Issue 3: July - September 2018

WELGEVONDEN

TAILS

THE LATEST RESERVE UPDATES

OPERATION RESCUE RHINO

How Welgevonden's Rhino Husbandry Programme is helping save the Waterberg rhino - and beyond

FIERCE FEMINISTS HERE TO STAY

This new clan of Spotted Hyaena are far more regal than Disney makes them out to be

PURPLE PACHYDERMS

An ethical approach to elephant population control

THREE CUBS AND A COLLAR

Vulnerable without their mother, management had no choice but to intervene

RETURN OF THE BREWMASTER

Welgevonden is no new terrain, but Shaun McCartney tells us it's a whole new game

A NEW PAIR OF 'GENES'

With help from EWT, a new male cheetah was introduced onto the Reserve

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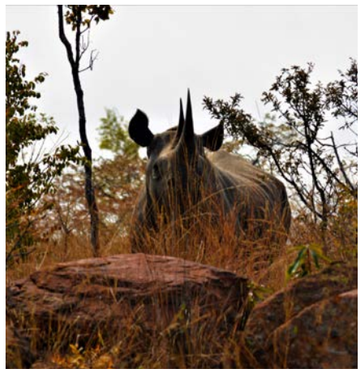
Introducing Your New CEO

After taking his brewery to profitability, Shaun has taken on the role of CEO once more. Read what Welgevonden's prodigal son has planned for the Reserve.

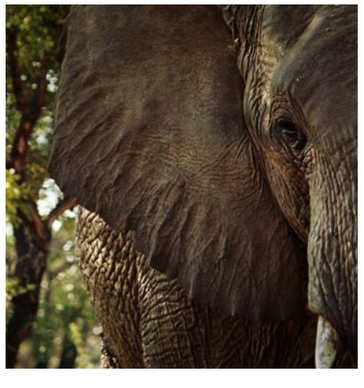


Not Your Typical Refugees

For the first time in history, black rhino can call Welgevonden home.

Feminist Found and Collared

Five Spotted Hyaena were captured between August and September. While four were sent to Khamab-Kalahari Game Reserve, the matriarch of the clan was collared and released back onto the Reserve.



Effective Contraception

Elephant management is a contentious issue at the best of times, but Welgevonden's approach to population control is 100% effective, 100% reversible and 100% ethical.

Cover | FJ Mammes captured a black rhino cow and her calf before they disappeared back into the thicket.

WE'D LOVE TO HEAR FROM YOU

If you have any inquiries, comments, suggestions, or would simply like to submit a letter relating to your experience at Welgevonden, feel free to contact us here:

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EDITOR'S LETTER

Say what you will, the world is going digital. And I'm not just talking about convenient online banking or confiding in Siri. With the next wave of technological revolution sweeping the globe, the Internet of Things is connecting the world like we've never seen before (but more about that on pages 5 and 15).

This digital transformation is most apparent in the workplace. Business has become a real-time experience where a relentless stream of instant communications bombard our electronic devices daily. Business meetings can be conducted remotely, information is captured and stored directly onto computers, and the latest company updates can easily be shared via social media (what business doesn't have their own Facebook page these days?).

But technology has disrupted business models and, according to Forbes, the idea of digital transformation scares at least 70% of CEO's. And who can blame them? These baby boomers grew up without mobile devices let alone hashtags and often do not believe that they have the right leadership team or the technical skills to adapt. This attitude often acts as a barrier to moving forward with digital. A costly decision. With failure to digitize leading to many cases of bankruptcy (Kodak being a prime example in this case), city-based companies have been quick to realise that going digital is not an option. It's a necessity. Game reserves on the other hand have been slow to adopt this same attitude, if at all. The epitome of wilderness, most people shun the idea of incorporating technology into an area that should otherwise be a digital cleans from the city bustle. But a recent cyberattack on the Reserve's outdated IT server proved that digital does not discriminate.

Management's logistical world was turned upside down when a ransomware virus infiltrated the network. With access to emails and certain documents denied, business as usual skidded to an abrupt halt. Our fragile connection with the outside world had been sabotaged. Unable to perform simple work related tasks, management nervously twiddled their thumbs while IT technicians attempted to resolve the situation. A month and a half later and all systems are "still not" go. Needless to say, plans to improve Reserve digital infrastructure and cybersecurity are well underway.

True. Digital transformation ensures that companies remain relevant, connected and aligned with customer demand, but it is so much more than that. It is a powerful driving force in propelling companies forward as it promotes the development of creative, innovate solutions. From efficient farming techniques to improved vehicle safety and protecting wildlife species, digital is transforming corporations of every discipline today. While at the IoT Conference and Awards earlier this year, one of the guest speakers (was he from Deloitte?) said something along the lines of, "The future is digital whether you like it or not. And it's moving at such a rate that if you don't choose to run with it now, you'll never manage to catch up".

So, we're running with it. With plans in place to erect a LoRa network within the Reserve, a robust computer network under development, and a technologically savvy security department, Welgevonden is fast closing in on the digital divide and proving that technology does have a place in the bush. This change in attitude will by no means result in an altered bushveld experience. In fact, it could be the reason that it remains exactly the same – abundantly diverse and undeniably wild – for years to come.

-Jess

WELGEVONDEN
NEWSREEL

A SUCCULENT ENTRANCE

Sally Thompson, landscape artist and wildlife connoisseur, recently took the lead in decorating the front of Welgevonden's main entrance with gorgeous succulent plants. All indigenous, Sally hopes that this feature garden will act as an introduction to the wildlife experience that can be expected within the pristine, protected wilderness area.

"I know it doesn't look like too much right now, but just give it a few months. This garden is going to flourish beautifully once the first rains come", says Sally Thompson

Sally was accompanied by Welgevonden's competent gardening team who helped prepare the gardens and will continue to maintain them in Sally's absence.

A ROARING SUCCESS!

When male lion, "Dinokeng", was released onto the Reserve, he was fitted with a GSM tracking collar for the purposes of monitoring his movement, behaviour and general adaptation to his new surroundings. He has since established a fixed territory and no longer requires intensive monitoring.

With the help of Dr. Peter Caldwell, management successfully removed the collar earlier this year. "We were lucky to remove the collar when we did as it was becoming tight around the lion's neck", says Carmen Warmenhove, Research Coordinator.

Research Volunteers and vet nurse students from Writtle College University were given the opportunity of assisting during the procedure.

COMMUNITY CLEAN-UP

5 September 2018: Over a thousand individuals, including staff members from Welgevonden Game Reserve, opted to assist in clearing rubbish from the town's streets, and plant a number of indigenous trees at selected schools within the area.

"The clean-up was a great example of how communities can work together to ake a positive change in their own neighbourhoods", says Marlene van Staden, Vaalwater Mayor. "We need to set a good example and educate others on the importance of maintaining a clean town."

THE PROOF IS IN THE PUDDING
WILDLIFE PROTECTION PROGRAMME RESULTS ANNOUNCED

The rhino poaching problem might be old news, but the technologies being developed to tackle it are definitely not.

Welgevonden has collaborated with MTN, IBM and Wageningen University to develop a radical, proactive solution to prevent poaching. The new technology makes use of GPS data transmitted via collared prey species, such as Impala and Wildebeest, to detect poaching activity within a protected wildlife area.

"These animals need to be aware of their surrounding every second, in case of there being a threat in the area… we use these animals as a sort of sensor to understand what is going on in the veld", says Professor Herbert Prins.

Scientists have since made use of the GPS data to develop a mathematical algorithm that detects where animals deviate from "normal" behaviour. Previous research shows that prey animals behave differently when threatened by predation. By adopting this concept and refining its parameters, the algorithm is designed to correlate erratic animal behaviour to the location of a human intrusion within a game reserve.

Anti-poaching units can make use of this technology to determine points of entry and direction of movement, swiftly reacting to the potential poaching threat and intercepting the intruder before he/she arrives at their target.

François Spruyt, Professor Herbert Prins and Mariana Kruger announced at the MTN Internet of Things Conference and Awards that the solution will increase poacher capture rate from 3% to 86.4% within a 125m radius.

Plans to take the solution further are currently underway. The aim is to test the product at a larger scale, increasing the complexity and accuracy of the algorithm.

PANGOLIN POACHING PERSISTS

Unlike the publicised plight against rhino poaching, the pangolin pandemic is almost as elusive as the little creature itself. In fact, the scaly mammal is frequently referred to as "the most trafficked animal you've never heard of".

July 2018, a Temminck's pangolin was discovered strolling along the dusty streets of Thembisa, an informal settlement near the East Rand of Gauteng – definitely not the scaly anteater's home range! The small anteater miraculously managed to escape from its poachers and was later rescued by members from the Johannesburg Wildlife Veterinary Hospital.

