To make informed management decisions, comparative data were needed for the different populations on key performance indicators such as age structure, age at first calving, average intercalving intervals, mortality rates and rhino body condition. Mark-recapture analysis of both ID and clean animal sighting data was also needed to produce accurate estimates of true rhino population sizes and densities. All these data could then be used to help manage populations for maximum growth so that rhino numbers will increase rapidly towards the overall metapopulation target, as well as to maximize genetic diversity and enhance Kenya's future ability to withstand any limited poaching outbreaks. It was decided that the system should also assist sanctuaries in rhino security and improve overall knowledge of their population. For example, information obtained on patrol routes, rhino sightings, movement and home ranges could be used to deploy patrols.

Effective operation of such a system requires high-quality field data, which in turn can be achieved only by improving rhino monitoring. It was recognized that by obtaining items of equipment such as GPS receivers and digital cameras, and by training rangers in the use of standardized AfRSG-recommended monitoring techniques, the quality and conservation value of monitoring data obtained could be improved.

While KWS developed the initial version of the system, financial support of USD 100,000 from the United States Agency for International Development (USAID) has enabled KWS to further enhance the system and then to implement it in the 12 Kenyan rhino sanctuaries and parks.

Development commenced early in 1999, and by the end of that year the first version of the database was completed. A nine-month pilot study of the information system followed in Nairobi National Park, which also included use of GPSs and a digital camera. This trial was very successful, and good quality biological data on the population were gathered. Rhino managers at Nairobi are now effectively planning patrols using the system and scouts are confidently using the GPS receivers and digital cameras in their daily monitoring. Further enhancements to the system have been made based on the experience gained from the pilot study, a five-day rhino monitoring and management workshop, and the output of the Kenya rhino conservation strategy development workshop held in September 2000. AfRSG has also contributed vitally to the development. Its contribution included a visit to South Africa by KWS rhino staff in November 2000 where they exchanged expertise with counterparts in southern Africa to make the Kenyan system complementary with those of the southern African range states. A one-day rhino database symposium was organized at KwaZulu-Natal Wildlife headquarters, where the system was demonstrated and necessary amendments incorporated, which included standardized performance indicators and automated queries to facilitate annual status reporting.

The required information system and monitoring equipment have now been acquired for all the parks and the system was fully implemented following a training workshop in May 2001. Other partners in rhino conservation have also provided additional project support.

KWS would like to sincerely thank USAID for the financial support, and the Zoological Society of London and AfRSG for their important contributions towards developing the system.

Black rhino dung DNA analysis

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The International Rhino Foundation (IRF) on behalf of the Selous Rhino Trust and in collaboration with the Smithsonian Conservation and Research Center is processing proposals submitted to support developing and applying a faecal DNA methodology that will be generally applicable in assessing and managing black rhino populations and that specifically will be applied to analysing the Selous black rhino population. Proposals are under review. Updates on this project will appear in future editions of *Pachyderm*.