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Research



What purpose do conferences serve?

In the last two quarters of 2012, ATREE organized one international conference; participated in another international conference with global policy mandates; and set up stalls, presented posters and gave talks in two national conferences. This interaction was in addition to the talks and lectures that we list later in this newsletter, to share how our faculty and students have been engaging with different bodies of audiences.

Are there benefits to researchers halting research long enough to prepare for, travel to and participate in such meetings? The short answer is yes: exchanging ideas, getting critical response on research from peers, learning the vocabulary of new ideas and concepts from across countries, disciplines, and diverse stakeholder groups is a shortcut access to the nuances that underlie new thinking on environment, development and conservation.

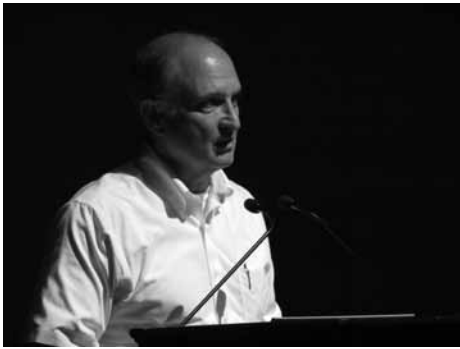
Asia, the world and India: Presented below are snapshot reports on Biodiversity Asia, Conference of Parties, National Biodiversity Congress and Indian Biodiversity Congress.

Conservation in human-dominated spaces: Biodiversity Asia 2012

Conservation is as much about people—their politics, history, culture, economics, motivations and desires—as it is about biodiversity, ecology and biophysical processes. This is all the more intensely experienced by

natural and social scientists in Asia, where the context in conservation and development studies pertains to human dominated ecosystems, subsistence level dependence on natural resources, stark inequities in sharing of resources, and aspirations towards Western goals and standards.

Biodiversity Asia 2012, the 2nd Asia Regional Conference of the Society for Conservation Biology, held from 7th to 10th August 2012 in Bengaluru, addressed the peculiarities and challenges of conservation science in Asia. The theme of Science, Policy, Governance is reflected in the composition of discussants and the nature of discussions in the various symposia, talks, panel discussions and workshops over the five days of this international conference. 400 participants from 23 countries attended the conference, organized by ATREE, SCB and other partners.



"The truth is that we are in trouble, and we in the scientific community have to be truth tellers."

Prof. David Orr, noted environmentalist and professor of Environmental Studies and Politics, Oberlin College, USA, presented evidence to warn that things were going to get hotter, faster, in more unpredictable ways, in his inaugural lecture on the science of global warming and the challenges before humanity. He emphasized the need to create sustainable

models of living with available, off-the-shelf technology, and not treat sustainability as an abstraction. 7 August 2012.



"People have treasured and guarded our natural heritage and biodiversity and they need to be placed at the centre of development."

Dr. Madhav Gadgil, author of the Western Ghats Ecology Expert Panel report talked about environmental misgovernance and the Western Ghats. "Hope," he said, "lay in the democratisation and revival of community based environmental governance." Dr. Gadgil was delivering the 9th TN Khoshoo Memorial Lecture: 'Western Ghats: Nature, People and Development'. 8 August 2012.



"Wild animals know no borders. In India, they cannot afford to because people and their livestock are everywhere."

Vidya Athreya, on the leopard. Athreya was awarded the 2012 TN Khoshoo

Memorial Award for Conservation, Environment and Development for her pioneering work on the dynamics of human-leopard encounters; the ecology and biology of this species; and the politics and socio-cultural elements of these encounters. Athreya is Research Associate with Pune's Kaati Trust, and Centre for Wildlife Studies and Asian Nature Conservation Foundation, Bengaluru. 8 August 2012.



How have societies and landscapes with a very long history remained livable over centuries and millennia?

Mahesh Rangarajan, Director, Nehru Memorial Museum and Library, New Delhi, on 'Asia at the Crossroads: Nature, Nation, and Science in Times of Change'. 8 August 2012.



How does a biocultural perspective influence planning and implementation in conservation?

Plenary session by Dr. Eleanor Sterling, Center for Biodiversity and Conservation, American Museum of

Natural History, USA. 9 August 2012.



Is science on the conservation agenda at all?

Dr. Prahlad Yonzon memorial lecture by Dr. Kashmira Kakati with examples from Northeast India. Kakati drew attention to the fact that the conservationist's fight is often a lone battle against relentless destruction of rich wildlife habitats and corridors. 10 August 2012.



"Whether science is being heard or not is often a political decision and scientists must reflect on how far science should push to influence policies, especially given that science has limitations."

