

In this Issue

Outreach

- Trees of India
- Keeping pace with climate change impacts

Personal takes: a column in first person

- Participatory research results shared with respondents
- Demand for lantana craft training
- CEPF grantee news
- World Wetlands Day at Vembanad
- Sites identified for long term waterbird surveys
- Bird studies in conferences

Education

- Internships in MM Hills
- Student's Wetland Congress 2014

New

- People
- Workshops organized
- Publications
- Invited lectures
- Grants



Outreach

Trees of India

In April, the India Biodiversity Portal initiated the TreesIndia Neighbourhood Tree campaign to map and create checklists of Indian trees—in forests, cities, villages, highways, and in your neighbourhood. The aim was to record the distribution of tree species across India as a way of protecting species disappearing from our landscape. More than 3300 observations were uploaded over the one week of the Neighbourhood Trees Campaign held across the country from 22 to 27 April 2014.

Dr Prabhakar, the chief architect of the India Biodiversity Portal, and lead for the Neighbourhood Trees campaign says, "... we have some very classy observations on trees, generous uploads of 200-250 observations from individuals for a process which is time consuming for that many uploads. There have been folks—who will remain faceless, since everything is online—who have come forward voluntarily to help identify trees from the data shared."

<http://treesindia.indiabiodiversity.org/> and <http://indiabiodiversity.org/> will remain active sites open to contributors, both amateur and professional. The IBP already has about 13,000 species pages: this is 13,000 pages chronicling biodiversity in India on an open portal, contributed by nature enthusiasts and researchers. Contributors can register and upload information on trees and other biodiversity on these open portals to generate information useful for research and species documentation. Use our guide on photographing trees for identification, and how-to tutorials on uploading observations and checklists on <http://treesindia.indiabiodiversity.org/page/45>.

The TreesIndia group was founded on January 17, 2014 with the aim of putting up one page for every tree species in India with descriptions, photos and point locations. The campaign was planned in a workshop held on 28 February. Thirty-three participants: NGO representatives, researchers, teachers and students (school, graduate, post graduate and doctoral) attended from Bengaluru, Pondicherry, Chennai, and Goa. Seasonswatch, Vruksha Project, Neralu Tree Festival group, Biotik-IFP, ATREE's own Heritage Tree mapping representative from KMTR and the Kanakapura

school programme, and MCC, Chennai were some of the participants. It was decided that Earth Day, on April 22, would be an appropriate day to flag off the campaign.

Keeping pace with climate change impacts

What are the questions researchers need to ask when it comes to climate change impacts? Physical and social scientists and non-governmental organizations brainstormed to identify research and communication gaps in their understanding of how rural livelihoods adapt to climate change. This was the subject of a two-day Indo-US bilateral workshop on *'Adaptation of rural communities to climate change: Bridging the gap between academia*

and community workers and identifying research needs'. Besides learning from each other, the participants aimed to bring together their skills and understanding in future collaborative efforts in climate change research.

The technical sessions covered current on-the-ground initiatives on climate change adaptation and livelihood impacts in rural India; to how climate and crop models, and broad-scale remote sensing might be used to understand climate change impacts on agriculture. The panel discussions identified a need for fine-scale climate and crop modeling, and effective communication with rural communities so they might better adapt to climate change against the backdrop of other demographic and market forces.

Dr. Harini Nagendra of ATREE and Azim Premji University, and Drs Pinki Mondal and Ruth deFries of Columbia University organized this workshop. There were nineteen participants: from Columbia University, Directorate of Water Management, Indian Agricultural Research Institute, Indian Institute of Science, Tamil Nadu Agricultural University, ATREE, Azim Premji University, Central Research Institute for Dryland Agriculture, Foundation for Ecological Security, IIT Bombay, The Energy and Resources Institute, Watershed Organization Trust, Yale University, George Washington University and NASA Goddard Institute for Space Studies. The workshop was held at ATREE, Bengaluru on February 20 and 21, 2014. It was supported by the Indo-US Science and Technology Forum.



