

'Nose jobs' save Namibian rhinos

Sue Armstrong, Johannesburg

CONSERVATIONISTS working in Damaraland, northwest Namibia, have dehorned desert black rhinos (*Diceros bicornis bicornis*) in an attempt to save them from extinction. They carried out the dehorning, dubbed "Operation Bicornis", in three months up to June, and pronounce it a success. Although conservationists have been discussing dehorning for several years, this is the first time they have put it into practice in the field.

The desert black rhino is one of four subspecies of African black rhino, and is found throughout Namibia. Earlier this year, poachers began to threaten the species. Rhino horn fetches fabulous prices in the Far East, where it is used in medicines, and in the Yemen, where it is carved into dagger handles.

Dehorning was chosen because it is more practicable than another option—translocation, moving the animals to a place where they can be better protected. Conservation officers are thin on the ground in Damaraland, which is a vast, rugged area, with few people.

Although translocation is widely used in managing game in Africa, conservationists rejected it in Damaraland for several reasons. First, the death rate among rhinos moved is high—about 15 per cent. According to Peter Morkel, the vet with the Game Capture Unit of Namibia's Department of Nature Conservation, the problem does not arise during sedation and transport; only about 2 per cent of rhinos die during this period. Instead, a rhino is most vulnerable immediately after it arrives in its new home—when it is confined in a stockade, or boma, for a few days or weeks—and when it is released into a strange environment.

Translocated rhinos have trouble with their feeding. Rhinos depend on the presence of bacteria in their large gut to ferment their coarse diet. Translocation interrupts their feeding and disturbs the bacteria in the gut, so that the animals quickly become undernourished. Rhinos need a huge amount of energy to survive.

Rhinos suffer considerable stress when they are first released into a strange environment, because they must establish a new territory among unknown rhinos. A rhino has to be taught the intimate details of its home environment by its mother during the first two years of its life. It learns, for instance, what it can safely eat and where to find water. Eventually, when its mother moves away to produce a calf elsewhere, the rhino establishes its territory in the area where it has grown up.

For the desert black rhino, the problems associated with translocation would be compounded because it would be moving to a totally different habitat. These rhinos, which live on the semiarid fringe of the the Namib desert, have adapted themselves to an environment that is startlingly different from bushveld—the normal habitat of the black rhino.

Until eight years ago, scientists knew little about the desert rhino. Then, Blythe Loutit, a botanical illustrator who had stumbled across their giant footprints in the sand near Damaraland's Skeleton Coast, started a study of what they ate. Loutit found that the desert black rhino is an opportunistic feeder which will even eat



Leonard Lee Ruge. Illustration by Frank Lang.

The normal habitat of black rhinos is bushveld (above), but in Damaraland the animals have adapted to semidesert. This rules out moving them

grass when the food is available.

This is a habit unheard of among black rhinos of the bushveld, where they are browsers, mainly of leaves. One of the desert rhino's favourite foods is the *Welwitschia mirabilis*, an extremely primitive relative of the conifer that is unique to the Namib desert.

The poor diet of the desert black rhino means that when it is being moved, it has less stored energy to fall back on during the period of interrupted feeding. Also, says Morkel, translocation lengthens the time it takes for the bacteria in the gut to adapt to a new diet.

Operation Bicornis has in fact involved the translocation of a few animals, with tragic results for some. A cow that was translocated with her small calf fell to her death over a cliff recently, and a young bull has also died from eating an unfamiliar, poisonous plant.

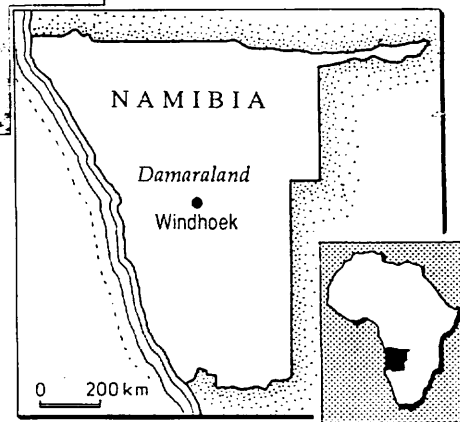
The dehorning process itself involved far less risk, and the team lost no rhinos. They darted the animals from a helicopter, using neuroleptic anaesthesia. This is a mixture of M99, the semisynthetic opioid etorpiine hydrochloride, which immobilises the animals, and azaperone, a sedative that reduces the "narcotic excitement" that is a side effect of M99. Morkel also added the spreading agent hyaluronidase to the syringe to ensure that the rhinos absorbed the other two drugs.

Timing is critical in this procedure. If, an animal makes a short run after darting, this helps to circulate the drug round the body. If it makes a long run before collapsing, this may speed up the physiological processes to a dangerous degree. Because M99 is a

powerful respiratory depressant, Morkel always administers a small dose of a respiratory stimulant, doxapram hydrochloride, as soon as he reaches the animal. This bridges the time during which the animal is in so-called "oxygen debt" because it has been running.

Morkel checks the heart rate and temperature immediately after capturing a rhino. If an animal's temperature is above what he considers the critical level of 39 °C, he will abandon the dehorning and give the antidote. Throughout the operation, assistants throw water over the rhino to prevent it overheating in the sun.

After removing the tranquillising dart, the vet squirts an antibiotic into the wound. This is important, because rhinos can develop abscesses which tend to fester under their thick skin. Also, the dart can damage the muscle slightly because it is fitted with



an explosive internal charge which delivers the drug at high speed. Morkel also administers benzyl penicillin, an antibiotic, to prevent infection in any small wounds that may be caused during the operation.

Workers cut off the horn about 6.5 centimetres above skin level, which is just above the quick. Once they have clipped the stump, and filed it smooth, they paint it with mildly antiseptic Stockholm Tar in case there are any small abrasions. Then a vet gives the antidote M50-50 (diprenorphine hydrochloride). In just over a minute, the animal is back on its feet.

Since the end of the dehorning operations, game guards have camped out in the desert. Supervised by Loutit, they have monitored the animals involved to see if hornlessness has affected their social interaction, their ability to defend themselves against each other and predators, or their feeding habits. "Absolutely no ill effects have been observed so far," says Loutit.

In the past few months, two calves have been born to mothers with "nose jobs", leading the team to believe that females are no less attractive to males, despite their radical surgery. Loutit also says that there is no more poaching in Damaraland. Instead, the poachers have moved northwards to the vast game region of Etosha. □