



Focus on Rhino

Monitoring black rhinoceros
in South African National Parks
2002 - 2006



David Shepherd
Wildlife Foundation



South African
NATIONAL PARKS

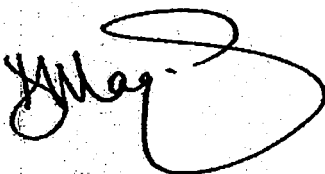


Foreword

Dedicated funding and focused monitoring of single species often raises concerns of parochialism. Some naturalists argue that the effort should rather be spread over entire ecosystems. However, in South Africa where the re-building of wildlife populations has often started with the translocation of single species, akin to bringing them into the ark one by one, it is imperative to focus efforts on certain species in order to account for success or failure. Viewed from this perspective, focused monitoring of the black rhinoceros is not only justified, it is the wise and right thing to do. It is an expensive investment strategy, but we owe it to the species and must do it for posterity. In the case of the black rhinoceros, we invest not for economic principles, but because our minds follow our hearts. Rebuilding the black rhinoceros population of South Africa, and other members of the endangered mega fauna has proved to be a huge challenge to conservationists. Success is at a snail's pace, but giving up is not in the vocabulary.

Having rebuilt thriving populations of other mega fauna like elephants and white rhinoceros, we are certain that it can also be done for the black rhinoceros. We are cracking the code, and our knowledge of managing this enigmatic animal has improved over time, thanks to knowledge gained from focused monitoring efforts. We now know that breeding populations have to be managed by translocation before they reach ecological carrying capacity so that adult females can optimise births. We also know that the ideal founder group with a good chance of success should have sufficient animals with the right age and sex structures.

We have produced this publication because we have a good story to tell. I have read with glowing eyes the monthly monitoring reports from Lucky and Sue, as we fondly call them. My heart knows the warmth of reading about sightings of animals in good body condition, the joy of new born calves, and the success of calves surviving to adulthood. My heart also knows the pain of losing a calf, of being unable to help ailing animals, and the extreme pain of hearing about a rhino death. All these experiences have encouraged us to produce this publication, to share our involvement, trials and successes; and to encourage more support for the conservation of this important species.



Hector Magome, PhD
Executive Director: Conservation Services, SANParks



Contact details:
South African National Parks
P O Box 787, PRETORIA,
South Africa, 0001
Telephone : +27-12-426-5000
Fax : +27-12-343-2832
website: www.sanparks.org

Project

Approved SANParks Research Project No.: 2006-02-02AHMA

Black Rhinoceros ecotype *Diceros bicornis bicornis* meta-population in SANParks



“ Our dedication to black rhinos was inspired by Shibula – a very special black rhino. Her return to Africa from Lisbon Zoo, adapting to the wild and giving birth to six calves is an all too rare good news conservation story ”

Sue Downie
Lucky Mavrandonis
March 2007



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Executive Summary

Purpose of this Report

This report documents five years of work in SANParks and shares our experiences with a wide spectrum of readers. It should appeal to those who care about rhinos, as well as provide new information for those involved in rhino conservation and management. We also hope that those who do not yet appreciate this truly magnificent animal will find this publication an inspiration to help ensure the survival of rhinos.

Shibula

Our experience with Shibula prompted our desire to learn more about the critically endangered black rhino, and contribute to ensuring its survival.

- Shibula was brought back from Lisbon Zoo in 1991, and our love of black rhinos began. We have followed her progress for the past 15 years – from a tame zoo animal to a wild rhino.
- Shibula has given birth to six calves. Four of her calves have survived. The first born female, Dundi is at Mountain Zebra National Park (Mountain Zebra), the other two females Tria and the youngest Dusty are with Shibula in Darlington area of Addo Elephant National Park (Addo). The male Kleinaldec, her fourth calf was moved to the Kuzuko Concession in 2005. Tria has already had a calf of her own. Dundi - see page 31.
- Shibula's return to the wild has truly been successful, and we look forward to many more calves, as her story continues.

Monitoring

- The monitoring project, which basically involves locating, identifying and observing individual animals on a regular basis, continues to grow. Techniques have evolved and become more sophisticated together with the equipment such as radio-transmitter implants being used.
- Data sheets are kept on all the rhino. Observations on behaviour, distribution, the birth of calves, deaths and feeding preferences are recorded. The physical condition and health of animals are assessed, and map plots record their positions and movements over time.
- During over 400 hours of observations, we have endeavoured to remain undetected by the rhinos so as not to disturb them. This has resulted in us observing behaviour that has not been documented before.
- Our observations show that black rhino are social, caring and intelligent creatures that do not fit the stereotyped solitary, aggressive animals they are reputed to be. Much as with elephants, family and social relationships are important in the life of black rhino.

Future

- As the rhino populations expand, there is a clear need to cultivate dedicated and trained on-site field rangers to ensure more frequent monitoring.
- One cannot be complacent about the security of black rhino, even in national parks, as the recently exposed activities of poaching syndicates indicate.
- Translocated animals should be intensively monitored, ideally using radio transmitters implanted in their horns, and other methods devised to monitor young and vulnerable animals.
- The successful release of orphans into a wild population can be assisted by following the example of two hand-reared black rhino raised and released at Addo.
- Black rhino conservation in national parks could be enhanced by prioritising the acquisition of good black rhino habitat, particularly at Mountain Zebra and acquiring more animals of the *Diceros bicornis bicornis* subspecies from the successfully managed populations in Namibia.

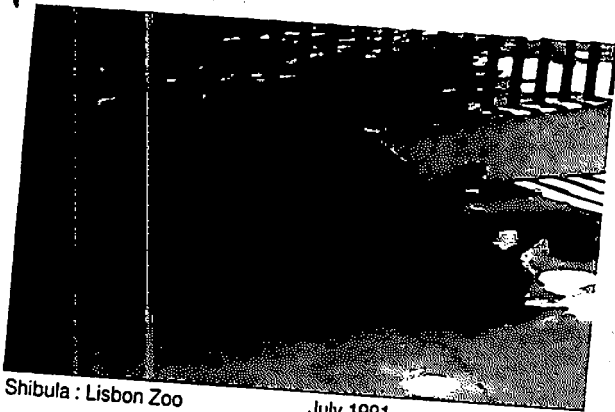
On-going Project

After five years and 53 monitoring trips, we realize how much more work is still needed to understand and successfully build up black rhino numbers in our national parks. We remain fully committed to this project and the black rhino.

Background

Why did two "retired" industrial pharmacists become focused on rhinos? Our interest began in 1991, with a project to move a young black rhino cow, of the rare sub-species *Diceros bicornis bicornis*, from the Lisbon Zoo in Portugal to Augrabies Falls National Park in South Africa. Funds for the cost of the translocation were raised by our pharmaceutical company Lagamed in a combined effort with David Shepherd and the David Shepherd Wildlife Foundation (DSWF). The project was initiated by Dr Anthony Hall-Martin, then Director: Conservation Services at SANParks because Shibula, (which means "wild lady") was alone in the zoo. She had been caught in the wild in Namibia and taken to Lisbon to breed with one of the last known black rhino from Angola. Sadly, the bull she was intended to mate with died soon after her arrival in Lisbon. Shibula could make a much better contribution to conservation by joining the small founder population of black rhino at Augrabies Falls National Park.

Shibula's journey back to Africa was filmed by SABC's environmental programme 50/50, but this was just the beginning of her new life in the wild. Shibula had profoundly touched our lives, and we regularly visited Augrabies to see her. This was most rewarding as for some time after her release, Shibula would approach vehicles as she was accustomed to close contact with humans.



Shibula : Lisbon Zoo

July 1991



Sue meets Shibula in Lisbon Zoo

July 1991



Shibula released at Augrabies, but still tame.

September 1992

Shibula's rehabilitation to the wild was a world first - no black rhino had ever been taken from a zoo and reintegrated into a wild population.

In September 1994 her first calf was born, a female named Dundagos, which means "we have achieved" in Nama. She is known as Dundi for short. This was followed by a male calf, Agab ("first born male") in December 1996. Even though she had been living in the wild for several years Shibula brought both calves close to us on occasions, as if to introduce her offspring. We felt greatly privileged.

By 2000, almost ten years after Shibula's successful return to Africa she and the other Augrabies black rhino had been moved to the Darlington section of the Addo Elephant National Park. We wanted to spend two or three months following her and her calves as we were researching an article for the DSWF magazine *Wildlife Matters* and needed more information and photographs.

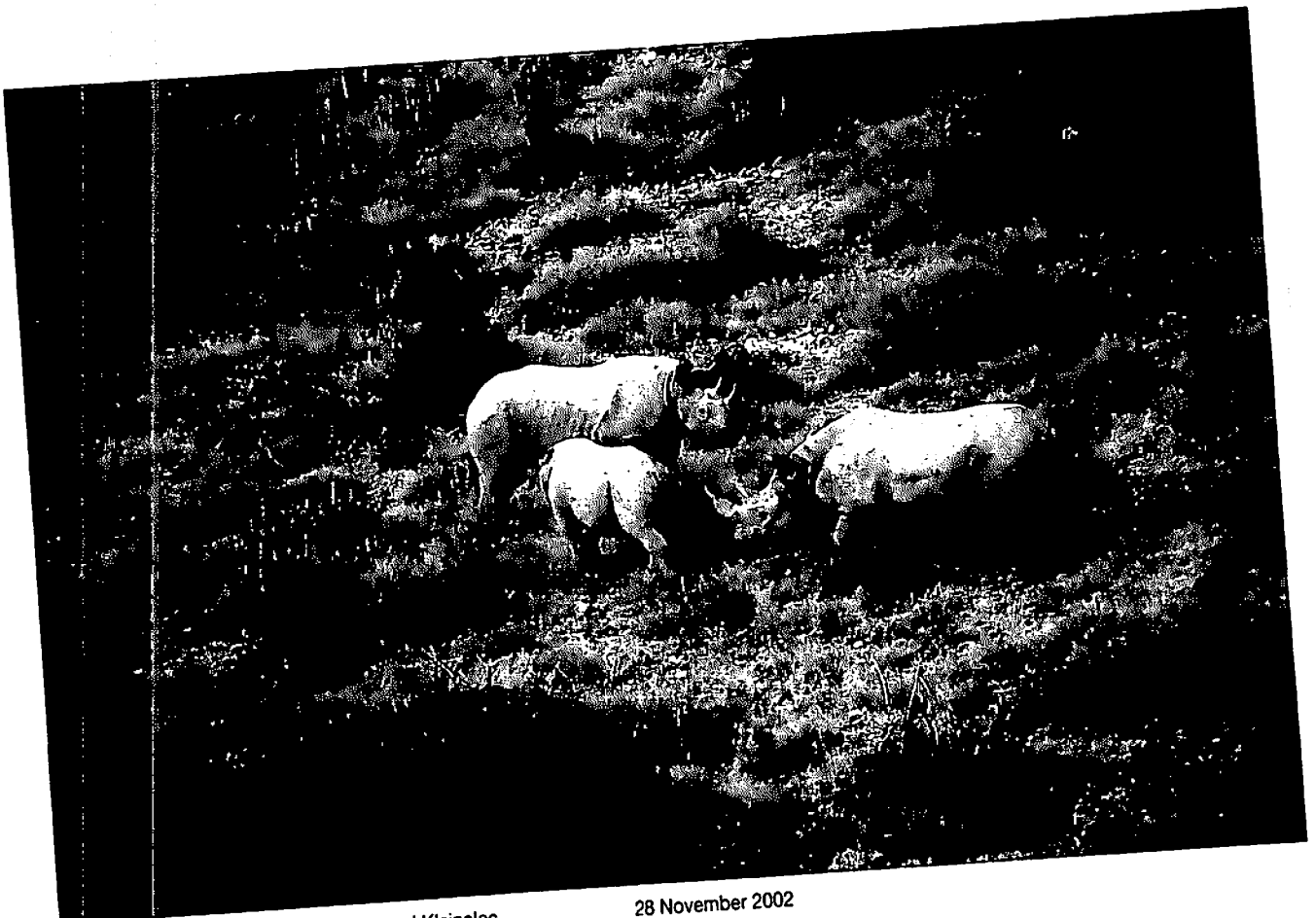
Our initial objectives quickly grew ambitious as it was more useful to monitor all the black rhino in the population, rather than just a few. Our proposal was approved and funding obtained from the DSWF and WildAid to monitor all the rhino in the Darlington section of Addo. In 2002 we expanded our project to include the new founder population introduced to Mountain Zebra National Park (MZNP).



Shibula and Dundi (6 months old)

March 1995

Monitoring black rhino was a huge challenge, very different from the pharmaceutical industry, but experience over the years in developing and running a successful business would help, as in any successful venture one has to assess and tackle the challenges. It was important to learn as much as we could, but we had been cautioned that we would mainly see spoor and dung and not too many rhino!



Shibula free and wild with calves Tria and Kleinalec.

28 November 2002

Rhino Family Trees

Shibula ♀
 Born 1984, Etosha, Namibia
 Moved to Darlington February 1999

<p>1. Dundi ♀ Born: September 1994 Moved to MZNP March 2002</p>	<p>2. Agab ♂ Born: December 1996 Died: January 2004</p>	<p>3. Tria ♀ Born: June 1999</p>	<p>4. Kleinallec ♂ Born: April 2001 Moved to Kuzuko March 2005</p>	<p>5. Noors ♂ Born: October 2003 Died: November 2005</p>	<p>6. Dusty ♀ Born: October 2006</p>
		<p>First Calf ♂ Born: November 2006</p>			

Blom ♀
 Born: 1978 Etosha, Namibia
 Moved to Darlington, February 1999
 Died: April 2006

<p>6. Khora ♀ Born: December 1995 Moved to Darlington February 1999</p>	<p>7. Quattro ♀ Born: September 1999</p>	<p>8. Darling ♀ Born: October 2001</p>	<p>9. Kara ♀ Born: February 2003</p>	<p>10. Guy ♂ Born: October 2004 Died: April 2006</p>	<p>11. Stillborn ♀ Aborted April 2006</p>
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<p>1. Ntombi ♀ Born: May 2003</p>	<p>2. Nomvula ♀ Born: February 2005</p>
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Sasha ♀
 Born: October 1998, Etosha, Namibia
 Moved to Darlington March 2005

<p>1. Thandi ♀ Born: May 2003</p>	<p>2. Nonny ♀ Born: July 2005</p>
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Helen ♀
 Born: March 2000, Etosha, Namibia
 Moved to Darlington March 2005

1. Tula ♀
 Born: March 2006

Faru ♀
 Born: January 1980, Etosha, Namibia
 Moved to MZNP, March 2002

<p>Alfred ♂ Born March 2000</p>	<p>Kamaia ♀ Born: December 2004 Died: July 2005</p>
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Ubhejane ♀
 Born: January 1977, Etosha, Namibia
 Moved to Vaalbos, August 1987

<p>Rathie ♀ Born: November 1998</p>	<p>Leanne ♀ Born: December 2004 Died: September 2006</p>	<p>Tshukudu ♂ Born: March 2006</p>
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First Calf ?
 Born: December 2006

Nkombe ♀
 Born: January 1983, Etosha, Namibia
 Moved to Vaalbos, August 1987

<p>Tiffany ♀ Born: November 2002</p>	<p>Jabula ♂ Born: March 2005</p>
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♀ Female ♂ Male



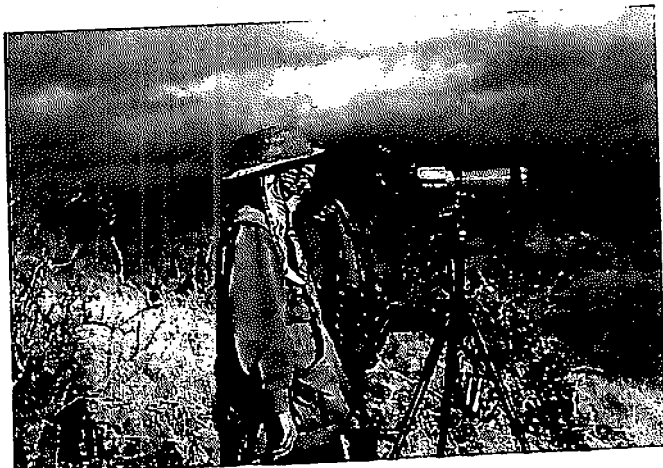
Rhino Monitoring

A Typical Day Monitoring Black Rhino

The planning for a trip starts at our home Valley Farm with a detailed seven-day weather forecast, giving minimum and maximum temperatures, wind direction, rain forecast and sun and moon rise and set, for the area in which we plan to work

The day starts at least an hour before sunrise (4:00 am in summer). Black rhino are most active early morning, late afternoon and during the night. The aim is to be at a vantage point before the sun rises, from where we can scan the surroundings with binoculars and a spotting scope looking for rhinos. At this time, it is still and quiet, one can hear branches being broken and rhino are more likely to be out browsing in the open.

