The biological management of rhinos in Hluhluwe-iMfolozi Park

Understanding the biology and ecology of species is vitally important in developing effective conservation strategies. For species such as the black rhino (*Diceros bicornis minor*, *below*) and white rhino (*Ceratotherium simum*), this understanding has been developed over the years through research and by learning from the results of various management actions.

Dr Dave J Druce | Park Ecologist, Hluhluwe-iMfolozi Park

In the KwaZulu-Natal (KZN) province of South Africa, this knowledge has allowed Ezemvelo KZN Wildlife (Ezemvelo), the government agency mandated to manage the conservation portfolio of KZN, to develop management and monitoring strategies for both rhino species for the province. These strategies include a vision, objectives and various population performance targets. The success of the two rhino populations are assessed against these targets on an annual basis.

In Hluhluwe-iMfolozi Park (HiP), as with other public protected areas within the province, more detailed Park-level management plans exist, which outline how censuses are to be undertaken, how the data is to be analysed, what monitoring and reporting needs to be done and how removals or introductions are to be determined. The HiP management plans for both black and white rhino, purposefully, do not list a carrying capacity limit for either rhino species.

> **A detailed black rhino park database contains each individual's history and details of all sightings**

Black rhino are individually identified and monitored. To do this, young black rhino are immobilised and a unique pattern of notches are clipped out of their ears. A detailed black rhino Park database contains each individual's history and details of all sightings. Each time a black rhino is seen, the unique notch patterns and location of the individual are accurately recorded and reported. Sightings are reported by field rangers while on foot patrol, by managers and scientists while on aerial anti-poaching patrols, by priority species monitors, and by tourists. Camera traps also assist in providing additional sightings.

Annually, the population performance is determined and 5% of the population is removed to form new populations, usually on private or communal land. Because the population is monitored to the individual level, and in order to ensure that the population within HiP is not negatively affected by the removals, specific individuals are selected for removal. The success of this process is dependent on good monitoring, which allows managers and scientists to have an accurate idea of the demographics and distribution of the animals.

White rhinos, however, are not monitored individually in HiP. Every two years, detailed game counts are conducted on foot throughout the Park with the assistance of Earthwatch Institute volunteers. This produces a very accurate estimate of the Park's white rhino population. Within the Hluhluwe section of the Park, 2% of the white rhino population is removed annually. In iMfolozi, the removals strategy was informed by research conducted by Professor Norman Owen-Smith many years ago. Here there is a core area, which is assumed will form the hub of the rhino population. Away from the core area are various sinks. The density of rhino in the sinks is kept low so that rhinos can move from the core into these sinks when habitat conditions and social interactions become poor. These sinks have trigger densities that, when exceeded, result in rhinos being removed. A fixed-wing aeroplane is used to determine where the rhinos are distributed relative to the core and the sinks. All white rhino that are removed are either donated to other Ezemvelo protected areas or auctioned off to various buyers.

The success of these management plans are greatly dependent on the management and scientific teams working closely together and having the resources and manpower to monitor the populations, conduct censuses, store, analyse and interpret data and review the plans' effectiveness.

Grants

We sent £1,300 in emergency funding from restricted donations received for HiP for ear-defenders for rangers to wear while at target practice, and for repairs to Section Ranger Dirk Swart's motorbike. We are currently holding over £11,000, from donors including Safari de Peaugres and the Foundation Friends of SafariPark Beekse Bergen, which will be sent in March, ready for HiP's new financial year.

ALL IMAGES DAVE DRUCE