When I tell people that I am studying bats, I am almost always met by a shocked reply; "But why?! They are so ugly!" My immediate response is that if you actually see them close up, they can be pretty nice looking. While this answer doesn't always convince them, I always believe that it is worth a try. I have also, often heard people group bats as birds and even insects. These misconceptions and numerous others, together with other threats such as, habitat modification and disturbance to their roosting sites, have put bats in a very difficult situation. IUCN's Global Status Survey and Conservation Action Plan lists, that the lack of correct and educated information on bats, is one of the major threats that they face.

Bats are the second most speciose order of mammals, with about 1100 species worldwide. They have a remarkably wide distribution, being present almost everywhere in the world, except in the Polar Regions, very remote islands and areas with extreme desert like conditions. They are amazingly diverse not only in form, but also in the kind of food they eat and the areas they use as roosting sites. The bumblebee bat (*Craseonycteris thonglongyai*), is the world's smallest mammal weighing just about 2grams, while the largest bat (*Pteropus vampyrus*), has a wingspan of almost 6 feet! Bats play an important ecological role and provide valuable ecosystem services, such as seed dispersal, pollination and pest control.

batty 'bout bats

There are about 120 bat species known, from the Indian subcontinent and about 30 species from South India. The Anamalai Hills, which is part of the Western Ghats, and is considered a biodiversity hotspot, has undergone significant habitat alteration during the last century, with the landscape mainly consisting today of monoculture plantations of tea and shade coffee plantations, with some remnant rainforest fragments interspersing these plantations. Even though these are disturbed, these fragments have been shown to harbour unique species of plants and animals. There have been no previous research studies undertaken on bats in this area, and this current study which started in June 2008, hopes to record the bats found in this area. This study is also assessing the effects of rainforest fragmentation on local bat communities.

However, first there are other questions which need to be answered. The first important step is to actually find out the number of bat species in this area. We are also simultaneously developing an echolocation call library of the different insectivorous bat species found in this area. Insectivorous bats have poor eyesight, and hence, mainly depend on echolocation to create a picture of the world around them. While most species have distinctive calls, closely related species often share similarities in the structure of their calls, making it a challenging and fascinating subject to study and analyse. The bat call library will enable us, to then identify species just by their call, without having to capture individuals.

Norman Myers said, "tropical rainforests are the greatest celebration of life on earth". Habitat fragmentation of valuable ecosystems can pose serious threats to their fauna and flora. Bats are one of the important components of tropical rainforest systems. Eleni K. Foui, in collaboration with the University of Leeds and Nature Conservation Foundation, has started a study in the Anamalai Hills, looking at the effects of rainforest fragmentation on bat communities.

Kalyan Varma

focus

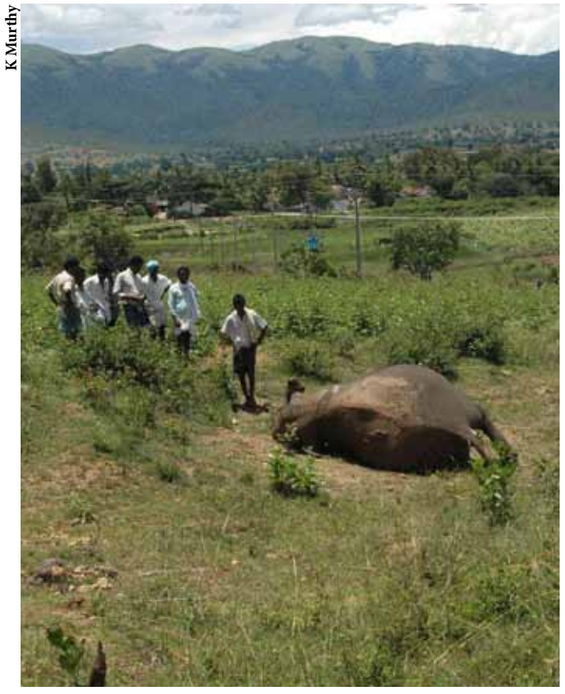
Any attempt to understand or address problems of wildlife conservation, particularly in India, brings us right back to humans. It is impossible not to be troubled by the human deprivation at the heart of many wildlife conservation problems. The question that follows then is this: how are wildlife conservation and rural poverty related? MD Madhusudan (Senior Scientist & Trustee) and Pavithra Sankaran (Communications/Design Consultant and Western Ghats Programme Team member) contemplate this question.

