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*Molluscs in white rhinoceros  
dung*  
L. G. du Toit

## CHAPTER 13

## Mortalities in the white rhinoceros – J.G. du Toit

### Natural mortalities

For white rhinoceroses occurring in natural areas, the mean annual mortality rate is 3.5% for adult bulls older than 10 years, 1% for adult cows older than seven years, 6% for sub-adult animals, and 3.5% for calves under three years of age. The mean annual mortality rate for black rhinoceroses in the wild, is 7.3% for adult bulls, 3.5% for adult cows, 5.7% for sub-adult animals and 9% for calves. The following are some of the more common mortality factors (Pienaar & Du Toit, 2010).

#### *Droughts*

White rhinoceroses are water dependent. They need daily mud wallows to regulate their body temperature. When the water source disappears during a drought, the animals will move to other permanent water sources. As the white rhinoceros is a selective grazer, large-scale deaths may occur during severe droughts, especially in areas with a high population density. Hundreds of black rhinoceroses died in the Tsavo National Park in Kenya during the droughts of 1961 and of 1970/1971. However, it appears that the black rhinoceroses found in the Namib Desert of Namibia are better adapted to survive droughts.

During droughts on game ranches, it will be necessary to provide water when some of the waterholes dry up. This is because the rhinoceroses are territorial and congregation around the waterholes will lead to increased conflict and mortality. Lucerne can be given as supplementary feeding on game ranches. White rhinoceroses are aggressive at feeding sites and dominant animals may injure others. There should be ample feeding sites and sufficient bales distributed per site. Space the bales widely at each feeding site, to reduce aggression between animals. Animals may become stuck in the mud when watering points dry up. Daily visits to such watering points are necessary during droughts, to rescue any animals that are stuck.

#### *Floods*

The white rhinoceros is a poor swimmer and can be trapped on islands in large rivers during floods. The only way of rescuing these animals is by darting and airlifting them by helicopter.

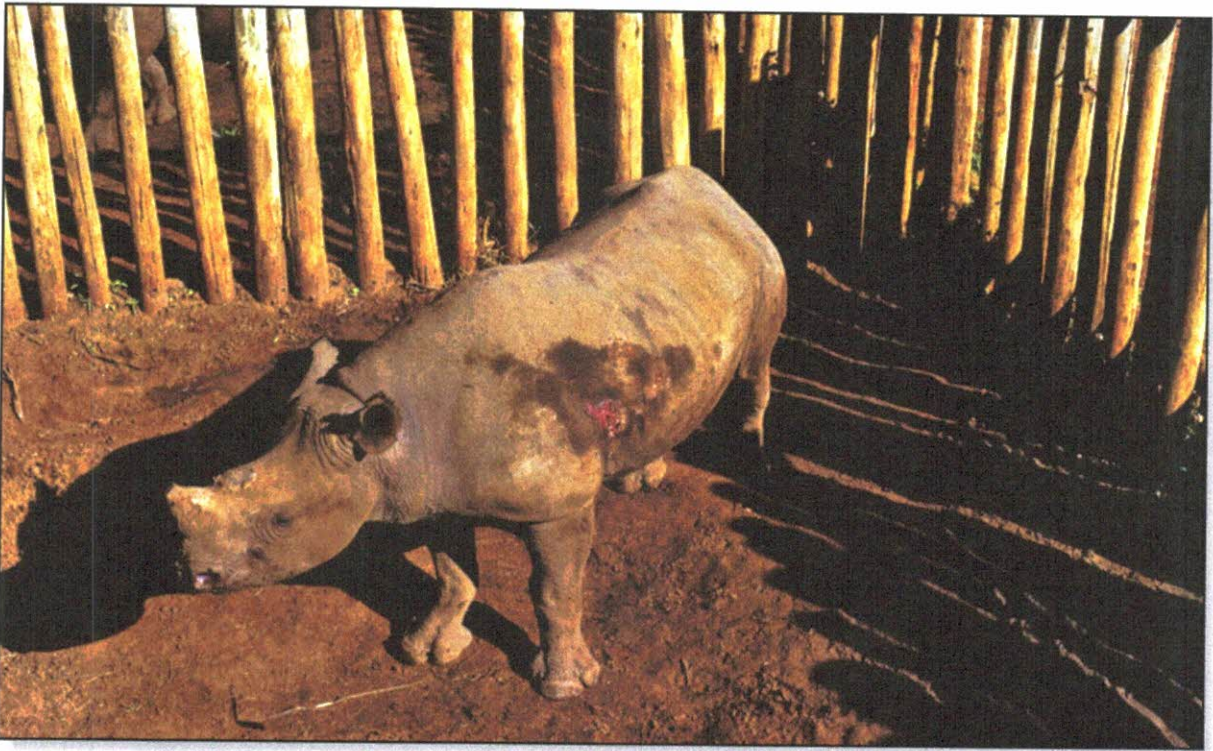
#### *Fire*

Incidences have been recorded of rhinoceroses killed by lightning or burnt to death in veld fires, especially where the animal was trapped against a fence or a cliff.

#### *Diseases*

Parasitic dermatitis is common in the black rhinoceros, and skin lesions of the shoulders, neck and chest are caused by a filarial worm, *Stephanofilaria dinniki*. The lesions become

larger in summer and more or less disappear in the winter. The condition is therefore known as “summer sores”.



