

## Papers from Tropical Ecology Congress

S.P. SINGH<sup>1\*</sup>, SKIP J. VAN BLOEM<sup>2</sup> & A.R. NAUTIYAL<sup>3</sup>

<sup>1</sup>Formerly, Vice Chancellor, H.N.B. Garhwal University, Srinagar, Uttarakhand  
C/O CHEA, 09, Weldorf Compound, Mallital, Nainital 263001, Uttarakhand, India

<sup>2</sup>Depto Agronomía y Suelos, Universidad de Puerto Rico, P.O. Box 9030; Mayagüez,  
PR 00681-9030 (USA)

<sup>3</sup>High Altitude Plant Physiology Research Centre (HAPPRC), H.N.B. Garhwal University,  
Srinagar Garhwal, 246 174, Uttarakhand, India

It is our great pleasure to invite you to read this special issue of *Tropical Ecology*, which includes most of the papers presented during the Biodiversity Symposium at the Tropical Ecology Congress (TEC) held in December, 2007. The International Society for Tropical Ecology (ISTE) and HNB Garhwal University jointly sponsored the congress, reviving it after a number of years in hiatus. The meeting was held in Dehradun, Uttarakhand, India, and also benefited from substantial support of many other organizations, including the Government of Uttarakhand and, Forest Research Institute, Wildlife Institute of India, International Centre for Integrated Mountain Development, Indian Institute of Remote Sensing, GB Pant Institute of Himalayan Environment and Development, and the Centre for Ecology, Development and Research. Each of these organizations and institutions has our sincere gratitude for their efforts in support of TEC-2007.

Among the many recommendations that were developed during the conference was the desire to maintain outlets for tropical ecological research, particularly for scientists from developing countries and young ecologists. *Tropical Ecology* has been helping to fulfill this need since 1960. In addition to this issue on Biodiversity, additional special issues on Remote Sensing, Mountain

Ecology, and a joint issue on Invasive Species and Environmental Pollution are planned. As you can see, it was a productive congress.

It is perhaps appropriate to lead our series of special issues with Biodiversity and Conservation. While this topic has grabbed headlines for much of the past two decades ("Save the rainforest!"), recently biodiversity has begun to fall off the radar as concerns about global warming and elevated atmospheric CO<sub>2</sub> has dominated environmental news coverage. Both are, of course, serious topics that deserve the public's attention. However, despite the high publicity for some species, typically charismatic megafauna, there are many gaps in our knowledge as to how to protect and restore most endangered species' population and the roles these species play in ecosystem function.

### Brief description of the meeting

A wide range of issues were addressed in four symposia and eleven technical sessions, including biodiversity and wildlife, climate change and its consequences, carbon forestry, mountain ecology, geographical dimensions of ecology, analysis of spatial patterns using remote sensing and GIS techniques, restoration ecology, forest regeneration, invasive species, environmental

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\* Corresponding Author; e-mail: surps@yahoo.com; svanbloem@uprm.edu; arnautiyal@gmail.com

pollution, ecological adaptations, agricultural ecosystems, aquatic ecosystems, natural resource management and ethnoecology.

An all-participant “Ecology Forum” and discussion periods following each session identified recommendations general to the field of ecology and specific to each topic mentioned above. General recommendations included: (a) develop linkages among ecological groups of India and across countries; (b) combine ecological elements in various areas and institutes, such as the Wildlife Institute of India, Remote Sensing Institutes, Social Science related organizations and NGOs; (c) link Indian ecology and ISTE to other major organizations like the Ecological Society of America; (d) initiate measures to connect young Indian ecologists at an international level; (e) develop an integrated international research project on the Himalaya-Gangetic Plains System; (f) integrate ecology and social sciences in an effective way; (g) enhance the ability of ecological organizations to influence policy decisions; and (h) to publish the research papers presented in the conference, maintaining a forum for scientists from the developing world to publish their work and to highlight the research of young scientists. Regular readers of *Tropical Ecology* know that the ISTE sponsors the journal and is addressing the last point with this series of special issues from the congress. Some of these recommendations echoed goals that we established at the outset of the TEC, specifically:

- Increase ecological networking and collaboration both within South Asia and globally
- Improve the standing of ecology in India
- Encourage the development of young ecologists
- Increase awareness of the global importance of the Himalaya-Gangetic Plains system

We will briefly address outcomes related to each goal below.