With the help of the African Pangolin Working Group, arrangements were swiftly made to have the pangolin released onto Welgevonden Game Reserve.

It is still not known where the animal originated from and it likely that she was subjected to a significant amount of travel, possibly across the borders of several African countries, before arriving in Thembisa. This is likely to have had a severely negative impact on the pangolin's bodily condition.

Despite our best efforts, "Thembi" was unable to recover from the trauma experienced during the poaching event and was sadly found dead a few days after her release.

We hope that this event serves as a reminder of the severity of the current poaching crisis, not just for rhino, but for small vulnerable species as well.

FINAL FEMALE ELEPHANT COLLARED

...AND JUST IN TIME FOR THE ANNUAL CONTRACEPTION

Of all the 8 elephant herds on the reserve, there is one that is especially elusive. Their secretive nature means that they are seldomly sighted by guides and even when spotted, these shy ellies do not like to hang around, quickly moving off into the dense bush. Their skittish behaviour has made for locating this herd difficult in the past and management procedures, such as the annual contraception, have often been trying as a result.

Unlike majority of the herds, a tracking collar was not deployed onto this matriarch and elephant monitors over the years have had difficulty in studying their intriguing behaviour and understanding their movement patterns. It was obviously prudent that this elephant be collared with a GPS collar as this would both help locate the herd's whereabouts for management purposes and assist Welgevonden's elephant monitor in conducting relevant research.

Conservation oriented owner of Izingwe Lodge, Trisha Wilson, recently sponsored the necessary funds to collar an elephant on the Reserve. The matriarch from 'Herd Two' the obvious collaring candidate. Elephant monitor, Matthew Thorp, spent a solid week searching for the secretive bunch to no avail. "I have a hunch as to where they are, but I could be completely wrong".

Luckily, our competent elephant monitor's sixth sense is usually on point and he and the helicopter pilot, Lambert van der Westhuizen, swiftly located the herd from the vantage point of the helicopter. Upon detection of the herd, the remainder of the team raced towards Nyala Plains where Dr. Peter Caldwell had neatly darted the large elephant cow.

The procedure was seamless. The management team efficiently fitted the collar around the sedated elephant's neck, the wildlife vets monitored the animal's vitals and the sponsors were given ample time to enjoy the experience.

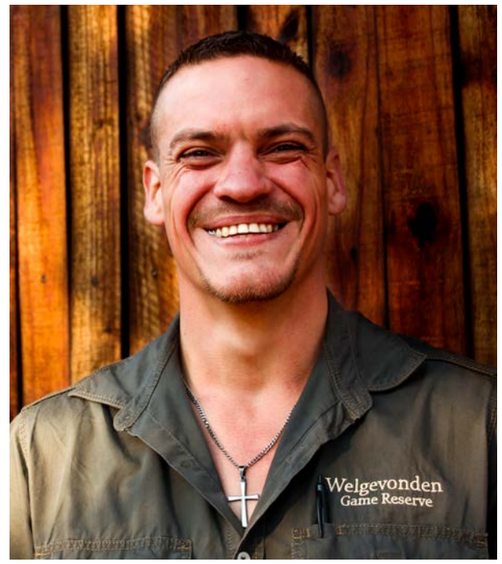
Thank you to Trisha Wilson and the Izingwe team for making this operation possible!

WELCOME TO THE FAMILY, TIAAN

This friendly face belongs to Welgevonden's newly appointed deputy security manager, Christiaan van Eeden (or Tiaan as we have all come to know him).

Christiaan grew up in Modimolle where he matriculated from Hoerskool Nylstroom in 2004. He spent the majority of his working years in Pretoria but moved back to the bushveld where he started working for TNH Wildlife and Management Solutions as a manager.

He joined the Welgevonden team in 2018 (lured in by his passion for nature conservation and fascination with the weather) where he has since been employed to oversee the daily operations of the fencing and access control departments.



LIGHTS, CAMERA, ACTION!

With the initial test phase a huge success, the Wildlife Protection Programme has the potential to revolutionise the way game reserves combat wildlife crime. MTN, proud partner of the innovative solution, recently filmed an advert on Welgevonden which will artistically showcase the product. Keep your eyes peeled for the creative masterpiece in February 2019.

NEW GENES IN THE 'POOL'

Don't you hate it when you're hard at work fixing a leak in the bathroom pipe, and you discover that the tools needed to complete the job have somehow disappeared from your usually jam-packed toolbox? That's exactly what's happened to Africa's cheetah population after declining by 76% over the last 100 years.

Just like where your tools go missing, when a portion of an animal population goes extinct, it also loses a portion of its genetic diversity. This results in what's known as a "population bottleneck" and the few remaining individuals become similar in their genetic construct – what was once an assortment of tools becomes a small collection of hammers. This impacts the long-term viability of the population as it no longer has the "genetic tool kit" to adequately adapt to changing environmental conditions.

Up until 1965, cheetah were considered vermin by provincial legislation in South Africa. Despite their rapidly declining numbers, free-roaming cheetah were readily (and legally) killed by farmers who suffered animal stock losses as a result of predation. When farmers began to shift from cattle ranching to wildlife ranching and cheetah-farmer conflict escalated to a state of serious concern, a programme was instituted to remove cheetahs from commercial farmland and relocate them to small fenced reserves. By 2009, a total of 157 cheetah were removed from the free roaming population and introduced onto 37 different fenced reserves. And the population began to decline.

Although the programme might have saved cheetah from disgruntled farmers and stray snares, it reduced genetic diversity. Where free roaming cheetah were initially able to migrate between widely distributed pockets of cheetah populations, relocating them onto enclosed reserves restricted their dispersal and reduced gene flow. Now subjected to inbreeding, cheetah were more susceptible to genetic traits such as poor sperm quality, focal palatine erosion, susceptibility to similar diseases, and even kinked tails – all ramifications of the low genetic diversity within the global cheetah population.

In addition to low genetic diversity: predator-naïve cheetah being introduced into reserves with high lion densities, the sale of cheetah into captivity, single sex introductions and excessive contraception programmes all contributed towards cheetah population decline. Unfortunately, as these smaller reserves are generally driven by financial objectives and have low predator carrying capacities, the majority of these issues were unavoidable. It had become evident that the haphazard cheetah reintroduction plan required refinement, particularly guidance by a long term conservation strategy.

In 2011, the Endangered Wildlife Trust (EWT) launched the "cheetah meta-population project", which aims to facilitate a coordinated management approach to cheetah reintroductions on small reserves. The programme, which relocates cheetah individuals between 48 small fenced reserves, aims to mimic natural dispersal that may have taken place had the landscape not been impacted by anthropogenic factors such as fences, farms and settlements. This approach should maintain both the genetic integrity and demographic viability of the South African cheetah population. It also reintroduced cheetah to areas where they had become locally extinct.

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Mosquito Nets, Wall Art, Unique Furniture, Uniforms, Lighting, Rugs, Game Drive Accessories, Hospitality, Supplies, Beds, Linen, Towels etc.

Cheetah were first introduced onto Welgevonden Game Reserve in 1999 when a free roaming cheetah was brought in from the local farmlands. The population only began to grow upon the introduction of two female cheetah from Phinda Private Game Reserve in 2009. Five years later, there were 21 healthy cheetah residing within the Reserve's boundary. As is the case with all fenced reserves, there is a limit as to how many predators the area can sustain. When management noticed a stark decline in impala numbers, they turned to EWT's programme.

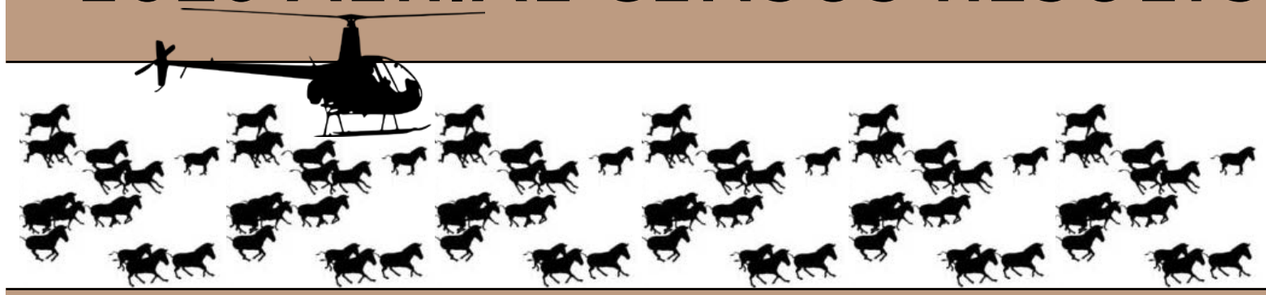
Since 2014, the Reserve has relocated a total of 10 cheetah individuals to various private reserves, including Liwonde National Park in Malawi, and introduced 3 individuals to promote genetic diversity. The latter number increased to four when a large, slender male was translocated from AmaKhosi Private Game Reserve on the 21st of September 2018, bringing a suite of new genes along with him.