*Summer sores in a black rhinoceros*

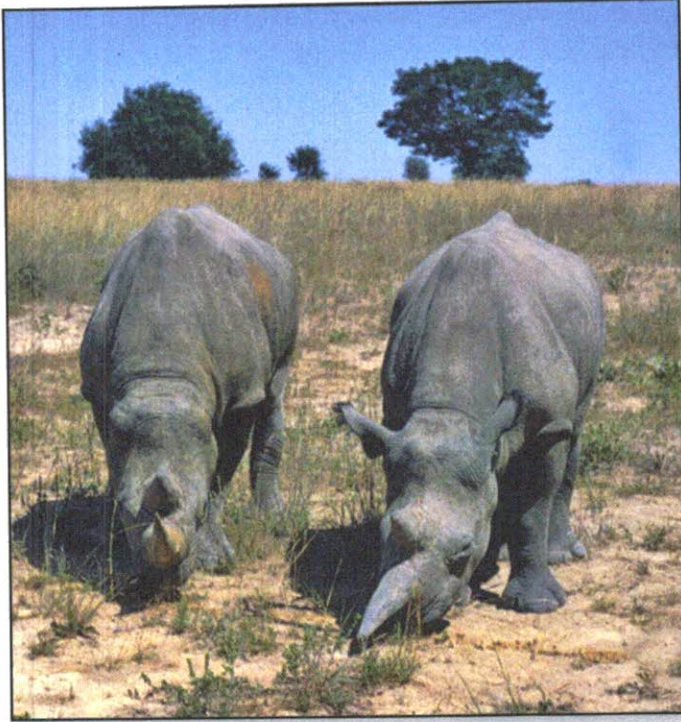
A septic condition of the oesophagus caused by the bacterium *Streptococcus equisimilis* has been recorded under stress conditions (e.g. harsh winters) in two to three-year-old, free-ranging white rhinoceroses. The condition was invariably fatal as the animals did not respond to treatment.

*Babesia*, *Theileria* and *Trypanosoma* species of blood parasites are found in rhinoceroses in natural conditions, without the animals showing clinical signs of these diseases. The possibility of these infections should be taken into account when animals are moved from disease-free regions into areas where these diseases occur.

White and black rhinoceroses died during the 2012 anthrax outbreak in the Kruger National Park.

### *Predators*

Lions can kill young animals and injure adults so severely that they have to be destroyed. A case was documented where a leopard had mastered the technique of killing new-born calves by severing the jugular vein in the neck and waiting for the animal to bleed to death before eating it. Spotted hyaenas have also been known to catch rhinoceros calves. This usually happens in the black rhinoceros because the calf is running behind the mother.



*Hyena was responsible for the ear loss in this black rhinoceros when it was young*



*Bite wounds inflicted by a hippopotamus*

### *Natural causes and fighting*

Fighting between the bulls in territorial disputes is responsible for about 50% of the mortalities in adult rhinoceros bulls. Fighting occurs between white rhinoceros bulls in the Kruger National Park during the end of the dry season when water is scarce. White rhinoceros calves and young cows during the dry season have been so badly injured by these bulls that they die. Moreover, cows in oestrus are often gored in the hindquarters when they try to leave a bull's territory. These wounds can be infected or infested with blowfly maggots.

In the Pilanesberg National Park, sub-adult elephant bulls killed 15 white rhinoceros bulls. These attacks stopped when elephant bulls with a shoulder height of more than 3m were introduced in the area to dominate the sub-adult elephant bulls that were breaking away from the breeding herds and attacking and killing the rhinoceroses.

Fighting with other animals seldom occurs. In the Kruger National Park, however, a white rhinoceros bull was killed by an elephant bull and a black rhinoceros cow died after a fight with a hippopotamus. In the Addo Elephant National Park, a black rhinoceros calf was killed by elephants. Individual cases are known where a black rhinoceros bull was killed by a white rhinoceros bull (Pienaar & Du Toit, 2010).

When white rhinoceroses are introduced on a game ranch, it is necessary to do so in their original family groups. Young, solitary

animals should never be introduced on game ranches that already have white rhinoceros populations, because the resident dominant bull will kill the sub-adults.

### Unnatural mortalities

These mortalities can be described as human induced.

#### Poaching

Currently poaching is a major factor contributing to losses in the metapopulation. More information about this problem is given in Chapters 4, 20 and 21.



*Snare wound in a rhinoceros calf*

after capture in the white rhinoceros. A decrease in the nutritional value of food can cause pregnant cows to abort.

Loss of the horn during capture operations occurs commonly; while wearing down of the horn occurs especially in bomas. In cold areas such as the Free State, the animals can incur freeze-burns on their skin, stomach and tail, or can even freeze to death. Poor feeding in a pen, or even stress, can cause bacterial skin infections. Bacteria that have been isolated in such conditions are the genera *Staphylococcus*, *Streptococcus* and *Pseudomonas*.

Laminitis sometimes attack all four limbs, so that a rhinoceros appears to be lame or crippled. This condition is related to a high intake of food concentrates. Organophosphate poisoning can also lead to muscle weaknesses and ataxia, and is even known to have caused death. A case is known of a black rhinoceros cow in the Kruger National Park that incurred capture myopathy after she had been captured.

### REFERENCES

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- Pienaar, D.J. & Du Toit, J.G. (2010). The white and black rhinoceros. In: *Game Ranch Management*, 5th Edition. Bothma, J. du P. & Du Toit, J.G. (Eds.). Van Schaik's, Pretoria.