In optimal early morning weather conditions, using a scope, it is possible to positively identify rhinos at a distance of up to 1.5 km. If the rhino presents itself so that the rising sun outlines the ear, or casts a shadow of the ear on the body, it can be identified using the notches before heat haze distorts the image.



Field ranger Johnson April & Sue



Loaded with equipment

Wind direction is very important, even though it may be still, a gentle breeze can carry our scent to the rhino. We use a small baby powder plastic bottle filled with finely sifted ash, which is visible and works very well no matter how gentle the breeze.

Once a rhino is spotted and wind direction checked, we decide how best to approach closer, preferably without the rhino being aware of our presence. This usually entails walking, hiking and climbing up to an appropriate vantage point and taking all our equipment with us. At a minimum we take the scope, two tripods and telemetry equipment when appropriate. The high vantage point gives a wide view over a large area and the best opportunity to spot any rhino moving around.

Early morning temperatures in summer are already above 20°C sometimes increasing to 40°C in the middle of the day. In winter, conditions are less challenging, but morning temperatures before sunrise have been as low as -3°C. Several layers of clothing are normally sufficient to cope with the discomfort until it warms up. Occasionally one experiences mid-summer cold fronts that bring in low temperatures and rain forcing us to abandon the observation until it clears up.

Once the rhino is seen, the time is recorded and the first priority is to identify it with the scope or binoculars and preferably confirmed by a second opinion. After identification, its condition is assessed, a score agreed upon and recorded. If it can be sexed it is useful to confirm the identification. Thereafter, video and photographs are taken to update the data sheets, on condition, new markings, horn growth etc.

Temperature, wind direction and wind speed are recorded, as well as distance from the rhino. Once all the figures are noted, the behaviour and interactions can be studied. At the end of the observation the time is recorded again and whether the human presence was detected or not. It is essential that all this basic information is recorded in writing immediately, as memory of key specific facts fades quickly particularly over a number of sightings.

As one never knows what may happen during the day, we take sufficient food and drink to keep our energy levels up and avoid dehydration in the heat.

There is still just enough light to observe rhinos at least for 30 minutes after sunset. This means a long, hard day starting at 04h00 and returning at 20h00, then still having to write up more detailed notes. A typical day can vary from 12 to 16 hours and despite long hours, huge distances and sometimes difficult conditions, what we have observed and learnt about black rhino, makes it well worth the effort.

An average day includes a minimum of driving 100 km and three to five km on foot. The heat and the wind are the biggest difficulties to cope with, and wind speeds of 40 – 50 kph are often measured. It is almost impossible to hold binoculars steady in such conditions, let alone see anything with a scope!

If rhinos are not seen from the vantage point, it then requires searching for spoor, dung or browsing signs by vehicle and on foot. A great deal has been learnt from the trackers and

field rangers we have worked with, and we are now reasonably competent to track rhinos alone. It always amazes us that such huge heavy animals very often leave only smudges, not clear spoor, move silently, can stand motionless for long periods, can cover long distances very quickly just walking, become instantly alert and can reach top speed in seconds.

We soon learnt it was essential to get to know the area, waterholes, boundary fences, rivers, gullies, kloofs and hills and to regularly check the waterholes for spoor and ensure water supply, as rhino prefer to drink at least once a day. Rhinos are creatures of habit and this can be used to locate them.

A concise report on each monitoring trip is prepared and circulated as soon as possible to all involved at SANParks and the sponsors DSWF.

Naming of Rhino

For many years the monitoring of black rhino in South African national parks has been simplified by giving the animals individual names. This makes it easier to communicate with field staff about a particular animal as the name often has a local connotation, or reflects a characteristic of the animal itself.

Ear Notches and Identification

Ear notches are the simplest way to identify individual black rhino. For ease of reference the ear notch patterns of all animals in the population are grouped together on a chart, a copy of which is always kept available during every monitoring trip. It is more accurate to first see the notches with the scope and then to confirm identity by cross referencing to the ear notch chart.

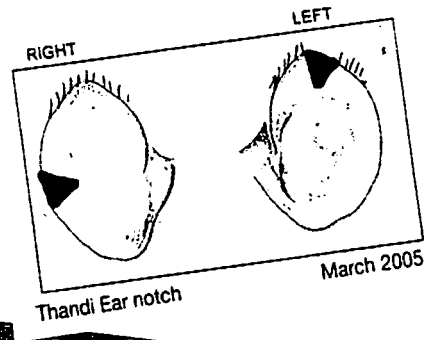
Ear notching is done on sub-adults at roughly two years of age. The rhino to be notched is darted from a helicopter, and a combination of V-shaped notches, about four cm deep are cut into the ears according to a master list, making sure not to duplicate notches.

Positive identification of a rhino is done by trying to see the ear notches, horn shape and length, size of the animal, cow-calf combinations and sex of the animal. It is very easy to make assumptions and it is amazing how wrong one can be. The information gathered must be accurate therefore if the ear notches cannot be seen and the identity has to be assumed, reasons must be given for the assumption. After identification the rhino's body condition can be assessed.



Notching Kara

23 May 2005



Thandi Ear notch

March 2005



Thandi's Ear notches

August 2006



Notching Darling's ears.

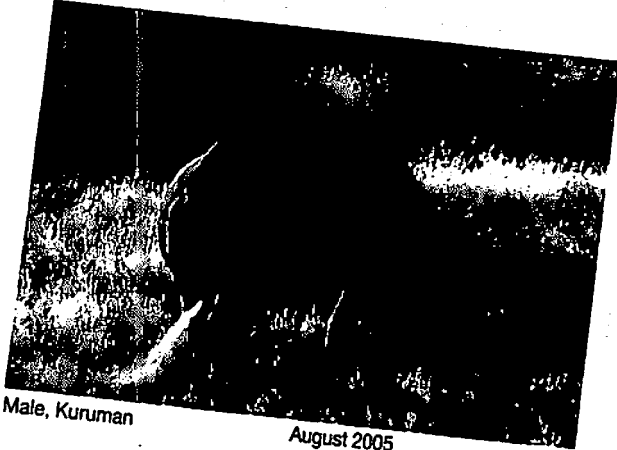
08 October 2003

Radio Telemetry

It is preferable when rhino are moved to a new area to implant transmitters into the horn. This allows for relatively easy tracking from a vehicle or on the ground, and makes identification of the animal easier. However, the batteries only last about 18 months if set on a duty cycle i.e. on for 12 hours a day.



Checking transmitter signals



Male, Kuruman

August 2005

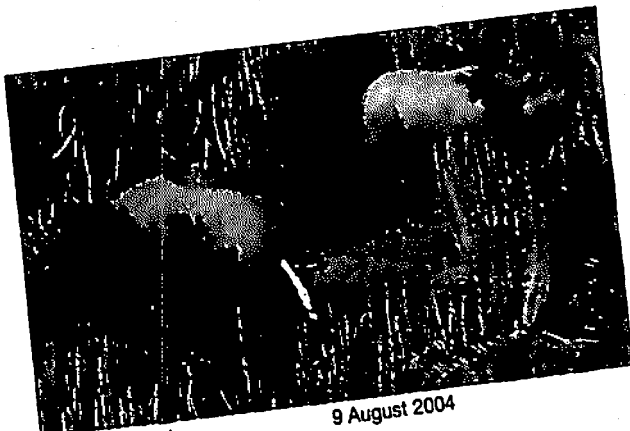
Sexing

If the ear notches are not clearly visible, it helps to sex the animal; this eliminates possibilities and assists in assuming the identity of the rhino. Sexing can be done in two ways:

Urination : Males nearly always spray urine, and it is seen relatively low between the legs, while females urinate from under the tail.

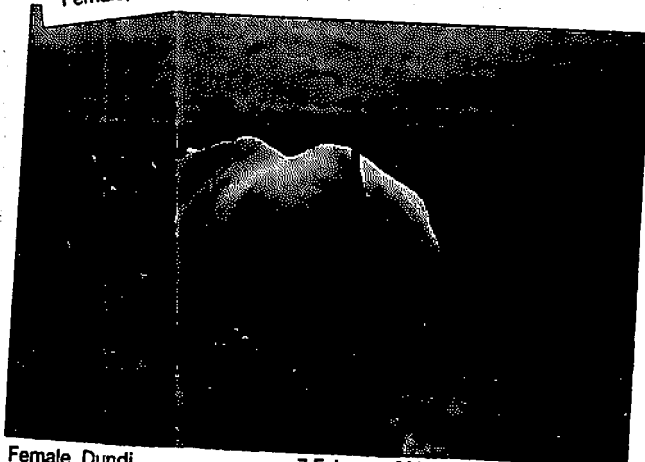
Genitalia : Provided one is viewing from the back and the tail is moving it is straight forward.

It is difficult to sex newborn calves in the wild, because of the distance and obviously it is a very small area to focus on.



Female, Shibula.

9 August 2004



Female, Dundi

7 February 2003

I. Sexing Methods

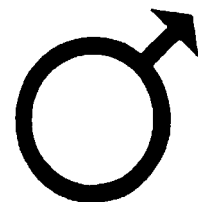
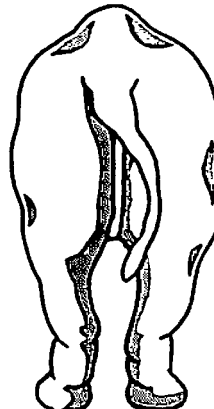
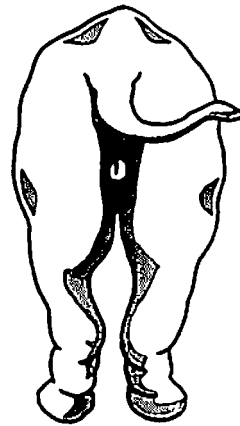


Diagram: Sexing Rhino
Courtesy of the
African Rhino Specialist Group.

Condition

[See Appendix B for Standard Condition Chart]

The condition is based on a body index system of assessing different parts of the rhino's body (neck, shoulder, spine, rump etc.) - five out of five is perfect condition. This condition assessment is subjective and different observers will assess differently, but it is important when reviewing an animal's history. Loss of condition could be a warning of a problem with the individual or the population. Photographs do not always give an accurate assessment, as shown by the photographs of Dundi taken about 1 minute apart, with each one indicating different condition.

In January 2004, we were convinced that Dundi was due to give birth soon, but as no calf arrived, it was concluded that she was just in very good condition.

The condition of individual animals, especially cows, can vary according to the seasonal availability and quality of food, and we have found that lactating and the demands of a new calf often have a significant impact on their condition.

Map Plots

The position of every rhino observation is plotted on a map for each trip. (See Appendix A) This has helped to build up a picture of where they spend most of their time through summer and winter. It is also helpful in deciding where to start looking for rhino on each trip, although we have often been surprised. Positions are plotted by means of a GPS reading of our position, together with a compass direction of the rhino, and finally the distance to the rhino using a range finder.

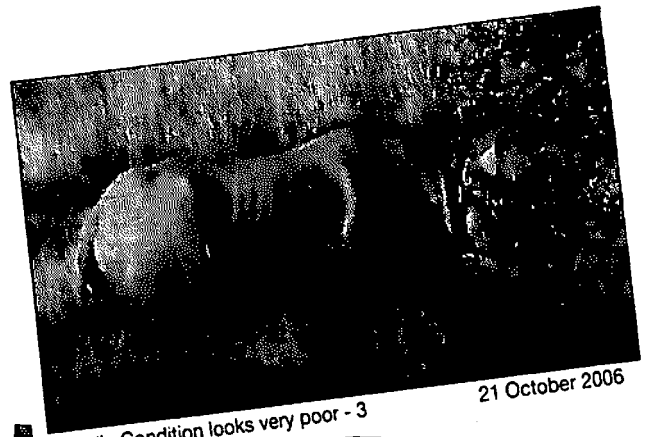
Data Sheets

At the beginning of the rhino monitoring project a data sheet for each rhino was created, which details information such as mother and father (if known), ear notches for identification, a record of all observations, condition history, calving history, inter-calving interval, relocations, map plots and photographs of each observation. (See an example Appendix A)

The design of the data sheet was influenced and assisted with input from Save the Rhino Trust, whose successful black rhino database in Namibia was funded by DSWF.

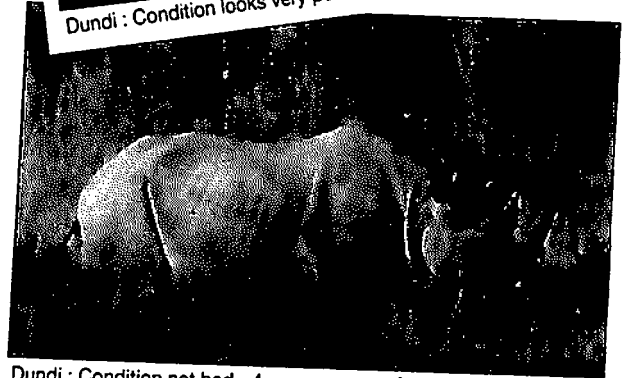
Sighting and Condition Tables

We summarise sightings and condition scores in a table updated after each trip, for easy reference. (See Appendix B).



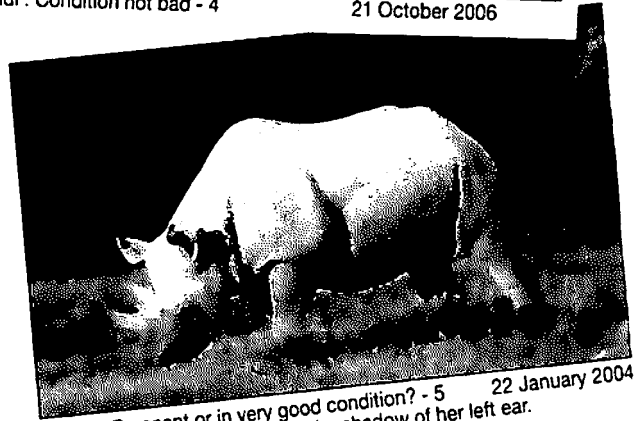
Dundi : Condition looks very poor - 3

21 October 2006



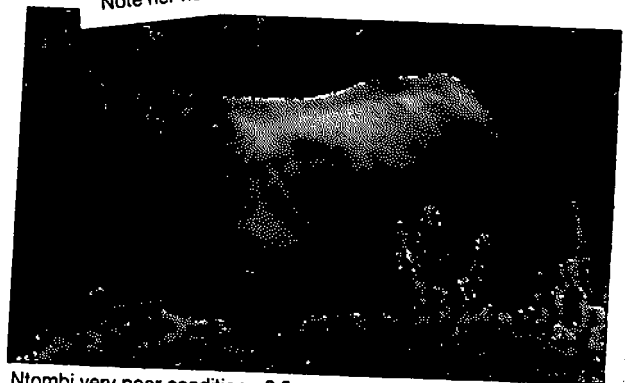
Dundi : Condition not bad - 4

21 October 2006



Dundi : Pregnant or in very good condition? - 5
Note her notches are visible in the shadow of her left ear.

