each sighting. There have been two sightings of a single female mating with both the older Sweni male and the younger N'wanetsi males respectively. A few members of the broken pride were seen finishing off the remains of a wildebeest carcass under the watchful eye of a few hyenas who happily took over when the lionesses moved off.
- The Nwanetsi coalition and much older Sweni male have been seen far less this month, with most sightings being of the Sweni male on his own (or in the company of a Mananga lioness), without the younger N'wanetsi males accompanying him.

Leopards

- The Dumbana female leopard has provided a handful of sightings. This beautiful girl killed a young kudu, and after feeding for a while managed to tree it. Feeding on the carcass in the safety of the branches of a small Jackalberry, on the banks on the Xinkelengane drainage, she was able to eat the entire kill without disruption.
- The Dumbana 3:3 young male has once again been a consistent part of the guests' safari experience while at Singita Kruger National Park. This male has been successful in the food department, with most sightings of him being sleeping with a seemingly full belly, however, only once, was he actually seen feeding, on yet another baboon carcass.
- The Mhlangulene female leopard has been sighted four times this month, and only one of her two daughters has been identified. They are at the age where they would be becoming independent, and could be moving further from their natal area.
- The Mondzo male leopard has been seen regularly doing his territorial patrols along the N'wanetsi River, often seen from the lodge all the way north, following the river all the way out at Park Road Crossing. He is starting to resemble his older territorial neighbour, with a gouge of skin taken off of the bridge of his nose, but higher up on his face than the similar scar on the Lebombo male.
- The older, and more scarred Lebombo male has been identified twice this month, once on Sisal Line south of the N'wanetsi concrete crossing, where he finished off an impala carcass before lounging on

the banks of the river to rest. With a full belly, he took advantage of the cooler morning to conduct a territorial patrol along the thick vegetation along the river bank, much to the dismay of multiple impala which all started alarm calling as they spotted him moving.
- There have been no confirmed sightings of the Pelajumbo and Mbiri Mbiri males this month.
- Multiple young individuals have been seen this month, with sightings being brief and so making identification impossible, or of individuals that we have not yet identified.

Cheetahs

- There was one female cheetah located within the concession during the month, as well as a few that were regularly seen on the H6 while transporting guests to and from the Satara Airstrip.

Wild dogs

- There have been eight sightings of African wild dogs this month. On two occasions the Floppy Ear Pack were seen, and the rest of the sighting were of four, three or one single individual. We have predominantly been seeing the packs in the central section of the reserve, from Sticky Thorn Quarry to Mondzo Pan and Ntsibitsane, but tracks have been found further east into the ridges of Neokeng and Sisal. We are not sure if the smaller groups we have been seeing are members of the Floppy Ear Pack or are members of a different pack.
- At one sighting when the whole pack was present, the dogs had visibly made a kill with blood on their fur, but seemed uneasy and apprehensive, even growling and alarm calling towards the thickets alongside the Ntsibitsane Drainage. After some investigation, the source of their displeasure was discovered to be one of the Shish lionesses feeding on the remains of what appeared to be the dogs' hard-earned impala kill.

Spotted hyenas

- Although we do have numerous sightings of hyenas, they are often of single individuals moving swiftly past with food to find, and predators to harass. Most commonly, when a leopard or lion have a kill or the wild dogs are around they may be seen during the daylight hours, but besides these instances, they will most commonly be seen as the evening sets in.
- The hyenas were most excited about the carcass left abandoned by the Trichardt males, but with immense fear and respect for male lions, and were only seen in the area once the lions had moved off.

Elephants

- In the early mornings, when it is still cool, the elephants seem to be up in the higher ridges of the Lebombo Mountains, coming down as the day progresses to seek out water in the N'wanetsi River or the pools in various drainage lines further north in the reserve.
- There have been many sightings of herds, with many youngsters and babies following their knowledgeable mothers from water to food resources as the day progresses. Coming to the end of the winter months, our dry season, the food quality will slowly be depleted and water becomes more scarce by the day, and so a matriarch who can lead her family to the resources they need is so vital for herd survival. There is also much more evidence more recently of trees being pushed over to gain access to the roots, where nutrients are often stored during the harsher conditions of the dry season.

