

# The Nagarhole tiger controversy

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The small community of wildlife researchers and conservationists in the country has been rudely rocked by a controversy that has ramifications for the very freedom of scientific inquiry. It all began when five tigers died over a two-month period during March–May this year in the Nagarhole National Park in Karnataka. At the centre of the controversy is wildlife biologist K. Ullas Karanth, who is conducting research on tigers at Nagarhole. The state's then minister for forests accused Karanth of being responsible for the death of the tigers and issued orders banning the research project. Not only has a specific research project been stopped but other sweeping statements have been made by the minister to the effect that no research of any kind would be permitted in the forests of Karnataka.

The purpose of this article is to explain the nature of the research project, its utility or otherwise in the advancement of scientific knowledge and formulation of conservation plans for the tiger, the deaths of the tigers and whether the government is justified or not in accusing the researcher for these, and the implications of the controversy for future research in ecology.

## The tiger research project

The research project, 'Ecology and management of large carnivores in Nagarhole National Park', was begun in 1986 by Ullas Karanth under an Indo-US collaborative venture. The principal American associate of the project is University of Florida's Melvin Sunquist, well known for his pioneering scientific studies of the tiger in Nepal using the technique of radio-telemetry<sup>1</sup>. The early phase of the project in fact received funding from Karnataka's Department of Science and Technology through their Ecology and Environment Unit. From 1986 to early December 1989 the project did not involve any form of 'manipulative' research. During this period the herbivorous mammals in the park were censused intensively and

the feeding habits of the carnivorous mammals studied by examining their kills and scats<sup>2</sup>.

Once the basic background information on the ecology of the park was built up, the project moved into its next phase—that of capturing tigers and leopards through chemical immobilization and fitting them with radio transmitters for subsequent tracking. This aspect of the research was cleared both by the Government of India through its Ministry of Environment and Forests and by the state government's forest department. During December 1989 and January 1990 four tigers and two leopards were collared. Later, another leopard, which had strayed into a village, was captured by the forest department and released in Nagarhole with a radio-collar fitted on it.

The procedure for collaring the tigers was as follows. Live baits, usually buffalo calves, were tied out in the park and regularly checked. The baits were fitted with radio-collars so that if there was a kill and the bait carried away, the carcass could be easily traced. Once a tiger took the bait the team moved into action. With the help of captive elephants the tiger was encircled with two long stretches of white cloth and slowly made to move towards a specific point where it was darted with a tranquillizer. The drug used was a mixture of a disassociative anaesthetic and a muscle relaxant: a combination of tiletamine hydrochloride and zolazepam hydrochloride for darting free-ranging tigers and ketamine hydrochloride and xylazine hydrochloride for leopards trapped in a cage<sup>3</sup>. These drug combinations, developed in the early seventies, have been used on many cats, including tiger, lion, jaguar and Florida panther, both free-ranging and in zoos. Under experimental situations they have been used when an animal is needed for surgery and must be down for 6–7 hours. According to Karanth the dose used for darting free-ranging tigers at Nagarhole was about one-third that of the surgical dose, which itself has a wide safety margin.

Once darted the tiger usually moves

no more than about 250 metres before going into a slumber. A temporary tent is put up to provide shade and the animal is cooled by pouring water over it. A specially designed collar with a miniature radio transmitter is fitted around the neck of the animal. The collar and the transmitter together weigh 800 grams; the general rule is that this should be less than 3% of the body weight of the animal. A surveillance is kept on the animal until it revives and moves away into the jungles. The time for revival varied between three and eight hours in the case of the darted tigers at Nagarhole. Karanth has asserted that all the tigers darted during the study revived successfully and there was no mishap. The four tigers, three males and one female, were all collared between 7 January and 29 January 1990. No further darting of tigers was attempted after this according to Karanth. The first tiger to be collared, an old male, had serious injuries, suspected to have been inflicted during a fight with another tiger, at the time of capture. This has been clearly documented on video tape and film.

## The tiger deaths

The first tiger to be found dead was an adult male, on 6 March in the Hunsur range. The post-mortem examination, carried out by a government veterinarian, indicated pulmonary congestion, suggestive of some disease, which however was not diagnosed. On 27 March the old collared male with injuries was found dead. This was not really surprising because its imminent end had been predicted by the researchers. Its age has been estimated at over ten years. In zoos tigers have been known to live up to 15–20 years of age; in the wild animals usually die earlier.

Subsequently, an adult female (3–4 years) was seen dead on a road in the Kalhalla range. This also had several injuries, presumably from a fight; a broken tooth of another tiger was found lodged in its shoulder. Two other tigers, an adult male (3–4 years) and a young female (about one year), were seen alive in an injured state before they died on 28 April and 4 May respectively. The post-mortem reports also indicate death due to fights for these two animals. These deaths occurred at different places in the 641-square-kilometre