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Abstract: In southern Africa, the increasing popularity of ecotourism has resulted in the establishment of wildlife reserves in areas formerly used for intensive livestock and crop farming. In 1992, the Phinda Resource Reserve began a large-scale project to attempt the re-introduction of lions and cheetah into northern Natal, South Africa. The project has been successful in initiating the re-establishment of these two species. Both have bred quickly and the survival of the litters has been high. A long-term management plan is underway to exchange individuals of both species with other reserves in South Africa to minimize inbreeding of both founder populations of about 30 individuals each.

Reintroduction of Lions and Cheetahs in South Africa

by Luke Hunter*

In southern Africa, the increasing popularity of ecotourism has resulted in the establishment of wildlife reserves in areas formerly used for intensive livestock and crop farming. These projects are laudable in their attempts to re-establish the indigenous wildlife of the region, but the understanding of the parameters necessary to make such ambitious ventures successful are often poorly understood. At the beginning of 1992, the Phinda Resource Reserve, a privately-owned wildlife reserve of 18,500 ha, began a large-scale project to attempt the reintroduction of lions (*Panthera leo*) and cheetah (*Acinonyx jubatus*) into northern Natal, South Africa, a region from which both species had been absent for many decades.

In conjunction with the University of Pretoria's Mammal Research Institute, an intensive research project was implemented at Phinda to monitor the progress of reintroduced felids in an effort to establish criteria for success in this sort of manipulation of wildlife communities. This article presents a brief summary of the project's success to date and the management implications involved in the reintroduction of large felids. Greater detail of the behaviour and ecology of reintroduced lions and cheetahs will be presented in a series of papers currently in preparation.

Phinda authorities released 13 lions and 15 cheetahs between 1992-1993. All the animals were wild-caught and upon their arrival at Phinda were kept in an 80 metre x 80 metre boma for 8-10 weeks. This period of captivity prior to release seems to be very important when translocating carnivores. Experience from earlier translocation efforts indicates that carnivores released without the pre-release captivity period leave the release area and often head for the capture site which may be hundreds of kilometres away. At Phinda, all released felids remained in the reserve and established stable home-ranges within a few months of release. During this process the "conditioning" of animals to electrified fences was important. At Phinda, the entire reserve is enclosed by a 2.2 metre high electric game-fence. The holding boma had an internal electric fence so that animals' initial efforts to escape the boma resulted in being shocked. When released, lions and cheetahs appeared to "respect" the fence and have not

crossed it, despite the temptation of livestock and game on neighbouring properties.

In addition to radio-collaring some individuals (Telonics, ArizonaTM), all animals brought to Phinda have been implanted with subcutaneous TrovanTM transponder identification chips and tattooed on the gum above an upper canine tooth, ensuring positive identification should animals leave Phinda boundaries. After three and a half years, all transponder chips are still working and have proved to be an excellent method of marking animals. By now, however, the gum tattoos are unrecognisable or have disappeared.

Mortality of released felids in the first three years has been high; illegal human activity in the reserve being the single greatest factor. Wire-snare poaching at Phinda has killed five lions and two cheetahs. In the case of the lions, disruption of stable social groups resulted in the loss of five cubs, deaths which would probably not have occurred if not for the initial losses of pride males by snaring. Three lions were destroyed when they killed a tourist, and a female cheetah with three yearling cubs born at Phinda left the reserve when an entrance gate was inadvertently left open. These animals were not recovered and moved into farmland where they were almost certainly shot. Deaths of cheetahs also occurred as a result of territorial clashes (two male deaths) and encounters with lions (two male deaths). These natural deaths aside, the influence of human activity on the success of such projects cannot be underestimated. When reintroduction of large predators is to be attempted, reserve managers need to allocate resources wisely to control issues such as movements of people and poaching within the reserve.

Nonetheless, the project has been successful in initiating the re-establishment of these two species in the area and Phinda is now one of the finest reserves in South Africa in which to view these animals. Both species have bred quickly and survival of the litters has been high. Populations of both lions and cheetahs are approaching 30 individuals and a long-term management plan is underway to exchange individuals of both species with other reserves in South Africa. In small areas such as Phinda, where low numbers of individuals make up founders of a reintroduced

population, inbreeding remains one of the greatest long-term problems. Active management of the population in the early stages of these projects is vital if it is to be successful in the long run.

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