Personal takes

Chandrima Home reminds us that every childhood is precious because of the choices that parents make. She outlines, very simply, the basic tenets, as a human being and a mother that helped her make the choices she did.



Bringing up baby and doing research: what do women do who want both?

When I was expecting Kuhu and decided to take a year off from my PhD, like many women in their careers usually do, I wondered about how I would balance work and child when I got back. A year down the line, I was back on my PhD and decided to take my one-year old daughter to the field. For the next four and half months I was to stay in Kibber, a village in the Spiti Valley of Himachal Pradesh at 4,200m. I was apprehensive about the long distance to be travelled, access to health care, and had mixed emotions about how Kuhu would cope, especially with the winter months setting in. The ordeal that Kuhu went through in the 14-hour bus ride from Delhi to Manali made me wretchedly question my decision on getting back to work.

But kids adapt much better than we do and, in a day, she made me believe that maybe it was not a wrong move! While I took more than a week to get adapted to the high altitude landscape, she took

only four days. Her loss of appetite and heavy breathing soon vanished and she was like any other baby in the village, prancing about energetically.

Though challenging, these four and half months were also the most memorable months in field. In the course of my fieldwork, my daughter learnt to walk, run, dance to Spitian music, name all the domestic animals, imitate a donkey bray, say 'mama' and many other words. She experienced the feel of snow, the wet nose of a yak and even scalded her face on a hot tandoor. Although the memories of Spiti seem to have faded, I am sure they will be revived when she joins me in field again this year. In the course of this one year, many people have asked me, "How do you manage your PhD and your daughter?" I have just one answer to give them, "I never want myself or my daughter to say: I could not do it because of you."

Chandrima Home, PhD, batch of 2009, researches the ecological and social dimensions of threats posed by free-ranging dogs in the Spiti landscape. She says that without support from NCF

field staff, villagers, friends and family she could not have managed baby and fieldwork.

Personal Takes is a first person account of the thoughts, ideas and experiences of people who do research on environmental issues.

Participatory research results shared with respondents in Vembanad

ATREE conducted a participatory mapping exercise to understand the current status of natural resources in Vembanad Lake, resource-use patterns, and the roles played by panchayats and community-based organizations in the governance of these resources. This study was important because extensive water and land remodelling efforts in the past have drastically altered the lake's waters and landscape, affecting the natural habitat of terrestrial and aquatic fauna and flora, and the ecological health of the backwater. The study was conducted in

ten panchayats in the southern part of the lake.

On 7 February 2014, ATREE and WWF-India organized a joint workshop on 'Sustainable livelihoods of Vembanad Lake and its challenges', where they presented the findings of their respective research on 'Participatory mapping of natural resources in Vembanad Lake', and on 'Sustainable livelihood security index of Vembanad Lake'. The findings were shared with 25 panchayats, direct users of the lake, and local institutions. These two projects, supported by the Kerala government's Department of Environment and Climate Change, are among the very few grassroots level projects in this area.

Some of the suggestions that could guide further work were:

- ▶ Expand the area of resource mapping to the north of Thannermukkom barrage. This was recommended by most of the panchayats.
- ▶ A participatory study on the impacts of increasing populations of cormorants (not looked upon favourably by fishers) on fish populations. Suggested by fisher-folk.
- ▶ A scientific study on the impact of houseboat tourism on the ecological health of the lake.
- ▶ Further studies on sustainability of black clam relaying, a practice that was started in 2011. This was suggested by the Black Clam Cooperative Societies and panchayats.

Jojo C V.

Demand for lantana craft training

The Lantana Craft Training programme at Male Mahadeshwara Hills has been

attracting the attention of forest department officials, especially of the neighbouring states.

Thirty five participants from four southern states requested further training after a demonstration on the lantana furniture making process at a training programme on 'Management of Lantana camara and Eupatorium' by the National Afforestation and Eco-development Board (NAEB) on 13 and 14 February at Anantapur.

