

# Disseminating Wildlife Awareness to Reduce Human-Animal Conflict: A Case Study from Arunachal Pradesh, India

Ambika Aiyadurai\*

## Abstract

A survey of wildlife attacks on mithun (*Bos gaurus frontalis*), a semi-domesticated cattle was carried out in Arunachal Pradesh. Nishi, an ethnic group dominant in the state, own mithun and reportedly kill predators in retaliation. The methods adopted to document the problem were forest trails and village surveys. The attitudes of the local people towards wildlife were assessed during the village surveys and possible solutions to the problem were discussed. The attitude of the Nishis towards wildlife, especially dholes (*Cuon alpinus*), was extremely negative. The depredation of mithun by carnivores has created antagonism among the owners, which has resulted in retaliatory killing. The loss of mithun to the local people is high, in both economic and sentimental terms, as it plays an important role in the culture and traditions of the Nishis. The survey provides a set of recommendations for the mitigation of the conflict. Communicating about wildlife is the high priority activity to be taken up in these regions for the sustainable use of natural resources and for the peaceful co-existence of both wildlife and people.

Conservation education is totally lacking in this region and there is a need for carrying out intensive awareness programmes. Nishis should be the primary target group of awareness programmes to address this specific issue. The educational programmes should focus on (1) Reducing human-wildlife conflicts (2) Changing attitudes of people towards dholes and other predators (3) Increasing public understanding of the value of wildlife and wildlife habitats (4) Developing a successful and replicable wildlife education model.

This paper suggests that communicating with the local people about wildlife is a vital part of wildlife conservation. A combination of innovative approaches to wildlife education and the involvement of local people can have a large and positive impact.

## Introduction

---

\* Wildlife Trust of India

New Delhi, India

[ambidurai@rediffmail.com](mailto:ambidurai@rediffmail.com)

Conflicts between wildlife and humans, if left unchecked, are likely to increase and threaten the remaining populations of wildlife species unless measures to enhance public support for conservation efforts are undertaken. Education can play an important role in reducing the conflicts if proper communication strategies along with management interventions are adopted. The places where the conflicts are likely to occur such as villages and towns around national parks and wildlife sanctuaries need attention. Regions where there has been a history of human-animal conflict, for instance with leopards in Uttaranchal, or elephants in states like Orissa, West Bengal, and Assam to name a few, will benefit if conservation education programmes combined with effective communication techniques are designed and implemented.

Conflicts like these are not new to the country, but they are becoming more frequent and widespread. But, the conflicts in Arunachal Pradesh and in other northeastern states are unique because the antagonism of the local people has led them to take the law into their own hands. There are reports of retaliatory persecution of the snow leopard (*Uncia uncia*) (Mishra et al., 2004), and dholes on account of livestock depredation. (Aiyadurai, et al., 2004). This paper discusses a case study of human-animal conflict in Arunachal Pradesh, which involves Nishis, a dominant ethnic group of the state; their negative attitude towards wildlife is threatening the existence of wildlife species. This paper also suggests the scope of education and awareness to reduce human-animal conflicts, negative attitudes and discusses how an innovative and long term commitment to reach out to people can lead to the peaceful co-existence of human beings and wildlife.

### **Study Area**

Arunachal Pradesh is known for a rich biological and cultural diversity and is located within the Eastern Himalaya global biodiversity hotspot (Myers et al., 2000). The state has a forest cover of about 68, 045 kms (Forest Survey of India, 2001) and is also home to 27 ethnic communities with distinctive cultures and rich traditions (The People's Commission on Environment and Development, 2002). The study was carried out around the Itanagar Wildlife Sanctuary, established in 1978 (Directory of Wildlife Protected Areas in India, 2000), which is located in the vicinity of the capital of Arunachal Pradesh, an area notable for its biodiversity.

The forests can be classified mainly as North Bank Tropical Evergreen (Nahor-Jutuli) Forests, Tropical Semi Evergreen and secondary forests. Secondary forests occur due to both biotic (mainly shifting cultivation) and natural (mainly landslides) reasons (Kaul and Hariharan, 1987).

Notable mammalian fauna are elephants (*Elephas maximus*), tigers (*Panthera tigris*), leopards (*Panthera pardus*), clouded leopards (*Neofelis nebulosa*), sambar (*Cervus unicolor*), barking deer (*Muntiacus muntjak*), dholes (*Cuon alpinus*), wild boars (*Sus scrofa*), jackals (*Canis aureus*), and small cats.

### **Nishis—The people**

Nishis are a dominant tribal group in Arunachal Pradesh who practice slash-and-burn cultivation. Nishis have a special association with mithun, the semi-domesticated cattle found only in the northeastern states of India. Mithun, a crossbreed between gaur (*Bos gaurus*) and domestic cattle (*Bos indicus*), is an integral part of the culture and living wealth of Nishis and other tribal communities of Arunachal Pradesh (Singh, 1995). In general, the animal is used to pay bride price, medical bills and education fees for children, and fines and has many other uses, vital not only to the customs and traditions, but also to the economic needs of the people (Aiyadurai et. al, 2004; Solanki et. al., unpubl). Their socio-religious utility is so significant that they are treated with great care and affection (Shukla, 1965).

