

Eastern Himalaya

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Biodiversity Conservation in Areas outside Protected Areas (AOPAs)

As much as 13 % of the world is under Protected Areas (PAs) network since the first National Park- the Yellowstone National in US, came into being in 1872. PAs are still the focus of mainstream conservation strategy for biodiversity conservation. However, increasing evidences of significant biodiversity and species habitats in areas beyond the boundaries of the PAs in human dominated and modified landscapes calls for biodiversity conservation strategy paradigms which takes AOPAs into consideration. A global analysis of highly threatened species, found 51% of the species occurring in areas outside protected areas, not legally protected. In India, the 700 PAs constitute less than 5 % of the country's geographical area. Vast expanse of monoculture plantations of tea, coffee, cardamom, private forests, agriculture land, agroforests, identified and unidentified water bodies and remnant forests form prominent land use areas outside PAs.

The need for extending conservation efforts to areas other than protected ones is being brought up from different quarters, with emphasis on their reflection in legislations. The "Agenda 2000" of the European Community reflects this trend in relevant legislation for non-protected areas. Lately there has been an acknowledgment in India for the need of biodiversity conservation outside PAs.

The Eastern Himalaya in India largely comprises of the Northeast states, has a total of 67 PAs covering an area of 28,379 km² which make only 10 % of the entire area, and only a miniscule proportion of the entire Indian landmass. There is hardly any information or targeted conservation action in the largely human dominated AOPAs in Eastern Himalaya. Hence, extending the conservation effort to these areas is crucial for persistence of species and sustainable development of the landscape. Our ongoing projects in ATREE examines biodiversity status in AOPAs. This effort has identified and confirmed Tea Plantations in Darjeeling, known for their globally famous Darjeeling Tea as critical habitats for two threatened Asian Pangolins-Indian Pangolin *Manis crassicaudata* (Endangered) and the Chinese Pangolin *Manis pentadactyla* (Critically Endangered) along with as many 10 other mammal species. We have mobilized select community members to be Pangolin Guardians



Camera trap image of a Pangolin captured from a private forest in Pokhriabung, Darjeeling

who monitor the species and raise awareness about conserving them in the region, to offset the inadequate legal protection afforded to the species in these production landscapes. These mammals especially the Pangolins have high biocultural use, along with their trade from the region.

-Dr. Sunita Pradhan(sunita.pradhan@atree.org)

Human Wildlife Conflict in Kitam Bird Sanctuary, South Sikkim

Forests provide bundles of ecosystem services to communities living in its fringe areas. However, there are "ecosystem disservices" to these communities from wildlife, which raid their agriculture crops and lift their livestock.

This is the situation in the fringe villages of Kitam Bird Sanctuary (KBS), Sikkim. KBS is the smallest protected area in Sikkim, with an area of 6 km² and a perimeter of 10 km. It is an Important Bird Area and represents the only lowland forest habitat in the protected area system of Sikkim. Some of the issues that drove the government to declare this a protected area include - illegal timber extraction, habitat loss and fragmentation, livestock grazing, unsustainable fishing and forest fires, which were threats to this important habitat.

Community meetings were organised for the

recently initiated study “**Developing strategies to Mitigate Human Wildlife Conflict in Sikkim Himalayas**” at Lower Kitam and Belbotay village of KBS. It was evident that the habitat has been restored, all illegal activities halted and the wildlife population is thriving. However, increasing population of wildlife has resulted in intense crop depredation impacting the livelihoods of communities thus giving rise to negative perceptions on the presence of wildlife. Most farmers have abandoned agriculture - leaving their land fallow - as practising agriculture is now perceived to be risky, expensive and non-profitable. Cultivation of rice which formed a major source of income for these villagers is now talked about nostalgically as “days of the past”. This is paradoxical in a state that has declared itself as 100% organic and is widely promoting and supporting organic agriculture in a mission mode.



Watch tower in a fringe village in KBS

-By Vikram Pradhan

To mitigate crop depredation, communities guard their crops by fencing their fields with locally available resources and constructing watch towers specially used to guard crops at the night. These are not considered efficient and effective. Cultivation of alternative crops which are unpalatable to wildlife has never been explored. Compensation from the government is inadequate compared to the quantum of damage.

This represents the vulnerability of the farming community throughout the Sikkim-Darjeeling Himalaya. Communities have reportedly shown hostility towards the protected area staff. Mitigation measures that are well discussed need to be identified and converged with ongoing programmes of the government like Mahatma Gandhi National Rural Employment Generation Scheme and Northeast Rural Livelihood Mission.

-Vikram Pradhan (vikram.pradhan@atree.org)

Improved Cook Stoves: Scaling up through Micro-enterprise Groups

Improved Cook Stove(ICS) is a scientifically modified version of the traditional cook stove which is more efficient in fuelwood consumption compared to traditional stoves. ICS was first introduced in the Darjeeling Himalaya by ATREE in collaboration with Namsaling Community Development Centre, Ilam Nepal, who have been working on this technology in the adjacent district of Eastern Nepal for more than two decades. ICS

microenterprise group is efficient energy cook stove maker enterprise, comprising of resource persons trained by ATREE on making and installing ICS units. To scale up the ICS programme and make it sustainable, these promoters have been organized as Micro-enterprise groups with the aim of installing ICS, training on ICS installation and maintenance and developing skills for the market. These micro enterprise groups are based in villages in the fringe area of two protected areas- Senchel Wildlife Sanctuary and Singalila National Park. The inhabitants of these villages are small income earners who usually depend on subsistence agriculture for their daily food consumption and forest for providing fuel as their main source of energy. As the rate of human development increases, there is also an increase in energy demand, and usually the only affordable source for them is firewood, hence inflicting more pressure on the forest.



