South African
NATIONAL PARKS

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South African National Parks Annual Report **2019/20**

Veterinary Wildlife Services

Rhino Management

SANParks has made it a priority to manage and stabilise the population of rhino in Kruger National Park. The park has been the epicentre of rhino poaching , with many animals lost from 2008, and thus needs special attention. The picture is changing slightly following interventions by Ranger Services and Scientific Services which have led to a decline in the number of poached animals year on year. Disease has also had a negative impact on both black and white rhino but Veterinary Wildlife Services (VWS) has embarked on an ambitious plan to monitor and clean some animals and move them to rhino strongholds managed by SANParks.

White Rhino Management

When it comes to white rhino management, this has been a very productive year for the Kruger National Park VWS team, with the TB rhino protocol approved by the Directorate on Animal Health. The initial plans were to upgrade the boma facilities so that sixteen animals could be put through quarantine at any one time, enabling the park to clean at least fifty rhino a year. Due to extensive costs, a decision was taken to run four animals through the facility as a trial batch and four white rhino (two bulls and two cows) were captured and placed in the bomas. An additional four staff were appointed to run the facilities. The two cows tested positive during the first testing phase and were released back into the wild. The bulls successfully completed the programme and have been cleared by the Department of Veterinary Services to be moved to a facility of SANParks' choice. Two more females were captured and have thus far tested negative for TB, with VWS awaiting final tests before moving them out of the park.

Black Rhino Management

Rhino poaching remains a major challenge and this year was no exception. On several occasions, the VWS team had to assist with the retrieval of injured rhino and sometimes of their calves. Young healthy calves were transported to the Care for Wild orphanage upon retrieval; the older ones are housed in VWS bomas until they are strong and old enough to be returned to the wild.

In 2019, a black rhino with a severe injury to the shoulder was retrieved and placed in the VWS bomas for treatment. The team worked tirelessly to nurse the injury; however, due to the extensive movements in the shoulder the treatment was not successful and a decision was made to euthanise the animal. The story of "Goose", an injured black rhino, is a positive one; after two years of extensive treatment, her leg injury has improved to an extent that the initial wound has shrunk significantly and she now moves without any wound dressing. Plans are being formulated about the future of this animal as she is at the prime of her reproductive life and can assist significantly to increase the number of future calves.

Clinical Responses

The veterinarians and the capture team are called upon to assist with animal injuries and other issues reported by tourists and guides. Animal snaring has increased very considerably in Kruger National Park, especially along the western boundary. The snares do not discriminate and cause horrific injuries to any animal that they entangle. During the reporting year, the VWS had to immobilise two lions, nine hyena, two wild dogs and five elephants to remove snares. The majority were successfully treated and released back into the wild.

Peace Parks Zinave Animal Donations and Translocation Project

In 2017, the SANParks Board and the Department of Environment, Forestry and Fisheries (DEFF) approved a request from the Mozambican government to supply up to 4000 animals to repopulate the Zinave National Park. Because of its proximity to Mozambique and because there are no disease related limitations, the majority were sourced from Kruger National Park. In 2019, 102 zebra were captured and translocated, bringing to 692 the number of animals moved to Zinave National Park.

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Laboratories and Biological Bank (Biobank)

The Kruger National Park Biobank holds over 80 000 samples from free ranging game collected over many years and is a great asset for the organisation, with the samples used to support research projects by local and international researchers. SANParks is a participant in the National Biobank Network group which is examining ways of creating a national network of biobanks so that samples are more accessible to researchers and to avoid duplication of research work. A generous offer from the West Rand Honorary Rangers enabled Kruger National Park to upgrade the building and install an effective temperature control system. From the Medivet Project and from Stellenbosch University, VWS received generous donations of the following equipment to aid in the clinical treatment of injured animals as well as for conducting laboratory tests:

- Nikon SMZ-445 Microscope
- IMIUTP 350+ Digital Magnetic Stirrer
- Notion Pro Wireless Logging System
- Flameproof cabinet
- Garmin GPS Units (Foretrex 401).