Forest officials from Tamil Nadu invited ATREE to train the Soliga community in Kathrimalai forest area near Mettur, in lantana craft. ATREE responded with a 15-day training in furniture-making for 20 Soliga participants. MM Hills field staff, Naryanan coordinated this programme.

Ten families in Keeranahola village requested training in lantana furniture making. They see this as a supplementary source of income on days they are free from farm work. They will be receiving training shortly.

Another training has been planned for May 2014 under the aegis of the CEPF-supported programme on lantana craft as an alternative livelihood. This request was made by Junglescapes, for skills training to communities in the Lokkere forest area.

Jean Rodel, due to visit from Wildlife and Environment Society of South Africa (WESSA), is working on a national education and awareness campaign on invasive alien species in her country and hopes to take back learning from the Lantana Craft Centre model in MM Hills, for possible application in South Africa.

CEPF grantee news

The CEPF Secretariat and the ATREE Regional Implementation Team visited

eleven partners across the Mysore-Nilgiris and Sahyadri-Konkan corridors in March, in which they took note of successful conservation activities on ground, as well as challenges faced by the partners.

The indigenous community of Kadars in Vazhachal Forest Division successfully received title deeds to Community Forests Rights (CFR) under the Forest Rights Act, with help from CEPF grantee, Amitha Bachan and the World Wide Fund for Nature. This will enable the Kadars to have a say in managing their forests.

ACCORD, AERF and Keystone Foundation reported socio-economic benefits to local and indigenous communities with implementation of sustainable natural resource management practices.

RASTA from Kerala, SNM from Maharashtra and Arulagam, Tamil Nadu reported a drastic reduction in the number of pharmacies selling diclofenac for veterinary use; also a change in peoples' perception of vultures, following awareness campaigns on the role of diclofenac in decimating India's vulture populations.

WTI has developed plans to mitigate the negative impacts of linear intrusions like roads and rail.

NCF, in collaboration with The Shola Trust, is seeking to develop a better understanding of human-elephant interactions, with focus on peoples' tolerance of *Elephas maximus*—Asian elephants.

WRCS has identified critical connective links as habitat or migratory passages for large carnivores. They are now working to bring these critical links into the ambit of some sort of protection by informing regional policy and wildlife management.

BNHS is assessing the distribution and population status of the Critically Endangered and endemic Kondana soft-furred rat *Millardia kondana* in Sinhgad, and trying to apply the 'Alliance for Zero Extinction' (AZE) concept to the site.

World Wetlands Day celebrated at Vembanad

ATREE organized a seminar on *Conservation of Vembanad Lake and Western Ghats* along with Federation of Joint Lake Protection Forums, Vembanad and Joint Forum of Farmers and Fishermen, Kuttanad (Kuttanad Samrakshana Samithi) on World Wetlands Day at Muhamma, Alappuzha. Farmers and fisherfolk debated the operation of Thannermukkom barrage, which regulates the flow of seawater in the lake; the importance of streams to Vembanad; why protecting the Western Ghats is important to Vembanad stakeholders; and management of invasive species. ATREE pointed out the importance of participatory conservation and the bottom-up approach. Lake Protection Forums released lamps in streams to send out a message on the importance of these streams to the viability of Vembanad Lake.

Sites identified for long term waterbird surveys over the Tamiraparani

The fourth water fowl census results make it very clear that the Tamiraparani river basin is an important bird habitat in India. The census, conducted mid-January every year, is a citizen science initiative. This year, the researchers also earmarked 53 tanks of over 50 hectares area each, and heronries that see congregations of winter birds, for repeat surveys over a long period of time.

This year's survey yielded a count of 67,000 waterbirds. Arumangalam, Kadambakulam and Vellur recorded birds in excess of 13,000, 9,000 and 6,000 respectively; 18 tanks recorded a congregation of more than 1,000 waterbirds and three tanks recorded more than 5,000 waterbirds. Common coots were the most abundant, along with flocks of resident and migratory ducks such as Eurasian wigeons, northern pintails, cotton teals and lesser whistling ducks. Other birds sighted were Greater Flamingoes and bar-headed geese. Caspian tern, white-necked stork, kora or water cock and small pratincole were recorded for the first time in the four years that the census has been conducted in this region.

