

Africa:

Lipstick, hula-hoops and a metal-detector

When I got a request to write an article for *The Horn* on a piece of equipment I found particularly useful in my work, I was initially at a bit of a loss as to what to pick. Writing something on some of the amazing new machine learning / data mining / artificial intelligence or multivariate ecological statistical software packages would not be of much interest to most readers. So, I decided to write about lipstick, a metal detector and a hula-hoop.

Richard Emslie
Scientific Officer, IUCN SSC African Rhino Specialist Group

I used my favourite pieces of equipment in the early 1980s, when I was doing field work on applied white rhino grazing ecology in iMfolozi Game Reserve, South Africa. Park management at the time were concerned about the potential for "over-grazing" by white rhinos as a result of the Park fence preventing their dispersal (a population regulation mechanism).

The grass in iMfolozi was not only responding to being eaten by white rhinos, but also by other large herbivores such as buffalo, zebra, impala and wildebeest, as well as by insects. To better understand the impact of grazing by white rhino on other herbivore species, and on the grass itself, as well as the impact of grazing by other species on white rhino, I studied grass responses to observed grazing patterns of a range of common species.

One year, as part of this work, I had about 1,700 marked study grass tillers of two of the major grass species in the Reserve. (The term tiller refers to an individual grass shoot that sprouts from the base of a grass tuft / plant.) The study grass plants were marked with small, grey, numbered metal tags and on each plant two sample tillers were marked using very thin red and black twisted wire collars at their base.

I went back to these marked study tillers in the field every three weeks during the growing season to see if they'd been eaten, and if so how and by what. This allowed me both to determine what types of grazing regimes were natural, but also how the grass tillers responded to different levels and patterns of defoliation. A cheap "treasure-hunter's" metal detector proved very useful for finding the iron bars marking the end of the transects, and also for finding some of the marked grass plants along the transect. A pink and white candy-striped hula-hoop also proved to be a useful marker for circular "quadrats" when monitoring grass species composition and studying grazing patterns by a number of key large herbivore species.

I needed to be sure that I didn't double-record any grazing on my study tillers when I came back on subsequent visits. Seeing as most animals are pretty colour-blind and lipstick is largely made of wax, I thought lipstick might be suitable for marking any grazed grass surfaces, and shouldn't unduly put off the animals or insects. Although the colour eventually faded in the sun, the lipstick lasted long enough that there was never any chance of double-counting. Zululand summer temperatures sometimes exceed 40°C, and one problem was that the lipstick could melt. As it melted less in the Zululand heat than other brands, and was easy to see, Yardley's Rave Red long-lasting lipstick ended up being my brand

of choice. To the surprise of the female shop assistants at the chemist in Mtubatuba, I would usually buy five to ten lipsticks at a time. Pockets filled with partially used lipsticks certainly didn't quite fit the archetypal image of the rugged bush ranger / researcher wearing khaki! Who cares - it worked!

Interestingly, I found that many of the experimental simulated grazing regimes being used by a number of academic researchers at the time bore no relation to how the grasses were actually being eaten in the wild. The results from my monitoring of grazing in the field and observations of grazing patterns of key herbivore species helped guide the design of some simulation defoliation experiments that I undertook in a large herbivore-proof enclosure the following year.



Richard expands his latest theory to delegates at the 2008 AFRSG meeting in Lake Manyara, Tanzania

IMAGES: SAVE THE RHINO

Richard gets up close and personal with white rhinos

Namibia:

Command centre

The Rhino Recovery Car, together with its crates and trailers, has permitted the Namibian Ministry of Environment and Tourism to move more black rhinos safely, efficiently and at considerably less cost.

Mark Jago
Game Capture Veterinarian
Ministry of Environment and Tourism

The sound of the 21st-century mobile phone screaming a wake-up call at five o'clock in the morning drags me painfully from a brief two hours of sleep under a crystal clear star-spangled African sky. It is cold, even colder than when we off-loaded our precious cargo of two female black rhinos the night before, deep into the heart of Damaraland in western Namibia. The sound of voices and the aroma of coffee drive the lack of sleep away, and as the first rays of sunshine creep above the horizon, the roar of the helicopter's jet engine signifies the start of another rhino capture for Namibia's Ministry of Environment's rhino capture team.

Capture is fast, challenging work requiring above all the combined effort of a number of individuals united into one well-oiled team. Alongside the people there is a battery of highly specialised vehicles and equipment. This has been modified countless times over the years, as more is understood about the best way to capture and transport rhino and the techniques improve. Capture of wild creatures is by definition stressful for

the animals concerned, but the team continuously strives to minimise this stress and to ensure as efficient and as safe an operation as possible. It was with this philosophy in mind that the Rhino Recovery Car (RRC) and the Lightweight Rhino Crate and Trailer system was built. These pieces of kit have proved to be highly successful.

Funded in part by Opel Zoo, the RRC has brought together into a single vehicle all the kit needed to carry out the numerous procedures that are required for a rhino to be translocated. The converted 4x4 Landcruiser is always the first to arrive by the side of the sleeping rhino. It carries water to cool down the rhino, ropes to secure and move it, bush-cutting equipment to clear a road in for loading, and a myriad of veterinary equipment to monitor and support our prehistoric patient. Supplemental oxygen, pulse oximeters, thermometers, cooling fans are all ready to hand at a second's notice. A portable generator powers the drill that neatly fits a radio transmitter into the horn, so the animal can be located and monitored after translocation. Equipped with both ground-to-air and inter-vehicle radios, the RRC is the command centre for each and every rhino capture.

A few years ago Pierre du Preez and his colleagues in the Ministry of Environment and Tourism started looking at the option of using lightweight rhino crates and trailers to recover and transport black rhino. Costing significantly less than the older systems, these have now been refined into veritable first-class travelling compartments!

The crates are significantly smaller than their predecessors and constructed of the minimal amount of steel needed to contain a rhino safely. With doors at both ends, rhinos can be easily loaded and offloaded. The interior is lined with rubber conveyor belting to minimize any chance of the rhino injuring itself. With air vents cut into the sides and back, trap doors on the top which may be open or closed, and the crate painted with a heat resistant paint, critical temperature control is about as good as it gets. The crates can be rapidly winched up onto a low, simple trailer, which then is pulled by a standard Toyota Landcruiser from the remotest parts of the Namibian bush, before being cross-loaded by crane to the large 6x6 transport truck, which can carry up to three crates at present.

All the equipment requires continual maintenance, for wear and tear is significant, but the equipment has undoubtedly been an essential factor in helping Namibia pursue its ambitious and successful black rhino conservation programme.

Thanks!

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Things don't always go to plan!

IMAGES: DAVE HAMMAN

The translocation team mud wrestles with a rhino