Dr. Damayanti Buchori of Bogor Agricultural University, Indonesia at a panel discussion on 'Science is from Venus, Policy is from Mars', a discussion on the rift that complicates

conservation. Other participants were Dr. Sharad Lele, Convenor of the Centre for Environment and Development at ATREE; Dr. Thomas Brooks, VP for Science and Chief Scientist at Nature Serve, USA; David Quammen, noted science writer; Dr. Eleanor Sterling, Director, Center for Biodiversity and Conservation, American Museum of Natural History, New York, USA. Dr. Kartik Shanker, Scientist at the Centre for Ecological Sciences, moderated this session. 9 August 2012.

Book release

Invertebrate diversity and conservation in the Western Ghats.

Editors: Priyadarsanan Dharma Rajan, Soubadra Devy, Aravind Madhyastha, K. A. Subramanian and Seena Narayanan. On diversity, ecology, biogeography, behaviour and conservation of invertebrates of the Western Ghats.

Common dryland trees of Karnataka

Editors: A. Kavitha, N. Deepthi, R. Ganesan, S. C. Gladwin Joseph
Kannada-English bilingual guide on common farmland tree species, and their place in the semi-arid agricultural-rural landscape of Karnataka.

Poster event

The conference hosted 26 student posters, 37 student talks and 24 student speed talks.

Capacity building and skills training

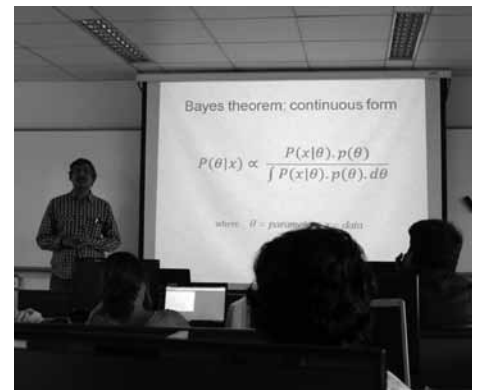
Tips for writers

Science as story: How to communicate science to a general audience
David Quammen, science writer on the practicalities of science writing.

Introduction to open-source GIS and remote sensing for conservation



ArcGis and modelling workshop



Workshop on Bayesian models in Conservation Science



Rethinking conservation education: Beyond tree planting and painting competitions. The Conservation Education Network, India

Awards

Award in the speed talk category to Roshmi Sharma for 'Do protected areas effectively conserve amphibians of the Western Ghats?' Also to Suman Jumani for 'Determinants of dry season ranging



behaviour by Asian elephants in a fragmented landscape’.

In the regular talks category, to Sascha Ismail for talk on ‘Identifying conservation priorities for an endangered tropical tree in complex forest agro-ecosystem’. Also to Hari Shridhar for talk on ‘Identifying keystone bird species in a mixed-species flock co-occurrence network in the northern Western Ghats, India’.

The Society for Conservation Biology (SCB) is an international organization dedicated to promoting the scientific study of the phenomena that affect the maintenance, loss, and restoration of biological diversity. The present conference was seen as a precursor to talks at the Conference of Parties, taking place in October in Hyderabad. Dr Simon Nemtsov invited ATREE to organize the Asia conference when he visited India in 2010.

What ATREE chose to talk about at the Conference of the Parties

The eleventh meeting of the Convention on Biological Diversity’s Conference of the Parties (COP 11) was held in Hyderabad, India, from 8 to 19 October 2012, with the mandate of finding implementation solutions to the decisions reached at the Nagoya Protocol on Access and

Benefit Sharing, held last year at the tenth CoP meet in Japan.

ATREE faculty participated in talks, poster exhibitions and panel discussions.

Shrinivas Badiger presented a paper on ‘Negotiating tradeoffs: making informed choices about ecosystem services for poverty alleviation’, to provide insights gained from expert and local community meets on developing better natural resource management and sharing strategies for pro-poor ecosystem management. This was part of the discussions on Bioeconomy.

Nitin Rai gave a talk on ‘History, situated knowledge and science in Protected Area conservation’, in a panel on Protected Area governance in India and the Forest Rights Act, hosted by ATREE partner on FRA related work, Kalpavriksh.

Harini Nagendra participated in the Cities for Life summit, sharing her insights on urban ecology and public participation. As a run-up to this event, to illuminate the idea of biodiversity in urban spaces, ATREE, the Indian National Trust for Art and Cultural Heritage (INTACH) Bengaluru, and Citizen Matters, had organized a photo competition on urban nature and people-nature interactions in Bengaluru. Photographs were invited in categories: Urban Wetlands, Heritage Trees, Nature in my Backyard, People and Nature, Accommodating Nature within Cities. Some of the more interesting and thought provoking images were exhibited at this urban conclave at CoP.