Sixty citizens, including doctors, businessmen, housewives, advocates and school and college students participated in the survey held 24-26 January in Tirunelveli and Thoothukudi districts. This survey was organized by ATREE's Agasthyamalai Community-based Conservation Centre, along with Pearl City Nature Society, Thoothukudi and Nellai Nature Club.

Prashanth M. B.

Bird studies in conferences

A summary of ATREE's work on 'Farmer's perception of ecosystem services provided by rodent feeding owls' was presented at the 8th Asian Regional Raptor Research and Conservation Network, IISER, Pune, Feb 2014. The conference focused on conservation of Gyps vultures in India and case studies related to birds of prey across India, including their representation in culture. Participants presented extensive work on birds of prey; on migration involving satellite transmitter tracking; and nest site observations with camera trapping methods.

Earlier, ATREE presented summaries of work on forest owls, ecosystem services to forest fringe communities, and the good and bad of drought on waterbird populations in a river basin (a result of three years of mid-winter waterbirds census) at the 2nd International Conference on Indian Ornithology, Nov 2013, organized by SACON. The main theme of the conference was on ecosystem services, with dedicated sessions on birds in farmlands, agro ecosystems, wetlands. Interactive sessions focused on existing and up-coming citizen science initiatives across India, and on the pan Asian mid-winter water census.

Prashanth M. B.

Education

Internships in MM Hills

Herder challenges

Todd Bertwell, an intern from Oregon State University, USA is investigating herder practices in Malai Mahadeshwara Hills Community-based Conservation Centre. He is interested in the income and non-income benefits that people derive from their cattle, how they manage their cattle, and the challenges they face amidst changes in water availability, the surrounding ecosystem, and forest policy.

The study focuses on the Soliga Scheduled Tribe and Lingayat communities in two adjacent villages in MM Hills: Gorsane and Keeranahola. Both communities depend on their cattle to fertilize crops, till fields, and provide a small amount of milk, while some people with larger herds earn income through their sale. Herders routinely access the forest for grazing and have set up remote cattle sheds in the forest. However, this practice is under threat because of reduced fodder availability and demands from forest

managers to abandon the practice. The results will provide further insight on the connections among people, cattle and natural resources in MM Hills.

Role of medicinal plants

Intern from Taiwan, Zih-Lun Jian, is studying tribal knowledge, and Ruei-Yi Lin, is a nurse working on traditional therapy in acupuncture. They visited MM Hills in February to study indigenous knowledge on seed conservation and wild plant usage. Both interns also shared information on wild plant usage in Taiwan with the MM Hills communities.

Harisha R. P. and Todd Bertwell

Student's Wetland Congress 2014

The fourth edition of the Student's Wetland Congress was organized on 5th February 2014 at Pulimoottil Trade Center, Mullackal, Alappuzha, as a part of the Jalapaadom programme by ATREE's Vembanad Community Environmental Resource Centre. Hundred and four students from 14 schools and five colleges participated.

Six schools walked away with winning projects on fish depletion in Kumarakom, effect of weedicides on wetland biodiversity, study on fluorosis in Edathwa and Thakazhi region, etc.

Joby Paul, Vembanad CERC

New

People

The Dal lake project hired two consultants in January: **Aijaz Ahmed and Majid Maqbool**. **Janardhana K.** joined as Senior Consultant, Outreach; **Manjunatha G.** and **Sowmyashree** as consultants; **Devasenadhipathi**

and **Dhavamani R.** joined as research staff in Coimbatore; and **Shruthi Patil** as Data Entry Operator on the Adapting to Climate Change in Urbanizing Watersheds (ACCUWa) project. **Ameya Gode** has moved from the grasslands project to employ his training in RS in the Ecoinformatics Lab as Research Associate. **Rutuja** joins the MoEF dry grasslands project as Research Associate. PhD alumnus, **Dr Ravi Ramalingam** is Consultant on the Western Ghats Insect Inventory Programme. **Dr Milind Bunyan** joins as Consultant on Ecosystem Services for Poverty Alleviation project. **R. Kottaimuthu** is a Consultant in Wipro earthian. **Vindhya Nanu Gopalan** is Junior Research Fellow–DST, and **Nachiket Kelkar**, student of the 2013 batch has the added responsibility of Teaching Assistant.