"With only 3 adult cheetah on the Reserve, it was important that we introduced this new male as a means of inbreeding prevention", says Samuel Davidson-Phillips, Conservation Manager, "The individual is 'lion-weary' and should easily adapt to Welgevonden's habitat".

The male was released into a boma upon arrival, allowing him to acclimatise to the area before being released into the main reserve. He has also been fitted with a tracking collar which will help management monitor his movement patterns, interaction with other animals and overall adaptation to his new home. This collar will be removed once he has successfully established himself on the Reserve.

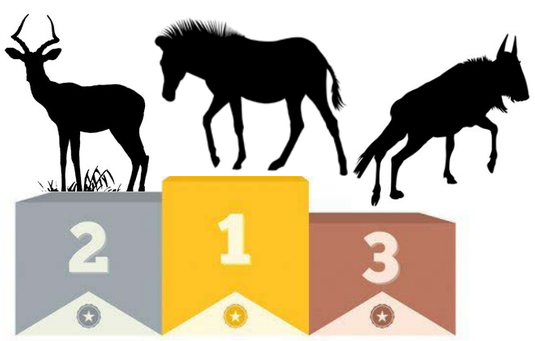
"All our introductions and relocations are carefully managed with the aim of maximising diversity while maintaining a suitable population size. We plan to translocate one of our sub-adult males when the opportunity arises", says Sam.

2018 AERIAL CENSUS RESULTS



60%

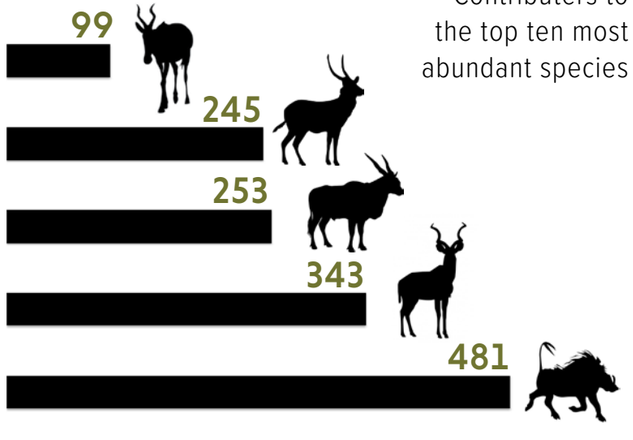
The number of game counted is **60%** higher compared to 2014

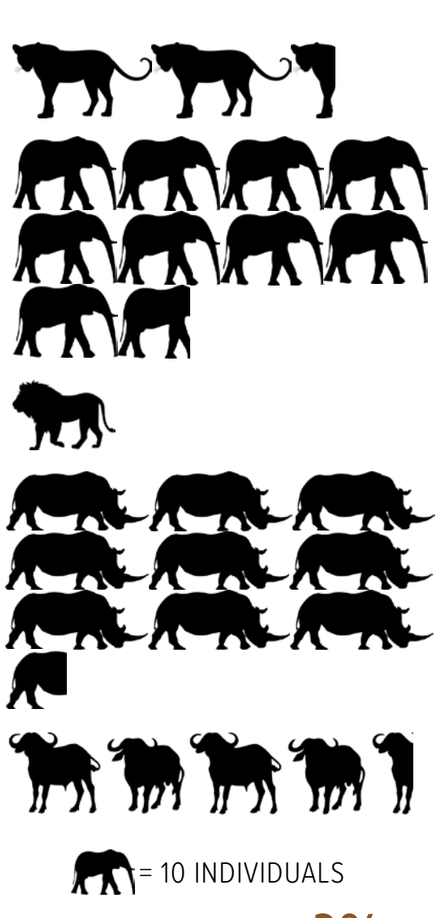


1 572 2 652 1 458

Bulk grazers dominate the overall population - the perfect ratio to achieve a herbivore-driven ecosystem.

Contributers to the top ten most abundant species





= 10 INDIVIDUALS

The Big Five constitutes **3%** of Welgevonden's overall game population.

INTRODUCING YOUR NOT-SO-NEW CEO

We sat down with accomplished brew master, businessman and newly appointed CEO, Shaun McCartney, to discover what exciting developments are in the pipeline.

Most people get a sense of déjà vu when they spot veteran leader, Shaun McCartney, walking around the Main Gate office area. And Shaun is no stranger to Welgevonden. Before pursuing his dream of becoming a Brew Master and running his own craft brewery, the ambitious individual had been at the helm of this conservation conscious company. Now, having taken his business, the Sabie Brewing Company, to profitability, Shaun has set out to tackle the position of Welgevonden CEO once more, bringing a new perspective in his wake.

Jess: CEO of Welgevonden is not new terrain for you. You've been in this exact position before. How is your approach towards undertaking the role different this time round?

Shaun: Our goal is to become (if we are not already) the best managed game reserve in the world. The Reserve has evolved substantially since I was last here and there have been some dramatic changes under my predecessor. I remember during my first term as CEO, I paid witness to some of the most horrific fires in my lifetime. It's astounding to think what destruction a single spark can create – it was something else. Since being back, I've already noticed a drastic change to the vegetative structure – a fire driven environment to one maintained by herbivores!

My role is to ensure we sustain this high level of pressure on the vegetation and systematically increase the grazing lawns and the 'stepping stones' between them. Another thing that's changed is our attitude towards technology. With the focus on technological security solutions, we'll be changing the way reserves across the continent tackle wildlife crime. Being on the forefront of this radical concept, we will have to be adaptable, resourceful and keep an open mind. We're also focussing on collaboration and building partnerships with government, big business and NGO's to achieve our goals. Otherwise, my approach would be to tackle the leadership position as well as any other – head on.

You've just come back from achieving a bucket-list item of yours – opening a successful craft brewery and taking it to profitability. Can you tell us more about this endeavor? And how do you feel the experience aided your already admirable skill set?

This venture was totally different to anything I had attempted before. I was faced with the challenge of restoring an old heritage building, commissioning a 1000 litre brewery, employing and training unskilled staff and developing various beer recipes that are true to internationally recognised styles. Thankfully, I was able to employ and empower good people. By the time I decided to move back to Welgevonden, I had made 170 batches of beer, won a gold medal at the SA National Champs and was awarded the Lowveld Chamber of Commerce's Entrepreneur of the Year Award. In my second month back on Welgevonden the brewery staff broke the record volume of beer sold for any month which gave me a lot of comfort and satisfaction that they had taken ownership of the business.

The experience helped reinforce many things that have helped me develop as a leader. These include: setting a goal and having short term measures in place (you get what you measure so make sure you measure the right things); stay positive (negativity is very destructive); don't have regrets (if you feel strongly about doing something go with your instincts); don't burn bridges (by maintaining good relationships you can go back and carry on doing things you enjoy); know when you have achieved your goal (once things become repetitive it might be time to hand across to someone else); make sure that the organisation can carry on without you or anyone else for that matter (have a succession plan); take some time out to drink real beer - for craft sake!

I'm sure many people are wondering as to what prompted your return to the Reserve. Can you offer some enlightenment?

In a way I feel like I have been away on a sabbatical and I get to eventually clear my inbox, dealing with unfinished business. I felt that I had achieved what I set out to do in building a brewery and making good craft beer. The business was starting to feel a little small and I developed an itch to get back into conservation related work. Welgevonden is an exceptionally unique company with a hunger to continually improve and maintain a status as one of the best managed game reserves on the globe. What I love is the professionalism of the company and the way the Reserve attracts good people in the business we operate in. It's run like a business in all aspects of its management, engaging the recommendations from experts ranging from diverse topics whether it be soil nutrition or HR, not only listening to these people but implementing their wisdom on a scale that matters. There is nothing that can substitute good science and, in this respect, we have the best in the world to guide us.

You've mentioned that one of the reasons for your return is that "Welgevonden Game Reserve offers a great deal of variety of experiences and endless challenges." Can you elaborate on this?

Welgevonden is on the forefront of conservation management. This is the place where ground breaking concepts are tried and tested and with this, a suite of constantly evolving challenges. For too long, reserves have isolated themselves from technological advancement. I mean, have you ever been to a reserve and not struggled to pick up cell phone reception? I know that reserves are typically "technology free" zones but by excluding these advancements, we're losing out on the benefits that they could potentially provide. Right now, the "Internet of Things" (literally the interconnectedness of tangible items) is the next big "thing" and will help us in the fight against wildlife crime. Embracing this next technological revolution and acting as the incubator to help in the development of this technology will aid the protection of our rhino and other wildlife species (and combat crime in general). We are currently being seduced by some very big names in communication and technology because we are professional, willing, and able to deliver on the implementation of new solutions.