Ankila Hiremath and Swati Shresth were other participants at CoP. On 17 October, ATREE organized a side event focused on reconciling the need for food security and meeting growing aspirations for

The wise use of common spaces

On Tree Diversity Day, R Ganesan, Fellow ATREE, spoke about how ATREE seeded agroforestry initiatives in three villages in the fringes of the protected, no-go Kalakad Mundanthurai Tiger Reserve landscape, making these villages self-sufficient in firewood, fodder, fruit and timber for their use and sale: all without needing to harvest inside the reserve.

The team’s observations in KMTR (one of ATREE’s Community-based Conservation Centres) was that despite the declaration of Kalakad Mundanthurai as a Tiger Reserve, the villagers’ need for fuelwood exceeded their fear of reprisal for venturing into a protected area. As a result, there was an outflow of almost 28 tons of fuelwood per month from this protected area, for sale to these three villages. Through interactions with smallholder farmers, school children and households, ATREE researchers and the village community agreed to grow a judicious mix of trees so that now, three years into the project, households are collecting around 700 kg of fuelwood from village-grown trees, fruits, fodder for their livestock, and in addition, selling timber worth around US\$100.

According to Ganesan, “*The trees in the villages act as a mosaic of ‘transition forest’, providing habitats or food for a diversity of creatures – from wild animals to pollinators.*” The villagers and ATREE identified village common spaces and under-utilized areas such as backyards of homes, land in the middle of farmlands or in field *bunds*, lakes and irrigation channels, in schools etc. Saplings were planted with a basic awareness of the role that species might play in the village natural resource basket.

This is a study that can be replicated. Contact PI at rganesan@atree.org for more information.



greater economic prosperity with conserving biodiversity for achieving Aichi Biodiversity Targets. Panelists in this discussion were Ganesan Balachander, Director, ATREE; Julia Merton-Lefevre, DG-IUCN; Ravi Prabhu, DDG, World Agroforestry Centre; Kamal Bawa, ATREE founder President; Sharad Lele, Senior Fellow at ATREE; and Anne-Hélène Prieur-Richard, Dy Director, DIVERSITAS. ATREE also invested in an outreach stall from 13-19th at the CBD's Interactive Fair for Biodiversity, where students, educators, academics and partners could get to know more about ATREE's work across India.

Expert consultation meeting on Arkavathy basin

Experts expect that climate change will aggravate climate variability, which in turn will intensify water-related stresses, especially for marginalized groups.

ATREE organized an expert consultation on water resource management issues in the Arkavathy basin on November 7, 2012. This was the preliminary stakeholder interaction of the '*Adapting to climate change in urbanizing watersheds*' project, which will first identify stakeholder priorities to understand which factors and pathways are most relevant. It will combine biophysical understanding with an understanding

of the socio-technical infrastructure and institutional mechanisms through which climate change impacts will be felt by water users.

Participants represented a range of scientific, government and non-government institutions, including Indian Institute of Science, Bangalore Water Supply and Sewerage Board, Karnataka Urban Water Supply and Drainage Board, Central Ground Water Board, State Pollution Control Board, Water Resources Development Organization, Arghyam, Svaraj and Biome Environmental Solutions. The objective of the meeting was to arrive at a common understanding of issues based on a review of existing literature and data, and to evolve consensus on future research

priorities. The meeting was organized into sessions on water scarcity, water quality, fair allocation of water and sustainable water use.

This was part of the International Development Research Centre (IDRC) funded three-year project that addresses water scarcity and water-related vulnerability in the context of aggravating conditions of climate variability and urbanization.

The project team consists of Sharachchandra Lele, Veena Srinivasan, Bejoy Thomas and Priyanka Jamwal.

Education

Towards Interdisciplinarity

In October, ATREE's doctoral students initiated a series of talks aimed at inviting young scholars, including PhD students, to share their work with ATREE researchers. Tentatively called *Towards Interdisciplinarity*, the series emphasizes ATREE's interdisciplinary approach to research and seeks to invite scholars from diverse backgrounds, whose work overlaps with ongoing research at ATREE. The inaugural speaker was Hari Sridhar, PhD student at the Centre for Ecological Sciences (CES), Indian Institute of Science, who drew from his doctoral research to illustrate the counterintuitive association of similar bird species in bird flocks. In November, Nachiket Kelkar, researcher at the Nature Conservation Foundation (NCF), spoke on marine turtle herbivory among seagrass meadows in the Lakshadweep Islands, and the resulting impact on fishing activities. In December, Sanam Roohi, PhD student at the National Institute of Advanced Studies (NIAS), shared her recent findings on transnational philanthropy based on ethnographic fieldwork in Andhra

Pradesh and the United States among the diasporic Kamma community. The following week, Karpagam Chelliah, doctoral student at CES, discussed the intriguing case of tuskless elephants, or *makhnas*, who account for half of the male elephant population in Kaziranga, and debated whether it was a case of natural or artificial selection. The *Towards Interdisciplinarity* series is ongoing and updates will be carried in future issues of Branches.