Buffalos

We have had three sightings of possibly the same single buffalo bull moving gradually south along the Xingkelengane Drainage. The last lone buffalo bull seen hanging around in this area was soon seen being fed upon by the Mananga Pride, so we will wait patiently to see the fate of this brave loner.

Plains game

- Although the vegetation has become visibly sparse, the general game and herbivores seen around the reserve area has remained impressive. With large tracts of land having been burnt with the fires during this dry season, many grazers have been attracted to the bright green grass stalks which emerged in the recently burnt areas, even browsers are starting to frequent these areas as the trees that, until now, were covered by dried and shrivelled leaves are starting to push out their new leaf growth.
- The burnt areas have made spotting the smaller antelope like steenbok much easier, but knowing they are exposed and vulnerable with little vegetation in those burnt areas means they do not stick around for too long before dashing off to seek cover.

Rare animals and other sightings

In the shorter and more sparse grasses, spotting some of the smaller, nocturnal creatures has been made easier. Genet, civet and honey badgers have been seen more often, with one young honey badger unfortunately seen injured one night and found dead the next morning. Luckily nothing here goes to waste, so first a bateleur was seen feeding on the carcass, and after a few days it was gone.

Birds

- Individual female greater painted snipes have been seen in the N'wanetsi. Interestingly, compared to other birds, the female of this species is actually more colourful, with a deep chestnut plumage around the neck and a bright white collar. The males, in comparison are much duller and more well camouflaged, due to the breeding system of the species. Being polyandrous, as described in the journal last month, these females mate with multiple males (where possible) and the males are the ones who care for the offspring, once she has laid her eggs in his nest. He should therefore be more camouflaged since it is his responsibility to incubate the eggs. In this area however, she may be forced into monogamy in the absence of other male partners.
- A barred owlet has been seen and heard a few times, which is exciting because more often the pearl-spotted owlet is seen and, although they may appear similar, their calls are very distinct.
- A large collection of vultures flocked to the area around Gumba Drainage where the two Trichardt male lions had a giraffe carcass that they fed on for five days. A variety of vultures could be seen in all the trees in the vicinity, all waiting patiently for the lions to lose interest in their kill and leave the scraps to the clean-up crew. As over-whelming as the smell had been while the lions protected their quarry, the moment the vultures flocked in, the smell seemed to lift within a day, a testament to their ability to clean the bones of meat where larger predators are unable.

Some articles and stories follow, as well as the August Gallery.

A deeper look into animals eyes **Article by Graeme Stewart**

In this article I take a deeper appreciation for animal eyes and how they work without going into too much technical detail, as well as answer a common question, which is, “Why do we not use a red filter when viewing animals at night?”

Firstly let’s have a look at how the eyes of the animals we see on safari work and what the difference is between the nocturnal animals and the diurnal animals:
The retina of the eye contains two photoreceptors; the rod cells and cone cells. These photoreceptors are responsible for allowing animals to see in both night and day. The rod photoreceptors are responsible for the absorption of light and the differences in brightness, and are most sensitive in low light and contribute to visual sensitivity or the ability to distinguish an object from other objects or its surroundings. The cone photoreceptors on the other hand, are most sensitive in light conditions and absorb information about colour and visual sharpness, or clarity.

The eyes contain a specialized photopigment found in the rod cells called rhodopsin. This photopigment absorbs particles of light and is replaced at a rate fast enough for the rods to remain active and maintain vision in low light settings, such as sunrise and sunset. In diurnal animals the rhodopsin becomes inactive after absorbing a certain photon and is not replaced fast enough, making their night vision not as accurate as the nocturnal animals’.

What makes the nocturnal animals’ eyesight as sharp as it is during the night?
In short, in order for nocturnal animals to maximize their visual abilities in the dark, their eyes have had to evolve and so we have seen a different design of the eye. The rod cells are there for the absorption of light and to help with the sharpness of their nocturnal vision. Nocturnal animals have more rod cells in their eyes as compared to diurnal animals. These rod cells serve as light receptors and help them see in low light. For example, cats have 25 rods cells per single cone cell in each eye, as compared to diurnal species, who have 4 rods per cone cell.

When it comes to the actual design of the eye, compared to diurnal species the nocturnal species have larger eyes overall which results in a larger pupil. The purpose of this is to increase the brightness of the image on the retina as more light is able to enter the eye, this will ensure that more rods are activated and their visual sensitivity is increased.