Talking about new projects, Welgevonden's Environmental Awareness Programme came to fruition earlier this year. How do you feel this programme will help uplift our local community?

The third pillar of sustainability is: social (the other two being the economic and the natural environment). Game reserves tend to focus on conservation, often disregarding local communities and the daily challenges faced by the unemployed and the poor often in close proximity to these wildlife sanctuaries. Our outreach program is an opportunity to create awareness around the benefits of conservation, not only in the form of conserving biodiversity but in long-term sustainable job creation. The message we're trying to convey through the programme is this: Chefs, waiters, field guides, receptionists, etc., within the eco-tourism industry source local food and beverages which are consumed by tourists. These tourists likely purchased an air ticket (jobs) to South Africa, had their passports scanned by a government official (jobs), and were ferried here (jobs) by a charter that required refuelling (jobs!) in Vaalwater.

Although the programme aims to instil the passion to conserve, it is the benefit of nature that we're trying to emphasise. If a rhino is killed for its horn, there is in all likelihood only 1 or 2 community members, probably not from our local community, who will benefit financially (and only once off) whereas if that same rhino is left on the plain, it will attract people over and over again, creating an endless income stream. It is our duty to make these community members aware that where the former is not sustainable, the latter is. A win-win-win for all three: the community, conservation and the economy.

What, in your opinion, makes Welgevonden different to other private game reserves?

Our location within the Waterberg has thrown some abiotic challenges our way which have helped shape our character for the good. It has forced us to look beyond the conventional wisdom and find out for ourselves what the potential of this land is. From a management perspective, decisions are based on contemporary scientific evidence rather than outdated conservation theories (thankfully we're not traditionalists like that). Perhaps more importantly: the people. There is a serious desire (and realisation) that we have the capacity to be the best managed game reserve in the world and although there is an appreciation of our limitations, the "can do" attitude and fortitude of the staff allows for the achievement of things that other reserves can merely try mimic. We also have a good conservation oriented membership who care deeply about the Reserve. These concerned folk take the time and trouble to "be in the know" and contribute towards the decision making of the Reserve. Finally, we have strong leadership from our board and an approach to proper governance that is rarely seen elsewhere in other businesses.

"We have the capacity to be the best managed game reserve in the world"

What vital qualities do you believe every CEO should have and how do these translate to success?

Good business ethics, self-conviction, trust in your people and a sense of humour. You need to set smaller goals with the right people for the job and make sure that these are all facing the same direction. If I remember correctly, it was Jim Collins who used the analogy of a bus, which goes something like this: first and foremost you need a bus, but you also need a driver who knows where the bus is going, people who wish to arrive at this predetermined destination, and seats allocated to the correct individuals. Very importantly, surround yourself with good people; people who have a sense of curiosity and who are always willing to try. Give them the room to make some mistakes (although don't be too reckless) and make sure they have the right tools to do their job to the best of their abilities.

What are you most looking forward to about being based at Welgevonden Game Reserve again?

I can reacquaint myself with the Waterberg, aptly called 'Big Sky Country' and the people who live here, many of whom dedicate their time selflessly to worthy causes that make our region a better place. Other bonuses include: I theoretically have a Game Reserve all to myself – depending when I drive on it; I have got as rusty as an old nail with identifying birds and plant species – I look forward to spending quality time in the field with Nikki rediscovering these; and I get to drink one of my own craft beers without having to supervise the staff pouring it!

Last, but not least, could you briefly describe what Welgevonden Game Reserve personallly means to you?

It is humbling for me to be chosen in this leadership position. The board has demonstrated their trust in me and I need to deliver. Being 57 years old, I do not think that the company would necessarily have granted me the opportunity to lead this prestigious Reserve had they not known me beforehand. I am extremely excited about the developments that are to happen in almost every facet of Reserve management as these will not only help me grow as a person, but our employees and the Reserve as well.

Not Your Typical Refugees

Black rhino have taken up residence at Welgevonden for the first time in history - and it's all thanks to the Rhino Husbandry Programme.

BY JESS OOSTHUYSE

PHOTOGRAPHS BY WELGEVONDEN RESEARCH & SHAUN MCCARTNEY

Small, private game reserve owners are on the back foot when it comes to rhino protection.

In 2015, it was estimated that, since 2008, South Africa lost a staggering R1.3 billion to rhino poaching. With no compensation for protecting these critically endangered species, more than 70 of 330 South African private game reserve owners have been forced to sell their rhino populations as they cannot afford the adequate security to protect them. Even where rhino owners can afford the security, the inhumane cruelty seen in rhino poaching incidents cause severe emotional trauma and may affect the long term psychological well-being of owners. With these factors in mind, the Reserve Board embarked on an initiative to assist owners with protecting their rhino – without having to sell.

Many of Welgevonden's Members are stakeholders in the eco-tourism industry, but the Reserve does not rely on tourism directly for financial security and are excluded from the volatile market conditions that often characterise the wildlife industry. As Welgevonden can afford to take a long-term approach towards its conservation management strategy, as well as maintain a dedicated security department, it puts the Reserve in a position where it has the power, and therefore the responsibility, to assist in the protection of rhino beyond its borders, facilitateing the long-term survival of rhino species. And with this power, came the development of Welgevonden's Rhino Husbandry Programme.

The Programme, developed in 2016, offers the opportunity for rhino owners/organisations to relocate their rhino populations to the Reserve for an agreed period of time (generally 5 years) during which the Reserve will provide suitable natural habitat and the security required for their protection. In order to differentiate between these rhino and the resident population, resident and “rhino refugee” receives a unique identification code (as part of the Rhino DNA notching programme) notched into its ears. Although all offspring born during this time period are split equally between the parties, either in monetary terms or number of individuals, the initial population will remain the property of the original owner.

The program is not simply a selfless act of conservation comradery as there are a number of benefits associated with the introduction of new rhino to the Reserve. For example, white rhino are exceptional ecosystem engineers and will help propel the “Plains Project” forward by promoting the expansion the plains. These new individuals will also bring a unique mix of genetics to the table, increasing the overall heterogeneity of the meta-population and buffering it from potential environmental change. Finally, these additional rhino will increase the quality of tourism on the Reserve, making it a true hub for quality rhino sightings – a rare phenomenon considering the persistent poaching problem.

Historically, Welgeovnden has provided refuge for the Southern White Rhinoceros (also referred to as the Square-Lipped Rhino) and has been largely absent of the slightly smaller, although far more aggressive species: the black rhino. Their introduction was not prevented by a lack of suitable habitat, but rather the lack of opportunity to obtain this particular species in the past.

Poaching has been on the rise in the Waterberg and a number of small, privately owned game reserves have experienced detrimental blows to their healthy rhino populations. Some of these owners/organisations have approached Welgevonden regarding the Husbandry Programme and have since relocated their remaining rhino individuals to the Reserve. Although these have predominantly been white rhino, the overall introduction has also included a number of black rhino. For the first time in Welgevonden history, the reserve is home to this iconic species.

The adaptation of these individuals to their new surroundings is being closely monitored by members from the Welgevonden Research and Volunteer Centre. This has proven to be a difficult task considering that there are fewer black rhino on the Reserve than there are leopard! Unlike the placid white rhino that is regularly spotted placidly grazing or snoozing on the grassy plains, black rhino are elusive animals and reside in thick, woodland vegetation. As one can imagine, this dense habitat type does well to conceal the animal from view. What’s more is that they are skittish and will generally dash off when disturbed. For this reason, it took the research team over a fortnight before sighting their first black rhino.

Research coordinator, Phillipa Davidson-Phillips, mentioned that although they were able to monitor the individuals indirectly through signs like tracks, dung and territorial markings, it took a long time before they physically sighted a black rhino on the Reserve. Funnily, the group had not actively been searching for individuals at the time, but had stopped for a “comfort break” when they noticed a charismatic quarry emerge from the thicket. Low and behold, a black rhino cow had stealthily snuck out of hiding to investigate the scene. "She was not outwardly nervous, but curious. We observed her for an hour before trotting back into the bush", says Pip.

These animals are doing well to settle down on the Reserve. Since their arrival, they have explored their surroundings and established fixed territories. It is an absolute honour and privilege to play host to this vulnerable species.

"This was a momentous occasion for the reserve. Welgevonden has been afforded the opportunity to be home to this amazing species and to assist with their protection and long-term survival", says Bradley Schroder, previous CEO of Welgevonden. "Congratulations to all involved with this amazing operation and in assisting to protect one of the most iconic and aggressive species in Africa".

LEFT
Bradley Schroder and Greg Canning were integral during the translocation process.
PREVIOUS
Members from the Research Centre observed their first black rhino two weeks after their introduction.