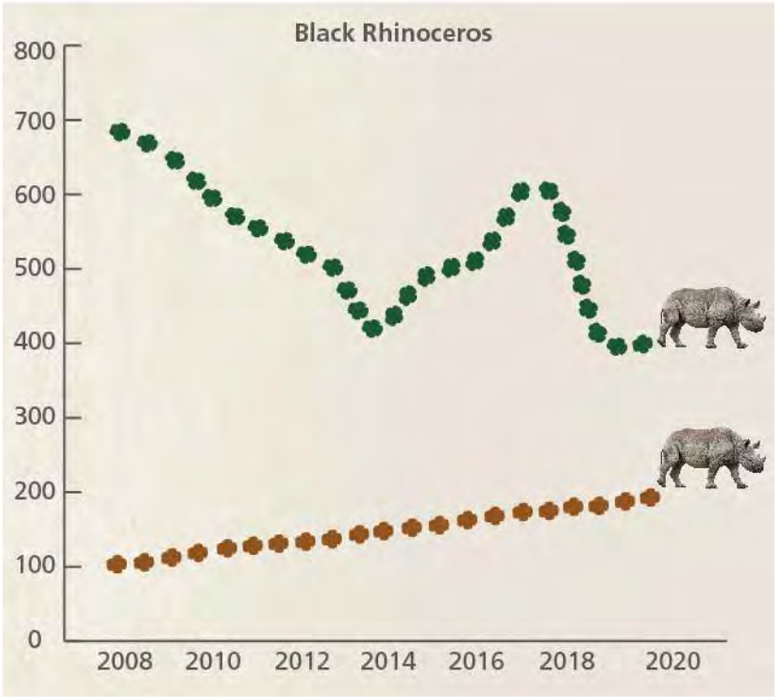
Due to the selfless dedication and commitment of staff and support from donors and management, the year was highly productive.

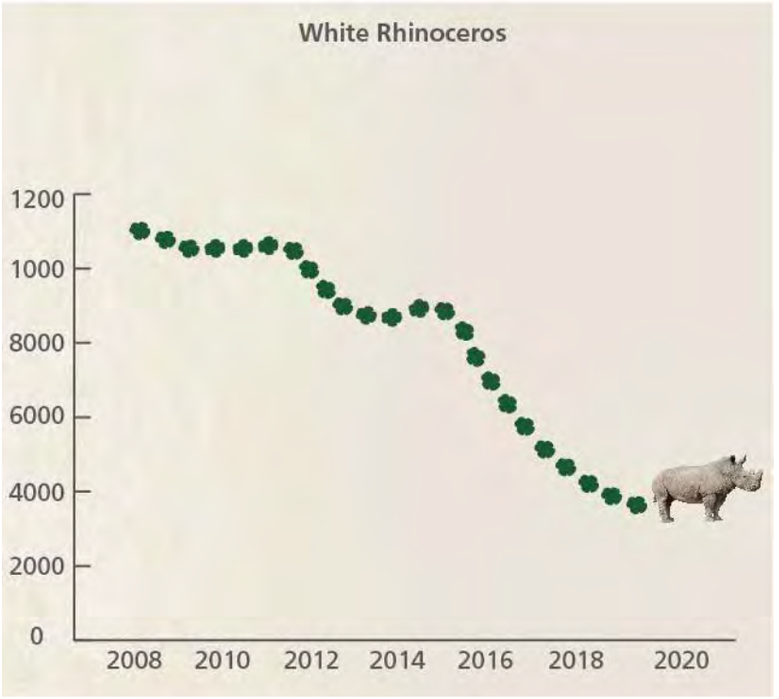
Rhinos

South Africa has adopted an integrated rhino management strategy. Within this context, SANParks has implemented anti-poaching and biological management operations in several national parks and has contributed to the South African Rhino Management Group and the African Rhino Specialist Group, and the review of policies, legislation and practices on matters relating to handling and management, breeding, hunting and trade of rhino.

During the year, rhino monitoring and surveys were completed and provided to the African Rhino Specialist Group for international reporting. SANParks contributes 34.4% and 34.9% respectively of South Africa's black and white rhino populations. Primarily due to poaching in Kruger National Park, one black rhino sub-species, and white rhinos, have declined over the past decade. The 2019 rhino estimates for Kruger National Park stand at 268 black (95% CI: 191-342) and 3,549 white (95% CI: 3 152-3 949) rhinos, with births equalling combined natural and poaching deaths for the first time in five years. This bodes well for future population growth.