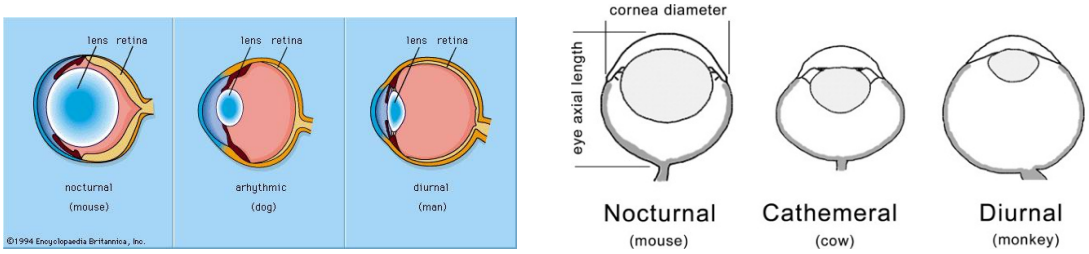
Since more rod cells are activated, this maximizes the information that is sent to the specialized nerve cells known as the ganglion cells, which are located in the retina of the eye. These ganglion cells convert the electrical signal produced by the retina’s photoreceptors when they absorb a particle of light into a signal understood by the brain, which is then able to make sense of an image and allows the animal to "see".

At night the nocturnal animals actually start to use object's edges and borders rather than differences in colour to distinguish objects from their background.

Have you ever noticed the slit eye of certain animals?
The reasoning as to why these animals have slit pupils is they allow less light in during the day when bright light could damage their retinas. They have specialized lenses that are multifocal and have different areas in a concentric pattern in which each ring in the eye refracts, or bends, different light wavelengths best.

An example of the split pupil of a cat.

When it comes to diurnal animal eyes, such as humans and most birds, they have smaller, thinner lenses placed well forward in the eye and have smaller corneas relative to eye size as an adaptation for increased visual sharpness.



A diagram showing the differences between the eye shapes.

The tapetum lucidum is a layer of tissue, containing guanine, and is located in the eye between the lens and the retina known as the choroid region. This layer of tissue acts as a reflective membrane and is responsible for the eyeshine characteristic you may have seen in many animals. The tapetum lucidum enhances visual sharpness under low light conditions by reflecting visible light back through the retina, increasing the light available to the photoreceptors. This allows cats to see better in the dark.

What are the differences between the lights that we use on safari?
Every now and then a question gets asked, “Why do we not use a red filter when viewing animals at night?” Both red and white light emits a wavelength of light and it will still have an effect on the animal’s eyes, even though the red filter emits a much longer wavelength of light than white, it still has an effect on the eye, so for a short period of time and with minimal shinning on the animal’s eyes its believed that it will have the similar effect on the eye. In general, light with a higher frequency will have a shorter wavelength and will be more intense than light with lower frequency and longer wavelength. White light has a wavelength of 400 - 700 nm, whereas red light has a longer wavelength of 620 - 750 nm, making red light a weaker light in terms of brightness (frequency). When white light passes through a red filter all of the other colours in the spectrum are absorbed and only the red light passes through, and only a very narrow band of light is transmitted and is less intense.

What are the effects of light on animals’ eyes?
When it is dark and there is no light available for the eyes to absorb, the rods play a big role in the vision by putting the eye into a state known as scotopic vision. This is a state in which colour vision is sacrificed for light gathering and light sensitivity. As it moves towards darkness, the eyes adjust to the lowered light conditions and become fully dark adapted after approximately 30 to 40 minutes. With light exposure from spotlights longer than about 7 minutes, the rhodopsin is completely broken down and the adaptation to the dark conditions has to begin again usually taking another 30 to 40 minutes. This is why both a red filter and the white light will have a similar effect on the production and absorption of rhodopsin in the eye.

We as guides and trackers just need to be ethical and considerate when it comes to the use of spotlights with the least amount of negative effects on the animals’ eyes and nocturnal behaviour.