CATCH AND RELEASE

Managing a self-established clan of these ferocious feminists will be as challenging as it is rewarding.

BY JESS OOSTHUYSE

The Hyaena, Hermaphroditic Self-Eating Devourer Of The Dead, Trailer Of Calving Cows, Ham-Stringer, Potential Biter-Off Your Face At Night While You Slept, Sad Yowler, Camp-Follow-er, Stinking, Foul, With Jaws That Crack The Bones The Lions Leave Belly Dragging, Loping Away On The Brown Plain, Look-ing Back, Mongrel Dog-Smart In The Face - Ernest Hemingway, Green Hills Of Africa, 1935

Hyaena have been subjected to many a scan-dalous truth over the course of history. As Lucy Cooke explains in her entertaining book, The Unexpected Truth About Animals, hyaenas are “considered nature’s thugs, condemned throughout history and across continents and cultures as dim-witted cowards, skulking in the back alleys of the animal kingdom wanting to mug more noble beasts for their dinner.”

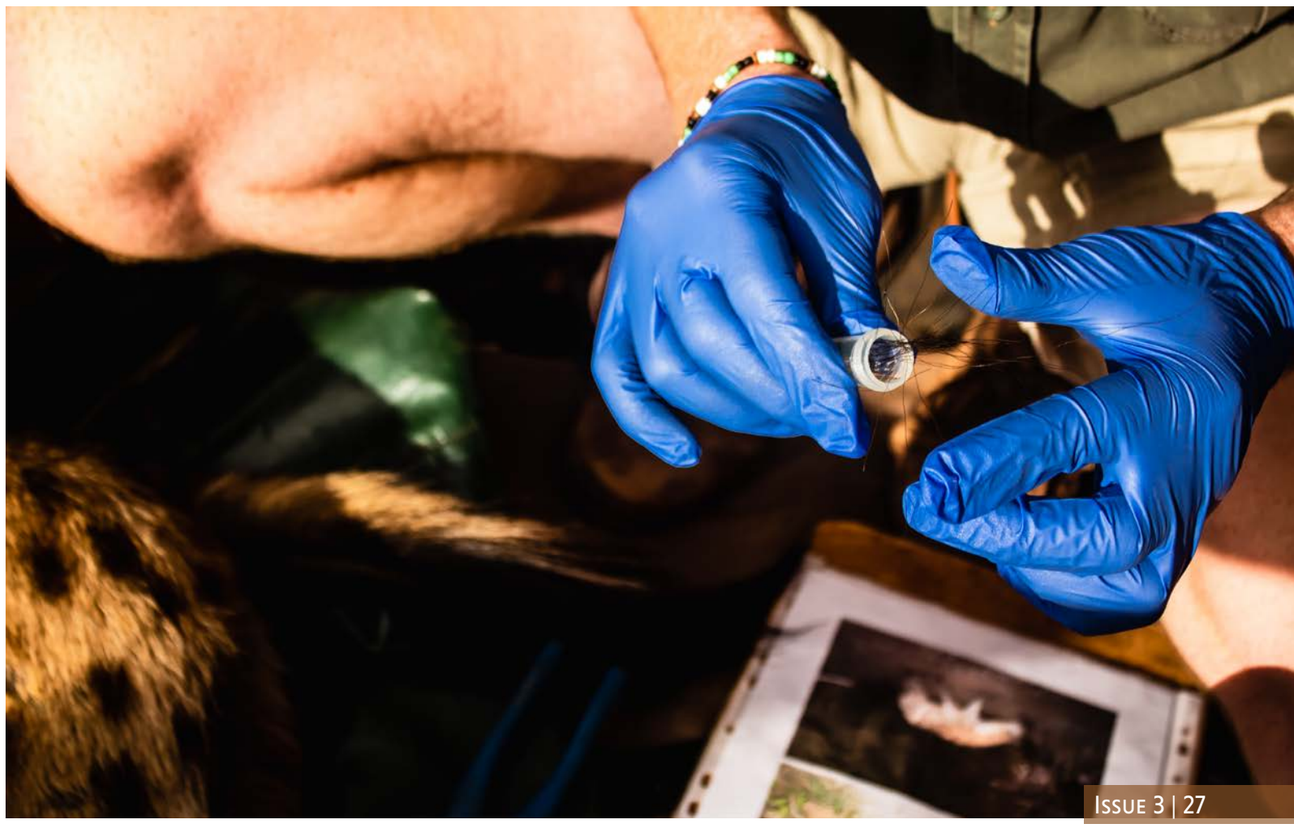
These misconstrued ideas were (surprisingly) not perpetuated by folklore but are rather of a scientific origin. The hyaena baffled biologists. Even the father of taxonomy, Carl Linnaeus, could not correctly classify the species, first thinking it was a cat only to later classify it as a dog. He never got it right. The species is in fact a “souped-up” member of the mongoose family and therefore more closely related to a cat.

A more controversial topic for early zoologists was the basic question of the hyaena’s gender - female hyaenas sport a sexual structure that re-sembles a penis. While one animal encyclopedia explained that the “hyaena in itself possesses both sexes, being male the one year and a fe-male the next”, it was later decided that the hy-aena was hermaphroditic, capable of swinging its sexes according to the season. Over 65 000 species are indeed cross-sexual. The hyaena, is not.

The clitoris of a female can extend up to 20cm and is shaped and positioned exactly like the penis of the male hyaena (hence the confusion). This organ is “politely” referred to as a pseu-do-penis and is thought to have evolved as a mechanism to reinforce female dominance with-in the clan (go sister!).

ABOVE: Dr. Peter Caldwell entertains the international vet-nurse students with a few jokes while preparing for the procedure.

BELOW: A number of hairs are carefully extracted from the individual to be used for research purposes.



International vet-nurse students assist during the procedure. Dr. Caldwell guides them through the process, advising how best to insert a needle, discussing the function of each specific medical drug, and explaining how to search for (and insert) an identification microchip.

In case of most animals, male individuals will fight over territorial space and/or the right to mate with females. But, when it comes to spotted hyaena clans, it is the female that dictates the “who’s” and “when’s” of copulation. Bluntly put, sex is an “undignified affair” that forces the male to take on a submissive squat-like position at the female’s rear in an attempt to merge their monomorphic genitalia. As you can imagine, this act would be completely impossible without the full cooperation of the female, allowing her to exert her dominance over the male.

They are by no means the dim-witted, cowardly scavengers that the media portrays them to be.

As science progresses, so does our understanding of these loping predators. They are by no means the dim-witted, cowardly, scavengers that the media portrays them to be (does Ed from the Lion King come to mind?). These fierce and ferocious feminists are highly efficient predators and responsible for taking down up to 95% of the meat they consume. More impressive however, is their ability to digest food that would otherwise make any other animal sick - even a putrid carcass riddled with anthrax won’t keep this species down. This trait is vital for ecosystem health as it contributes towards nutrient cycling and prevents the spread of disease.

Although the most common of the four different hyaena species, the Spotted Hyaena has been an uncommon resident at Welgevonden Game Reserve – until now.

Recently, an estimated 12 free roaming hyaena were reported as having established on the Reserve. Although exciting from an ecological perspective, especially as this species is known to be slow to recolonise areas, there was the concern that their presence might jeopardize the success of the Game Introduction Programme that is finally nearing its completion.

After consultation with Welgevonden’s Scientific Advisory Committee (WSAC) and an assessment of the predator-prey model, it was decided that the Reserve could happily sustain a population of six hyaena individuals. As you are likely to have already worked out, this was half the number of the predicted clan size. What's more is that management had to devise a way to reduce the number of hyaenas prior to them establishing a fixed social structure, i.e. very quickly. It was decided that the surplus hyaena, approximately 4-5 individuals, would be translocated to reserves looking to bolster up their hyaena populations, while the remaining individuals would be closely monitored so as to better understand their population dynamics, maintain the social structure of the clan, and informed decisions pertaining to their management.

After several late, cold nights and numerous failed attempts, our two conservations, were finally able to cordon off three of these elusive individuals within the predator boma on the 15th of July. While the two juveniles were kept in the boma pending their relocation to Khamab Kalahari Reserve, the frequently sighted matriarch was fitted with a Hawk105 (GPS-GSM) collar upon capture and released back onto the Reserve that same day so as to return to her den site.