PhD students team

Another PhD students' initiative: Around the field in fifteen minutes

Technology has made taking photographs a relatively inexpensive pursuit, and wildlife researchers generally take thousands of images when in the field. Instead of just storing them on individual computers and disk drives, the PhD students have initiated a show called 'Around the field in fifteen minutes'. This slide show presentation by the students captures the travails, joys and insights gained during interactions on the field. As of end December, between six PhD students and two RAs, eight episodes of this slide show series were shared. The diversity in topics and in landscapes, and articulation of experiences and understanding has proved educational to audiences from research as well as non-research backgrounds.

P Madegowda, PhD

The Puvudham experience: Conservation education at MM Hills

The Puvudham School from Nagarkoodal village, in Tamil Nadu, follows a non-formal education system with a curriculum based on the five elements that make up the universe: the sun, earth, water, air and space. The medium of learning is story,

dance and song. ATREE's conservation education programme emphasizes employing all the senses for achieving an understanding of the world around us. The two approaches have some obvious synergies, which came into play when the Puvudham students visited ATREE's MM Hills Community Conservation Centre (CCC) this September. The objective of the visit was to provide exposure and hands-on experience on issues with many shades and nuances—sustainable livelihood, nature and man conflict, social stratification, local culture and importance of nature and wilderness in life. The happy faces along with the great comments from the school after the 3-day visit speak for its success.

Activities, over the three days from 23rd to 26th September included nature walks, bird watching, visit to lantana craft centres, orientation on the story of waste, cultural events, introduction to wild edible plants, interactions with Soliga school children and community. Learning about wild edible and medicinal plants was something the children wanted to do as part of their MM Hills visit. Madesha, Sr. Field Assistant at the CCC, showed them more than 60 species of edible and medicinal wild plants. He also showed them how to identify the plants by touch, smell, taste and physical characteristics. The children were surprised to know that many plants they considered weeds were actually edible and good for health. Dundi, the local expert, taught the children to prepare a local delicacy with green leaves, using a mix of tamarind, chilli, garlic and salt. Hands-on crafting of articles from lantana was the other uniquely MM Hills highlight.

This was part of the MM Hills CCC initiative in local conservation and environment education, which it has been conducting from 2010.

*Sharada Ramadass and
Sutapa Mukherjee*

Outreach

SEMBANAD SPECIAL

Tharang 2012: Green film festival

ATREE CERC, Vibgyor film collective and Salila wetland study centre of St. Joseph's College, Alappuzha, organized Tharang 2012, a short film festival. It was held on 6th and 7th September. About 1500 participants from 23 schools and colleges in Alappuzha district took part in the programme. The objective of the festival was to sensitize students to environmental issues.

Films that featured:

Veeduoru Poonkavanam: A 30-minute documentary directed by Suresh Elamon. It tells the story of backyard biodiversity and our means to protect it.

Chitrakuzhal (which means binoculars). Title of the English version is The Bird Catcher: Directed by Majeed Gulistan.

Pachilakood (My home is green): Animation film directed by Sajan Sindhu and dedicated to the children who lost their lives in the endosulfan tragedy in Kasaragod district. It tells the story of an ant and a caterpillar. The ant, which loses its entire tribe to the pesticide mishap, meets a baby caterpillar and a relationship develops between them. The story moves ahead through the memories of the ant and the metamorphosis of the caterpillar.

Vrischikathile aalmaram: Adaptation of the Russian short story, The Oak Tree of Autumn, by Yuri Nagibin. It embodies the message of a spiritual relationship between human beings and nature. Produced by the Sree Sarada Girls Higher Secondary School.

Resource mapping shows dip in clam deposits in Vembanad

One of the work-in-progress revelations of ATREE's participatory resource mapping exercise at Vembanad has been the red alert on declining clam deposits in the lake. Responding to the situation, ATREE's Vembanad Community Environmental Resource Centre, clam societies and Lake Protection Forums met on 11 September 2012 to discuss ways to increase clam deposits in the lake. Findings show a dip in the eastern reaches of the lake. One of the reasons being cited is the obstruction of saline water intrusion that gives the lake and its inhabitants its particular environment. Dr. K. K. Appukuttan, Ret. Principal Scientist, CMFRI Cochin, led the sessions, along with Dr. Priyan and Jojo T. D. of ATREE.

Convention on ethical fishing

With mass decline of fishery resources in Vembanad, the Lake Protection Forums (LPF) around Vembanad decided to conduct a convention against unethical fishing in Vembanad. The convention was held on 13 July 2012 at Muhamma, Alappuzha. The meeting was presided over by District Director of Fisheries, Alappuzha and facilitated by Muhamma panchayat President, Deeba Ajithkumar; Mannanchery Panchayat member Mr. Megahanathan; and Kainakary Panchayat member, Mr. Sunil.