Participants at the Improved Cook Stove Mela organized at 3rd Mile, Darjeeling

-By Neryson Marum

Some of the challenges to these micro enterprise groups include 1) distance and remoteness of villages making communication between members difficult 2) the operation of the enterprise is limited by seasons as ICS units can't be installed in the monsoon and mid-winter seasons 3) micro-enterprise groups operate without a good marketing or business plan.

-Neryson Maruma, is an exchange participant for **FK Norway** from **TaTEDO Tanzania** to ATREE India, **TaTEDO** is a sustainable modern energy development NGO based in Dar es Salaam, Tanzania.

ATREE Eastern Himalaya Meetings, Workshops & Events

A training workshop was organized on 14th March - “**Butterfly Monitoring and Documentation in Talle Valley Wildlife Sanctuary - Monitoring Protocol Development Training and Workshop**” in collaboration with the Zoology Department of Sikkim University. The main objective of this workshop was to train amateur

nature enthusiasts on various monitoring protocols, so that they can record and document butterfly diversity in a rigorous and scientific way. Using the protocol, we also expect to establish a baseline on available butterfly diversity and build on this for further monitoring this important group of species. Participants in this workshop included members from NgunuZiro (an NGO based in Ziro, Arunachal Pradesh) as well as a number of students from Sikkim University who are nature enthusiasts. As a follow up, the participants from Arunachal Pradesh will lay down transects in Talle Valley Wildlife Sanctuary and document and monitor the butterfly diversity there.

"Mitigating climate change impacts and biodiversity monitoring to assess change in the Darjeeling Himalaya"- a two day training workshop was organized in collaboration with the Division Forest Office Darjeeling and Darjeeling Wildlife Division. Held on April 27th -28th at the West Bengal Forest School, Kurseong, to train a critical mass of forest department field staff – forest guards in particular to better equip and engage them on biodiversity conservation and its allied activities in the face of climate change impact. 30 forest guards from Darjeeling Forest Division, Kurseong Forest Division, Silviculture Division, Soil Conservation Division, Kalimpong and Kurseong participated. The workshop had theory sessions where participants were introduced to subjects like climate change, techniques and equipments used for monitoring biodiversity and habitat and using technology to document, share and learn about biodiversity. Next the participants were divided into five groups for practical sessions:

1. use of monitoring equipment: practical use of monitoring equipments such as clinometers, range finder, compass and densiometer used during field work, and also how data sheets need to be filled with this data - led by **Nayan Thapa and Vikram**



Clockwise from Top Left:
1. Participants in the **Butterfly Monitoring and Documentation** training workshop

2. **Kurseong Workshop for Forest Guards:** Practical training.
3. Awareness program for students on **World Environment Day**

Pradhan

2. use of GPS in mapping by **Annesha Chowdhury**
3. setting up of camera traps and retrieving data from camera traps by **Roshan Pradhan**
4. faunal survey and monitoring methods by **Dr Sunita Pradhan** and **Saibal Sengupta**
5. citizen science and use of technology in biodiversity monitoring by **Rohit George**

"Tourism exists for park and not Park for Tourism" became the focus for International Biodiversity Day - May 22nd with a perspective building panel discussion on "**Current trends of tourism and it's impact on biodiversity in the Darjeeling Himalaya**" in collaboration with the Tourism Department, Gorkhaland Territorial Administration (GTA) Darjeeling. The discussion was geared towards providing a holistic view on the ongoing state of tourism in this landscape, its impact on biodiversity and the possible strategies to manage its impacts.

'**Connecting with Nature**' on 5th June, World Environment Day, ATREE organized multiple activities at different sites – highlighting the ecological richness of the region, an awareness program was organized for student groups at Rimbick High Secondary School; Lending the needed support ATREE organized cleaning and plantation activity at Rampuria Forest village with the Eco-Development Committee members (EDC) and a plantation drive was organized at Srikhola Mahadevthan Revenue village at the fringes of Singalila National Park in collaboration with Self Help Groups, Forest Protection Committee (FPC) members and the socially active local bodies.

On 30th June we held the **Inception Meeting and Stakeholder Consultations** for the **Assam Biodiversity Portal** (ABP), a project to be implemented jointly by ATREE, The French Institute of Pondicherry and Strand Life Sciences. A number of representatives of the administration, academic institutions and NGOs participated in this program. Shri K.V. Eapen, IAS Additional Chief Secretary to the Govt. of Assam, was the chief guest for the event, which comprised of presentations on the project and consultations with various stakeholders. In this project ATREE will be conducting meetings and workshops across Assam to encourage participation from across the state.

-Dr. Rinzi Lama (rinzi.lama@atree.org) and Rohit George (rohit.george@atree.org)

ATREE's mission is to promote socially just environmental conservation and sustainable development by generating rigorous interdisciplinary knowledge that engages actively with academia, policy makers, practitioners, activists, students and wider public audiences. ATREE's Northeast/Eastern Himalayas Programme has a direct presence in the Darjeeling and Sikkim Himalayas and Assam, and works with a range of local partners in the other states of north east India.

For more information contact

Dr. Sarala Khaling
Regional Director
sarala.khaling@atree.org

Rohit George
rohit.george@atree.org