Development of elephants **Article by Amy Roberts**

Elephants have to be one of the most interesting animals we have the privilege of spending time with while on safari in Africa. They captivate humans like no other animal, and leave you with a feeling of calm and euphoria, without doing much at all. Possibly one of the reasons for this, the connection we feel with these amazing creatures, is because of the similarities we have with them and the familiarity of all they do. With a lifespan longer than any other terrestrial mammal, besides humans, elephant have an extended period of development, much like we do.

The family dynamic of an elephant herd is also very similar to humans in many ways, with the matriarch (oldest female, or grandmother, of the group) leading her younger sisters, her daughters, her nieces and their respective calves, raising them all together. A family will be the first thing a calf sees when it comes out onto this earth, a swarm of fiercely protective giants, surrounding its mother as she goes through the vulnerable process of labour. Then, a celebration, trumpeting and grumbling, as the midwives rush in to ensure the newly dropped calf is protected from any threats while still immobile, while the mother and more mature females gently prod the infant with their trunks, encouraging it to stand. It truly is a family affair, much like in human culture.

After a gestation of 22 months, these calves are understandably very well-developed (precocial) and like most large mammalian herbivores, are able to stand soon after birth, normally walking with the mother within two hours. Their bodies can weigh about 100 kg (220 pounds) and will already stand about 1m (3ft) tall, which is important because it needs to be able to reach the teats between its mothers front legs to suckle. With initially poor eyesight, just like in human children, the calves will rely on touch, scent and sound to recognise their mothers and will always stay very close to her as the herd begins to move. In the first eight years if its life, it will spend 80% of its time within a few metres of its mother or another member of the herd, as it gets older and braver.

A baby elephant will have a set of milk tusks which develop within the first year and are shed to make way for its permanent tusks. These tusks are elongated upper incisors, which will extend beyond the upper lip after about two years of age and continue to grow throughout the elephant's life, being worn down and sometimes even broken during their feeding activities. Just like humans, elephants will tend to be either left- or right-dominant, indicated by the appearance of their tusks with notches forming in the dominant tusk from more consistent use. As seen during development of humans, very young children appear not to have a preference, but this develops gradually with age.

Luckily, in their first four months, elephant calves depend fully on their mothers for milk so they do not need their tusks for feeding just yet. They will drink up to 10 litres (3 gallons) per day of highly nutritious milk, sometimes even suckling from another closely related member of the herd such as the grandmother (allo-suckling). During this time the trunk, which is also a vital tool for feeding, has a low muscle tone and is not much use to the calf until it starts to copy the movements it sees from older members of the family. "Monkey-see, monkey- do", sound familiar?

Between four and six months, these little copycats start to handle food and vegetation and interact with other members of the herd, making use of the trunk more and more and thus developing not only the muscles but also the co-ordination required for controlling this most amazing and multipurpose appendage. It can take up to one year to have full control of the 40 000 muscles that make up the trunk, a comparable age to when human babies are accurately grasping and manipulating objects with the 30 muscles making up the human hand.

In this time, the calf will have started supplementing its diet with the vegetation it is able to pluck with its trunk and get into the mouth (although much of it falls to the ground on the way there at first) and so starts the long process to weaning, which can take between two and three years, although it has been observed to take longer. Learning constantly from the rest of the herd, what to eat and what not to eat, and copying the movements of how to break the foliage it wants away from the rest of the plant. It's all very technical!

Baby elephant practicing picking food with its trunk – Photos by Amy Roberts

Elephants are bulk feeders, and have been known to consume up to 5% of their body weight per day, so they have developed a rather selective feeding behaviour, choosing higher quality forage over high-fibre with low nutrient value. This is also something a calf not only needs to learn, but also needs to practice and perfect before giving up the high-quality milk that its mother is producing, and understandably, this can take a while.

An elephant calf is not only dependant on its own mother, but other females within the herd are always involved in protection, socialising, comforting and teaching. Often adolescent females, which are too young to reproduce themselves, will be very attentive to their younger siblings and cousins, acting as additional care-givers (allomothers), gaining experience for when they have a calf of their own, and helping females who are "first-time moms" and need a bit of help.

So, it is clear that humans are not unique in the fact that the whole family is very influential in the development of a child. "It takes a village", or so they say, and the same is true of these incredible creatures, and our connection perhaps stems from an understanding that we are not so different after all.