Workshops organized

Golden Jubilee National Seminar on *Bioregional and ecocritical discourses: Nature and narration*. Organized by Newman College, Thodupuzah in collaboration with ATREE, and sponsored by UGC. 23 and 24 January 2014.

See details of other workshops organized, like TreesIndia, Student's Wetland Congress etc., in the preceding pages of this newsletter.

Publications

Edited book

Purushothaman, S., R. Abraham (eds.). 2013. *Livelihood strategies in southern India: Conservation and poverty reduction in forest fringes*. India: Springer. ISBN: 978-81-322-1625-4 (Print), 978-81-322-1626-1 (Online).

Ramawat, K. G., J. M. Merillon and K. R. Shivanna (eds.) 2014. *Reproductive biology of plants*. Boca Raton, FL, USA: CRC Press.

Papers published in edited books

Hiremath, A. J. and B. Sundaram. 2013. Invasive plant species in Indian Protected Areas: Conserving biodiversity in cultural landscapes. In: *Plant invasions in protected areas. Patterns, problems and challenges* (eds Foxcroft, L. C.; P. Pyšek, D. M. Richardson, P. Genovesi) Invading Nature - Springer Series in Invasion Ecology. Volume 7. pp 241-266. Springer.

Ramesh, M. and R. Sankaran. 2013. Natural history observations on the Indian spiny-tailed lizard *Uromastix hardwickii* in the Thar Desert. In: *Faunal heritage of Rajasthan, India*. (eds Sharma, B. K., S. Kulshreshtha and A. R. Rahmani). Vol 1. pp 295-310. New York: Springer.

Shivanna, K. R. 2014. Biotic pollination: How plants achieve conflicting demands of attraction and restriction of potential pollinators. In: *Reproductive biology of plants* (eds Ramawat, K. G., J. M. Merillon and K. R. Shivanna). pp 218-267. Boca Raton, FL, USA: CRC Press.

Peer reviewed articles

Lele, S., O. Springate-Baginski, R. Lakerveld, D. Deb, and P. Dash. 2013. Ecosystem services: Origins, contributions, pitfalls, and alternatives. *Conservation and Society* 11(4): 343-358.

Nayak, R. R., S. Vaidyanathan, J. Krishnaswamy. 2014. Fire and grazing modify grass community response to environmental determinants in savannas: Implications for sustainable use. *Agriculture, Ecosystems and Environment*. 185: 197-207.

Rogimon P. Thomas, Joby Paul. 2013. Distribution and ecology of the genus *Murdannia* Royle (Commelinaceae) in South India. *Online International Interdisciplinary Research Journal* 3(4): 201-206.

Sapna Bai, N., O. K. Remadevi, T. O. Sasideharan, M. Balachander and P. Dharmarajan. 2014. Pathogenicity

of *Metarhizium anisopliae* (Deuteromycotina:Hyphomycetes) isolates to the ailanthus webworm, *Atteva fabriella* (Lepidoptera: Yponomeutidae) under laboratory and field conditions. *Journal of Sustainable Forestry* 33(1): 73-86 doi:10.1080/10549811.2013.816969

Sivapalan, M., M. Konar, V. Srinivasan, A. Chhatre, A. Wutich, C. A. Scott, J. L. Wescoat, and I Rodríguez Iturbe. 2014. Socio-hydrology: Use-inspired water sustainability science for the Anthropocene. *Earth's Future*.

Sreekumar, K. R., Joby Paul, and Rogimon P. Thomas. 2013. Taxonomic and ecological appraisal of *Ixora johnsonii* Hook.F. (*Rubiaceae*) mRNA 2 (3): 3-7.