ATREE's President, Dr. Bawa addressed the gathering and released a booklet on 'Ethical Fishing Practices' by Mr. K. M. Poovu, Secretary of Lake Protection Forums and field coordinator of ATREE's CERC—Community Environmental Resource Centre. Mr. KrishnaKumar, Research Associate, CERC defended ethical fishing practices, sustainability and spoke about advantages of traditional fishing methods.

New

Recognitions

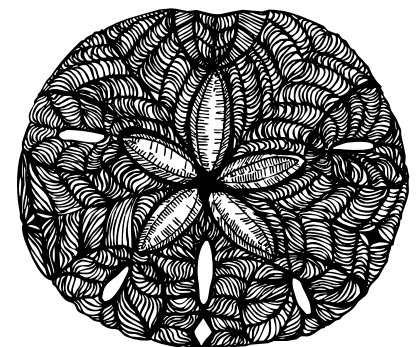
Niraj Kakati, Coordinator ATREE has been nominated by the Ministry of Environment & Forests, Govt. of India on the Regional Expert Committee undertaking Management Effectiveness Evaluation of the Protected Area network in India. The sites will include National Parks and Wildlife Sanctuaries in six states of the North-eastern region.

People

Annesha Chowdhury has joined the ATREE Eastern Himalayas Programme as a Junior Research Fellow under the TWST-funded project on 'Integrated approaches for adaptive resilience-based management of forests supporting agro-ecosystems in the Darjeeling-Sikkim Himalayas'.

B. Lakshmi is a student in the programme in Environment and Development at Ambedkar University Delhi. She interned with the research project on Ecosystem Services and Poverty Alleviation in June and in December 2012 to work on the *kendu* leaf value chain and ecological impact of harvest of *kendu* leaves in Nayagarh district of Odisha.

Meghana Eswar and T. Md. Zuhail have joined as Research Associates in the project 'Adapting to climate change in urbanizing watersheds' (ACCUWa) funded by IDRC. She has an MSc in Disaster Management from Tata Institute of Social Sciences, Mumbai.



Roan Lakerveld joined the research project on Ecosystem Services and Poverty Alleviation in November 2012 as a volunteer, to work in Odisha, on the institutional aspects of distribution of ecosystem service benefits from forests.

Workshops organized

Biodiversity Asia. 7-10 Aug 2012.

Expert consultation on Arkavathy.

7 Nov 2012. Sponsors: IDRC

Publications

Books

Bawa, K. S., S. Kadur. 2012. *Himalaya: Mountains of life*. Bengaluru: Ashoka Trust for Research in Ecology and the Environment.

Kavitha, A., N. Deepthi, R. Ganesan, S. C. Gladwin Joseph. 2012. *Common dryland trees of Karnataka: Bilingual field guide*. Bengaluru: Ashoka Trust for Research in Ecology and the Environment.

Priyadarsanan D. R., S. Devy, N. A. Aravind, K. A. Subramanian and S. Narayanan. 2012. *Invertebrate diversity and conservation in the Western Ghats*. Bengaluru: Ashoka Trust for Research in Ecology and the Environment.

Book chapter

Bawa, K., Ingty, T., 2012. *Climate change studies in Sikkim: an introduction*. In: *Climate change in Sikkim: Patterns, impacts and initiatives* (eds. Arrawatia, M. L., Tambe, S.). Gangtok: Information and Public Relations Department, Government of Sikkim.

Ingty, T., Bawa, K. S., 2012. Climate change and indigenous peoples. In: *Climate change in Sikkim: Patterns, impacts and initiatives* (eds. Arrawatia, M. L., Tambe, S.). Gangtok: Information and Public Relations Department, Government of Sikkim.

Killada, N. V., S. Badiger and B.K. Thomas. 2012. Flood in Krishna basin: Institutional responses to flood regulation. In: *Agony of floods: Flood induced water conflicts in India*. (eds. Prasad, E., K. J. Joy, S. Paranjape and S. Vispute). Pune: Forum for Policy Dialogue on Water Conflicts in India.

Lele, S. 2012. Economic incentives for forest management. In: *Deeper roots of historical injustice*. (eds Anonymous). P. 101-124. Washington, D. C.: Rights and Resources Initiative.

Articles

Balachander, M., O. K. Remadevi, T. O. Sasidharan, N. Sapna Bai. 2011. Virulence and mycotoxic effects of *Metarhizium anisopliae* on mahogany shoot borer, *Hypsipyla robusta* (Lepidoptera: Pyralidae). *Journal of Forestry Research*. 23(4): 651-659.

Harisha R. P. 2012. Present scenario of user knowledge and availability of wild edible plants in Male Mahadehswara Hills, South India. *International Society of Ethnobiology Newsletter*. 4 (1):10-12.