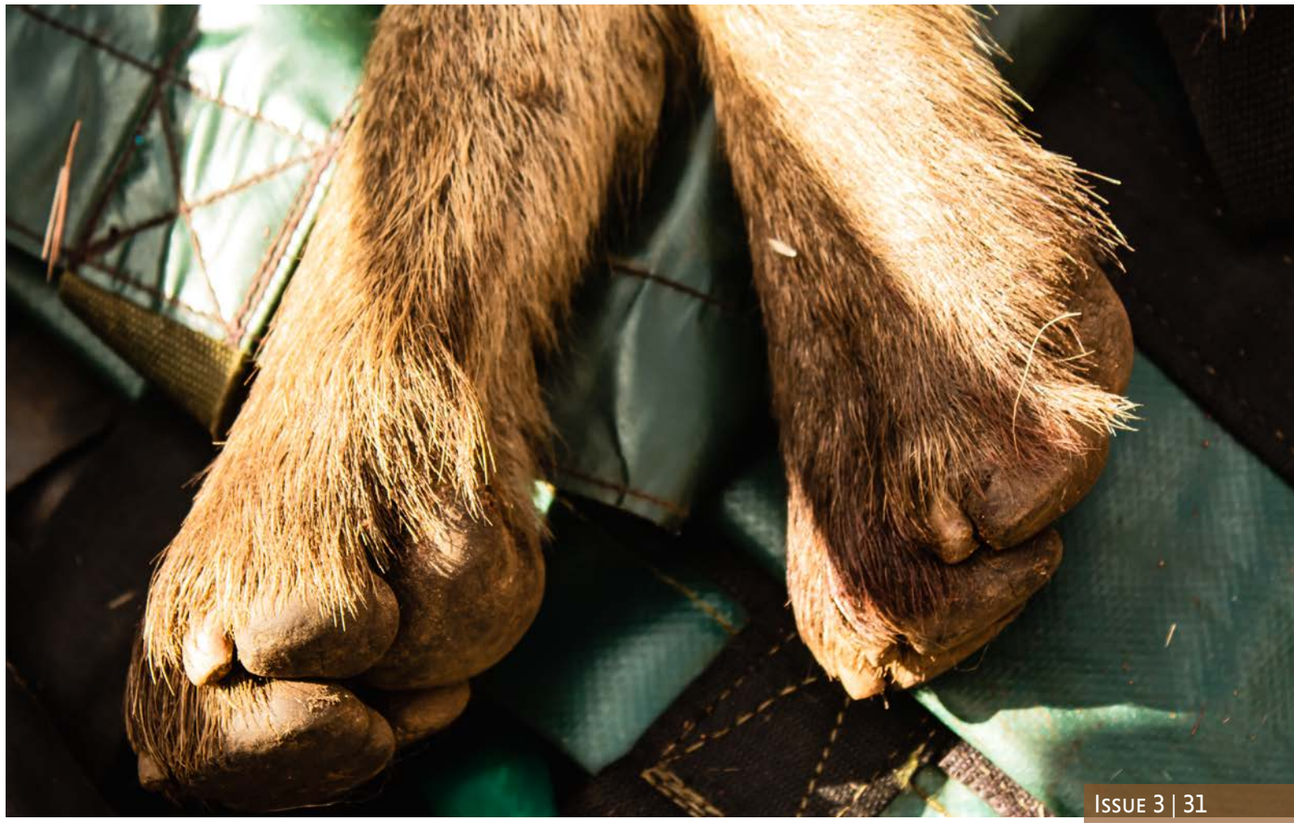
The attending veterinarian, Dr. Peter Caldwell, estimated this large female to be approximately 10 years of age and was evidently lactating. It is obvious that this female is a highly successful matriarch as she still retains her dominance within the clan and is capable of producing cubs. This is quite an achievement considering that one in ten first time hyaena mothers die while giving birth (that pseudo-penis admittedly does have a few flaws).

Collaring the matriarch will help in locating den sites, monitoring individuals within the clan and determinng the birth rate of the population.

With previous sightings of the clan having been scarce and irregular in the past, the improved ability to track and monitor the behaviour of these animals will better our understanding of their movement patterns and interaction with various biological elements within the Reserve.

ABOVE: The ferocious jaws of an exceptionally adapted carnivore.

BELOW: There is no way of telling just how far these paws have travelled but we can monitor how far they will still go.



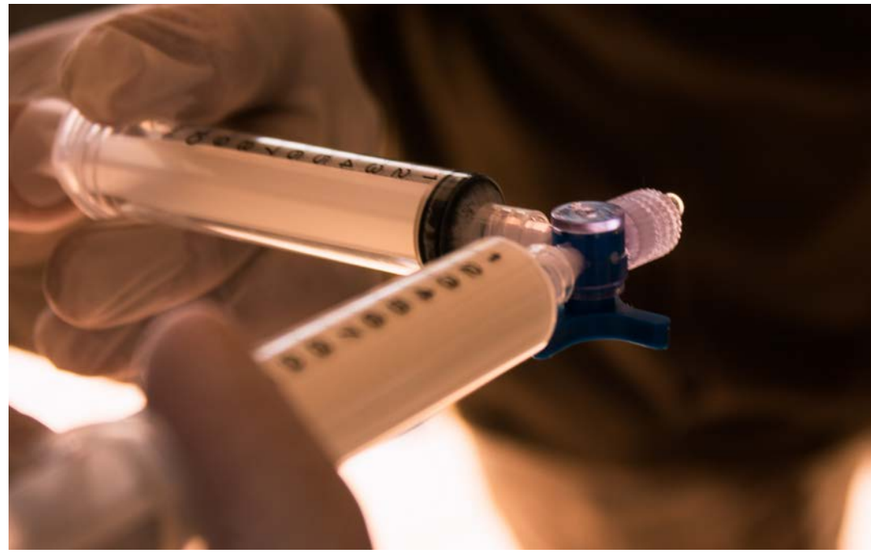
Since the initial collaring procedure, management have captured an additional two hyaena. These, along with the two from the first capture, have all been relocated to Khamab Kalahari Game Reserve where they will help bolster their existing hyaena population. Here, Dr. Paul Huber examines one of the younger hyaena prior to their translocation.

It is exciting to play host to a small population of this interesting species. But with the Reserve's goal of achieving a herbivore-driven system, the management of these successful predators will likely prove challenging. Nevertheless, we are enthusiastic towards the endeavor, determined to refine our predator management protocols, and look forward to hearing the characteristic howl of the hyaena amongst the evening symphony of Welgevonden's pristine bushveld.

EFFECTIVE CONTRACEPTIVE

Since 2005, Welgevonden Game Reserve has made use of the immunocontraceptive vaccine, pZP, to control the rate of elephant population growth. This method is 100% effective, 100% reversible and 100% safe.

Briefly, the pZP is produced by a complex process whereby the ZP is removed from the ovum, its glycoproteins extracted, isolated, and converted into a vaccine. The contraceptive vaccine uses the ZP from a pig, thus the name porcine Zona Pellucida (pZP).



Dr. Peter Caldwell oversees the preparation process, carefully extracting the correct quantities of the respective drugs and ensuring that solutions are mixed correctly.

Elephant monitor, Matt Thorp, and conservation manager, Samuel Davidson-Phillips, consumed by concentration as they help prepare the darts for the contraceptive procedure

BY JESS OOSTHUYSE

COVER PHOTOGRAPH TAKEN BY MATTHEW THORP

Intense concentration stifles the room. The four young gentlemen carefully mixing contraceptive drugs have been warned that a single drop of the solution in their blood stream will lead to sterility. Not an appealing thought. But the porcine zona pellucida, or pZP, will do no harm to elephants – merely prevent pregnancies.