Graph 2: Trends in average numbers of south western (brown) and south central (green) black rhinos as well as southern white rhinos since 2009





The establishment of rhino strongholds outside Kruger National Park continued (but is currently limited due to disease quarantine) while anti-poaching initiatives have reduced poaching rates to 7.5% of the rhino population per annum, a constant rate since 2016. As part of SANParks' focus on individual welfare and ensuring population persistence, within Kruger National Park veterinarians recovered orphans of black and white rhino as well as treating an injured black rhino cow. Key biological management initiatives in small national parks included capture and translocation of 10 black rhinos as part of range expansion initiatives and translocation of 10 white rhinos to complete game sales transactions.

Declining rhino numbers prompted SANParks to revise its rhino strategy one year earlier than planned. The strategy aims at establishing robust rhino populations while meeting stakeholder expectations. A key component of rhino management is to use the best available information and understanding to inform decisions. Several research projects on rhino dynamics, spatial use, veterinary procedures and disease risks were the focus during the reporting year and provided new insights. These include protection of rhino cows to maintain the breeding population; diverting poachers away from breeding hotspots by translocating young males; and dehorning in some breeding hotspots.

Climate change preparedness

Consideration of SANParks' potential contribution to climate change mitigation led to expansion of the existing Draft Adaptation Plan into SANParks' Draft Climate Change Preparedness Strategy. This year saw an extension of the carbon footprint assessment to include all national parks, suggesting that priority areas for SANParks' mitigation include energy supply and air travel. SANParks' potential role in awareness raising and education about reducing emissions also emerges as a priority.

During 2019, climate change was incorporated explicitly into park management plan updates, including those of Agulhas and Garden Route National parks. These increasingly recognize impacts beyond biodiversity, including visitor and staff safety, income generation, infrastructure, cultural heritage and neighbouring communities. Park-level assessments of climate change vulnerability carried out through consultation with park managers, and desk-based analyses carried out by the GEF-funded Spatial Planning for Area Conservation in Response to Climate Change, informs the approaches. The Global Environmental Fund project produced maps informing future conservation priorities under climate change, assisting with both spatial and on-the-ground conservation planning. In collaboration with the Rockies Institute, SANParks applied adaptation planning with human communities living in and around Richtersveld National Park, with several actions implemented.

Conservation Services scientists led the climate change components of the National Biodiversity Assessment (2019) and contributed to global climate change science through advisory groups, publications and symposia. Vital ongoing monitoring of climatic conditions and their biodiversity impacts continues, and media requests for examples of climate change impacted species, systems and people escalate. Key challenges include expansion of climate change considerations into all aspects of SANParks' operations and building within-park capacity for climate change adaptation and disaster risk reduction.

Animal and Disease Monitoring and Management

Wildlife Management and Support

Veterinary Wildlife Services plays a crucial role in the management and restoration of wildlife populations in national parks by effecting translocations and monitoring released individuals. The aims of translocation projects include high post-release survival, adaptation, breeding and recruitment of translocated animals with an increase in population size. A number of factors can influence the outcomes of translocation projects including planning and implementation by an experienced multidisciplinary team; biological and ecological knowledge of the translocated species coupled with appropriate husbandry and release techniques; management of direct and indirect stress on translocated individuals; and appropriate selection, capture, handling, welfare and management of individuals, including releasing animals in good body condition and into optimal habitat. Veterinary Wildlife Services also engaged in varied wildlife management, support, animal welfare and research functions throughout the year.

Black rhino Range Expansion Programme

In 2019/20, in collaboration with the World Wildlife Fund: Black Rhino Range Expansion Program and the Eastern Cape Parks and Tourism Agency, 20 black rhinos Diceros bicornis minor were translocated from Great Fish River Nature Reserve to a new destination, establishing an additional breeding founder population. In addition, the sale of 10 black rhino from Addo Elephant National Park contributed to range expansion of the critically endangered south-western black rhino subspecies D.b.bicornis in accordance with the Biodiversity Management Plan for black rhinos. Further, in collaboration with Rhino Impact Investment and Wilderness Foundation Africa, since the start of 2019 monitoring of black rhino populations in national parks outside Kruger National Park was enhanced with the ear notching and tissue sampling of 55 black rhinos. Some of these rhino were also dehorned as an anti-poaching measure.

