

Topics for RRC roundtable discussion

1. Phytoestrogens – following the Tubbs update given by Katie, there should be some good discussion points regarding where we are with this.
2. sex ratios - put to bed five years ago but I still hear people bring it up. Is it a problem?
3. rhino welfare – welfare has become a huge topic and is complex; Is it worth a discussion within this group?
4. dental issues – big issue in black rhinos - why? Is it a problem in other rhino species? Is it just mechanical due to less browse in diet? Is there a link to iron? Could it be linked to microbiome?
5. SND (superficial necrolytic dermatitis) – Have there been more cases? Are cases declining?
6. IHVS (Idiopathic hemorrhagic vasculopathy syndrome) – Have there been recent cases? Where? Is this syndrome in decline? What do we know about it?
7. TB – Growing number of cases in wild populations. What about captive populations?

Cases of sporadic TB have been reported in captive rhinos; however, recent studies have found *M. bovis* infection in free-ranging black and white rhinos in BTB endemic areas. The consequences of detecting TB are quarantine of the facility/property, which restricts movement of animals for conservation and breeding programs. In addition, evidence suggests that rhinos can shed bacteria in respiratory secretions and thus pose a threat to other rhinos, animals, and people. Research is ongoing to develop diagnostic tests, and investigate the epidemiology of this disease in rhinos. Since important free-ranging populations exist in TB endemic countries, this is a significant threat to ongoing conservation activities, including international translocations.

8. Foot problems (pododermatitis) – I think this is resolved and we all know it is substrate related and how to remedy the situation. Correct? Or, is more research needed?
9. IOD – a good follow up discussion to Katie’s presentation and where we need to go with this.
10. Rhino tissue bank – where does it stand? What is the future?
11. Rhino necropsy protocol – are there suggestions for Michele based on research priorities? Should we post this with the Rhino Husbandry Manual?
12. Renal disease in captive rhinos – chronic pathological changes are often observed in necropsied rhinos in captivity. These are sometimes associated with vague clinical signs such as weight loss, lethargy, poor appetite, but commonly used blood/urine analyses are not particularly helpful in diagnosis. Novel tests for detecting and investigating the cause, management and prevention of renal disease in rhinos should be a research priority. Is this just age-related and rhinos are living longer?

In Situ topics:

13. Orphan rhino care and hand-rearing – there is a need to ensure that we provide the optimal care for orphan rhinos which may be compromised when recovered (including dehydration, malnutrition, and wounds associated with gunshot or predators). A holistic approach should include readily available formulas for bottle rearing, husbandry/welfare recommendations that will maximize successful reintroduction of rehabilitated rhinos (not imprinted), treatment of infections associated with wounds, prevention of infections such as Salmonella and Clostridia.

Can we draw from ex situ experience with bottle raised black and white rhino calves? Do we have enough info to help out with both species?

14. Pain management for injured rhinos – this is imperative for poaching survivors but also rhinos in captive care.
15. Novel/effective/practical wound treatments for rhinos – again for poaching survivors which are often injured in the limbs or head/neck.
16. Biomarkers for prognosis – recent work has shown that injured/sick rhinos often have a drop in albumin, globulins and total protein needed for healing/recovery; also they become anemic, with increases in liver/kidney/muscle values that indicate cachexia. Can certain values be associated with prognosis to assist clinical decisions and management? Again, applies to free-ranging and captive rhinos.
17. Objective determination of conservation value of different rhino populations - This issue becomes important to influence more appropriate metapopulation management of rhinos by highlighting the fact that the conservation value of rhino populations drops disproportionately as numbers decline, an issue that is really important for countries which are not making appropriate policy decisions on the biological management of rhinos. (i.e., 25% of rhinos are on private land but that 25% does not equate to 25% of the conservation value of all rhinos in Africa).
18. Rhino parentage analysis to determine effects of management practices – These data are needed to determine what husbandry practices (translocations, dehorning, etc.,) may be impacting breeding dynamics. Attempts to get such data from University scientists have been unsuccessful to-date.
19. Exploration of alternative low-power RF systems to track rhinos and to integrate anti-poaching data – There is the need for a software programming expert to work on a simple “platform” that integrates primary digital data from devices in the field (digital radios that transmit GPS positions, Sigfox devices sending locational information from tagged rhinos and from Sigfox-linked devices such as vehicle trackers, gunshot detectors, etc., so that this information can be displayed in a customized way on a computer screen in an ops room.
20. Economic analysis of rhino conservation - What economic values do rhinos contribute to national economies? What economic stimuli can be applied to achieve new range expansion options in South Africa?