Heller, E., J. M. Rhemtulla, S. Lele, M. Kalacska, S. Badiger, R. Sengupta and N. Rama. 2012. Mapping crop types, irrigated areas, and cropping intensities in heterogeneous landscapes of southern India using multi-temporal medium-resolution imagery: Implications for assessing water use in agriculture. *Photogrammetric Engineering and Remote Sensing* 78(8): 815-827.

Kannan, R., C. M. Shackleton, Shaanker R. U. 2012. Reconstructing the history of introduction and spread of the invasive species, *Lantana*, at three spatial scales in India. *Biological Invasions* DOI: 10.1007/s10530-012-0365-z.

Paramesha, M. 2011. Sourcing local solutions for conflict. *Current Conservation*. 5(3): 38-39.

Sen, S., G. Ravikanth and N. A.

Aravind. 2012. Land snails (Mollusca: Gastropoda) of India: Status, threats and conservation strategies. *Journal of Threatened Taxa* 4(11): 3029-3037.

Sundaram, B., S. Krishnan, A. J. Hiremath and G. Joseph. 2012. Ecology and impacts of the invasive species, *Lantana camara*, in a social-ecological system in south India: Perspectives from local knowledge. *Human Ecology*. doi 10.1007/s10745-012-9532-1.

Thomas, S. 2012. Tragedy on the commons. *Current Conservation*. 5(3).

Ticktin, T., R. Ganesan, P. Mallegowda and S. Setty. 2012. Disentangling the effects of multiple anthropogenic drivers on the decline of two tropical dry forest trees. *Journal of Applied Ecology*. 49: 774-784.

Working Papers

Lele, S. as member of the Karnataka Elephant Task Force. Co-author, report of the Karnataka Elephant Task Force submitted to the High Court of Karnataka. 12 Sept 2012.

Popular press

Atkore, V. My tryst with Mahseer. *Sanctuary Asia*. December 2012.

Atkore, V. River of life. *Deccan Herald*. 7 January 2013.

Borah, J. et al. 2012. Tigers across borders: Tigers in the Indo-Bhutan Transboundary Manas Conservation Complex. *MNP/RMNP/WWF-India/ Aranyak/ATREE/UWICE/Bhutan Foundation*, New Delhi.

Lele, S. Colonial hangover persists. *Down to Earth*. June 16-30, 2012.

Lele, S. Standalone agency to map green wealth. *Economic Times*. 12 May 2012.

Mallegowda, P. 2012. Do wildlife corridors need protection? *Sanctuary Asia*. October 2012. 70-71.

Invited talks/ lectures

Aditya, V. Microhabitat selection of passerine birds in the tropical wet evergreen forest habitats of Kalakad-Mundanthurai Tiger Reserve, Tamil Nadu, India. Indian Biodiversity Congress 2012, Bengaluru. 11 Dec 2012.

Lele, S. Interdisciplinary analysis of the environment: Insights from research on tropical forests. School of Human Ecology, Ambedkar University Delhi. 9 Oct 2012; and at National Institute of Advance Studies, Bengaluru on 27 Dec 2012.

Priyadarsanan, D. R. Applying principles of deliberative democratic practices for the conservation and sustainable management of heavily used Vembanad backwaters of Kerala. MG University, Kottayam. 6-8 Nov 2012.

Priyadarsanan, D. R. Changing paradigms in conservation. National seminar on 'Biotechnology vs biodiversity: Challenges and options', Sree Narayana College, Kollam, Kerala. 21 and 22 Nov 2012.

Priyadarsanan, D. R. Taxonomy as an interdisciplinary science for human well-being. Indian Biodiversity Congress, Bengaluru. 9 Dec 2012.

Shivanna, K. R. Pollen and pistil biology. For post-graduate students, Sacred Heart College, Thevara, Kochi. 14 September 2012.

Shivanna, K. R. Pollination biology: How plants lure animals and use them to disperse their pollen. Sacred Heart College, Thevara, Kochi. For XIth standard school students under the INSPIRE (Innovation in Science Pursuit for Inspired Research) programme sponsored by the Department of Science and Technology to motivate young talent to take up research in science. 13 September 2012.

Presentations and talks at conferences

Atkore, V. Poster presentation on ~~'Preliminary assessment of fish fauna in the upper Malaprabha river basin of the Western Ghats, India'~~. Authors: Atkore, V., Krishnaswamy, J., Badiger, S., and Shanker, K. At the BioAsia Regional Seminar, Chinese Academy of Sciences, Beijing. 5-7 Nov 2012.

Gurung, K. Presented her work on the DBT-supported project 'Invasive species management in Sikkim: Opportunities for community livelihood enhancement'. Young Ecologists Talk and Interact (YETI) 2012. Organized by the Wildlife Institute of India with the support of Doon University, Dehradun. 5-7 Dec 2012.