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Predator Management

Managing lions in smaller national parks is supported by contracepting and collaring individuals, recovering those that leave parks and relocating surplus animals to other areas including private Lion Management Forum registered properties. Over the past year, 7 lions were relocated from Addo Elephant, 3 from Mountain Zebra and a pride of 8 individuals from Karoo National Parks. Two males were vasectomised in Karoo National Park, allowing for retention of testosterone-dependent dominance behaviour and mane growth but rendering them sterile. Three lions in Mountain Zebra, Addo Elephant and Karoo National Parks were fitted with telemetry collars to enable tracking to monitor behavioural and movement-related activities. In the Kgalagadi Transfrontier Park, 4 lions forming the focus of lion energy expenditure research had to be recovered from Botswana.

Treatment and progress of injured black rhino cow in Kruger National Park

In September 2018, an injured black rhino cow was captured in central Kruger National Park and taken to the boma facilities. Her right back foot was severely swollen and deformed; all the bones were broken and infected and the sole of the foot had sloughed off exposing the sensitive tissue underneath. A poacher's bullet was probably the original cause and the foot had been like this for some months. The foot was cleaned and protected with a fiberglass cast; a process which was to be repeated monthly by the SANParks veterinarians and capture team with the assistance of Dr Johan Marias and sponsorship from Saving the Survivors. Antibiotics were administered orally, 70 tablets a day, for seven months to control the bone infection while the foot sole slowly grew back, thickened and hardened. By March 2020, the cast was no longer required and the rhino was able to start walking on the foot. As an adult breeding female, this black rhino is a valuable individual in the conservation of the species and the efforts of the VWS team over the past eighteen months have given her an opportunity to have and raise calves for many more years.

SANParks' biobank upgrades

The SANParks biobank, with its two facilities in Kruger National Park and at SANParks' Kimberley office and boma facility, is unique in that it is the only long-term repository in South Africa, and possibly Africa, for blood and tissue samples from free-ranging African wildlife. The biobank facility in Kruger National Park currently holds approximately 80 000 blood-based samples in freezers and approximately 8 000 tissue, hair, faecal and histopathology samples collected over the past 15 years. Maintaining the biological integrity of these samples is essential to ensure robust results when they are used for research projects.

In 2019, the West Rand SANParks Honorary Rangers donated funds, time and expertise to upgrade the biobank building in Skukuza. This entailed covering walls and a false ceiling with insulation panelling, modifying doors to prevent escape of cool air and installing two large air conditioners to ensure that the interior of the building remains at 22˚C throughout the heat of summer. The six -80˚C sample freezers are now less likely to fail. The modified building has space for a further six freezers which will provide storage space well into the future.

The biobank facility in Kimberley was formally set up in 2012, storing samples (blood, hair and tissue) of over 4 500 animals collected from 28 different species over the past 20 years. In 2019, the storage capacity of the single -80˚C freezer had been reached whereupon the West Rand Honorary Rangers sponsored a second unit which arrived in March 2020.

Disease monitoring and management

Several incidences of diseases occurred in various parks, including African Horse Sickness in Addo Elephant National Park. SANParks vaccinated horses in Addo Elephant and Golden Gate Highlands National Parks. When a buffalo bull tested positive for bovine tuberculosis (bTB), the Department of Agriculture placed Mokala National Park under quarantine. However, this was a false positive and quarantine was lifted in February. A black rhino cow placed in the Addo Elephant National Park bomas as part of preparations for translocation to Sanbona Nature Reserve contracted babesiosis, a disease caused by ticks. SANParks continues to monitor the situation and hopes that the cow will recover in time for the move to Sanbona.

Quarantine and testing for bovine tuberculosis of rhinoceros in Kruger National Park.

Kruger National Park was placed under quarantine for bTB in December 2016; this prohibited the movement of all mammals, including rhino, out of the park. To allow for future translocation of rhinos, SANParks veterinarians developed a management plan for the quarantine and testing of rhino for bTB which was accepted in principle by the Department of Agriculture, Land Reform and Rural Development (DALRRD) on the understanding that there would be an initial testing phase to allow for evaluation and any required modifications.