22 January 2004



Ntombi very poor condition - 2.5

7 May 2006



Faru poor condition - 3.5

1 December 2005

Aerial Monitoring

In conjunction with this ground monitoring project, an aerial survey by helicopter is carried out at regular intervals. Although by comparison helicopter observations are very brief and intrusive, as the rhinos are obviously aware of the helicopter, aerial surveys do provide a very quick count of the majority of rhino in an area.

More rhino can be seen in a shorter period from a helicopter, therefore it is an efficient manner of assessing the condition of most of the rhinos. However an

experienced eye is needed to find and identify rhinos from an aerial perspective. Frequent helicopter counts (more than twice a year) could have a seriously negative effect on the rhino - stress, running, danger of injury and separating mother and calf, therefore need to be careful where aerial counts are done and how often.

Aerial monitoring also helps in searching for a specific animal if it has not been seen on the ground for some time and is an opportunity to notch the ears of the two-year-old sub-adults, before they become too independent of their mothers.



Ngara taken from the helicopter. Photo : Anthony Hall-Martin

10 February 2003

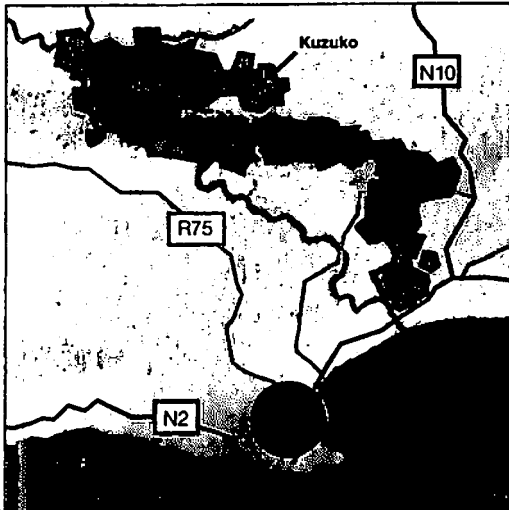
Equipment

Five years ago, the rhino monitoring project was started with a pair of binoculars and a 35 mm camera. The current list of equipment has grown to:

- Zeiss Binoculars 10 x 25
- Kowa Spotting Scope 20 to 60 x - can identify up to a range of 1.5 km.
- Canon 300D with 3 lenses (18 - 55; 100 - 300; Sigma 175 - 500 - digital equivalent to 780mm)
- Canon MVXi video camera with 18x optical zoom.
- Manfrotto Tripods
- Leica Range Finder - records accurately the distance up to 1 000m
- Kestrel weather station (temperature & wind speed)
- Garmin GPS
- Zartek two-way radios
- SANParks radio for security
- R-1000 receiver, 2-element antenna and a whip antenna (very useful to pick up signals when driving).
- Other useful items are a Leatherman tool, a good wheel spanner, a lopper and saw to cut branches
- Night Vision Monocular only has limited usage as it only has a 3x magnification.

DSWF has also donated four pairs of binoculars to the field rangers as it is impossible to do their job adequately without binoculars.

Addo Elephant National Park, Darlington Section



Introduction

In February 1999 the black rhino that had been living in Augrabies Falls National Park were moved to Addo because of safety concerns. The group consisted of two adult cows, Shibula and Blom, and their calves (Agab and Khora respectively) and an adult bull Ngara. They were released into a fenced area at Darlington north of the Zuurberg Mountains.

We started rhino monitoring officially in June 2002, and our first task was to update the ear notch charts, which are still used today, as the only way to positively identify individual rhino.

Blom, the oldest cow at Darlington, was one of the original founder population of the *D.b.bicomis* population in South Africa. This group was translocated from Etosha National Park in Namibia to Augrabies in 1985. She was named Blompot, but this has been abbreviated to Blom. When Shibula was released at Augrabies in December 1991, Blom already had three calves, all females and was well settled. The interactions between Blom and Shibula, which we interpret as akin to affection and friendship was observed on many occasions. This friendship and mutual support helped them to adapt and settle into their new home at Darlington.

By June 2002 Shibula's family had grown and three of her four calves were with her at Darlington. They were all settled together with Blom and her enlarged family. Ngara, the magnificent bull was the dominant male in a population of nine animals.

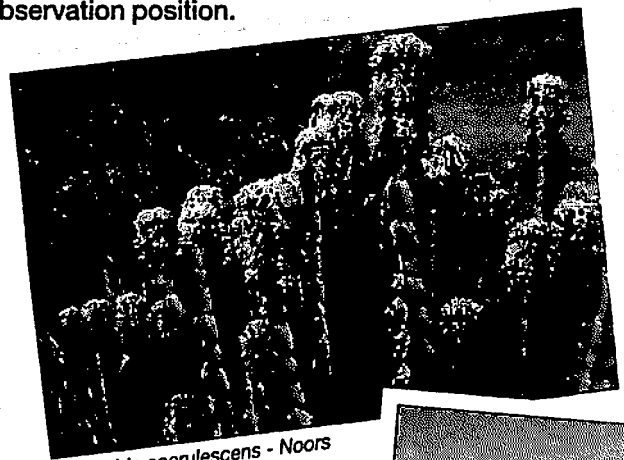
In time several other changes to the population of black rhino were made for management reasons. In March

2005, three rhino translocated from Namibia, were moved from the Kleinvlak section of Addo, to an area adjacent to Darlington that shared two boundary fences. Two cows, Sasha and Helen and a bull Gamka made up this new group. At the same time the dominant bull Ngara and his son Kleinallec were moved out of Darlington to Kuzuko. Ngara was replaced by a young adult bull, Kuruman from Tswalu Desert Reserve.

Habitat

The habitat at Darlington is similar to Augrabies, in that it is arid and very hot in summer, but the vegetation and topography is very different. At Darlington the hills and koppies are covered with spekboom, *Portulacaria afra* a fleshy, softly woody shrub, on the lower slopes and in the valleys another succulent locally known as noors, *Euphorbia coerulescens* a thorny tube filled with white latex which is nutritious, high in fat¹, and much favoured by the rhino² and kudu. On average, approximately 21% of the diet of black rhinoceros in Darlington comprises *Euphorbia coerulescens* (noors). Noors consumption is slightly higher in winter (c. 26%) than in summer (c. 21%).² Another common plant, which flowers spectacularly in August is *Aloe striata*.

The topography allows some excellent rhino monitoring opportunities. Hills on the north and south border a narrow valley which runs east to west. One can climb the hills to relatively safe vantage points from which to observe their natural behaviour and social interactions, in most cases, undetected by the rhino. On several occasions a feeling of safety on top of a koppie has been punctured by finding fresh rhino dung near our observation position.



Euphorbia coerulescens - Noors



Aloe striata

1. Louit, B.D., Louw, G.N. & Seely, M.K. 1987. First approximation of food preferences and the chemical composition of the diet of the desert-dwelling black rhinoceros *Diceros bicomis*. *Madoqua* 15: 35-54.

2. Landman, M. In prep. Foraging ecology of the black rhinoceros in the Thicket Blome, Eastern Cape, South Africa. PhD Thesis, Nelson Mandela Metropolitan University, Port Elizabeth.



View of Darlington

Browse

We have noticed that the rhinos eat a wide variety of plants, but often appear to be grazing when in fact they are eating small forbs. In Darlington the main species are Acacia and noors.

Family Relationships

Our observations suggest that family relationships are an important part of black rhino social life, as has been well documented with elephants. We presume that these links remain strong throughout their lives.

Shibula was often seen with her daughter Tria when both her fourth and fifth calves were young.

In June 2004, we spent several hours watching Shibula's two male calves "playing" – they chased each other around the spekboom on the side of a hill, alternating who chased who, stopped several times to have a head-down-nose-to-nose test of each other's strength, then one would wheel around and gallop off and the other would

follow. Finally, the older calf got bored and did not follow his brother, which seemed to confuse the younger rhino and he galloped back to try and restart the game. All the while Shibula browsed contentedly, as her calves exercised and entertained each other as well as the undetected observers.

Two of Blom's daughters, Quattro and Darling are always seen together, they are inseparable. The sisters were also seen on several occasions with their father the bull Ngara. All four of Blom's daughters plus a grand-daughter are often seen in the same vicinity and close together.

On 2 December 2006 Tria was seen with her first tiny calf, less than a month old – the second generation of Shibula's family, in the camp adjacent to the main rhino camp. Tria had moved from the main camp a few months previously. The fence separating both camps had been down for a couple of months, and only two rhinos have been seen in both camps since August 2005, when gaps were created in the fence for the rhinos to move through. They were Tria and the bull Gamka.

In mid November 2006 a field ranger reported seeing a rhino and calf which he assumed to be Shibula and her sixth calf, in the adjacent camp. A month later we confirmed and positively identified Shibula and her calf Dusty, about 2 km from where Tria and her new calf were seen. Is this a coincidence, or was Shibula responding to the birth of her daughter's first calf, by moving into a new area to get closer to Tria? How does one explain this? Can it be just coincidence? What communication between Shibula and her daughter prompted her to visit the adjacent camp (for the first time), so soon after the birth of Tria's calf? (See map Appendix A on page 34) In January 2007, we again observed Shibula and Dusty close to Tria and her new calf. This time, they were within metres of each other.

When Ngara was moved out of Darlington, neither of his sub-adult daughters, was pregnant by him. Tria's calf was sired by Kuruman.



Shibula, Noors (9 months) & Kleinalac (3¼ years)

19 June 2004

Social Interactions Observed

Many field guide texts describe the black rhino as a solitary species, as distinct from the social white rhinoceros. Our many observations of social interactions among black rhino show that this is not the case. Our first experience of this was in about 1996 in Augrabies, when we observed Shibula and two year old Dundi meeting up with Blom and two of her calves and the bull Ngara – a gathering of six black rhino at one spot.

During the first monitoring trip to Darlington in June 2002, we found five rhino in close proximity to one another, but could not identify them, as we did not have notch charts at that stage. In July 2003 we were amazed to see eight rhino together. It was Blom and five of her family plus Shibula and her accompanying male calf. The entire group was browsing contentedly in the winter sunshine.

Two months later we observed Shibula with her calves, Kleinallec and Tria on four occasions over two days. It seemed that Shibula was trying to chase Tria away, plus it was noticed that Shibula's teats were enlarged. In December Shibula was seen with a three month old male calf, her fifth, which was named Noors. Observations like this confirm that black rhino cows prefer to be alone when they are about to give birth to a new calf, and they chase the previous calf away. These youngsters often then join up with an older sibling, or other young animals, but usually are allowed back to join up with their mother and the new baby after about two months.

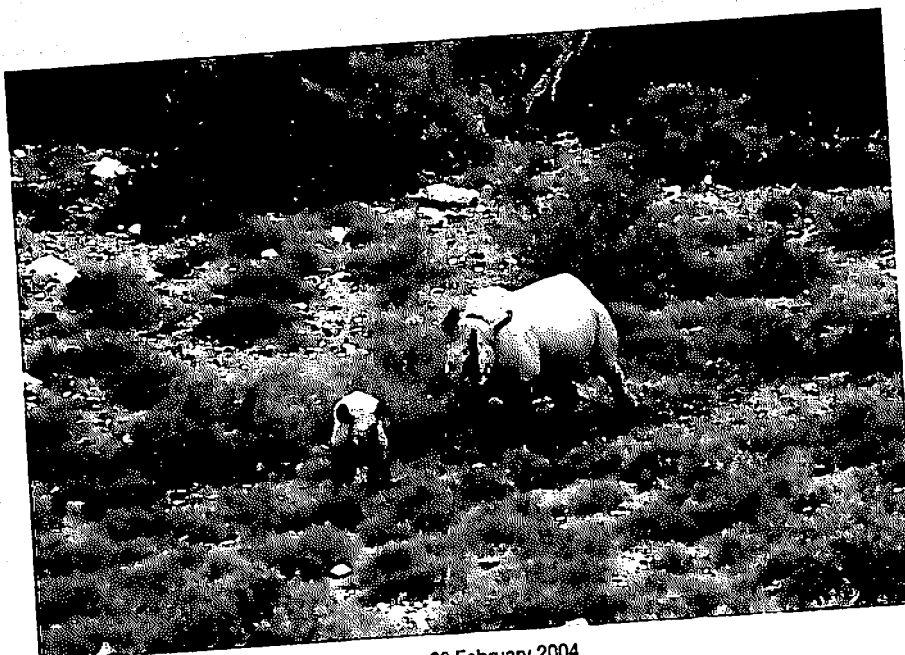
In March 2004 we once again observed eight rhinos together, this time Blom and three of her family, Shibula and her two calves chasing each other and about 50 m away the bull Ngara kept a watchful eye on the group.

The interactions during this observation made us realize that not only do rhinos have different temperaments, but also have strong friendships and definite dislikes. Blom and her daughter Khora rubbed faces and necks "affectionately", and then Blom and Shibula greeted each other with much "affection" for several minutes. Finally Shibula walked towards Khora, but ignored her completely and walked past her.

In June 2006, after sleeping most of the day within 150 m of Shibula and her sixth calf, Khora and her calf Nomvula got up and started walking up the hill, right past Shibula. Nomvula turned as if to go and greet them, but Khora ignored Shibula and continued up the hill – Nomvula seemed perplexed and undecided, and eventually had to run to catch up with her mother.

In mid-October 2005, Shibula's calf Tria was first seen in the adjacent camp, which was a totally new area for her. It was two months after the bull Gamka had reportedly moved through the fence into the main camp. Tria looked lost and agitated after a sudden rainstorm. With the help of two field rangers, we collected dung and placed it near the openings in the fence to guide her back. It was about this time that Tria's companion the new bull Kuruman, was killed by Gamka. Was Tria trying to escape? Whether Tria needed help to guide her back, we cannot say, but in December 2005 she was back in the main camp with three members of Blom's family.

At the beginning of 2006 Tria was still in the main camp, then was not seen for a while until the end of June when she was in the adjacent camp again and seen close to resident cows (Sasha and Helen) and their calves. As far as we are aware the three females are not related, but they now have a comfortable relationship. Thereafter Tria was only seen in the adjacent camp where she gave birth to her first calf in mid-November 2006.



Shibula & Noors (5 months)

29 February 2004

Vocalisations

Surprisingly black rhinos have a wide range of vocalizations. We have heard the well known high pitched squeak between a cow and calf, as well as squealing, snorting, growling and roaring.

“A Crash of Rhinos”

The collective noun for rhinos is a “crash of rhinos”. A theatrical description, but not strictly accurate according to our experience.

In October 2004 while watching Khora and her first calf browsing at a distance of 100 m, Shibula and her calves, Noors and Tria casually walked up and joined the first two rhino. The two calves trotted to meet each other squeaking in welcome. Tria and Khora greeted each other, and Shibula walked past Khora, then stopped to browse. A few hundred metres to the right, Khora's sisters Quattro and Darling were browsing. When they suddenly stopped browsing and looked up, we saw further to the right 20-month old Kara running ahead of her mother, Blom, who was closely followed by the bull, Ngara.

All ten rhino met up, but the bull was totally focused on Blom, which seemed to irritate her as she turned to face him, opened her mouth and growled loudly at Ngara – he seemed taken aback. Shibula walked cautiously up to him and gently rubbed noses with him – as if trying to distract him from Blom.