Harisha, R. P. Uses of wild edible plant resources by forest dependent communities in southern India. At Save Western Ghats Conclave and Tribal festival. Three Soligas (Dundamma, Chikamadaiah and Madaiah H.) from MM Hills attended and prepared wild food plants recipes at the festival. Mahabaleshwar, Maharashtra. Organized by AERF, Pune. 30 Nov-2 Dec 2012.

Khaling, S. Presented a poster on the project 'Integrated approaches for adaptive resilience-based management of forests for supporting agro-systems in the Sikkim-Darjeeling Himalayas' at the Sub-Global Assessment Network Annual meeting organized in Stellenbosch, South Africa by the World Conservation Monitoring Centre-UNEP. Nov 2012.

Lele, S. Ecosystem services: Origins, contributions, pitfalls and way forward. At workshop on 'Nature, power, knowledge'. Organized by School of Human Ecology, Ambedkar University, Delhi. 14 Dec 2012.

Lele, S. Biofuels: Where, how, at what cost, for whom? At workshop on 'Impact of biofuel on biodiversity' organized by Raashtra Bandhu, Bengaluru. 7 Nov 2012.

Lele, S. Panelist in side event on 'Sustainable use of biodiversity'. CoP11, Hyderabad. 17 Oct 2012.

Lele, S. Panelist in 'Science is from Venus, policy is from Mars: The rift that complicates conservation', panel discussion in Biodiversity Asia. 8 Aug 2012.

Mallegowda, P. Presentation on 'Multidisciplinary approach to conserve wildlife corridors in Mysore-Nilgiri landscape of Western Ghats, India'. As part of the Global Environments Summer Academy 2012 held in Munich, Germany. 18th Aug 2012.

Mallegowda, P. Presentation on 'Assessing the socio-ecological status of wildlife corridors for better management in Mysore-Nilgiri landscape of Western Ghats, India'. At lab seminar organized by ITES – Ecosystem Management, ETH Zurich (Eidgenössische Technische Hochschule Zürich), Switzerland. 27 August 2012.

Rai, C. Presented a poster on 'Energy use patterns in the Darjeeling Himalayas: Opportunities for sustainable use models'. Young Ecologists Talk and Interact (YETI) 2012. Dehradun. 5-7 Dec 2012.

Rai, N. History, situated knowledge and science in Protected Area conservation. In a panel on 'Protected Area governance in India and the Forest Rights Act' hosted by Kalpavriksh. CoP Hyderabad.

Setty, S. Presented a paper on 'Long term monitoring of *Apis dorsata* colonies in Biligiri Rangaswamy Temple Wildlife Sanctuary, India'. At Biodiversity Asia., 8 August 2012.

Shivanna, K. R. 6th International Symposium on Zingiberaceae. Organized by the Department of Botany, University of Calicut, Kerala. Chaired a paper presentation session on 'Reproductive biology, ecology and conservation'. 10-13 September 2012. The following two papers covering our work were presented in the symposium:

P. R. Nikesh, V. N. Dhanooj, P. A. Sinu and K. R. Shivanna

Reproductive ecology of *oesenbergia pulcherima* (Zingiberaceae) in Southern Western Ghats.

Sinu P.A., G. Kuriakose and K. R. Shivanna

Floral and visitor behaviour influence pollination in Indian cardamoms.

Conferences attended

ATREE put up an outreach stall at CoP, India Biodiversity Congress and National Biodiversity Congress. On display was information regarding the Academy for Conservation Sciences and Sustainability Studies, ATREE research and research posters, publications and newsletters.

Gazmer, A. and Ingty, T. Third National Research Conference on Climate Change, Bengaluru. 3-4 Nov 2012.

Ingty, T. Biodiversity Asia. Bengaluru. 7-10 Aug 2012.

Ingty, T. International conference on climate change impacts and adaptation for food and environmental security. SEARCA, Los Baños, Laguna, Philippines. 21-22 Nov 2012

Courses attended

Mallegowda, P. Participated in the Global Environments Summer Academy 2012 (GESA 2012) held in Munich, Germany. Organized and hosted by the Rachel Carson Center for Environment and Society and the Global Diversity Foundation. At Munich's Ludwig Maximilian University, as part of the Munich International Summer University, Germany. 3-4 August 2012.

Grants

Allwin Jesudasan and T. Ganesh received a grant of US\$20,000 in support of their proposed project 'Birds, wetlands and people - what makes them to coexist in a globalizing world?' from the National Geographic Society's Conservation Trust.

Harisha, R. P. got the Rufford Small Grant to work on conservation of rare, endangered and threatened wild plants species through community participation in MM Hills. Period: December 2012 to June 2013.

Khaling, S. US\$ 66,209 from IUCN – SOS (Save our Species) Grant for project 'Conserving the Critically Endangered white-bellied heron, *Ardea insignis* in key sites of the Manas Tiger Reserve in Assam, India'. Period: Dec 2012 to Jun 2014.