rural poverty and wildlife conservation

Thousands of farmers around Bandipur, an 'inviolate' Tiger Reserve in south India, graze cattle in their tens of thousands, inside the Reserve, severly affecting wild herbivores. While trying to understand why the farmers would undertake the risks involved in a clearly illegal activity, we came face to face with some troubling questions about poverty and its complex relationship with wildlife conservation.

Our ecological studies in Bandipur clearly showed that as livestock numbers inside the forest went up, wild herbivore numbers declined. It was perhaps anticipating such impact that the Wildlife (Protection) Act, in 1972, had laid down that all livestock grazing in National Parks like Bandipur was illegal. So, what wild herbivore conservation in Bandipur needed was highly obvious: a strict enforcement of the law to keep out cattle. Yet, we saw that despite every intention on the Forest Department's part to do just that, not even the slightest dent had been made in reining cattle grazing. A nearly identical situation prevailed even with the collection of firewood from Bandipur and its impact on forest cover. Here too, it had been impossible over three decades to enforce a perfectly reasonable conservation law on the ground.

The reason the law had not made a dent was that fodder for the cattle and firewood for the hearth were among the most basic needs for the local farming communities. Forest guards and watchers, often drawn from the same local communities, knew all to well that people here were too poor to afford alternate fodder or fuel, and too needy to ignore what Bandipur had. Strict enforcement of the law meant serious hardship for the local people (frontline park staff included) and for their livestock.



K Murthy

What may have made local people less desperate for Bandipur's fodder and fuelwood, we postulated, were better agricultural circumstances. Farming was buffeted by the enormous risks of uncertain rainfall and serious crop losses to wild herbivores such as elephants, pigs and deer. Such crop losses also had consequences for wildlife as disturbing numbers of wild animals were perishing in acts of retaliation by farmers.

We felt that, as conservationists, if we gave ourselves the right to ask farmers not to retaliate against endangered wildlife that caused crop losses, we also had to acknowledge the duty to help farmers offset losses caused by the same animals. It simply did not seem right to ask already marginal farmers to make further sacrifices for wildlife conservation.

Thus we began daily monitoring of crop loss suffered by farmers in 18 villages on Bandipur's boundary. After two years, we began a small conservation experiment in Maguvinahalli, one of the villages by helping establish a farmers' cooperative to eliminate crop loss on 80 acres of farmland without endangering wildlife. An electric fence was set up and within a year, farms within the fence lost no crop at all to wildlife.

The experiment succeeded in eliminating crop loss experienced by farmers, but the issue of the farmers' impact on the forest for fodder and fuelwood still remained. As we pondered how to address this, we discovered quite unexpectedly that, unbidden, the farmers who were part of our cooperative had already reduced their livestock holding, started to grow their own fodder, and stopped grazing their cattle in Bandipur. Likewise, they had made a complete switch from using firewood from Bandipur to using LPG as the main cooking fuel.

The reasons for this astonishing change were two-fold: once crop loss to wildlife—an important farming risk—was reduced, people leveraged available government schemes to bring tube-well irrigation to their lands and tilled them more intensively, growing two crops in place of one, three in place of two. This meant that it was no longer worth their while to herd cattle in the forest, when they could work on their own farms, growing not only fodder for their cattle but much more. Second, reduced farming risks and intensified production meant larger farm incomes, and therefore, money to afford more convenient alternatives to firewood.