A little later one of the young females physically tried to restrain a calf by first putting her neck on the calf's back, then putting both her front feet onto its rump and pushing the calf to the ground. It was assumed that Blom was preparing to give birth again. This was confirmed when

the field rangers reported seeing Blom with her tenth calf three weeks later. It was her first male calf – who was named Guy.

Observations of the rhino population at Darlington over the past five years indicate to us that black rhino are social, caring and intelligent creatures; they do not fit the stereotyped solitary, aggressive beasts of legend. They are entitled to continue living on this planet, as they have for the last forty million years.

Calves

Possibly because we always strive to remain undetected and are very careful while tracking, we have been privileged to see four very young calves in the wild.

First Observation of a Newborn Calf

In February 2005 we followed the spoor of a cow and small calf along the side of a hill. A huge grey “rock” was spotted in the dark green spekboom ahead of us – we soon realized that the rock was actually a sleeping rhino! We stopped and set up the scope and cameras but could not see the rhino's ears to identify it. But suddenly, while watching through the scope, a little face with huge ears appeared. This was a very young calf – with not even a bump of a horn on its nose. After two hours of patient watching, and enjoying the antics of the calf, we identified the cow as Khora. The calf was a surprise as her previous calf was only 21 months old. The new calf was not more than 10 days old. Khora was very tired and slept most of the five hours we observed them, even though the little calf bumped and pushed her mother, on several occasions. (See cover photograph)



L-R: Noors, Tria, Ntombi, Shibula & Khora

6 October 2004

Other Newborns Observed

Six months later, another cow, Sasha was observed with a tiny calf. Sasha was 10 years old and had given birth to her first calf in May 2003 in the Addo bomas. The calf, Thandi was hand-reared. Sasha's second calf was female and we named her Nonny (an abbreviation of Nonhlanhla meaning "lucky"), she was lucky to be born in the wild and stay with her mother. The cow and calf were more than a kilometer away, and Sasha spent a lot of time sleeping.

In October 2005 after an unidentified calf was seen on its own, Shibula and her sixth calf were positively identified quite high up on a hill. We had excellent observations of both cow and calf when Shibula moved into an open patch on the hillside and lay down to sleep. The calf was about two weeks old, and while her mother slept she was discovering what legs are for – running and jumping around a sleeping mother and kicking up clouds of dust – so we named her Dusty.

Another surprise was finding young Helen in late March 2006, with a very small calf. The hill where Helen's calf was first seen is covered with spekboom, so we named the female calf Tula, derived from the botanical name, *Portulacaria*.

In November 2006 Shibula became a grandmother – her third calf Tria gave birth and the "forecast" calf was first seen on December 2nd. The father of the calf was Kuruman.



Helen & Tula (3 months old)

12 June 2006

Calf Forecast

At the end of 2005 we had enough information about the rhinos to be able to prepare a "calf forecast". This has been very helpful in confirming when a particular cow should be ready to calve and also to suggest which bull could have been the sire. However there were still surprises such as Helen giving birth at such a young age – estimated at six to six and a half years old. (See Appendix B)

With the exchange of bulls in 2005, the death of Kuruman and removal of Gamka in 2006, there will be a gap in new calf arrivals, but this will allow the females to build up their condition.

By March 2007 Khora may have a third calf sired by Gamka, and if Sasha was covered by Gamka before he was moved she should have a calf by August 2007.

Rhino "Nanny" Behaviour

On many occasions we have seen young sub-adult females seeming to be caring for a younger sibling or even for another female's calf much like elephant "nannies" are known to do. We believe that this has been an important factor in the Darlington sub-population being so productive with a total of 12 calves born in Darlington between February 1999 and December 2006. When acting as a "nanny" the young female sub-adult has the opportunity to learn about calves without the responsibility, and to gain confidence in anticipation of her own motherhood. By "caring and playing" with the calf, the nanny also allows the mother time to browse and build up condition, which is very important while she is lactating.

POPULATION INCREASE DUE TO REPRODUCTION (LESS MORTALITIES) OF ADDO BLACK RHINO : 2002 - 2005

Area	Population		Calves	Increase %	
	Start	End		Absolute	Annual
Coerney	10	13	4	30.0 %	11.3 %
Nyati	11	14	3	27.2 %	10.2 %
Darlington	9	13	5	44.4 %	16.7 %
Total Addo	30	40	12	33.3 %	12.5 %

Table : Population increase due to reproduction (less mortalities) of Addo Black rhino : 2002 - 2005

(Courtesy of Dr A Hall-Martin)

In December 2005, three rhino, a cow, a calf and another rhino about 30 m from the other two were observed. Initially it was assumed that the rhino with the calf was the mother Sasha, but when the ear notches were checked, it was the sub-adult Helen who was close to the calf. They were browsing, "playing" and running together, while the mother Sasha, relieved of her maternal duties, got on with browsing.

Once again in late January 2006 Helen and Nonny were "playing" together while Sasha browsed on the side of a hill.

Sasha and Helen are not related, as far as we know but came to South Africa together from Namibia. They spent two years together in a camp (Kleinvlak) at Addo before being introduced to the adjacent camp at Darlington. (See map Appendix A, page 34).

When Blom, rejected her female calf Darling at the tender age of 17 months, the older sister, Quattro, immediately took over as a surrogate mother and they still have a very strong bond and are almost inseparable. The helicopter had difficulty trying to separate Quattro from her younger sister, when Darling had to be notched. After the notching, the sisters were reunited, and they were observed at



Sasha & her calf (6 months) with Helen

5 December

midday, with Quattro lying protectively right up against her sister as they slept in the shady Acacia thicket. Without this type of support, the stress may compromise a timid sub-adult.

We often saw Tria with Shibula and her two younger brothers. During 2006 we observed Tria with three other cows and their calves – Khora, Sasha and Helen. When Tria was first seen with her own calf, she was described as a “very calm and relaxed mother”; possibly it was because she had gained confidence from spending time as a “nanny” to other calves.

By contrast in Mountain Zebra National Park, there are no “nannies” or young sub-adult females. Faru only had her male calf when she gave birth, and Dundi has never had a calf, that we know of. It was hard work for Faru taking care of the calf and herself.

In our opinion the reason that the Darlington sub-population has such a good breeding record, besides very good habitat and nutritious plants to browse on, is because each time a cow calves, there was always a young female available to play with the calf. This confirms that small groups are not ideal for breeding. Currently there are five cows with five calves and three young females who have not yet had calves in Darlington.

Calf Running Ahead

We have noted on many occasions, in more than one park, that when the cow and calf feel safe and relaxed, the calf often runs ahead of its mother as they walk through the veld. Even from a few weeks old we have observed the calf confident enough to walk or run in front of its mother. However, as soon as they feel threatened, the mother moves ahead and the calf follows, as is normal for black rhinos.

“Comfort” Behaviour

It has been interesting to observe what can be described as “comfort” behaviour of the black rhino.

Wallowing

Wallowing seems to be a most enjoyable activity for rhinos and we have observed it on several occasions. It can take from 15 to 30 minutes, then depending on the colour of the mud the rhino emerges black or red. We have seen a rhino sit down on its rump and then flop onto its side and roll like a dog from one side onto its back and then the other side. The well known reason for this is to help to remove parasites as the mud dries.

Rubbing Stone or Tree

This is very comical to observe, because the rock is usually too low and the rhino has to crouch down, bending its back legs awkwardly to touch the rock, then it moves itself backward and forward to rub the belly and chest. This is usually done when the mud is dry and removes the parasites, but it also seems very satisfying to the rhino.

Rhinos will also rub their horns on rocks or tree trunks to sharpen and smooth them. We have seen Ngara, very methodically rubbing both his anterior and posterior horns at the same time on a special tree trunk. Rhino rub their horns into individually identifiable shapes. By the time Shibula had her second calf, she had rubbed the tip of her front (anterior) horn to an almost 90° angle, which was very distinctive. Rhino spend many minutes rubbing their horns.

The sharpened horns are used to break branches to give them access to browse at a higher level than they can normally reach. We have often seen this, especially a cow breaking branches for a calf and have been surprised at the thickness of the branches they can break. Recently two stems about 8 – 10 cm in diameter were pushed over and broken.

Shade

In the heat of the day, it is several degrees cooler in shade and the rhino moves around the tree to stay in the shade. It is amazing to watch a rhino walk from the sunlight into shade and almost disappear, even in minimal shade. They either stand or lie down in the shade.

Fences

Another interesting behaviour was a rhino testing a fence. Normally rhino seem to respect fences and they can sense the electricity. On one occasion we observed Tria on one side of the boundary fence between the two camps. Fifteen minutes later she was on the other side of the fence, although we did not see how or where she pushed through. A short while later she wanted to return to the cow and calf she had been with earlier, and we saw and filmed her pushing at the fence at a few places but she could not get back while we observed her.

Suckling

We have observed calves suckling many times, from tiny calves stretching up to reach the teat, to calves suckling while the mother is lying down, but it is odd to see a two year old calf having to lie down next to the standing mother to suckle. Typically a young calf spends about ten minutes at a time suckling.

During a recent translocation a small sample of milk was expressed from a lactating mother. It was difficult to collect the milk as both teats seemed to have about four small openings and sprayed fine streams of milk over a wide area.

Dominance and Gene Exchange

Ngara was the dominant bull in Darlington and it has been assumed that he sired all the calves, but as the following evidence suggests he may have had competition from Agab.

Agab

During a trip at the end of November 2003, we noted "consistently seeing Ngara and Agab (two bulls), Khora, her calf Ntombi, and the three sub-adult females together". It could be that Khora was in oestrus in November 2003, her first calf was six months old and her second calf was born in February 2005, 15 months later. Possibly there was friction between Ngara the older bull and Agab. Sadly in January 2004, we found Agab dead at the age of seven years. (See the Family Trees on page 6).

When Agab's body was first seen, we thought the rhino was sleeping – just three metres from the road. There was evidence of a scuffle and blood near some aardvark holes about 90 m from where Agab died. Ngara and Agab knew each other well and it looked as if, during the scuffle, Agab fell in an aardvark hole and broke or seriously injured his right front leg, which would have incapacitated him. He hobbled a short distance and lay down, ate some noors (right in front of him), but in the heat of January as septicemia set in and without water he would have soon dehydrated and died.

Movement of Bulls

In March 2005, the dominant bull, Ngara was caught and moved out of Darlington to prevent him mating with his daughters, and replaced by a young adult bull from Tswalu Desert Reserve. At the same time three rhino from Namibia, were moved into an adjacent, but separate, fenced area. Sadly the relocations ultimately resulted in the death of five rhino.

The bull from Tswalu, named Kuruman was seven years old and the bull in the adjacent camp, Gamka, was ten years old – an age when it has been said rhino bulls are pumped full of testosterone and actively looking for breeding opportunities. Kuruman had about six months in Darlington and was seen several times with Tria.

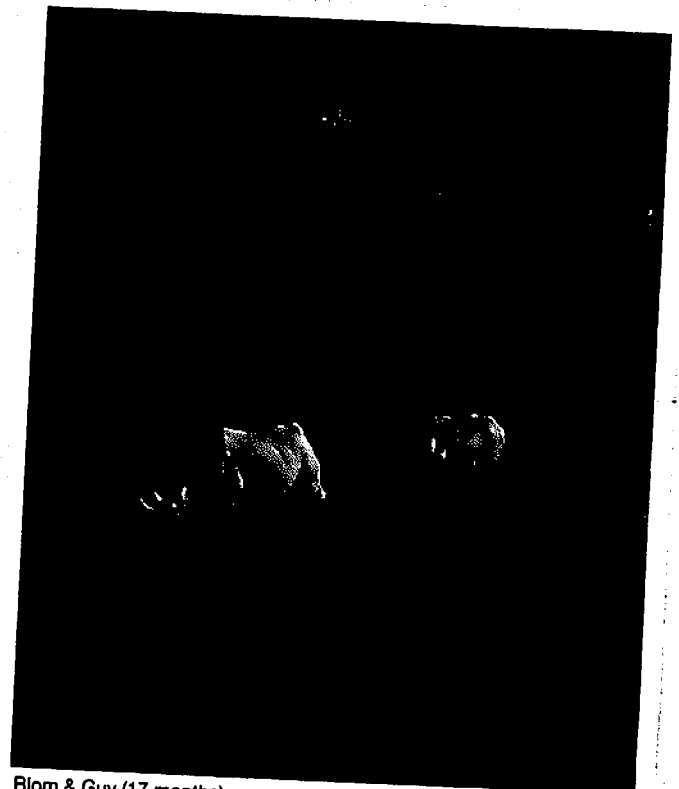
In the adjacent camp the older cow Sasha, gave birth to a calf in mid-July. They were first seen on 1st and 2nd August 2005 and on both days Gamka was within 150 m of Sasha and the new calf. On the same hill, but on the Darlington side of the fence about 500 m from Sasha, two cows and their calves were observed. We know now, that one of them, Blom was already six months pregnant then, but her daughter Khora had a six month old calf and could have been in oestrus which could have stimulated Gamka to push through the fence and move into Darlington which led to a confrontation with the males.

Deaths

The remains of Shibula's young male calf (only skin and bones) were found in February 2006. A week later after an extensive search on foot, the remains of the bull Kuruman were found. Subsequent events strongly suggested that Gamka had killed them both.

Blom and her male calf had not been seen for several months and it was a relief to see them in late March 2006. From a vantage point on the koppie, it could be seen that Blom had several scratches on her rump and she was limping, but the calf, Guy, looked okay. It had been planned to move Guy in May to join the hand-reared female Thandi. Guy would then be 19 months old and it was estimated that Blom would be about to give birth to her eleventh calf. But Gamka killed Guy (broke his spine) on April 1st. At the post mortem it was noted that Guy also had a broken rib which had healed, the vet estimated it was broken at least two months earlier. It seemed that Gamka had been harassing them for several months. It had been thought that while the calf was still with the mother he was safe, plus Blom was already pregnant, so why was Gamka being so aggressive?

Blom had been seriously wounded trying to protect Guy. She aborted a still born female calf on April 4th, and even though she had been darted and treated twice – her internal injuries were too serious and she died on April 6th. The post mortem indicated that her death was the result of a ruptured spleen. It was a devastating series of events.



Blom & Guy (17 months)

21 March 2005



Gamka being moved out of Darlington

9 May 2006

Gamka Moved out of Darlington

Gamka was darted and his horns docked. Unfortunately even with docked horns, he was still able to seriously hurt the three year old female, Ntombi. We found her on May 6th with two huge wounds on her left rump and in very poor condition. (See page 10 under Condition). In less than 24 hours, a rescue operation was organised to dart, treat and move Ntombi to the Addo bomas and hopefully put her with the hand-reared Thandi. But Ntombi's condition was poor, she was in hilly terrain when found and it was too risky for the helicopter to try and chase her closer to the road. She was darted, her wounds treated, given a drip to boost her energy levels and released. Unfortunately after several intensive searches on foot and by helicopter, Ntombi has not been seen again.

After an extensive helicopter and ground search, Gamka was darted and captured two days later and moved to the Kuzuko concession.