The testing phase was implemented during the last quarter of 2019. Two white rhino cohorts of two animals each (2 x male, 2 x female) were captured and put into bomas during late October. They were immobilised and blood collected on three occasions at six week intervals. Blood samples were processed by SANParks' veterinary technologists in the Skukuza State Veterinary laboratories and plasma samples were sent for further analysis to the Research Chair in Animal TB at Stellenbosch University and the Department of Tropical Diseases, Onderstepoort Veterinary Faculty. In collaboration with SANParks, these two academic institutions have developed rhino-specific assays for diagnosing bTB. One rhino in the female cohort tested positive for the disease and this group was released. The two males tested negative on all three tests, resulting in a submission by the Skukuza State Veterinarians to the Director of Animal Health, DALRRD, for a Health Certificate to allow the translocation of these animals out of Kruger National Park. The two males will be moved to Marakele National Park, the first rhinos to leave Kruger National Park in over three years, a move that will support regional rhino conservation.

Corridor disease in Marakele National Park

In 2007, Marakele National Park was placed under quarantine as a buffalo tested positive for Corridor Disease, a state-controlled disease which is fatal in domestic cattle. This resulted in the removal of all buffalo from the park in 2008/09 during which time 91 animals were relocated to iSimangaliso Wetland Park in KwaZulu-Natal. Marakele National Park was free of buffalo for 18 months, after which the quarantine was lifted. It was however important to re-establish buffalo back into the park as they are an important ecological driver, a food source for large predators and a significant tourist attraction. Thus, in 2011, 15 bulls were reintroduced as sentinels and monitored for disease for two years. Once it had been confirmed the disease was no longer present, a breeding population of "disease-free" buffalo was re-established in the park. By the end of 2016, 108 buffalo had been reintroduced to the park. Since 2018, a further 60 buffalo were moved to Marakele with the last 17 moved during 2019 consisting of animals that had survived the 2018 fires in the Graspan section of Mokala National Park. These animals had suffered burn wounds and been treated intensively by SANParks veterinary staff at the bomas in Kimberley.

Extractive natural resource use as a conservation tool in National Parks

As a principle of effective conservation management, SANParks endorses responsible resource use when applied according to the pillars of sustainability, namely maintenance of ecosystem integrity, economic viability and social relevance/acceptability. Guided by the SANParks Resource Use Policy of 2019, a wide variety of renewable and non-renewable resources are therefore harvested across parks annually. Each year, the amount, type and benefits associated with the various resource use projects and programmes taking place in national parks are summarised in a resource use report that is submitted to the Minister. A selection of topical and interesting examples from land and sea are presented below.

Cover of 2018/2019 resource use report to the Minister

Terrestrial resource use across parks

Contributions towards the wildlife economy: The Department of Environment, Forestry and Fisheries' Wildlife Economy Programme aims to grow the wildlife economy in the context of fair access and equitable benefit sharing. Through donations and loans to emerging farmer and community groups, SANParks is a key implementation and delivery agent of the programme. During the reporting year, 1 152 animals were captured and translocated, 28.5% of going to emerging game farmers and 13% to local communities. The cost of Wildlife Economy Window 1 is estimated at R1 358 million.

Lethal off-takes and live animal sales in smaller parks: In some smaller national parks where there is not a full complement of carnivores and where translocations are too costly, excess animals are sometimes removed and the meat used internally or by external operators. This past year, 3 927 animals were harvested from parks (excluding Kruger National Park), generating R 4 693 538 in revenue for the organisation with downstream benefits accruing to three private operators.

In addition to donations, loans and off-takes, SANParks also sells excess game to generate revenue. During the 2019/2020 financial year, 530 head of game harvested from parks (excluding Kruger) were sold to private game farmers, generating R 11 695 321.

Animal off-takes from Kruger National Park: During the reporting year, 91 zebra donated to Zinave National Park in Mozambique as part of the Zinave wildlife restocking programme and 3 white rhino orphan calves were taken to a local rehabilitation centre. As part of routine animal off-takes for sustainable use, 242 impala and 90 buffalo were harvested from Kruger National Park with an additional 7 elephant and 56 warthog problem animal removals. A donation of 27 problem animal hippo carcasses was received from a neighbouring reserve for processing through Skukuza's meat processing plant, resulting in protein that was made available for school donations, community functions, special events aimed at rhino poaching awareness as well as internal events and sales. Protein continues to be well received by recipient groups and contributes positively to local relationship building. However, challenges of demand versus supply require innovative solutions based on open and transparent communication and engagement between recipient groups and park staff. Collective decision-making (deciding together how to share benefits and with whom) contributes towards shared responsibility, leading to more robust outcomes.