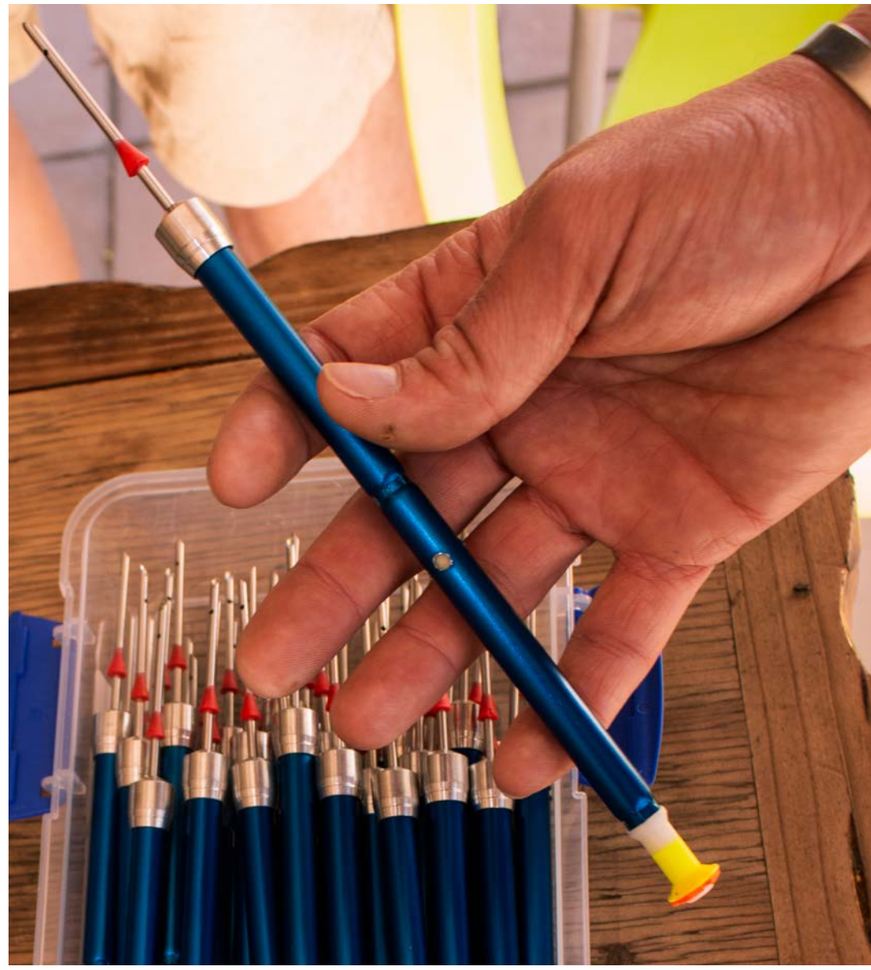
Elephants are intelligent and empathetic creatures. They are capable of expressing a wide range of human-like emotions such as empathy, joy, sadness and concern and even symptoms of post-traumatic stress disorder (PTSD) after having been exposed to severe tragedy. But their complex nature, although impressive, contributes towards the difficulty of their management, especially when it comes to population control.

Elephants are known as what's called a "keystone species" – they transform their savanna habitat and influence ecosystem function. These animals open up the landscape by tearing down trees which improves environmental conditions for certain species and maintains a particular habitat structure. Unfortunately, where population size is left unchecked (particularly in small and medium sized reserves) their influence on the vegetative composition can turn into that of a destructive nature. For example, by trampling plants and uprooting trees as they feed, elephants are capable of rapidly reducing large forests into grassland. The concern is that this could eliminate certain species from the ecosystem. If conservation managers wish to maintain high levels of diversity and protect a wide range of species rather than only a select few, they need to manage and monitor their elephant population intensively. Naturally, population size is the most crucial factor in elephant management. And the most controversial.

Historically, culling was the predominant method used in regulating elephant population size. The practice goes about removing entire breeding herds so as to avoid the stress of family members left alive. Aside from this scenario being seldom achieved, this management technique is considered inhumane and is hardly applicable to small populations of elephants. With increasing public pressure regarding the ethics of procedure, elephant culling was officially banned in 1995.

Although a step in the right direction, park managers were now faced with a new challenge: elephant numbers were climbing out of control. Between the initiation of the ban and 2008, the national population had grown from 8 000 to over 20 000 individuals leading to fears of unsustainable population growth within fenced reserves. During this period, managers made use of translocation as a means of population control, but opportunities to do so were (and still are) extremely rare. The only other option to manage elephants, other than to expand the size of reserves, was to decrease reproductive success through contraception – an option that was not available at the time.

Between 2017 and 2018, an elephant cow from each herd (usually the matriarch) was collared with a GPS satellite collar. These data can be extracted off the AWT tracking site and used to determine the location of the various herds in the population.



Biodegradable darts are imported from America. 75 darts were prepared for the purpose of the procedure while only 60 individuals were darted.

In 1999, researchers confirmed that the porcine zona pellucida (or pZP) vaccine could be used as a tool to protect elephant cows against conception. The highly versatile immunocontraceptive molecule, which has been tested on everything from stray cats to voles to elephants, promotes the production of antibodies that bind to ZP proteins of the target animal's oocytes, preventing sperm binding, fertilisation and in turn, pregnancy.

Contrast to hormonal contraceptives, the vaccine is efficient, reversible, safe, remotely deliverable, and has minimal impact on the social behaviour of elephants. This was ground breaking research – the first safe method of sterilizing free-roaming African elephants had finally emerged (and was even published in renowned scientific journal, Nature, in 2001).

Practical application of this contraceptive method was initiated in 2005 where 7 different private game reserves (including Welgevonden) opted to adopt the revolutionary science and incorporate it into their management strategy. Over the course of the next 9 years, a total of 108 individually identified cows were treated and monitored so as to evaluate the effect of the vaccine on both reproductive rate and the safety of the cow during pregnancy. This large-scale research showed that the vaccine was highly effective as a birth control mechanism: 100% safe for conceptuses at any stage of development, delivery is remote and does not require animals to be immobilized, 100% effective, and sufficient in achieving a population growth rate of 0%.

"The use of pZP has provided small-medium sized reserve managers with the opportunity to maintain a viable population with minimal impact on reserve biodiversity without sacrificing all important game viewing opportunities", says Matthew Thorp, Welgevonden Elephant Monitor. "While the management of elephants is a contentious topic at the best of times it is of utmost importance that interventions are carried out as ethically as possible." Since its initiation in 2005, elephant contraception with the pZP vaccine has become an integral component of elephant management on Welgevonden Game Reserve. The initial process involved a primary vaccination, administered to elephant cows that were 10 years and older, followed by two boosters at 3-4 week intervals. The elephant cows have received a single booster per annum ever since.

"At WGR, with the pZP being an annual occurrence, the implementation thereof can be likened to that of a well-oiled machine with the resultant disturbance being mitigated at every possible turn", says Matthew.

The vaccine is aerially administered – each cow is darted from the helicopter with a biodegradable dart that falls out once the immune-contraceptive has injected into the bloodstream. To ensure that no cows receive a double dose of the drug, a purple dye sprays out the back of the dart upon injection, lathering a portion of the buttocks with a purple hue and clearly marking the elephant as "darted". This dye is perfectly safe and easily washes off after a few days.

The vaccine does not halt population growth immediately. With some of the cows already pregnant and a gestation period of 22 months, populations will take up to three years before stabilizing.

If desired, it would be possible to completely inhibit births from this point onwards provided that all reproductive cows had received the contraceptive. But a birth rate of 0% is not something management wish to achieve. Calves play an important role in "elephant society" in that they are integral to herd cohesion. In fact, family groups are known to branch off into smaller and smaller herds where calves are excluded from the population – unnatural behaviour for such a socially complex species. For this reason, certain individuals are deliberately "skipped" during contraception, ensuring that calves are still born into the population. "We try to keep the herd dynamics of our elephants as natural as possible", says Matthew

Geared up and ready to go! The team take to the air to conduct the entire procedure in under 2 hours. The doors of the helicopter are removed for improved visibility, mobility and accuracy.

This year, the annual contraception kicked off on the 14th of September. The exciting procedure started with a number of our staff, under the careful guidance of Dr. Peter Caldwell, assisting in preparing the contraceptive solution (que back to the stifling concentration). 75 darts were prepared for the purpose of the procedure after which Matthew, Samuel Davidson-Phillips, Dr. Peter Caldwell and pilot, Lambert van der Westhuizen, took to the skies in a sleek Squirrel helicopter. With the location of each herd predetermined (thanks to the GPS coordinates transmitted from the collars deployed on the 7 different matriarchs) the group set out with purpose. And a 2 hour time cap.

Thankfully, the procedure ran smoothly and the team easily located each herd, darting a total of 60 different individuals in under 1 hour and 40 minutes.

"It was exhilarating to be part of the contraception operation this year. Fast paced, accurate and efficient, the small team worked well together to locate, identify, and dart the various cows", says Matthew. "Flying above the population of elephants, a population that I have come to know more intimately than most, I am reminded of the importance of constantly pushing management boundaries to create the most hospitable environment in which elephants may flourish."

BY JESS OOSTHUYSE

PHOTOGRAPHS BY
JESS OOSTHUSYE & WELGEVONDEN RESEARCH

THREE CHEETAH CUBS SPOTTED WITHOUT MUM

Daintiest of the predators, the cheetah has refined its hunting tactic to the tee. But this complex process can take up to 18 months to learn - so why were these 8 month old cubs all alone?

Of all the big African predators, the cheetah is second only to the wild dog in hunting success.

Welgevonden Game Reserve is famous for its dramatic and diverse landscape. From towering, multi-coloured sand-stone cliff faces, rolling hills of wooded bushveld, dense riparian thickets that wind along crystal clear rivers and grassy plains that appear to span infinitely over the horizon– Welgevonden has it all!

It is the numerous, large grassy plains that make the reserve suitable for sustaining a healthy cheetah population. Slender and agile, the cheetah is perfectly adapted for hunting in these open areas, making use of its excellent sight and superior speed to take down prey. Accelerating at approximately 96km/h in under 3 seconds and reaching speeds of up to 112km/h, cheetah require a significant amount of flat, open space to optimise their hunting technique (just like a sports car needs a flat, open highway to reach its maximum performance).