Kuzuko Concession near Darlington

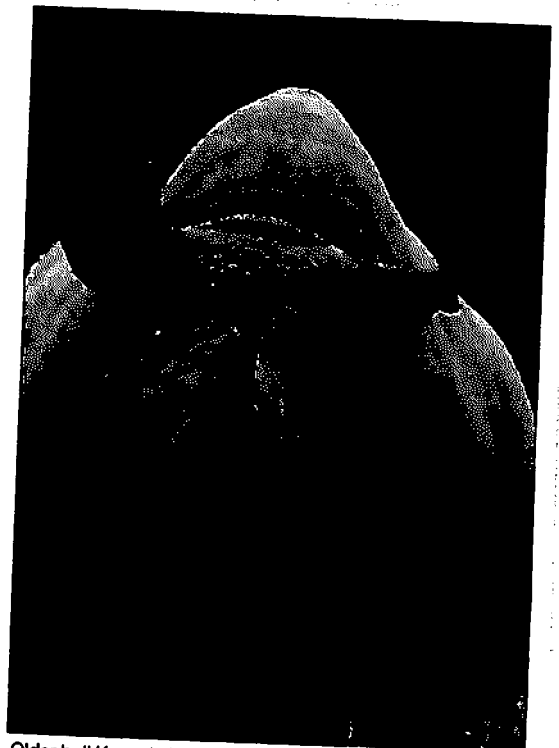
The bulls Ngara and Kleinalec were moved to the nearby Kuzuko Concession in March 2005. As this area has rhino bulls only and no cows, it is thought that there is no reason for the bulls to fight as has been seen in other areas where bulls only are kept.

Kuzuko is a 14 000 ha area with not as much noors as the rhinos were used to in Darlington, but it has some very nice river courses with thick riverine vegetation and pools of permanent water. Both rhinos had transmitters implanted in their horns but it was very difficult to actually see them. We could isolate where the signal was strongest and triangulate their position, but we only saw them twice after a long wait on a hillside.

Nyati Section of Addo

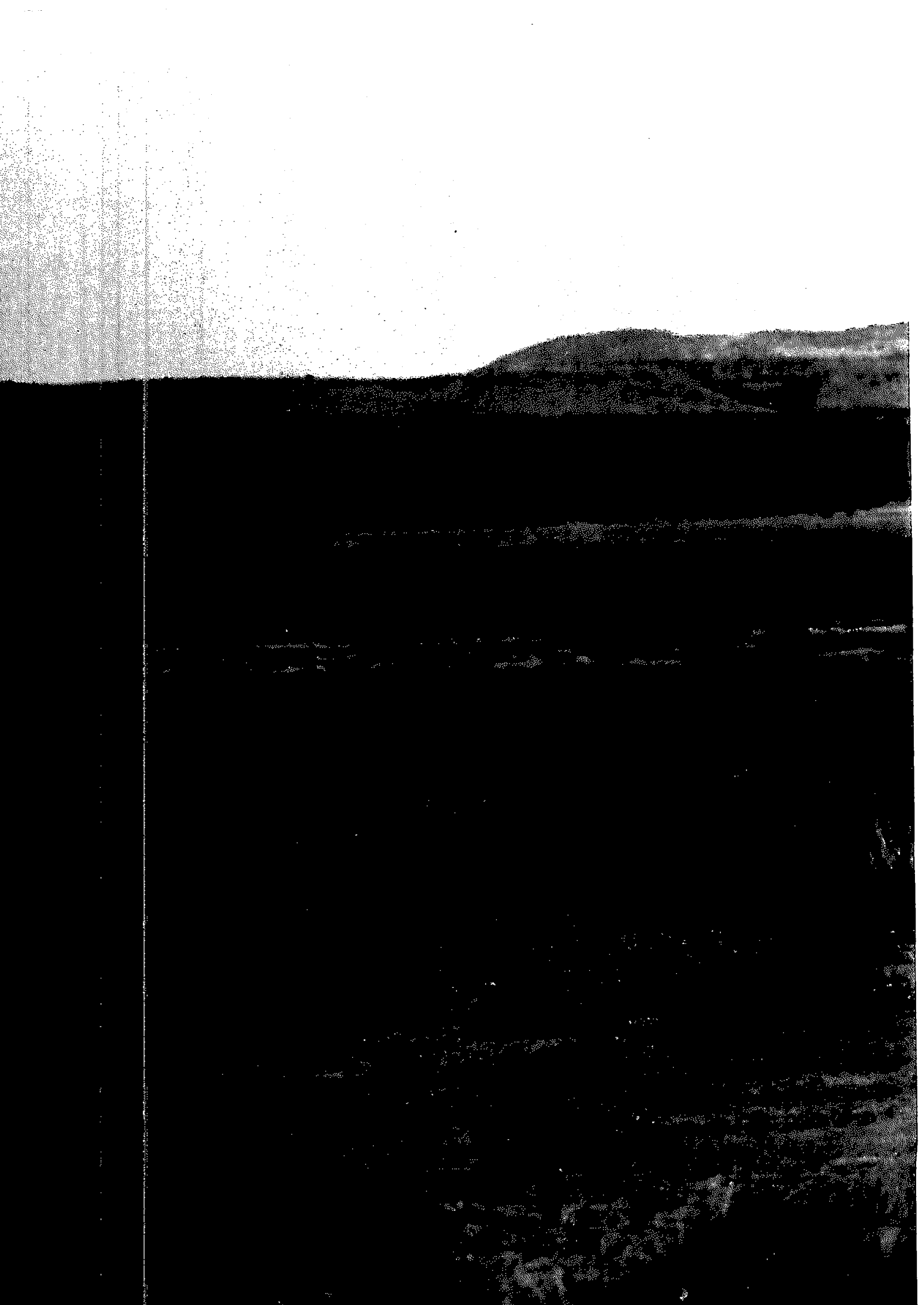
The most difficult and least successful area for ground monitoring is the Nyati section of Addo. The habitat is very dense valley bushveld and there are very few vantage places overlooking open areas. Ten trips were undertaken to Nyati over 20 months and we saw only six rhino in three different observations. It was therefore not cost effective to continue.

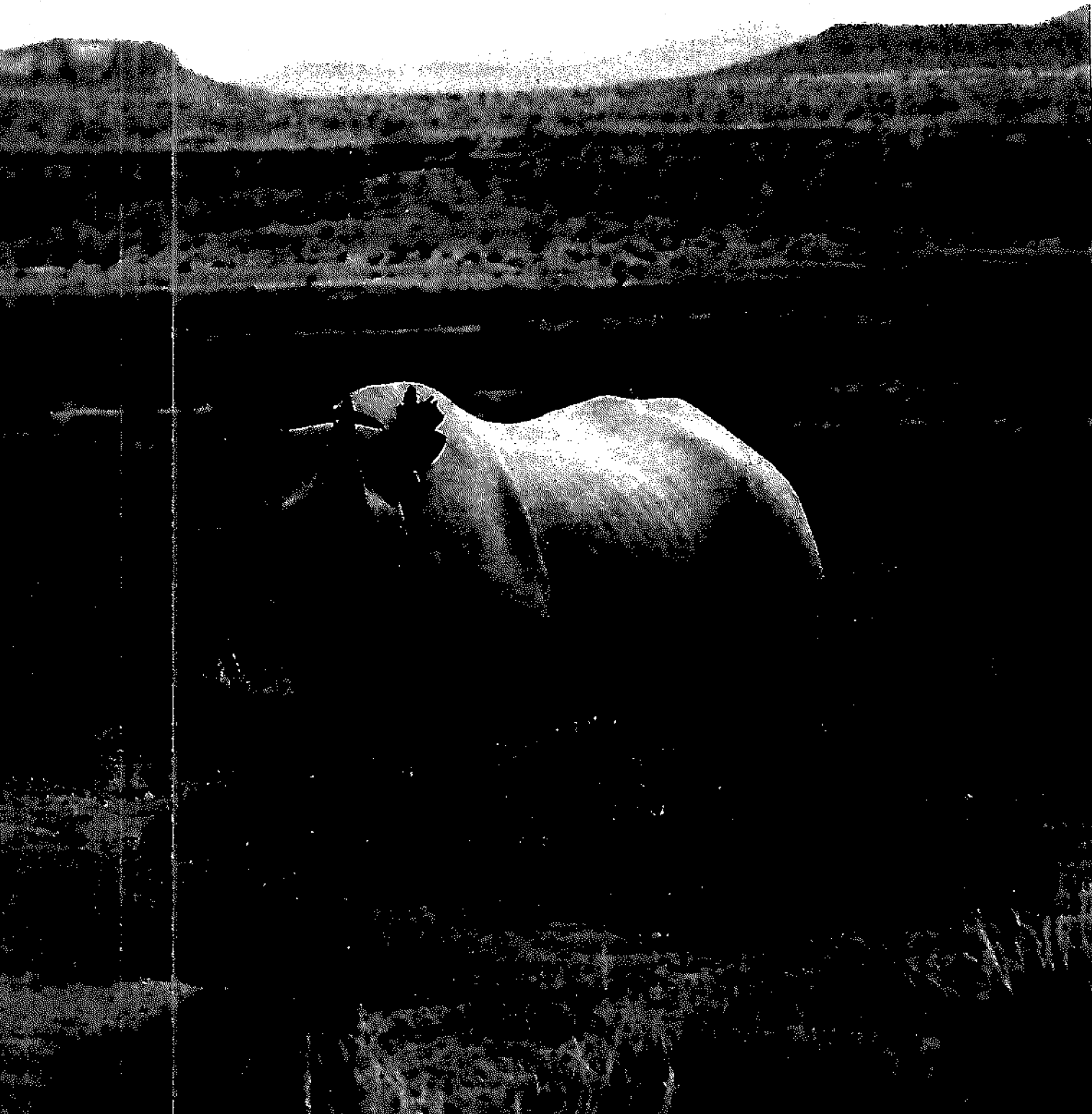
A young recently qualified tourist guide, who works at River Bend Lodge, takes guests on game drives in Nyati almost daily. He is very interested and is continuing the ground monitoring of these rhino. He has had much better success with seeing rhino, because he is on site and takes every opportunity to search for rhino. We regularly exchange information.



Older bull Karos in Nyati after interaction probably with younger bull Maleka.
Photo Jed Bird

14 January 2007





Dundi in Mountain Zebra National Park – 7 February 2003

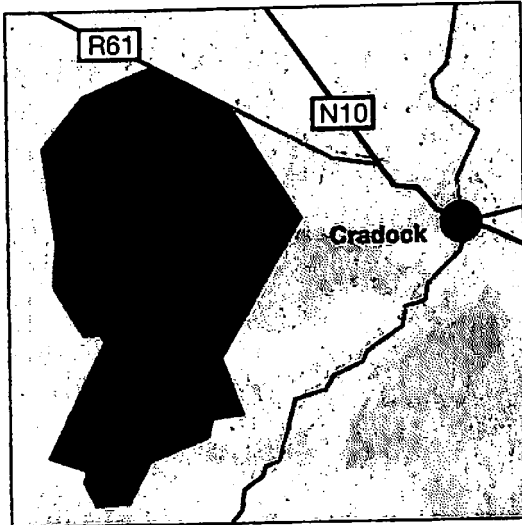


Mountain Zebra National Park (MZNP)

Expansion

In 1996 researching new conservation projects, Dr. Anthony Hall-Martin suggested to us that MZNP needed to be enlarged to ensure the survival of the Cape mountain zebra as well as the entire ecosystem of the park itself. At that time the park was only 6 536 ha. and too small to be ecologically viable.

Two fund-raising projects were launched with the generous help of David Shepherd, DSWF and 50/50, and R1.3 million was raised. By 2002 these funds together with other donations, from SASOL, the Barbara Delano Foundation, WildAid and matching funds from the SA National Parks Trust, were used to purchase 9 228 ha of adjacent farmland. The land was fenced and available for the introduction of a founder population of five black rhino.



Relocation of Black Rhino

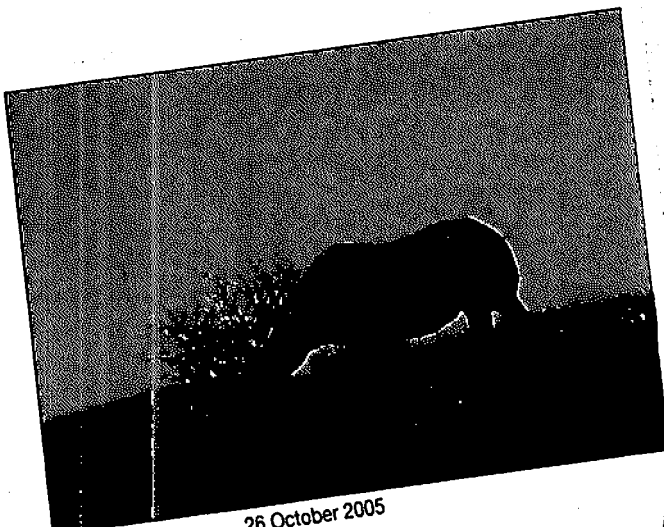
In early 2002, 50/50 documented the capture, translocation and release of the five rhino. Dundi was seven and a half years old and ready to start breeding. Faru, at 22 years old a mature cow was accompanied by her male calf Alfred, two years old. These three animals were released at the end of March. Two weeks later, when the first three had settled in, two bulls were released – Maleka, eight years old and Ombika four and a half years old.

The release of the rhino was a significant step in restoring the biodiversity of the park. The black rhino, as well as introduced buffalo and gemsbok once again roamed in the shadow of Salpeterkop, outside Cradock.

The four older rhinos had transmitters implanted into their horns to make tracking and monitoring a little easier. The expanded MZNP had riverine Acacia thicket which provided good browse and shelter for the rhino.

Browse

In MZNP the rhino have been seen to browse on amongst others *Pentzia globosa*, *Eriocephalus ericoides*, *Acacia karoo*, *Rhus lancea* and some *Lycium* species.



Dundi

26 October 2005



Faru & Kamaia (3 months).
Photo: Johan de Klerk

31 March 2005

Close Encounters

Initially, tracking and monitoring at MZNP had several adrenalin charged moments. In April 2002, with several VIP's in tow, the Section Ranger was using the Telonics receiver to follow the signal from Dundi's transmitter, which led us to where she was lying up in deep shade. Although she was relatively tolerant of humans from an early age, (because of Shibula's tameness), this delegation was too much. She charged past us and in an undignified manner, we tried to get out of her way.

Two months later, tracking the cow Faru and her calf Alfred with a "rhino vet" and the Section Ranger, the poor browse from recent frost was pointed out, also the thickness of twigs being browsed showed the rhinos "were working hard for their food" – not good signs. We were unaware that we were on a collision course with the rhinos. Faru saw us at the same time we saw the rhinos. The vet leapt into a nearby Acacia tree, while the rest of us huddled behind a very sparse bush, trying to keep very still.

Faru's condition was not good; she was badly cut and bruised – almost certainly from interaction with the older bull, Maleka. A week or so later, Faru had not been seen and Alfred seemed to be on his own. As a cold front was sweeping in over the Karoo, there was concern that in her poor condition, Faru's ability to survive the winter in the new habitat may have been seriously compromised. It was decided to move both rhino back into the bomas.

In the bomas, the vets could treat her and the Section Ranger ensure she regained condition. Faru and Alfred spent five months in the bomas, which was a good opportunity for us to study and photograph black rhino close up.

At the end of November they were released into the "old" park (6 500 ha) which was still separated by a fence from the "new" – recently purchased section. This would allow them time to settle in and establish themselves without being molested by Maleka. The main purpose of establishing rhino in MZNP however was to increase the population. Therefore in February 2003 Ombika the younger, more docile bull was moved into the "old" park with Faru and Alfred.

During a follow up trip in the "old" park a few weeks later, while traveling very slowly and intently searching the bush, a loud squeal was heard very near to the vehicle – we were not sure who got the bigger fright, the observer or the rhinos!! The three rhino were together, right next to the road. Although we had disturbed them they soon settled down and seemed comfortable in each other's company.

At the beginning of May, the older bull, Maleka somehow got into the "old" park and a month later we saw Faru covered in scratches and in poor condition again. Presumably Maleka was once again fighting with her. It was decided to move Maleka back to Addo where he was released into the Nyati section.



