

## **RADIO-TELEMETRY IN BLACK AND WHITE RHINOS IN ZIMBABWE: MANAGEMENT AND RESEARCH COMBINING TO ENHANCE LAW-ENFORCEMENT IN THE PROTECTION OF AN ENDANGERED SPECIES**

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In 1993 the Department of National Parks in Zimbabwe adopted an Intensive Protection Zone (IPZ) strategy to protect the remaining black and white rhinos in the Parks and Wildlife Estate. This involved the designation of 4 areas as IPZs with all remaining rhinos either being already resident or relocated into these areas from elsewhere. IPZs have increased and better trained manpower, more vehicles and equipment with increased Governmental and NGO support. Specific management actions include ongoing dehorning and radio-collaring. As of January 1995 over 86 rhinos (black n=69; white n=17) have had radio-collars fitted in the four IPZs. The radio-collaring of rhinos has been undertaken as part of the IPZ strategy whose most important aspect is monitoring for law-enforcement, as well as behavioral monitoring and research. The former is a vital component of protection as knowledge of territories and dispersal of rhinos allows more strategic deployment of anti-poaching patrols. It also allows a rapid response if illegal activity is detected, with increased protection for rhinos in the incursion area. The addition of mortality sensors to transmitters has assisted with law-enforcement and veterinary procedures.

The attachment of telemetry devices on black and white rhinos is problematic due to the anatomy of their necks. Several methods have been devised including telemetry ear tags and horn implants. Collaring of species such as the Indian rhino ( ) has been successful but although collaring methods have been attempted on both black and white rhinos these have not been successful long term. Due to the lack of horns, due to dehorning, for implants and the need for long term monitoring to enhance law enforcement in Zimbabwe's rhino IPZs, a suitable radio-collar design was considered imperative. The initial attempts at using a stretchable elastic (heavy duty upholstery elastic) with a canvas cover were unsuccessful due to breakage and several of these rhinos being poached. A more durable nylon tube covering was designed but collars were placed on too tight. The theory behind this was that a snug collar would not rotate or have a tendency to slip off. Unfortunately initial attempts resulted in pressure necrosis and cutting of the collar insert into the dorsal neck.

Another design was tried consisting of a hose within which a steel cable was inserted attached to the transmitter. Although this design appeared to be animal friendly the majority had slipped off within 3 months. The insert collar design was retained and considerable care taken in adjusting tightness and fit. Following this the design has proven to be the best of several tried with some collars remaining on rhinos for > 16 months with no neck damage.