But speed alone is not enough to secure a meal for a hungry huntress and there are still a number of challenges that a cheetah has to overcome before she and her cubs are able to enjoy their “fast food”. To to overcome these challenges, increase the chances of hunting success and reduce the risk of injury, cheetah have developed a refined approach to hunting.

But how does a cheetah take down its prey?

Before commencing the hunt, a cheetah will use various observation points to scan the surrounding area to locate and size up its prey. Once the dainty predator has its target in sight, it will stop and tense, lower its head to shoulder level and stealthily approach its chosen victim. Slowly moving in, the silent assassin will wait until the perfect distance away from its selected prey, usually about 30m, before pouncing.

The chase has begun!

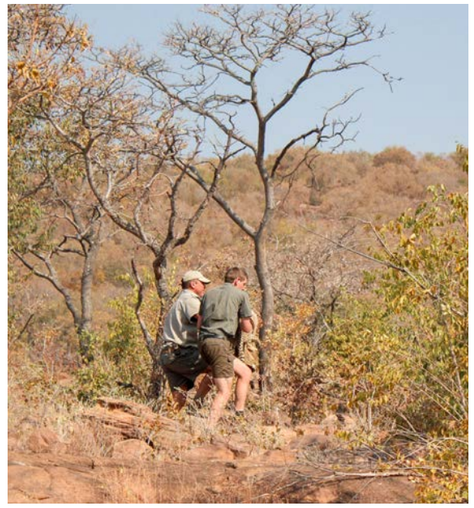
RIGHT:
Wildlife Veterinarian, Dr. Paul Huber, and Conservation Manager, Samuel Davidson-Phillips conduct the procedure seamlessly while vet nurse students observe from nearby

BOTTOM RIGHT:
After the procedure, Dr. Huber discusses the veterinary techniques used and the importance of wildlife veterinary work

BOTTOM LEFT:
Sam and Dr. Huber quickly return the small cat before administering the reversal drugs.

Using its long muscular tail as a stabiliser, the cheetah matches every move of its fleeing prey, quickly closing in on the target. Once close enough, it uses its forepaw to slap the animal’s shoulder, thigh or rump to knock it off balance. Alternatively, the razor-sharp dewclaw is used to hook the leg out from under the prey, tripping it into a somersault. Once down, the cheetah clamps its strong jaws over the victim’s windpipe or trachea in a strangulation hold, keeping it down with its forelegs and mouth, and twists the head so the horns face the ground.

As you can imagine, an enormous amount of energy is exerted during this process and the agile predator requires up to 30 minutes recovery time before it is able to finally consume its prey. A cheetah will usually drag its well-deserved meal to a safe spot and then quickly devour the carcass, constantly on the lookout for any larger predators or scavengers that might be lurking nearby. Although a successful hunter, cheetah lose up to 50% of their kills to other predators. Chasing down prey might be instinctive, but the intricacies that make a hunt successful are not. Over the course of 18 months, a mother cheetah will teach her cubs how to bring down their prey, direct a bite to the throat and hold their victim down in a successful stranglehold.



Once fully grown and their “training” complete, the mother will separate from her cubs, granting them full independence and hence the responsibility to look after themselves. But, just like any adolescent that ventures out into the “big world” for the first time, these young cheetah still have a lot to learn, particularly about the identity and behaviour of their potential prey. Although their mother will have taught them everything she knows, the youngsters will still be poor hunters by the time she leaves and will rely on one another for food, hunting together as a sibling group until their skills have been refined.

With learning to hunt being a long and delicate process, management was concerned to discover that three young cheetah cubs had been sighted on the reserve without their mother for over a day and a half. Only 7 months old and unable to fend for themselves, it is highly unlikely that the mother would have left the cubs on her own accord. Alone and vulnerable, the future of the cubs was in the balance. Management had no choice but to intervene. It was decided that the best option would be to allow the youngsters to remain on the Reserve in the hopes that they link back with their mother.

Until then, the cubs would have to be carefully monitored and their progress evaluated. In addition, management would have to act as a “surrogate mother”, supplementing the cubs’ diet where necessary. All these measures would hopefully ensure the cubs’ survival and enable them to live the rest of their lives in the wild.

On the morning of the 8th of August, the three youngsters were spotted near Site 23 and monitored by Welgevonden’s Research Team until wildlife veterinarian, Dr. Paul Huber, arrived. The vet quickly prepared the necessary immobilising drugs and set out to dart one of the cubs – the selected individual would be collared with a VHF tracking collar to help management monitor the sibling group’s progress.

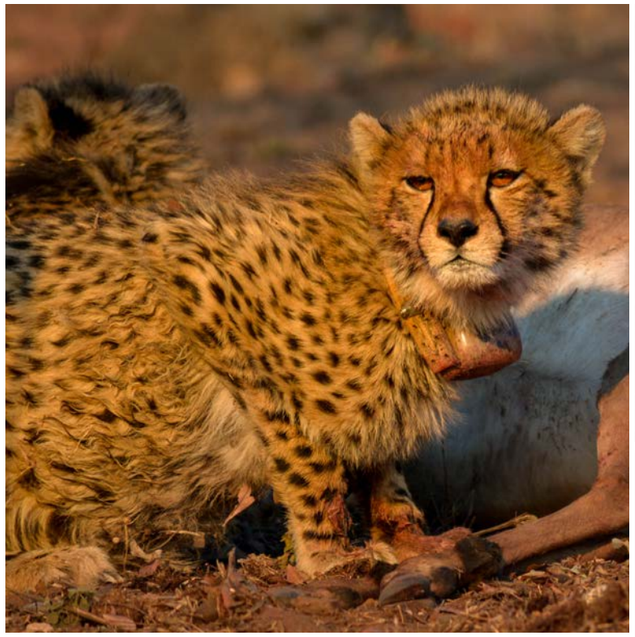
In order not to scare away the other two cubs and ensure that the group remained intact, the procedure had to be conducted as quickly as possible. Vet-nurse students from Writtle College University and international research volunteers stood by with Welgevonden’s three research coordinators, while Conservation Manager, Samuel Davidson-Phillips, and Dr. Huber moved in to conduct the procedure.

Skilfully manoeuvring over the rocky terrain, the two experts finally reached a position in which Dr. Huber could accurately dart the one individual, administering the immobilising drugs and rendering the cub unconscious. Once asleep, the young female was quickly carried to a secure spot where she was collared and given a number of immune-boosting drugs in record time. After the reversal drugs had been administered, the management team proceeded to withdraw from the cheetah’s vicinity, giving the individual enough space to reunite with her siblings.

Although slightly wobbly at first, the cub was back on her feet in no time and chirping at full volume, calling for her siblings to return. To the many that were hearing a cheetah’s call for the first time, this sound came as quite a surprise. Unlike other large cats, cheetahs do not contain a special two-piece hyoid bone in their throat and as a result, many of their vocalisations are unlike any other cat.

After a short while, the management team could hear the siblings returning her call. “Look, there one is!” exclaimed one of the volunteers as one of the siblings emerged from the dense veld and proceeded to nuzzle her sibling affectionately - the group was reunited.

Management has since continued to monitor the cubs’ progress on a daily basis and supplement meals where necessary.



CLOCKWISE FROM TOP LEFT
A sassy cub susses out her audience while enjoying her meal

Instead of simply running up to their meal, the cubs have begun to stalk the carcass.

The cubs are able to open the carcass on their own. When hot, they will often drag the carcass off into the shade.

The cubs are highly vigilant and readily evade danger.

Through regular updates from Reserve field guides and tracking by the research department, management has since continued to monitor the cubs’ progress on a daily basis. Due to the size of the cub that was collared it will have to be re-fitted as and when she grows. The youngsters are currently in great shape and managing exceptionally well on their own.

Although they have not linked back up with their mother, the cubs have begun to exhibit some interesting behaviour. "When presented with a carcass", says Carmen Waremenhove, Research Coordinator, "instead of simply rushing to their meal, the cubs first stalk and attack the carcass before feeding. We were initially worried that the cubs might not be able to hunt on their own, but they have definitely shown some promising behaviour, stifling any doubt we may have had before. It's all very exciting".

Cheetah vocalisations are unlike any other cat.

Click here to listen to a "chirping" cheetah".

The research team feed the cubs an impala carcass approximately once every five days. They have not diversified the meat selection in hopes that the cubs grow accustomed to impala meat and its physique, and select for this particular species once they begin to hunt on their own. The cubs have already been sighted stalking and chasing young birds, but it would appear that they still have a long way to go before they become successful hunters.

UNTIL NEXT TIME...