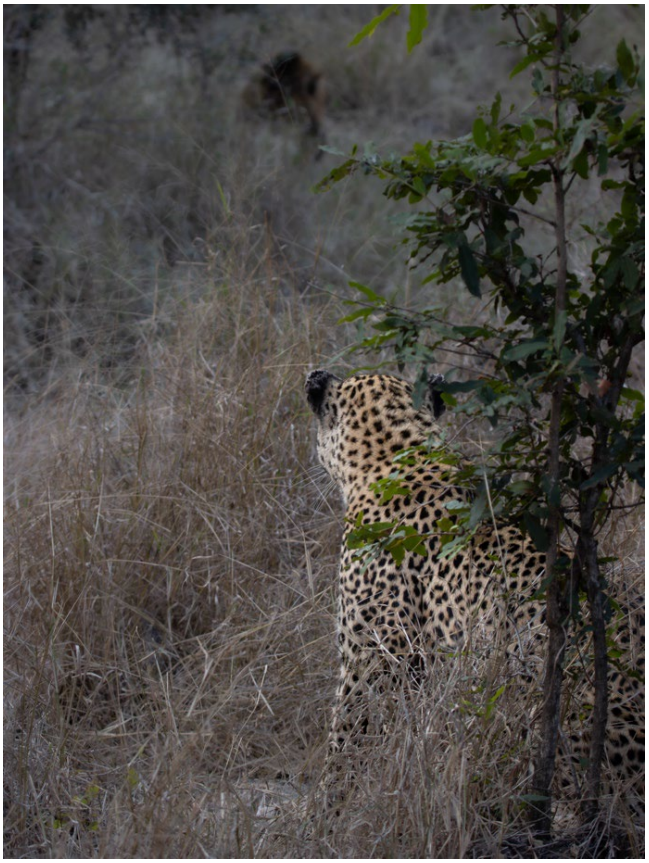
August Gallery

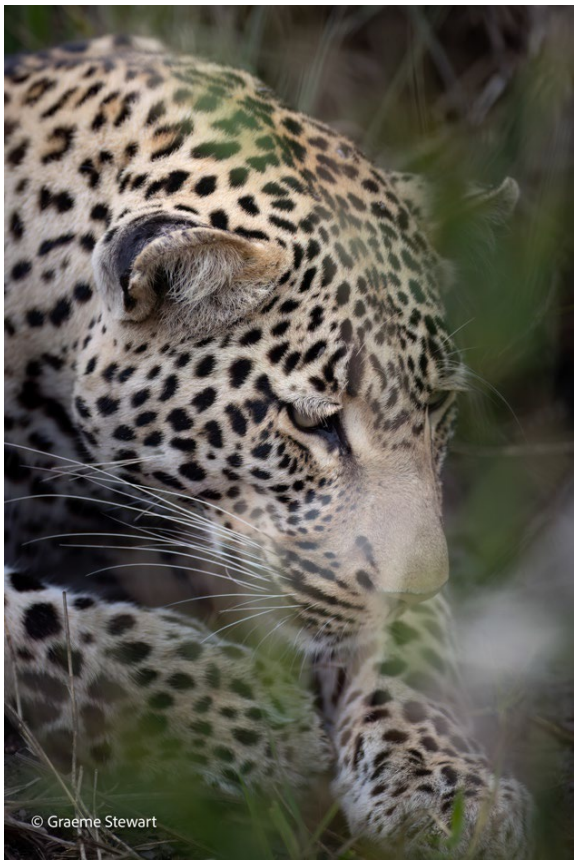
Greater painted snipe – Photo by Amy Roberts

Trichardt male lions feeding on a giraffe carcass – Photo by Amy Roberts

Sweni Male Lion – Photo By Amy Roberts

Spotted hyena – Photo by Amy Roberts





Left: Mondzo male leopard watching a Trichardt male lion at a giraffe carcass – Photo by Amy Roberts
Right: Dumbana 3:3 male leopard – Photo by Graeme Stewart

Dumbana 3:3 male leopard – Photo by Amy Roberts

Vultures perched above giraffe carcass – Photo by Amy Roberts

Sharpe’s grysbok – Photo by Amy Roberts

Shish female lion with cubs – Photo by Amy Roberts

Shish female lion with cubs – Photo by Amy Roberts

Young leopardess seen around Joes – Photo by Graeme Stewart

Female cheetah – Photo by Graeme Stewart