Collecting firewood and grazing cattle within the park were thus survival measures of a desperately poor people. Our work was not intended to alleviate the poverty that made people dependent on—and destructive to—the forest, but only aimed to eliminate conflict with wildlife over crops. But this created the essential conditions for the reduction of poverty in this landscape: a greater stability and profitability of agriculture.

This encounter leaves us with more questions than answers. Can we continue to see wildlife conservation and rural poverty as completely distinct and separate problems although we may encounter them together? Is it enough to ensure that conservation does not cause or aggravate poverty, but acknowledge that conservation can do nothing to fix this larger social problem? Or is rural poverty a serious constraint to the resolution of conservation problems, implying that unless we address poverty first, conservation will remain elusive? Is rural poverty just a nasty fact of life that we, as conservationists, have to accept and move on, keeping our own focus unwaveringly on wildlife conservation? Or is poverty tripping us up as we march determinedly, in blinkers, towards conservation?

K Murthy

new

rashid raza I completed a Masters in Sociology from the Aligarh Muslim University. Fortunately during my first few days there, I discovered the department of Wildlife and Ornithology, and of course after that, I ended up spending much more time here than in my own 'official' department! In the following years, I took part in surveys in the Himalayas and north-east India, with friends and faculty at the Department of Wildlife and Ornithology. I later joined the Wildlife Institute of India, where my research work focused on the patterns and mechanisms governing bird communities in the west Himalaya, eventually leading to my PhD. I worked in Kedarnath and the Gori Ganga valley in Pithoragarh.

I gradually got drawn towards understanding the patterns of ecological communities at a larger scale, and the Himalayas provided me a very large environmental gradient to test some of my research ideas. Last year, I joined the National Centre of Biological Sciences, to investigate the latitudinal gradient in species diversity in the new world continents of North and South America. The unthinkable happened: I became what one of my professors at the Aligarh University used to call 'a computer biologist'. I am now a Senior Associate with NCF's High-Altitude Programme, where I work and assist on several aspects of snow leopard conservation. Wildlife research and conservation programmes, increasingly involve understanding and working with people, while implementing conservation interventions. My five years of sociological training is finally being put to use. Education is never wasted!

The Wonder Years - NCF the teenager

NCF turned 13 on October 16th 2009. While we unfortunately did not get around celebrating this major event I take this opportunity to shamelessly quote some apt pearls from NCF's Trustee M D Madhusudan in an email to some of us – "while adolescence can be angst-ridden, it also often throws up moments of revelation. As adulthood looms over the horizon, we realise that there are ways in which we'd never want to grow up, and still yearn to keep the freshness and childlike spirit of NCF".

The baton of "NCF Director" was handed over to Rohan Arthur from M D Madhusudan, and we are sure our 'local Peter Pan', as Rohan is fondly known, will lead NCF through exciting and fun times, while helping us overcome the mild hiccups, bound to come our way. We welcomed new scientists and students on board, and even a lost budgerigar christened 'Ragi Mudde' into our office. Ragi was with us for a few weeks before we traced the owner, and we were delighted to see how Ragi managed to elicit parental instincts even out of our usually spaced out PhD students, who usually spend their non- PhD hours playing terrace cricket!

We would like to thank the Ford Foundation, for being a solid funding support over the years, and the people in Ford who made it possible and continue to support us in various ways – Ganesan Balachandran and Vasant Saberwal. We would also like to thank Mrs MA Vedavalli (Srinivasam Trust), Hari Sridhar, Shreyaswi Gurudas of Cable and Wireless Networks and Dr N.V Joshi (IISC, Bangalore and Care Earth, Chennai) for financial support and help in various immeasurable ways.

Thank you all for your belief and support over the years and may we always be in your thoughts. Meanwhile, till we meet again next year – we hope the rest of 2009 goes by peacefully and we wish you every happiness and success in 2010.

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