

Cat Project of the Month – November 2006

The IUCN/SSC Cat Specialist Group's website (www.catsg.org) presents each month a different cat conservation project. Members of the Cat Specialist Group are encouraged to submit a short description of interesting projects. For application use this [standardised form](#) (an editable word document)

Conflict resolution and leopard (*Panthera pardus*) conservation in a human dominated landscape



Leopard caught in an illegal snare in a sugarcane field in Ahmednagar District, Maharashtra (Photo V. Athreya)

The last decade has seen an increase in human leopard conflict in many parts of India. All sites but one are human dominated landscapes inhabited by high densities of people. One of the severely affected states used to be Maharashtra where more than 150 people were attacked by leopards between 2002 and 2004 and at least 200 leopards were captured in the same period. We are studying the reasons for the increase in conflict.

Vidya Athreya

Vidya is a research associate with the Kaati Trust, Pune, and the Centre for Wildlife Studies, Bangalore. She has been working for more than three years on conservation issues related to leopard conservation in human dominated landscapes in Maharashtra, India. Vidya has been a member of the Cat Specialist Group since 2006.



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(Photo A. Belsare)

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The leopard species has increasingly become synonymous as a man-eater in India due to spiralling conflict levels. This is perhaps the most serious threat to the conservation of the species in India, where it still has a widespread distribution. The leopard belongs to the category of 'Least Concern' in the IUCN red list, but is highly protected by law in India (Anon 1972). However, it is killed in large numbers to meet the demands of the illegal wildlife trade and large numbers are also captured and/or killed by the Forest Department in areas where serious conflict (attacks on people) is reported. India and Nepal are the only regions in the leopard's entire range where chronic attacks on people have been reported (WWF-India 1997, Edgaonkar and Chellam 1998, Athreya *et al.*, *in press*, Maskey & Bauer date na). Even within India only some pockets face severe conflict whereas nearby similar habitats do not (see Saberwal *et al.* 1994, Vijayan & Pati 2001, Athreya *et al.* 2004 for details). Given the lack of ecological information on the leopard in India, within and without protected areas, it is difficult for scientists to provide meaningful inputs to managers to better deal with serious conflict.

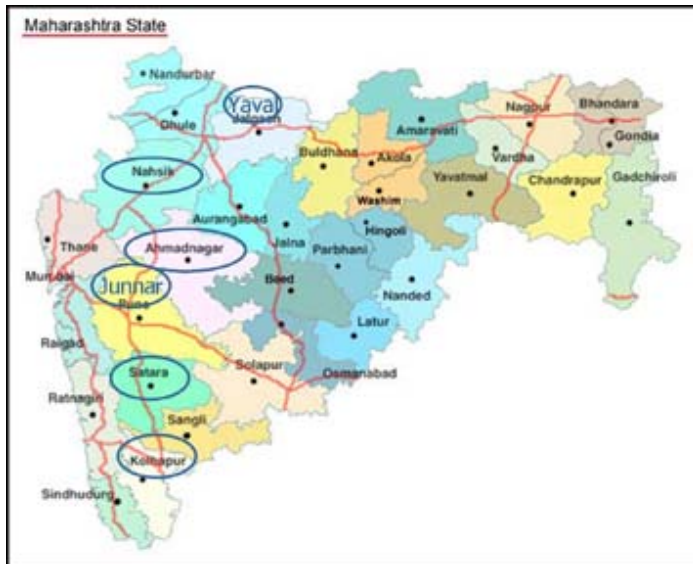
Objectives

Our initial research work was carried out in a human dominated landscape of Maharashtra in 2003. Since then our objectives have been:

1. To identify the reasons for the increase in leopard attacks on people
2. To provide ecologically sound management recommendations so that conflict can be controlled using proactive measures.
3. To create awareness among different administrative bodies, affected villagers and the media on the complexities of the leopard problem and to inform them of the precautions required to be taken when living close to leopards.
4. To standardise DNA based protocols to identify leopard individuals following conflict incidents.

A common habitat where leopards occur in W. Maharashtra, India (Photo V. Athreya).





Study area

Our work has been carried out in the western regions of Maharashtra. However, our research work has focussed on Junnar (intensive study was carried out in 2003) and Nashik Forest Circle (where large number of leopards are present in croplands). These are human dominated landscapes where people live at densities greater than 170 km². The Forest Department in these areas manage non-wildlife activities such as plantations, social forestry etc. Historically Junnar and Nashik regions used to support dry deciduous forests but numerous irrigation projects initiated a few decades ago have converted the vegetation to lush croplands. Cash crops such as sugarcane, maize, fruit plantations and vegetables are grown. The area faces three distinct seasons – the monsoon between June and September where daytime temperature are about 20° C, winter between October and February where temperatures can decrease to about 7° C in the night and day time temperatures are about 15° C, the summer where day time temperatures can go up to 40° C.