Faru badly beaten up.

8 June 2002



Dundi walking up close to our vehicle : 7 February 2003

Dundi is curious about vehicles and tolerates them. On many occasions we have spotted Dundi, stopped the vehicle and kept quiet and still. When she first sees the vehicle, she stops, assesses it by turning her head from side to side for a better look, then she continues walking to within five metres. She watches for several minutes and then trots off. Each time it is a privilege that such a magnificent pre-historic animal, which has been so persecuted by man, can still be curious enough to walk up that close, and seemingly trusts us. MZNP must be one of the few places on earth, where one can get so close to a wild black rhino.

Dundi is a very special rhino for us. For five years we have waited for, and anticipated, the birth of her first calf, but to date she has not been seen with a calf. We do not know the reason. She is 12 years old and should be in her prime breeding years. For the latest information see page 31.

Ombika has also on several occasions come up close to investigate us, sometimes on his own, and other times with Dundi.

In January 2003, Lucky and a field ranger were tracking Dundi and Ombika on foot. Initially the rhinos were unaware that they were being followed, but the wind changed slightly and the rhinos were blocked by a gully, so they turned and thundered past on either side of a tree behind which the observers were hiding. It was a very close encounter!

In October 2004, Sue got close to Faru and Alfred. Faru looked in very good condition for a change, but now we know that she was 13 months pregnant at the time. Her female calf was born at the end of December 2004, but mother and calf were only seen after the field rangers spent a month tracking the spoor the length and breadth of the rhino camp. The calf was named Kamaia (which means "walks a lot"), and was sired by Ombika.

Monitoring Difficulties and Park Development

During the last two years, it has become increasingly more difficult to find and monitor the rhino at MZNP. The transmitters only lasted 18 months, and initially the rhinos stayed in a relatively small area. Now, they are exploring all the kloofs and valleys. During 2006 the entire 72 km boundary fence was upgraded to a predator-proof standard, in anticipation of the arrival of cheetah in 2007. The remaining internal fences have been taken down and the new areas are now available to all the animals. Almost immediately rhino spoor and dung were found in the new areas. Rhinos like to have their known safe places to escape to when threatened, they are creatures of habit, but they are also curious and adventurous.

We have noted that due to a temperature inversion in winter the hills are about 3°C warmer than the valleys and consequently the browse is better. This explains why the rhinos are often found high up on the hills in the early winter mornings.

Our method of monitoring at MZNP is to climb one of a few hills before sunrise, and to scan large areas with the scope and binoculars. This has proved successful in pinpointing the whereabouts of the rhino.

Over the last ten years, MZNP has increased in size from 6 500 ha to over 28 000 ha, most of which is now available to the rhino. The population of only four rhino in such a large area makes it difficult and time consuming to find them. In order to cope with this challenge, dedicated trips of six to seven days have been planned for MZNP in 2007.

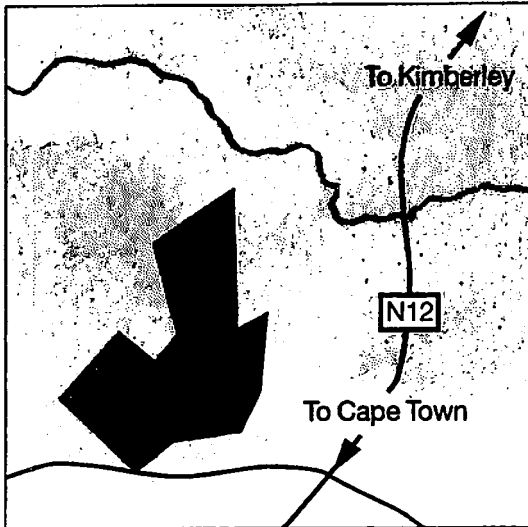
The health and reproduction of these few animals will be monitored very carefully over the next couple of years in order for SANParks to assess the future of rhino in MZNP. If the population increases adequately, or more rhino become available for translocation to MZNP then more land (with good rhino habitat) will be needed.



Dundi : 12 October 2003



New National Park



New Park

Vaalbos National Park, situated near Barkley West, has been de-proclaimed and in September 2006 all the animals including the black rhino had to be moved to a new national park. This new park is located about 60 km south of Kimberley. As we had been asked to expand the rhino monitoring project to include these rhinos, we wanted to be present when they were translocated. Being involved and close to the animals during the translocation gives us an opportunity to assess the rhino up close, to note any idiosyncrasies (visible individual body markings) such as a crooked tail, scars etc., and gives us a better start to monitoring new animals.

The founder population of black rhino had been introduced to Vaalbos in August 1987 and two of the original cows (Ubhejane & Nkombe), were still there in September 2006. Two sub-adult females were caught and moved first, but only the older Tiffany, had a horn big enough to implant a transmitter. The younger, was only two and a half years old and her anterior horn was too small to insert a transmitter.

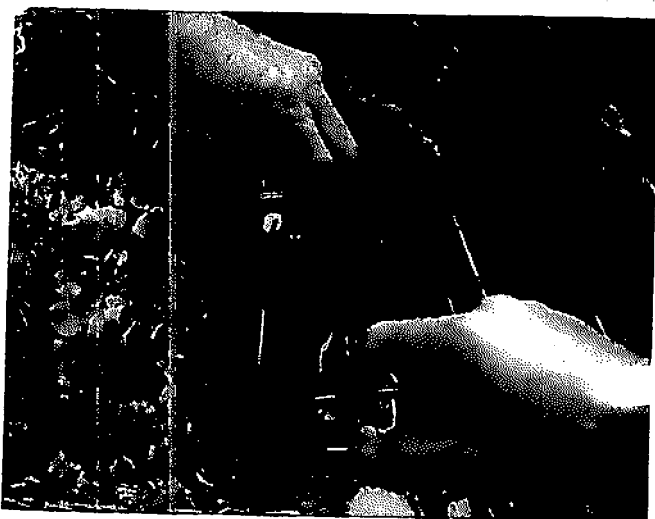
Transmitters were implanted into five black rhino, so that after release in the new area they could be tracked and monitored to ensure their safety. The transmitters would be active for 24 hours a day and the batteries should last up to nine months. By this time the rhinos should have settled enough to be found and monitored regularly.

Translocation of Black Rhino

The translocation of rhino was a very well rehearsed operation by SANParks vets and Game Capture Unit. The vets darted the rhinos from the helicopter, and the ground crew moved in as soon as the rhino was down. The veterinary assistant monitored the rhino's vital signs (heart rate and breathing) and administered various injections – antibiotics and anti-inflammatories. Holes were drilled in the horn and the transmitter implanted. Body measurements, notes and photographs were taken as routine. The oldest cow Ubhejane was 29 years old and Nkombe 23 years old.

Once everyone had finished their assigned tasks and the rhino was ready to be "walked" into the crate, it was moved into a position with its head as close to the crate as possible. A rope was placed around its head and threaded through the crate and out a hole on the other side, which was used to guide and pull the rhino into the crate. The anaesthetic was reversed and an electric cattle prod used (only when necessary) to encourage the rhino to move into the crate.

During a rectal examination of Rathie, by one of the vets, a head or foot was felt and it was estimated she was at least ten months pregnant. This turned out to be an accurate assessment as she gave birth during the last



Tiffany (3 years 10 months):
Anterior horn ready to receive the transmitter 13 September 2006



Tshukudu - six month old male calf

14 September 2006



Tshukudu in the bakkie

14 September 2006



Ubhejane & Tshukudu

14 September 2006

week of December 2006, indicating that she was about 12 months pregnant when she was moved to the new national park.

Ubhejane and her new calf, a male only about six months old, were the next to be translocated. The ground crew named him Tshukudu.

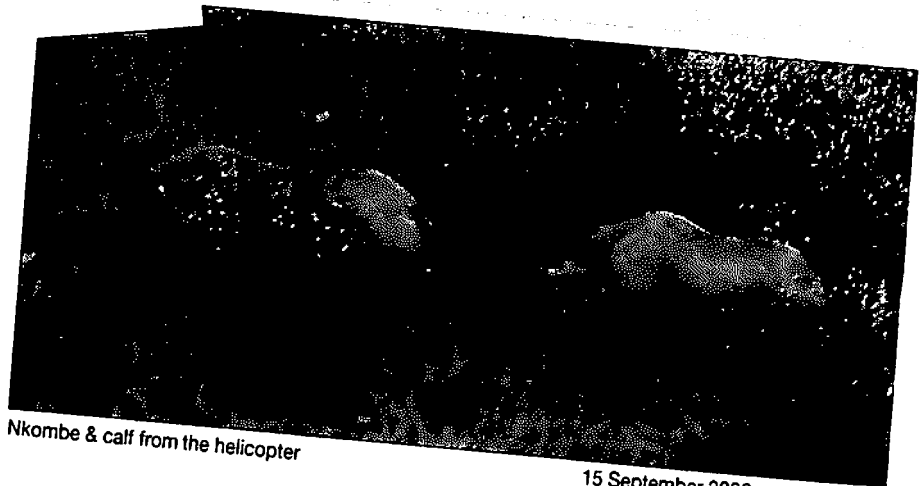
The risk of darting such a small calf is high, but there was no option. Both cow and calf were darted from the helicopter. The calf ran with the mother, and as the drug started to take effect on the cow a vet jumped out of the helicopter to see to her. The calf dropped only about 100 m from the mother and a second vet saw to him. He was still small and the ground crew lifted him into the back of a bakkie. He had notches cut into his ears for identification. The crate had bales of teff positioned to cushion his journey to the new park because he was so tiny in the big crate.

The release of the cow and calf in the new area was controlled with drugs. The crates were placed close together on the ground in the shade, and chest and back foot ropes were put on each rhino. They were given just enough drugs to "walk" them out of the crates, lie them down, and allow immobilization. The calf was positioned so that it was close to its mother.

All vehicles and people were removed from the scene. The vets administered the antidote to the calf first, a minute before the cow, as this ensures that the calf is fully awake by the time the mother wakes up. The blindfolds were removed and they climbed into a nearby tree.

Tshukudu stood up first after about four minutes, and saw his mother sleeping and just walked around her sniffing the ground. When Ubhejane stood up, she saw her calf next to her. She stood for a couple of minutes and then they slowly walked off together into the riverine thicket.

Translocating the other cow and calf did not go as smoothly. The calf was older and after the vet jumped out of the helicopter to see to the mother Nkombe, less than a minute later when the helicopter got back up, the calf had disappeared. After an extensive search with the helicopter and four ground teams, the calf could not be found. The vet decided to release the mother near where



Nkombe & calf from the helicopter

15 September 2006

she had been darted, in the hope that she would find her calf. Her transmitter would make location of both of them very easy. It was a tense time over the weekend as we did not know if the dart had injected the drug into the calf or whether he had survived. On Sunday Nkombe's signal was located and the following day from the helicopter it was confirmed that Nkombe had found her calf safe and sound – where with all our technology we had failed. With relief the calf was named Jabula (which means "happy").

They were subsequently darted, the calf first and then the mother soon after once the calf was crated. The release at the new park went smoothly, with both the cow and calf immobilised at release, all equipment removed and the calf woken up slightly before the mother.

During the first monitoring trip we located signals for all the rhino but did not see any in the thick black thorn / swarthaak (*Acacia mellifera*). Four weeks later we tracked three signals to a rocky plateau and found five rhino together – Ubhejane and her calf about 100 m from the other cow, Nkombe and her two calves. We did not see the young female sub-adult without a transmitter, but saw spoor and droppings on the road from the main gate to the lodge, which we assumed could be hers as we had signals for the other rhino in a different area quite far from this road.

The old bull, Bwana was translocated to the new park in October. Despite an arthritic and stiff gait, it is hoped that he will still be able to sire calves

Sadly the young sub-adult did not survive the translocation. It appears that she was very stressed at release and did not drink or eat sufficiently to survive. Black rhino calves of that age are very insecure and vulnerable. She would normally not have been translocated, but due to the land claim settlement there was no option. It was hoped that as she was released with a known older female they would stay together until they met up with their mothers and other known animals. In November 2006 signals were obtained for all the other rhino and five of them were seen.

"Third Horn"

We have seen a four cm long "third horn" on two rhino, notably the bull Ngara and the cow Nkombe. A "blister" seen on the forehead of the young bull at MZNP could develop into a "third horn". It is rare and has only been seen a few times, and only on *D.b.bicornis*. The "third" horn is relatively loose and does not get longer than four – five cm before falling or being knocked off.



Nkombe "walked" out of the crate

19 September 2006



Nkombe and Jabula ready to wake up

19 September 2006



Bwana, the bull just released from the crate

6 October 2006



Ngara showing two normal horns and a much smaller third horn 8 March 2005



Hand-Reared Black Rhino

On 16 May 2003 Sasha gave birth to her first calf in the Addo bomas; there was concern in case Sasha rejected the calf, due to the stress of being in the boma. Early the next morning the calf was found very cold and separated from its mother. It was decided to send her to Wildcare. The day-old calf was flown from Addo to Pretoria in a SANParks helicopter with the vet as personal attendant. At Wildcare she joined a young male calf that had been born three weeks earlier in the Kruger bomas and also rejected by its mother.

Great care had to be taken as their hold on life was tenuous and the milk supplements they were fed were not exactly rhino mother's milk. Access to the babies was initially limited to avoid introducing potentially fatal bacteria to them.

The little female from Addo was named Thandi, and the Kruger male, Kapela. The two rhino babies formed a strong bond and they seemed to draw strength from each other, which made hand-raising them much easier. We tried to see and photograph Thandi and Kapela in Pretoria every month to monitor and document their growth and development, including observing the first signs of their horns. It was a unique opportunity to study and get to know them, as even from an early age, each rhino had its own personality and temperament.

When they were eight and nine months old it was time for them to go back to Addo and be exposed to natural browse which calves even as young as two months start nibbling. Thandi had a lot of problems with diarrhoea which may have been because she needed more natural solid food in addition to the milk formula she was getting. It was hoped that the exposure to natural browse would solve Thandi's tummy problems. At Addo they had a new surrogate mum, and we continued to see the calves regularly and photograph their growth month by month.

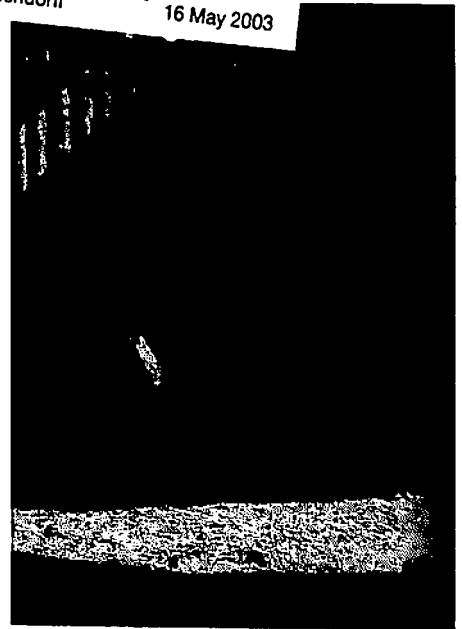
In March 2005 Kapela and Thandi (then 23 and 22 months old) were moved from the paddock next to the bomas to a 400 ha fenced off area (Kleinvlak), to continue their transition to living wild and independent of people. Sue spent a month observing how they adapted to this new challenge. The two were inseparable and took to their new home very well although initially their diet was supplemented with lucerne.