Mallegowda, P. Rachel Carson Center for Environment and Society and the Global Diversity Foundation supported of 1500 Euros through the Salvia Foundation to attend the Global Environments Summer Academy 2012 held in Munich, Germany from 3rd-24th Aug 2012. The Edda G. Sehgal Foundation travel grant also supported the same.

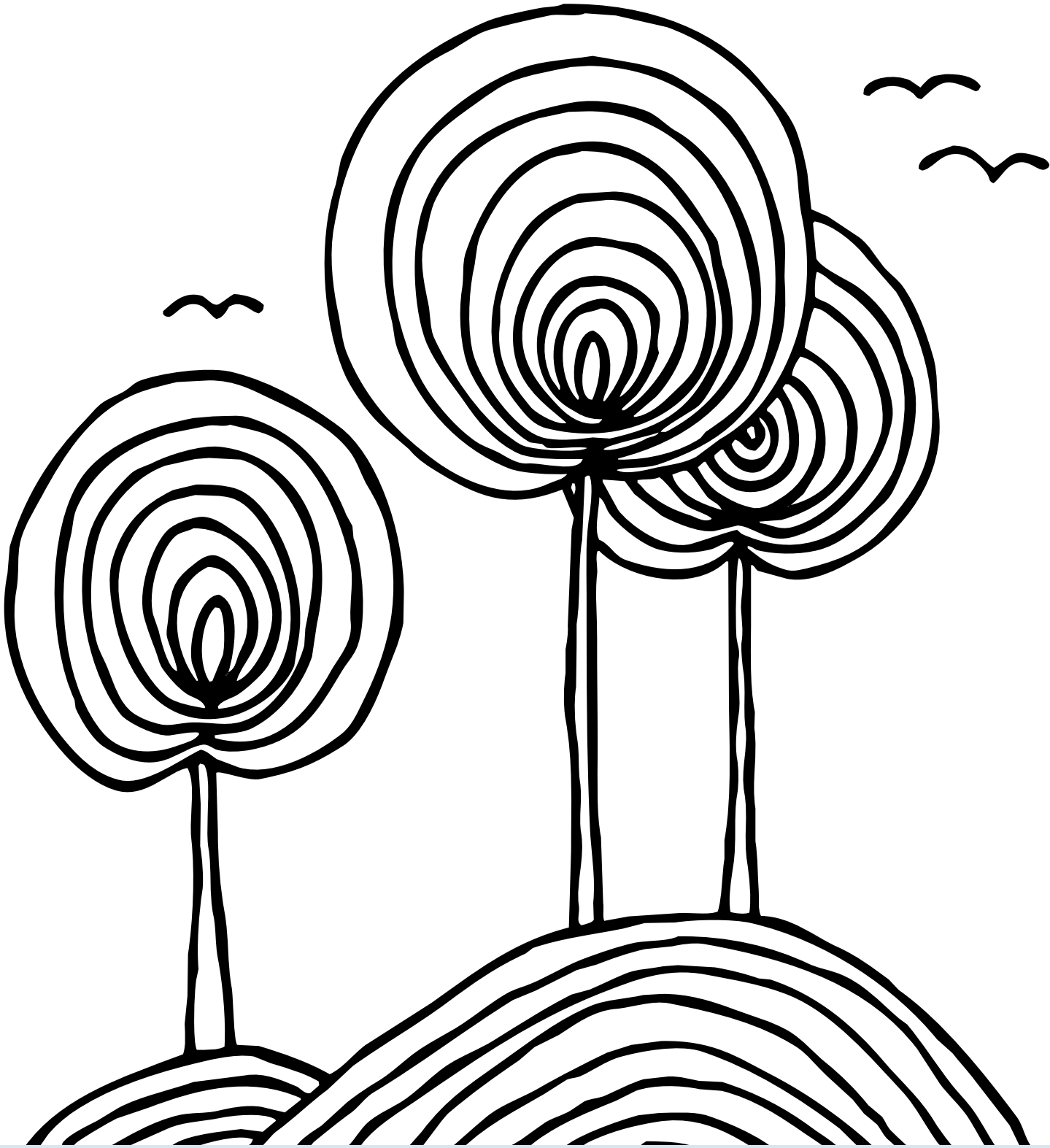
Vembanad CERC. Stakeholder meet among the Ramsar sites of India. MoEF. Grant of INR 6 lakhs.

Vembanad CERC. Biodiversity festival and preparation of biodiversity register in select schools of Vembanad under the National Environmental Awareness Campaign (NEAC) of MoEF.

New research projects sanctioned/ launched

Climate change in South Asia: Climate vulnerability and adaptation in urbanizing watersheds. Sanctioned in June 2012; launched Sept 2012.





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