Hunting is a tradition among the

Nishis and almost all the men hunt regularly, using both guns and traps. Traditional animal trapping/capturing methods are also used even today (Aiyadurai and Varma, unpubl report). Hunting is both an individual and a group undertaking. They are free to hunt in any part of the forest, but are forbidden to disturb the traps already laid (Shukla, 1965).

Hunting trophies are proudly displayed at the entrance of each home. For e.g., a monkey's skull is hung near the door to keep evil spirits away. One can notice the social, economic, cultural and even linguistic associations with the forest and its products in the lives of the Nishis.

### **Villages Studied**

Villages with reports of conflict, like, Poma, Rillo, Jothe, Rakap, Moin and Khoimir, located within and around the Itanagar Wildlife Sanctuary were the subject of this study.. Of these, Rillo, Moin, Poma, and Rakap were reported to have the severest conflict. Most of the villages (*basti* or *napung*) are small with an average of 30-35 families, each with about 11 members.

### **Human-Animal Conflict**

Mithun are often preyed upon, particularly by dholes, and to some extent by leopards. This problem is severe in some of the regions of the Sagalee and Poma forest range (Babu and Venkataraman, 2001). The reported killing of mithun by predators resulted in severe human-animal conflict because of the economic loss to the villagers (Varma and Subba, unpubl. report). Retaliatory killing followed, with the reported killing of 2-3 dholes (Varma, *Pers Comm.*).

### **Methods**

**A pilot survey was carried out in March, 2003, to find out the socio-economic status of the people, the number of mithun owned by them and other related information. The Deputy Chief Wildlife Warden (DCWW), Deputy Conservator of Forests (DCF) and the Range Forest Officer (RFO) were interviewed for specific**

**information on the status and nature of the conflict and other aspects related to the cultural and economic importance of mithun. The status of human-predator conflict and the people's attitudes towards wildlife were also assessed. The interviews were carried out with the help of the local trackers who functioned as translators. Status of Conflict**

Of the six villages visited, one village (Jothe) reported no conflict. In villages where conflict was reported, 82 per cent of the respondents felt that the dhole was the problem animal, six per cent of the interviewees felt that the tiger was the main problem, while the rest felt that other carnivores were also responsible for the problem. Overall, dholes, leopards, tigers and Himalayan black bears are known to kill mithun. The assessment of livestock depredation in and around Sagalee suggests that dholes were responsible for most of the damage, followed by leopards, clouded leopards and tigers (Babu & Venkataraman, 2001; Babu, 2001, unpublished report). The economic loss to the Nishis is high as each mithun costs between Rs. 20,000 to Rs. 25,000.

#### **Assessment of people's attitudes towards wildlife:**

All the 19 households visited expressed negative attitudes towards wildlife, especially dholes. The reasons attributed to such feelings were only the depredation of mithun. People reported other problems with wildlife: 57 per cent of the people interviewed said that wild animals visited the villages to steal chicken. Elephants usually visit once a year, mainly for paddy, causing an economic loss of about Rs. 5-6,000 per year. But, the attitudes of people to dholes were more negative because they believe that dholes are wholly responsible for killing mithun. There have been no human casualties on account of wildlife attacks.

When solutions to the problem were discussed, most of them wanted the dholes to be eliminated from the forests. People also expressed knowledge about poisoning the dholes or killing them using traditional traps. Views about the use of guns to kill dholes were also expressed. One person proudly accepted that he had killed and eaten a dhole. Dholes have never traditionally been part of the Nishi diet but in this particular incident, the dhole was killed in retaliation for the killing of his mithun. A dhole skin was also found in one home and was reported to have been killed recently, most likely during the conflict phase.

#### **Scope of Conservation Education**

Arunachal Pradesh needs a powerful and committed conservation education programme, which will benefit both the people and the wildlife. There are a few programmes that have been implemented in the Namdapha Tiger Reserve and around the Pakke Tiger Reserve by Nature Conservation Foundation (NCF) ([www.ncf-india.org](http://www.ncf-india.org)). Some of the educational materials developed by NCF are films, posters, children's books, calendars etc. It also implements outreach programmes like poster making and essay-writing for schoolchildren. The study carried out by NCF also emphasizes the need to expand

conservation education to other less explored regions, like the high altitude region of the Tawang and the West Kameng districts of Arunachal Pradesh (Mishra et al., 2004).

It is important that conservation education be linked to the livelihoods of the local people so that support from local people is ensured. The immediate need is to provide compensation when local people suffer livestock loss.

The programme need not focus on the post-conflict phase where the damage is already done, but on a planned and long-term comprehensive communication strategy. The role of the administration, media, general public and decision-makers should be included and specifically designed to deal with the crisis period.