Three months later, a second young orphaned bull, Danny from Kruger was brought to the Addo bomas. By September he was moved into a 600 m² camp within Kleinvlak in order to introduce the three to each other safely and slowly before opening the gate. Before Danny was moved to the camp, some of his dung was collected



Thandi only a few hours old suckling
Photo : Melanie Adendorff

16 May 2003



Sasha and her baby Thandi
Photo : Melanie Adendorff

16 May 2003



Melanie Adendorff escorts Thandi onto the helicopter:
Photo : John Adendorff

17 May 2003



Thandi : 3 weeks old

9 June 2003

and spread out near where Thandi and Kapela were usually found. Some of Kapela and Thandi's dung was placed outside Danny's camp, so that he would be aware that there were other rhino around.

It worked very well and it was a delight to find the three young rhino at the fence after ten days. On October 14th, while Kapela and Thandi were eating some lucerne strategically placed just in front of the gate, Danny was distracted by feeding him lucerne at the fence a few metres from the gate. The gate was quietly opened and it took Danny about ten minutes to realise this, and he could see Thandi and Kapela without a fence in between, which gave him such a fright and he dashed into the bush. He ventured out several times to look at the open gate and observed Kapela and Thandi calmly eating lucerne. After 45 minutes Danny casually walked through the gate towards the other youngsters, briefly greeted them by rubbing noses and then walked off to explore.

They were all about the same size and therefore it was assumed Danny was roughly the same age. We call them the Triplets and often see them together, although as Danny was wild born he is not as relaxed with humans.

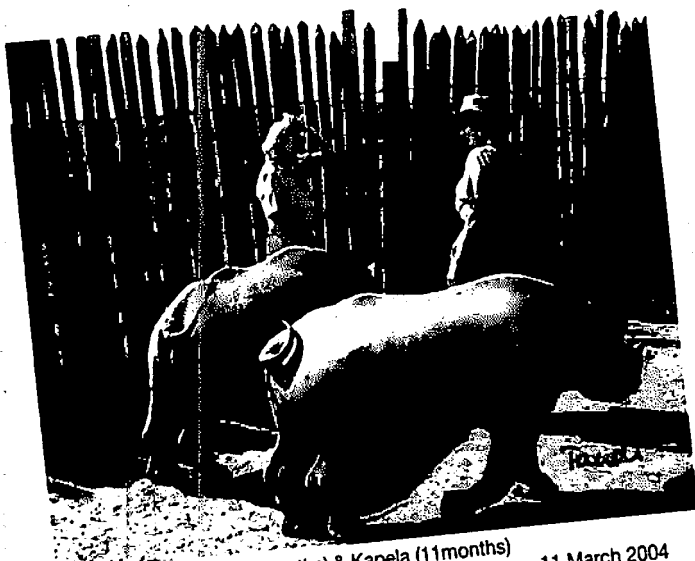
The one problem with the final release into the wild is that the males are a different sub-species to Thandi and will have to return to a population of *Diceros bicornis minor*, which will be a huge wrench for Thandi. In our opinion, based on many observations, it is very important to introduce Thandi to a young rhino of her sub-species before Kapela and Danny are moved away and before she herself is released into a wild population. A younger rhino would be more appropriate as she could "nanny" it and hopefully form a bond before the separation from Kapela and Danny.

It is also important to carefully think out and plan Kapela and Danny's introduction together to a new area, and monitor their progress within the new population. It is very important for future introductions of hand-reared black rhino to make sure their introduction to a wild population is intensively monitored to see how well they adjust and learn to integrate.



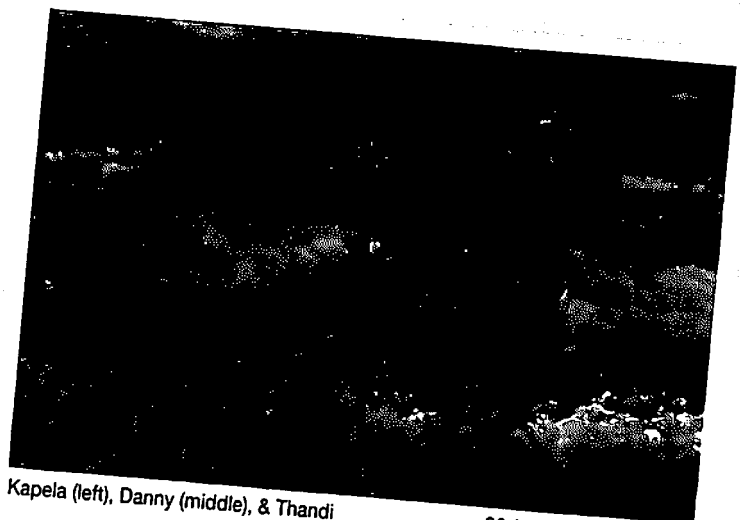
Thandi (13½ weeks)
Note anterior horn starting

13 August 2003



Thandi, foreground (10 months) & Kapela (11 months)
in the Addo bomas with Melanie & Sue

11 March 2004



Kapela (left), Danny (middle), & Thandi

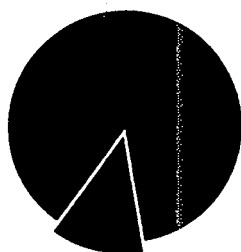
26 August 2006

Statistics

Full statistical information is only available July 2003 to December 2006, which gives information on 35 monitoring trips of which a number were made for relocations, releases, specific search for a rhino in addition to our normal monitoring activities.

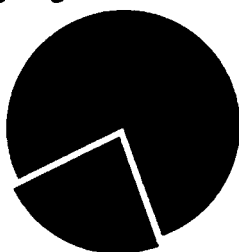
An important objective during rhino monitoring, besides identification and condition assessment, is to remain undetected by the rhinos. This not only lengthens the observation, but allows for a much better assessment of their natural behaviour.

Hours of Observation



Percentage Detected
Percentage Undetected

Sightings



Percentage Detected
Percentage Undetected

In our rhino monitoring work, we have remained undetected during 87.4% of the time observing rhinos. In 76.8% of the sightings, we also remained undetected.

- Documented a total of 275.7 hours of observing black rhino, during 314 sightings in 27 trips. Estimate for all 53 trips is about 400 hours observing rhinos.
- 240.8 hours have been spent observing rhino undetected.
- 241 observations were undetected.
- Average of 10.2 hours viewing rhino per trip
- Average of 11.6 observations per trip (an observation could be one or more rhino).
- Over the 27 trips, we were in the field for 212.8 days (Total 260 days including traveling)
- An average of 1.3 hours and 1.5 sightings per day in the field.

The success rate of seeing all the rhino in each area during each trip varies enormously, with MZNP being much more difficult. Table A shows the figures for 2003 - 2006.

The most difficult and least successful area for ground monitoring was the Nyati section of Addo.

Table B indicates the difficulty of monitoring rhino in Nyati from the air and ground.

At Darlington, the figures for ground and aerial monitoring are comparable.

A summary of days devoted to rhino monitoring from June 2002 to December 2006 is as shown in Table C.

Table A:

Percentage of Black Rhino seen during ground monitoring in different populations. 2003 - 2006

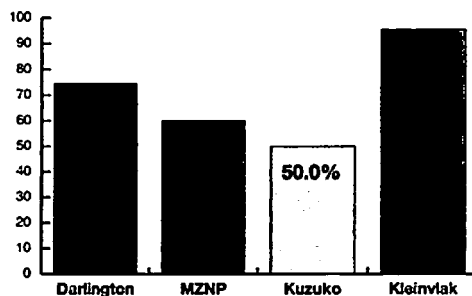
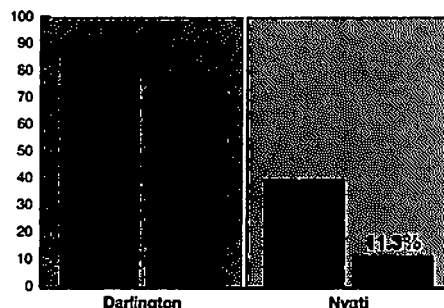


Table B:

Comparison of Black Rhino seen during ground and air monitoring at Darlington and Nyati. 2002 - 2005



Courtesy of Dr A. Hall-Martin

Table C:

Year	Total Days on Rhino Monitoring Trips	Days in the field (less travel)	Total Trips
2002	46	33.7	7
2003	71	53.5	10
2004	81	65.2	9
2005	153	132.0	12
2006	125	98.7	15
TOTAL	476	383.1	53

The plan for 2007 includes 100 days of scheduled trips, excluding emergencies, problems, notching and bull introduction at Darlington.

Costs

We live on a farm in Mpumalanga which means road and air travel to all the rhino monitoring areas. Monitoring at Mountain Zebra National Park entails a three and a half hour drive to Johannesburg Airport, one and a half hour flight to Port Elizabeth and another three hour drive to MZNP. It is a two hour drive from Port Elizabeth to Darlington. Kimberley is a nine and a half hour, 1 000 km drive, one way. This results in unavoidable travel costs but is offset by the fact that our time and services are voluntary, and at no charge to the project.

Direct costs covered by the major donor, DSWF and other sponsors include air tickets, Avis 4x4 vehicle rental, fuel and accommodation (where not provided by SANParks). Costs over the five year period include photographic equipment, DSWF's contribution to aerial monitoring, veterinary fees and equipment. We have personally funded the telemetry equipment (receiver and antennae) as well as six transmitters used at the new park, and helicopter time. We cover our accommodation costs (if necessary) when doing field work and use our own vehicle for travel to the park at no cost to the project. By planning ahead, getting reduced airfares, and absorbing as many costs as possible, we plan to reduce the costs in 2007.



The Future

As we take stock of our monitoring to date we can see how we might be able to improve on the efficiency of the project. We also need to work with SANParks staff on a number of elements that might influence the outcome of their rhino conservation effort.

1. Specific Field Ranger Responsibility

Dedicated, reliable and accurate rhino monitoring by trained field rangers should be a requirement in all parks with black rhino. It is important to select, train and motivate the right person for the job.

2. Security

In the light of recent poaching of rhino in protected areas by a highly organized syndicate, no-one can be complacent about security which must clearly always remain a high priority.

3. Hand-reared Rhinos at Kleinvlak

This project is an opportunity to reintroduce hand-reared black rhino successfully into a wild population. First a companion of the sub-species *D.b. bicornis* needs to be found for Thandi, and the relationship needs to be cemented before Kapela and Danny are moved away. The sudden removal of a life-long companion may have a devastating effect on Thandi.

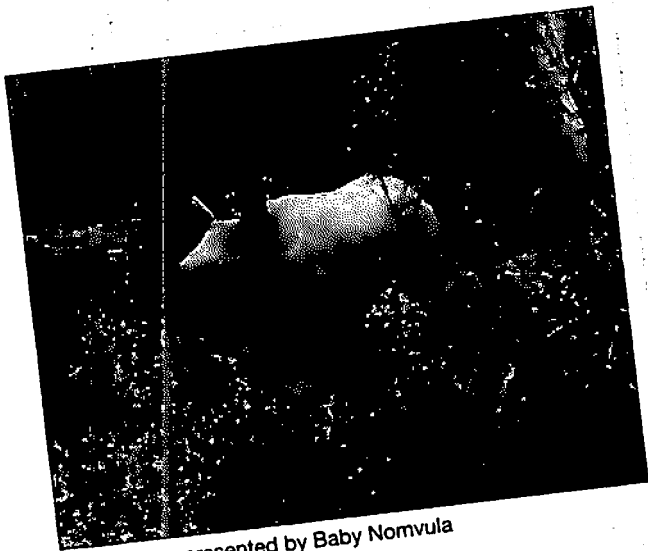
For the same reason it is important firstly to consider where to place them and secondly to keep Kapela and Danny together and carefully monitor their introduction to a *D.b. minor* population. Kapela and Thandi have not yet been introduced to wild rhino, and there is still a long way to go before they are successfully rehabilitated.

4. Translocation of rhino.

Most people working on black rhino agree that they should not be translocated unless absolutely necessary. If translocation is necessary, transmitters and intensive accurately recorded monitoring is essential as most mortalities occur within a few months after release in new areas. A method of monitoring young vulnerable animals (small camp, boma or flexible transmitter collar) should be considered. If translocation is necessary, to try and not separate closely bonded animals

5. Encourage further land purchase to increase important black rhino habitat.

6. A long term aim of the project is to develop the education and motivational aspect of the work to encourage local involvement, employment and "ownership" of the project, thus inspiring future conservationists.



The future represented by Baby Nomvula

Latest News

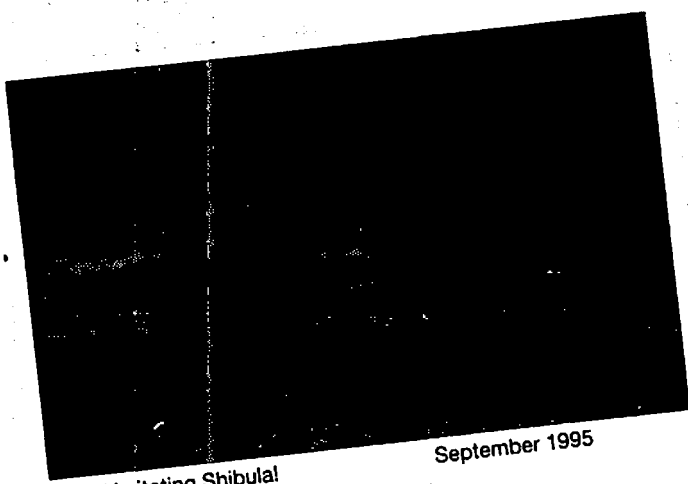
At the time of going to press, three new calves were born during March 2007, one in each of the national parks monitored, to the cows Khora, Nkombe and Dundi. This re-affirms the successful breeding of black rhinos in these areas, and has allayed our concerns about Dundi.

Epilogue

When we started this project in January 2002 we hoped that it would continue for at least 12 to 18 months. We are now starting the sixth year in January 2007 and there is still so much to learn and so much to document. We really need to train young motivated and enthusiastic people to continue monitoring and accurately record the behaviour of these small but vital populations of black rhino.



Black Rhino Facts



Dundi imitating Shibulal

September 1995

- The black rhino is highly endangered, South Africa has only 63 of the sub-species *Diceros bicornis bicornis*, and Namibia about 1 200.
- The black rhino is not black but a uniform grey, however colour does change slightly to adapt to the local earth colour especially after sand or mud baths, and after rain the colour darkens. On sunny days rhino appear light beige to white in the green vegetation.
- The “prehensile” or “hooked” lip is adapted to browsing on trees and shrubs
- Adult shoulder height : 153 cm – 160 cm
- Adult weight : 1 000 kg – 1 350 kg
- Gestation : 15 – 16 months
- Calves are born at any time of the year
- When disturbed the calf runs behind the mother
- Eyesight : narrow binocular vision; peripheral motion detection excellent and wide. Younger animals’ eyesight better than older rhino.
- Sense of smell and hearing is excellent and can pin point intruders very accurately
- Deposit dung at middens, but also defecates randomly within the home range. After depositing dung, scrapes with the back legs, helping to make its presence known to other rhino in the area.
- Olfactory communication : Scent marking by scattering dung and spraying urine. Calves often defecate in imitation of the mother.
- Rhino differ greatly in individual temperament
- Mainly active early morning, late afternoon and during the night
- Dependant on water and if possible prefers to drink daily
- Longevity : 30 to 35 years in the wild.
- Sounds : A wide variety of vocalisations from squeaking, squealing and snorting to growling and roaring.
- Horns are composed of keratin (the same material as nails), not attached to the skull but rests on the nasal and frontal bones. It is used to remove bark, break off branches and to excavate soil at salt licks. Also used as a weapon during confrontations with other rhino.
- Social organization : Not as solitary or anti-social as commonly portrayed. We have often seen several black rhino together, not just cow and calf combinations, but unrelated “friends”, “nannies”, bulls and on one occasion 10 black rhino together.
- Females reach sexual maturity at 4 to 7 years.
- Males mature from 7 to 10 years.
- Mating is for the male a time consuming process of conditioning the female to accept contact and eventual copulation.
- Rhinos have survived on the planet for over 40 million years.
- Since 1970 the population has declined by 96%, i.e. from over 65 000 to 2 300 in 1993. Numbers are now up to about 3 600



Nomenclature

Black Rhino Taxonomy:

- Order : *Perrissodactyla* (Uneven number of toes)
Family : *Rhinocerotidae*
Species : *Diceros bicornis*
Sub-species : *Diceros bicornis bicornis*

Origin of the name *Diceros bicornis*:

- Diceros : from the Greek "di" meaning two and "ceros", meaning horn
Bicornis : from the Latin "bi" meaning two and "cornis" meaning horn
Courtesy of the International Rhino Foundation website.