Sites where we carried out human leopard conflict related work (research and capacity building of the Forest Department).

Methods

Research project:

1. Carried out in 2003, the study used Forest Department data on conflict incidents, captures and releases of leopards, information from semi-structured interviews with more than 500 affected people and GIS analysis to track changes in vegetation over the last three decades (Athreya *et al.* 2004).
2. The management in Junnar responded to the large presence of leopards in a human dominated habitat by carrying out more than 100 captures and translocations of leopards in 2 years. In 2003, we commenced inserting passive transponders into all leopards trapped in the Junnar Forest Division and Nashik Forest Circle for identifying translocated leopards in case of re-capture.

A translocated leopardess captured in croplands and released into a Wildlife Sanctuary attacked a boy the day after her release. The boy's father hit her on the head with a sickle. Her identity could be determined by a microchip inserted in her as part of our project (Photo K. Mungale).





Training Forest Department staff to rescue leopards found in emergency situations (Photo G. Mallapur/V. Hoshing).

Capacity building of the Forest Department:

1. The lack of guidelines available to managers on pre and post capture management of conflict often hampers effective decision making. Currently a management manual is being made which is aimed at the managers in the state of Maharashtra as well as for other affected states. This will contain inputs from experienced scientists, managers and veterinarians in India (<http://www.rufford.org/rsg/Projects/VidyaAthreya>).
2. The Forest Department field staff often lack appropriate training or facilities to handle leopards and leopard emergencies in conflict areas. Training and awareness programmes were held for the Forest Department personnel, Police Department, Fire Brigade and NGO members in the most affected areas of W. Maharashtra so that the species and the situation could be better dealt with in case of emergencies. This exercise also created a rapport with the local Forest Department officials and allowed us to obtain a better understanding of the conflict at the field level. This was carried out in collaboration with Dr Belsare, a wildlife veterinarian who since then has also extended this programme to other affected states (<http://www.rufford.org/rsg/Projects/AniruddhaVBelsare>). These sensitization and training workshops are held whenever the need arises.

Education of local people

Local people are educated about the complexities of the leopard conflict and provided with a list of precautionary measures that need to be taken in areas where leopards are present. We are also carrying out awareness meetings for the rural media so that the sensational reporting is controlled.

1. The results of our Junnar project indicated that the surge in conflict was related to the translocation of more than 30 leopards into adjoining forested areas (see Athreya et al. 2004 for details). Furthermore, analysis of similar conflict from other areas (W. Bengal, two sites in Gujarat, all sites in Maharashtra) indicated that all the human dominated sites reporting leopards were adjoining forested areas where leopards trapped elsewhere were routinely translocated into (Athreya et al. *In Press*).

2. Our work in the Nashik Forest Circle shows that leopards can live among high densities of people, in human dominated areas, with low levels of conflict. Nineteen leopards were removed from the Ahmednagar Forest Division over the last 18 months (microchipped by us) and prior to their capture no attacks on people were reported. These animals are at least two – three years old. When viewed in light of the work in Junnar where large scale releases and translocations into adjoining forests exacerbated conflict levels, it is very important that management takes a more proactive stand to ensure low levels of attacks, in areas where leopards live amongst high densities of people.

3. Awareness was seen to be a very powerful tool at all levels – senior managers to the field staff of the Forest Department, the affected villagers, NGO's and Police Department personnel.

Meeting with the village administration and villagers where human attacks by leopards have taken place (Photo B. Pandharkar).



Next Steps: 1. It is likely that many innocent leopards are trapped following a conflict incident due to the lack of procedures to identify individual leopards. We are currently in the process of standardising techniques required for identifying individual leopards using genetic material.

2. Most of the high human leopard conflict sites in India are in human dominated landscapes. Information on the leopard densities present in such areas and their main prey is necessary to provide recommendations to managers on how to make such sites less attractive to potentially dangerous carnivores like the leopards. The proposed study is awaiting funding.

Project Information

Duration: 2003-

Location (see map): Maharashtra

Partners Maharashtra State Forest Department

Sponsor(s): The Rufford Maurice Laing Foundation, U.K.
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