### **Networking and collaboration**

Approximately 500 participants attended TEC-2007 including about 200 students and research scholars, in addition to established scientists, policy makers, public representatives and NGO personnel. In addition to the sponsoring and supporting

organizations listed above, the Aquatic Ecosystem Health Management Society (AEHMS), Canada and the Ecological Society of America (ESA) were also officially represented. AEHMS and ESA were specifically invited with the goal of developing future collaborative activities with ISTE and South Asian ecologists. In addition, as the TEC had not been held in some years, fostering collaboration within South Asia was also an important goal. We requested that all of the symposium and technical session leaders recruit speakers from multiple countries, a goal that was realized. In all, ecologists from 11 countries were present.

Both ESA and AEHMS have been increasing efforts to expand collaboration with ecologists outside of the Americas. Since the congress both societies have identified specific activities to be developed with ISTE and local partners in South Asia. We look forward to announcing more details on these initiatives in the future.

### **Improve the standing of ecology in India and South Asia**

Right from beginning the concern about decline of ecology in Indian universities was very much in the minds of the organizers. Productive output in terms of publication quantity and quality from India has decreased in the last two decades (SP Singh unpublished data from database searches). Attracting young scientists into the field has proven to be difficult for a number of reasons, but cultural and economic issues are both high on the list. In countries where many students are the first in their families to attend university, ecology is not perceived to be a science equal in status to medicine or engineering. In addition, ecologists are seldom at the top of the pay scale anywhere in the world.

We invited the press, local government, and business leaders to the congress and the response from each of these groups was positive. The congress was covered in both the local and national Indian newspapers, including some front page coverage. Both the chief minister and the governor of Uttarakhand State spoke at the conference. Leading ecologists were subsequently invited to continue discussions with the governor, and released a progressive statement supporting environmental protection during the Ecology Forum.

## Young scientists

At the outset, we encouraged participation of students in the congress and were pleased at the level of student attendance. This is a tribute both to the personal desire of the students to attend and to their universities for providing support. At the conference, we specifically targeted student participation in the discussion sessions and the Ecology Forum. We recognized that students frequently withhold their opinions and concerns in the more formal Indian culture, and yet it is important for them to learn to interact in scientific circles. Both the students and the community of established scientists thought this effort was worthwhile.

As an added encouragement to young scientists, Dr. Peter Murphy, the President of ISTE, announced in May 2007, that he would sponsor ten cash awards to recognize excellence in research that led to improved understanding of tropical ecology. These were awarded to young (<40 years old) ecologists from developing nations. Papers authored by “Alice J. Murphy Outstanding Achievement Award” winners will be so noted in each special issue. We include work from two Murphy Award winners in this issue (A. Datta-Roy *et al.* and G. Sharma *et al.*).

## Himalaya-Gangetic plains

Considering the TEC’s location in the foothills of the Himalaya, it was appropriate to

consider the state of ecological knowledge of the Himalaya-Gangetic Plains system. Himalayan forests have created the Gangetic plain via “nursing effect”, where sediments of rapidly eroding mountains enrich soils in the plain. The extreme elevation of the mountains blocks both cold air from the north and traps humidity from the south. This combination of physical factors has made the Ganga River Watershed one of the most productive agricultural areas in the world. It currently supports over 500 million people or ~8% of the world’s population. The long-term health of the watershed is crucial in preserving ecosystem services that influence biodiversity, marine systems, global biogeochemical cycles, human population and many of the cultures of South Asia. TEC participants felt that there was a need to develop a research initiative investigating ecological connections between Himalayas and the Gangetic Plains. A multidisciplinary project of this kind would require participation of experts from many disciplines and countries, and its successful implementation would significantly advance global ecology.

Overall, we can confidently state that the congress left its participants recharged in ecology and we eagerly await the new research initiatives, publications, and academic progress that the congress has stimulated. In addition, we look forward to the next TEC and hope to see you there.