Srinivasan, V. and S. Kulkarni. 2014. Examining the emerging role of groundwater in water inequity in India. *Water International* 39 (2): 172–86. doi: 10.1080/02508060.2014.890998.

Thompson, S. E., M. Sivapalan, C. J. Harman, V. Srinivasan, M. R. Hipsey, P. Reed, A. Montanari and G. Blöschl. 2013. Developing predictive insight into changing water systems: Use-inspired hydrologic science for the Anthropocene. *Hydrology and Earth System Sciences*. Discussions 10, 7897–7961.

Discussion paper

Srinivasan, V., D. Suresh Kumar, P. Chinnasamy, S. Sulagna, D. Sakthivel, P. Paramasivam, S. Lele. 2014. *Water management in the Noyyal river basin: A situation analysis*. Environment and Development Discussion Paper No. 2. Bengaluru: Ashoka Trust for Research in Ecology and the Environment.

Popular press

Maurya, N. 2014. *Vikas ki avdharna aur janjatiyon ka swasthya* (Concept of development and tribal health) *Yojana* (Hindi) Jan 2014.

Pradhan, U. *Seraph of the mountains*. *Sanctuary Asia*. February 2014: 60-63.

Papers presented in seminars

Maurya, N. 'Cosmology, ritual and ecology: Understanding the role of religion in preservation and conservation of water resources' under the theme *Water: Culture and Institutions* at international conference on 'Environment, Technology and Sustainable Development: Promises and Challenge in the 21st century' held on 2-4 March 2014. Organized by ABV-IIITM Gwalior in collaboration with ISEC, Bengaluru and University of San Francisco and supported by ISARC-24 and Sage.

Invited lectures

Jojo T. D. *Impact of conventional energy sources on environment*. Rajagiri College of Social Sciences. 11 Feb 2014.

Lele, S. *Sustainability, environmentally sound development and the role of science and technology*. Indo-German Summer School on Sustainability Theory and Practice, organized by Indian Institute of Technology Madras. 4 March 2014.

Shivanna, K. R., INSA Honorary Fellow

► Delivered two lectures in the Science Academies Lecture workshop on contemporary research issues in Life Sciences at SDM College Uire, Dakshina Kannada on 4 and 5 February 2014.

► *Pollination biology: How plants lure animals and use them for pollen transport.*

► *Importance of low-tech research in Botany in effective management and conservation of our bioresources.*

► *Pollination biology: Fundamental and applied aspects.* Siddaganga College of Science, Arts and Commerce. Tumkur. 5 March 2014.

► Delivered two lectures under Science Academies Lecture workshop on New Frontiers in Biology at S. Nijalingappa College. Bengaluru. 10 and 11 March 2014.

► *Pollen biology: Reproductive and non-reproductive aspects*

► *Pollination biology: Fundamental and applied aspects*

► Delivered a lecture in the refresher course on Life Sciences for university and college teachers. *Pollination biology: A requirement for crop productivity and stability of the species*. Bangalore University. 29 March 2014.

Grants

Vikram Aditya attended the AFEC-X 2013 (Advanced Field course in Ecology and Conservation – Xishuangbanna) from October 19–November 30, 2013 at the Xishuangbanna Tropical Botanical Gardens, Xishuangbanna, Yunnan province, China, for which he received a partial fellowship from the Chinese Academy of Sciences and from ATREE's Edda Sehgal travel grant.





www.atree.org

Head Office

Bengaluru

Royal Enclave, Srirampura
Jakkur Post, Bengaluru 560 064
Tel: +91-80-23635555,
Fax: +91-80-23530070

Regional offices

Eastern Himalayas

Khangsar House,
Above Brahmakumari, Development Area
Gangtok 737101
Tel: +91-3592-206 403

New Delhi

2nd Floor, 1, K Commercial Complex
Birbal Road, Jangpura Extension
New Delhi 110014
Tel: +91-11-2432 3133

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This newsletter has been put together from reports by ATREE folk. Design and layout is by Salil Sakhalkar. Editing by Samuel Thomas, Ganesan Balachander and Meetu Desai.