Rhino species include:

- Black rhino – 3 sub-species
White rhino – 2 sub-species
Javan rhino
Sumatran rhino
Indian rhino

Black rhino sub-species:

- Diceros bicornis minor* : South-central Africa: Kruger National Park
Diceros bicornis bicornis : South-western Africa Namibia; Eastern Cape, South Africa
Diceros bicornis michaeli : Eastern Africa – Kenya and Tanzania
Diceros bicornis longipes : Western Africa – Cameroon : NOW EXTINCT



Diceros bicornis bicornis - Two Horns



**South African
NATIONAL PARKS**

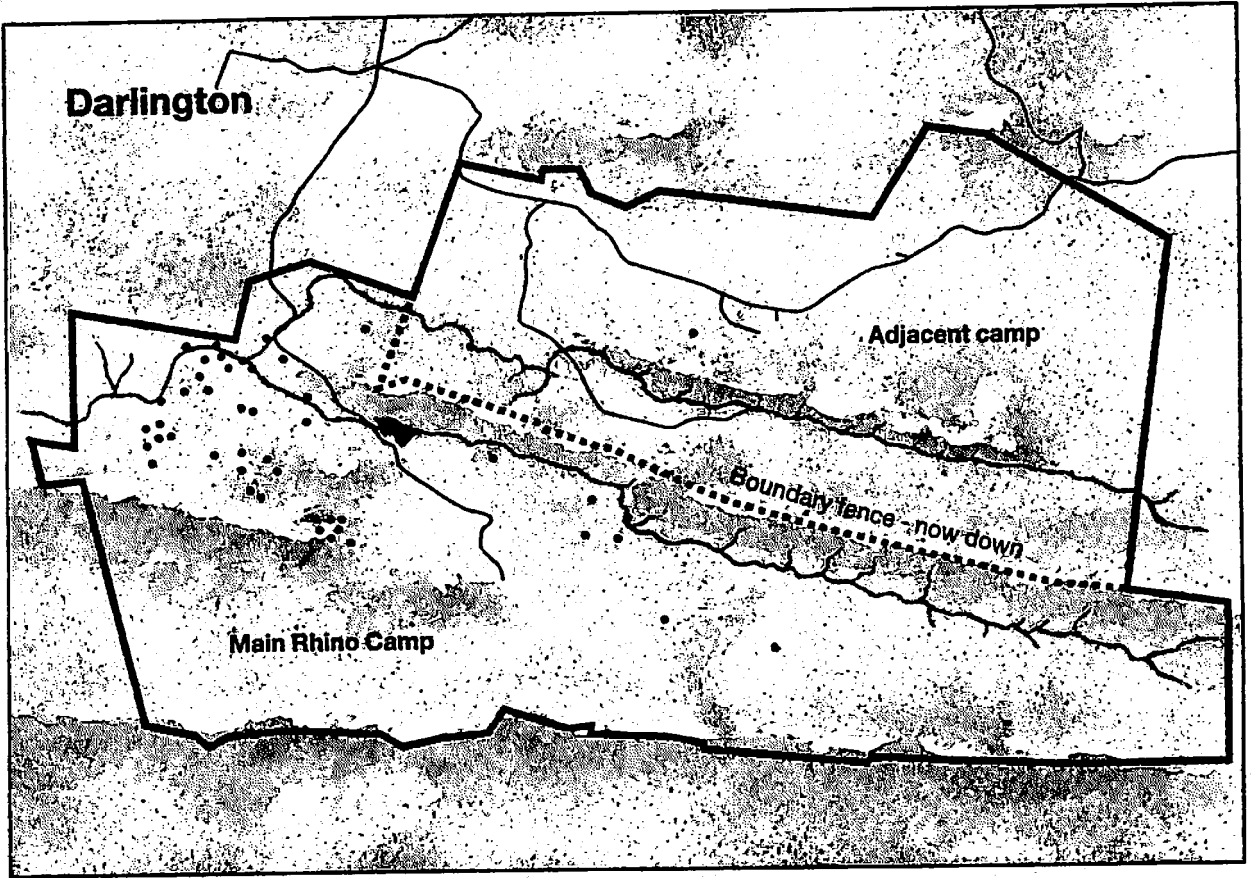
This report was commissioned by Dr Hector Magome and the publication sponsored by SANParks.

Photographs and Reproductions

Unless otherwise indicated all photographs have been taken by Lucky Mavrandonis and Sue Downie. Most observations mentioned in this report have been documented on photographs and video.

The reproduction of David Shepherd's painting and pencil sketch has been done with his kind permission.

Appendix A



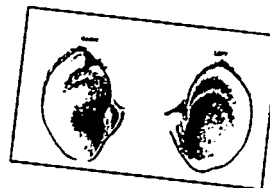
● Example of Shibula's positions from November 2002 - December 2006

Black Rhino Data Sheet
Addo - Darlington Population - Diceros bicornis bicornis SHIBULA

Individual Details

Name	SHIBULA ("Wild lady")
Sex	Female
Date of Birth	Estimated 1984
DoB Accuracy	± 1 year
Mother	Unknown
Father	Unknown
Introduced to Darlington	February 1980 from Augrabies Falls NP via Vaalbos NP
Originally from	Etosha NP, Namibia
Current Status	Independent cow, 20 years-old with 4 calves at Darlington
Number of calves	6 : Dundi, Agab, Tria, Klerzloc, Moors & Dusty
Information Updated on	29 December 2006

Individual Identifying Features
MARKINGS
EAR NOTCHES - Top Right



Example of First Page of Shibula's Data Sheet

Appendix B

Checkpoints for Condition Assessment by African Rhino Specialist Group

Example of Annual Sightings Table

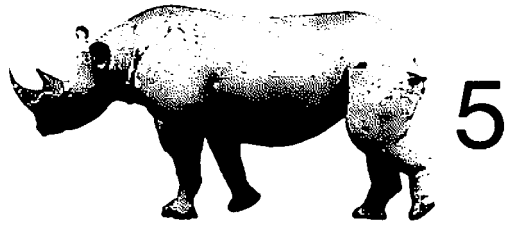
Black Rhino Sightings January - December 2006 : MZNP, Darlington, Nyati, Kleinvlak, Dirk's Kraal, Kuzuko
By Lucky Mavandana Sue Downie

Sex	Dam Sire	Date (From)	Age 1-Jan 2006	Month												% Sightings Frequency		
				Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec			
MZNP																		
F	Shibus Wabemane-Ane	Mar-02	11 y 3 m	-	-	-	-	J	-	-	-	-	-	X	-	-	-	80%
M	Ubu	Mar-02	5 y	-	-	-	-	-	-	-	-	-	-	-	-	X	-	50%
F	Eden 1980	Mar-02	28 y 3 m	X	-	-	-	-	-	-	-	-	-	X	-	-	-	80%
F	Faru	Mar-02	Born	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M	Faru	Mar-02	5 y 8 m	-	-	J	-	-	-	H	-	-	-	-	-	-	-	100%
Total 6 (50% in MZNP)				4	4	4	4	4	4	4	4	4	4	4	4	4	4	67.5%
Darlington																		
F	Eden 1980	Feb-02	22 y	-	-	-	-	-	-	H 18.2	-	-	-	-	X	X	-	80%
F	Nyati	Jan-02	3 m	-	-	-	-	-	-	-	-	-	-	-	X	X	-	80%
M	Nyati	Jan-02	27 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
M	Nyati	Jan-02	4 y 8 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	Nyati	Jan-02	5 y 8 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	Nyati	Jan-02	6 y 8 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
F	Nyati	Jan-02	7 y 8 m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Rump Spine Sweetspot Shoulder Neck



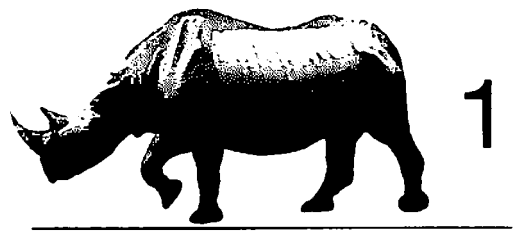
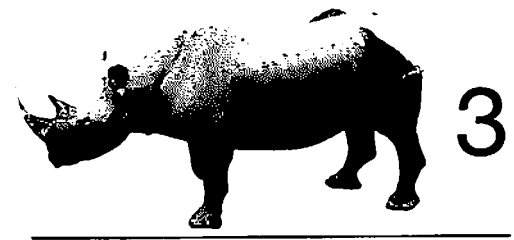
Standardised black rhino condition scoring was developed by HO Reuter, Raoul du Toit, Chris Foggin and Keryn Adcock



Example of Calf Forecast

Black Rhino Calf Forecast for Darlington Population
04 January 2007

COW	AGE	CURRENT	LCJ	BOONEST	PREGNANT	ACTUAL	SIRE
	Jan-06 (Born)	CALE (BORN)	Age at birth	(Conception)	(Conception)	(Conception)	
1 Blom Died 6-Apr-06	25+ y (± 1981)	Guy (Oct. 04)	16 m 20 m	Feb. 06	June 06 (Mar 05)	Sir born female 4-Apr-06	Nyati
2 Tria	6 y 6 m (June 99)	None	7 y 7y 2m - 7y 5m 7y 6m - 7		July-06 (Mar 05) (Apr 05) Aug - 11/27/06 (Dec - Aug 05)	mid-Nov 06 1st seen 2/12 AMM 14/12	Nyati Kuruman Gamka
3 Quatro	8 y 3 m (Oct. 99)	None	6y 8m 6y 10m - 7y 1m 7y 2m - 7		July-06 (Mar 05) (Apr 05) Aug - Nov 06 (Dec - Aug 05) Dec 06 - 1/107 Feb 06 - Apr 06	No calf seen by mid Dec 06	Nyati Kuruman Gamka
4 Khora	10y	Nomvula (Feb. 05)	16 m 21 m 22 m	Jun-06 (Mar. 05)	Nov-06 (Aug. 05) Dec 06 - Jul 07 Sep 06 - Apr 06	No calf seen by mid Dec 06	Nyati Kuruman Gamka
5 Sesha	10 y (± 1996)	Nanny (Jul. 05)	18 m 26 m	Jan. 07 (Oct. 05)	Sept. 07 (Jul 06) Aug 06 - Feb 07 Sept 06 - Apr 06		Gamka Gamka
6 Shizuta	22 y (± 1984)	Dusty (Oct. 05)	20 m 24 m	Jun-07 (Mar. 08)	Oct. 07 (July 06)	X X	Gamka Gamka
7 Helen	5 y 1 m	Tula (March 06)	?			X	Gamka





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Sponsors

Without whom this project would not be possible.

Rhino Monitoring Project:

We thank **The David Shepherd Wildlife Foundation** (DSWF), the principle sponsor of our rhino monitoring project and with whom we have worked for many years. The Foundation made Shibula famous in the UK when trustee and former England cricket captain **David Gower** visited Darlington to film a BBC programme about Shibula, his favourite animal and regular articles about Shibula in the *Wildlife Matters* magazine keep her in the public eye.

WildAid: Assisted with costs for the translocation of the rhino to MZNP and the monitoring project.

50/50: In South Africa, SABC TV 50/50 made Shibula famous by broadcasting several films on Shibula's life and that of her calves.

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Mountain Zebra National Park Expansion Project:

50/50 made an enormous contribution to fund raising by promoting the David Shepherd limited edition prints, generating publicity for the projects, and offering supporters feedback through regular updates of the outcome of the fundraising events. A special thank you to **Danie van der Walt** and his team at 50/50.

The David Shepherd Wildlife Foundation

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SASOL Limited

Vesta Medicines

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The Authors

Sue Downie and Lucky Mavrandonis (both industrial pharmacists) are retired from active business, and now spend all their time on rhino monitoring, conservation, and ensuring their unfenced 800 ha farm in Mpumalanga is a welcome sanctuary for naturally occurring species.

A conservation policy and strategy within their manufacturing and marketing company, was instrumental in the success of Lagamed Pharmaceuticals.

Following David Shepherd's example, Sue and Lucky feel the need to make a positive contribution to the environment. Their time and services are volunteered.

Contact details: Valley Farm, PO Box 511, LYDENBURG, South Africa, 1120
Telephone & Fax : +27-13-235-1626
Cell : +27-82-49 39 786
e-mail : valleyfarm@vodamail.co.za

The David Shepherd Wildlife Foundation

Internationally acclaimed artist and conservationist, David Shepherd established the David Shepherd Wildlife Foundation (DSWF) in 1984 to channel his charitable donations to projects which make a real difference to wildlife survival, focusing on the key flagship species that have given him such success. The authors first met David in 1986 and worked together to raise funds for the desert elephant and black rhino of Kaokoland, Namibia.

The DSWF has generously assisted with fund-raising for several projects over the years for the benefit of the black rhino of SANParks. These include land purchases at Augrabies Falls and Mountain Zebra National Parks and the Black Rhino Monitoring Project.

Without their enthusiastic and generous support much that has been done would have remained a dream. We sincerely thank David, Melanie and everyone involved in the Foundation for their tireless efforts, commitment and generosity to SANParks and the black rhino.

To date over £3.4 million has been granted by DSWF to projects in Africa and Asia working to save critically endangered mammals in their wild habitat and to benefit the local people who share the environment. The DSWF is currently also funding projects in Namibia, Zambia, Zimbabwe, Kenya, Uganda, Russia, Cambodia, India, Mongolia and Myanmar.

Donations sent to DSWF for specific projects, such as this black rhino monitoring project, go 100% to the field, with no administration costs deducted.

For further information on the work of DSWF please visit

www.davidshepherd.org or contact:

Melanie Shepherd, Chief Executive, DSWF

61 Smithbrook Kilns, Cranleigh, Surrey, GU6 8JJ, United Kingdom

Telephone : +44-1483-272-323

e-mail : dswf@davidshepherd.org

Black Rhino

During our lifetime, the black rhino has suffered a catastrophic decline. Numbers have started to show a slight increase, but total populations are still drastically low and the black rhino is still on the critically endangered IUCN red data list.

We remain totally committed to ensuring the long-term sustainable future of the black rhino.

Peter Hitchens' sketch epitomizes what we would like to see, black rhinos free to be wild rhinos. They really are magnificent creatures and deserve a future on this fragile planet.



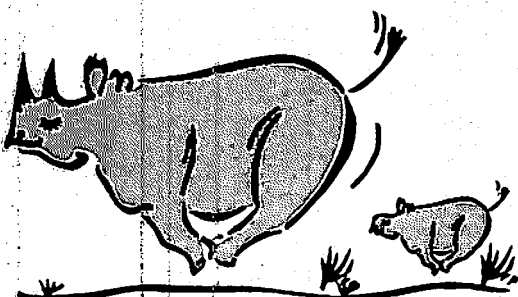
Lucky & Sue circa 1995



David Shepherd Wildlife Foundation



Anthony Hall-Martin, Melanie Shepherd & David Shepherd at Vaalbos 1992



Focus on Rhino

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