3.5 The status of black rhino in the Serengeti National Park

Titus Mlengeya, Chief Veterinary Officer, TANAPA, Tanzania

The total number of the Eastern Black Rhino *Diceros bicornis michaeli* in Tanzania is currently estimated at 60. From 1970 to the late 1990's poaching reduced the rhino population in the Serengeti-Mara Ecosystem from over 2000 animals to almost local extinction. There are currently two isolated populations, one near Moru Kopjies in the south (~10 animals) and another on the border with the Masai Mara National Reserve (~10 animals). Rangers conduct regular patrols to monitor the health and growth of the populations. Challenges facing effective conservation management of these rhino populations include: (i) low reproductive performance in young females; (ii) long distance wandering of heifers; (iii) restricted genetic flow; (iv) disease; (v) poaching; and (vi) slow decision-making on management interventions. Active management is strongly recommended. Translocation and exchange of rhinos is necessary to increase genetic diversity. New bulls are required for both populations. The establishment of a new founder population in the central Serengeti is advised, because of the abundance of suitable browse, the availability of water and the minimal risk of disturbance. The Oldupai-Ndutu area is also potentially suitable, but there is a greater security risk in this region. There is an urgent need for quick decisions, effective implementation of policy, firm political support as well as financial support from government and NGO's.

3.6 Ngorongoro black rhino: current status and problems

Amiyo Amiyo, Ngorongoro Conservation Area Authority, Tanzania

The number of black rhino in Ngorongoro Crater decreased from ~110 in the early 1960's to ~20 by the early 1970s. At present the population comprises 10 adults (3 of which are breeding males and 5 are breeding females), 3 sub-adults and 3 calves. The main breeding bull (John) has dominated since 1993. Ten of the 16 rhino in the Crater are John's offspring. It is likely that another bull (Mikidadi) will soon displace John as the dominant bull. Twenty calves have been born since 1990 of which seven have since died including four due to predation. Six adult rhino have died since 1990 of which the causes of death were disease (2), poaching (1 or 2), injury (1 or 2) and old age (1). Effective and sustained monitoring of rhino has reduced the risk of poaching. The greatest threats to the long-term conservation of the rhino are now ecological change and disturbance from humans. In 1966, there were 17 rhino resident in Lerai Forest. There are now no resident rhino in the forest probably due to dieback of trees and understorey and a consequent reduction in browse and shelter. Several factors are probably involved in the dieback. These include a reduction in water flow through the forest, increased elephant pressure, accumulation of salts in the soils and flooding during El Nino. *Acacia xanthophloea* is becoming reestablished outside the original forest towards thecrater rim but is not forming suitable rhino habitat. Other threats facing the rhino include: (i) an increase in elephants, which compete for browse, disturb rhino cows and calves and remove trees/cover used by the rhinos; (ii) an increase in buffalo which increase tick loads and, like elephants, compete for browse and disturb cows and calves; (iii) an increase in human disturbance due to tourism pressures, which can delay cows returning to calves and agitate the inherently shy rhino; (iv) invasive plants (e.g. *Bidens schimperi* and *Gutenbergia cordifolia*) have reduced habitat suitability for rhino in many parts of the Crater; (v) a reduction in swamp habitat due to construction of drainage ditches; (vi) possibly increased predation on calves due to a reduction in bush cover in which cows can leave calves while they look for water; (vii) a reduction in available browse which may

be causing malnutrition (especially in the dry season) which makes the population more susceptible to disease; (viii) protozoal blood parasites (e.g. babesiosis) are problematic when rhino are stressed during drought; and (ix) the high level of inbreeding is likely to manifest in abnormalities, reduced conception and greater calf mortality due to lowered immunity to disease, unless new rhinos are brought into the Crater.

3.7 Disease concerns for black rhino in East Africa

Elizabeth Wambwa, Chief Veterinary Officer, Kenya Wildlife Service.

Health risks for black rhinos include: (i) numerous tick species that cause diseases such as *Babesia bicornis* and *Theileria bicornis* which can result in rhino death under extreme conditions such as drought; (ii) biting flies, in particular *Glossina* species which are vectors for trypanosomiasis - a condition only likely to manifest clinically when rhinos are stressed; (iii) nematodes which cause skin ulcers; (iv) viral diseases such as rabies; (v) bacterial diseases such as Anthrax, Salmonella, *Pseudomonas pyocyanea*, coliform bacteria, *Clostridium* spp., and tuberculosis; (vi) Haemolytic anemia, which is usually linked to infection with *Leptospira interrogans* and can cause rapid death (within 48 hours of first symptoms); and (vii) trauma, disease and injuries sustained during and after translocation. Rhinos are routinely translocated in Kenya to increase metapopulation growth rates. Stresses exerted during translocation can, however, reduce immunity and increase the risk of infection. Resident rhinos also often fight with introduced rhinos which can cause injury or deaths. Nine rhinos have been killed by such incidents during 77 rhino translocations in Kenya. It is recommended that health and disease management play an integral role in the conservation of black rhino in the Crater. Before rhinos are brought into the Crater, for example, they should be rigorously screened for diseases and parasites. Serological investigations should be conducted in the Crater to determine the susceptibility of rhino to various infections and to develop a proactive disease management plan.

4. CRATER ECOLOGY WORKING GROUPS (3 SEPTEMBER 2003)

Small working groups were formed in the afternoons of both days. These groups were asked to identify management problems and solutions within their subject areas.

4.1 Working Group 1: Pasture, fire and ticks

Chair: Winston Trollope
Rapporteur: Amiyo Amiyo

4.1.1 Priorities that emerged:

- Development of a fire management plan;
- Development of a vegetation monitoring programme to assist fire management decision-making;
- Production of a map of the major vegetation units related to the major types of soils in the Crater;
- Identification of browse species favoured by rhino;