### **The role of the administration**

Poor communication between the administration and the local people is often responsible for the negative attitudes of people towards wildlife. Wildlife and forests are often projected as government property and people have been alienated from the forests. The role of the administration during the conflict phase should be to inform people and provide possible solutions to avoid further conflict. It should also play a vital role in stemming panic and thus avoiding the killing of wildlife. Steps to prevent conflict can be communicated over the radio, which is popular in rural areas. Live announcements through mobile vans or auto-rickshaws can be made and information pamphlets can be distributed door to door. These measures will not only reduce the panic but also help in confidence building. Special awareness teams should be sent to areas that are inaccessible by road.

People are unaware about measures to avoid conflict, and it becomes necessary to spread the word about safety measures. Arrangements for temporary camps for doctors, veterinarians and a mobile emergency medical van should be made. An emergency hotline facility should be provided to villages connected by road and technology.

### **The role of the media**

The media is either passive or exaggerates the issue. Wildlife species are often reported incorrectly and the news is sensationalised causing panic.

Sensible reporting is the need of the hour during any conflict. Correct and truthful coverage of the conflict and the projection of the importance of wildlife is vital. The vilification of wildlife does not help the cause of conservation.

### **The role of schools**

Awareness programmes should target the youth because their links with nature are not as strong as those of the older generation. Indeed, some of them may not even have seen wildlife. Thus, there is a need to create awareness about their natural heritage and involve them in the programmes. School and college wildlife awareness programmes need to provide relevant contextual information.

Similarly, the role of teachers in the programme is important as they are the catalysts in achieving the results of the conservation education programmes. Capacity building and training of teachers should be started to further strengthen the awareness programmes.

### **Local NGOs**

Local NGOs can play an important role in helping the administration and help confidence building among people during the crisis period. NGOs can orient and train volunteers who can visit the conflict villages to spread awareness about measures to avoid possible conflicts, and can help in implementing school awareness programmes.

### **Conclusion**

Along with educational programmes, management-oriented programmes need to be implemented to resolve human-animal conflict. Conservation education in isolation cannot be very effective in such cases. Some of the other measures that the study recommends are establishing effective wildlife conservation wings within the forest department, fenced enclosures to keep mithun, keeping watchers or guard dogs and the conservation of wildlife species outside protected areas (Aiyadurai et al, 2004). Other solutions to reduce conflict in the long run include developing alternative sources of revenue based on extraction of forest products through joint forest management and assuring forest benefits to local communities, the possibilities of eco-tourism and employment for local people.

### **References**

Aiyadurai, Ambika and Surendra Varma. Survey and review of status of wildlife and human-predator conflict in and around Itanagar Wildlife Sanctuary. Arunachal Pradesh, Unpublished report

Aiyadurai A, S. Varma and V. Menon. 2004. Human-Predator Conflict in and around Itanagar Wildlife Sanctuary, Arunachal Pradesh, India. Poster presented at Carnivores 2004: Expanding Partnerships for Carnivore Conservation at New Mexico, 2004

Directory of Wildlife Protected Areas of India, in ENVIS Bulletin: Wildlife and Protected Areas, Directory of Wildlife Protected Areas in India. Vol 3, No.1

“State of Forest Report 2001”. 2001. Dehradun: Forest Survey of India, Ministry of Environment and Forests

Public Hearing on Environment and Development. The People's Commission on Environment and Development, India

Babu, V. Narendra. 2001. A report on the Investigation to determine the death of *Mithuns* in Sagalee, Arunachal Pradesh: Unpublished report, p. 13

Babu, V. Narendra, and Arun Venkataraman. 2001. Dhole Depredation and its consequences for the carnivore community in Arunachal Pradesh, Northeast India. Poster presented at the International Canid Conference, Oxford University

Kaul, R. N., and K. Haridasan. 1987. "Forest Types of Arunachal Pradesh – A preliminary study". *J. Econ. Tax. Bot.* Vol. 9. No. 2.

Mishra, C., A. Datta, and M. D. Madhusudan. 2004. The high altitude wildlife of Western Arunachal Pradesh: a survey report. CERC Technical Report No. 8. Mysore, India: Nature Conservation Foundation, International Snow Leopard Trust, and Wildlife Conservation Society (India Program)

Myers, N., R. A. Mittermeier, C. A. Mittermeier, G. A. B. da Fonseca, and J. Kent. 2000. "Biodiversity hotspots for conservation priorities". *Nature*, 403, 853-858

Shukla, K. B. 1965. The Daflas of Subansiri region In The People of NEFA. North-east Frontier Agency. Shillong.

Singh, K. S. 1995. *People of India*. Vol. XIV. Arunachal Pradesh: Anthropological Survey of India and Calcutta: Seagull Books

Solanki G. S, B. Chongpt, and A. Kumar. Undated. Ethnology of the *Nishi* tribes and wildlife of Arunachal Pradesh. Unpublished report.

Varma, S and S. Subba. 2001. Status of human-dhole conflict in Arunachal Pradesh. Unpublished report, p. 4

### **Websites**

Nature Conservation Foundation, <<http://www.ncf-india.org>> (2 December, 2004)

### Personal Communication:

Surendra Varma, Asian Elephant Research and Conservation Centre, C/o Centre for Ecological Sciences, Indian Institute of Science, Bangalore 560 012