

presentations were about the biggest live butterfly exhibition in the world by Clive Farrell, Founder of Butterfly World, Stratford-upon-Avon Butterfly House and London Butterfly House, UK. Dr. Kodi Isparan from FRIM shared his experience on plant tissue culture and its application in propagating butterfly attracting plants. There were also 3 other papers on moth diversity in Singapore and a report from Assam on mortality of butterfly fauna due to vehicular traffic.

As part of the symposium a trip was planned to visit Matang Forest Reserve to see the world's best managed mangrove forest Reserve at Taiping. A visit to Taiping Zoo and Lake garden was also arranged.

Working group: Roger Kendrick, Senior Conservation Officer, Kadoorie Farm and Botanic Gardens, acted as the facilitator on the last day of the symposium. Four working groups were formed to discuss issues related to Lepidoptera conservation. The participants were divided into four working groups to discuss about the Status of Lepidoptera and suitability of CAMP for Lepidoptera assessment; Environment Impact Assessment; Area/Size of nature reserves for Lepidoptera & Internet uses: Records and database.

The groups presented their points that will be taken up by the group as plan of action. It was decided that a proceedings of the symposium be published.

Climatic changes & coastal Bioresources: Nat'l Conference Report

B.A. Daniel*

Human activities influenced global environment to a much larger scale, particularly from the beginning of the industrial revolution in 1750s. The composition of the atmosphere (areal ocean) was affected due to increase in the Green House Gases that had potential impact on regional and global climate. Now, climate change poses a threat to all ecosystems. The most significant impact is the rise in the sea levels and in land flooding. It has been predicted that people who live in the coastal areas will be worst affected due to rise in sea level.

To understand the recent trends on climatic changes and coastal bioresources, particularly in Peninsular India, the Department of advanced zoology and biotechnology, Aditanar College of Arts and Sciences affiliated to MS Manonmaniam Sundaranar University conducted a two day conference during 11–12 November 2008. The objectives of the conference are to create awareness on the climatic changes of coastal ecosystem; to discuss the impacts of climatic changes on estuarine, mangrove, sea grass, seaweed and coral reef ecosystem; to discuss strategies and operational plans for safe coastal environment; to provide an opportunity for researchers to discuss about coastal pollution management; to review current environmental legislation and for developing instant policy frame work for coastal environment and sustainable development and; to offer a platform to meet and interact with personalities from various universities, colleges, and other research institutions. About 200 members took part in the 2 day event.

The conference received a total of 38 papers including key note addresses. The organizing secretary and the Head of the department Dr. G. Lakshmanan welcomed the gathering during the inaugural and invited Mr. A. Kuttalingam to give the presidential address. Dr. B.A. Daniel, during the chief guest address stated that man had changed the chemical composition of the areal ocean there by created change in the climate which is affecting every organism in this world. He pointed out that it is the right time to take initiatives at individual level so as to bring back a better environment to live. Mr. Uthriapandian, Secretary, appreciated the efforts taken by the department to conduct this conference.

Mr. S. Jayakumar thanked the management for the financial support for the meet. The key note address was given by Dr. B.A. Daniel. He gave a detailed talk on the Climate change challenges with a particular reference to insect diversity. Climate change is now the most important environmental threat facing human today. While explaining the process of climate change he stated that Green house gases are a class of gases which can trap heat near Earth's surface. As the Green house gases increase in the atmosphere, the extra heat they trap leads to global warming. This warming in turn places pressure on Earth's climate system, and lead to climate change. He also said that Climatologists have predicted that a wide range of scenarios such as socio-economic, sea level, water resources, agriculture, forests, human health and biodiversity will be affected due to climate change. This will have severe impacts on the global hydrological system, ecosystems, sea level, crop production and related processes. The impact would be particularly severe in the tropical areas such as South Asia. During his talk he gave the definitions of climate change and associated terminologies such as climate, weather, green house gases, global warming, climate change and details on four layers of atmosphere such troposphere, mesosphere, stratosphere and thermosphere. He also talked about the maintenance of life-sustaining conditions on Earth, factors determine Earth's climate change, Human Influence on the Climate System, about the predictions of Intergovernmental Panel on Climate Change (IPCC) and about scenarios of damages in 2050. He also gave a brief description about ZOO's methodology for teaching Climate change and its related issues and for attracting non-traditional as well as traditional educators to adopt new techniques which are more effective in influencing comprehension, retention and behavioural change.

After the key note address the participants presented their papers. Dr. A. John De Britto, Reader in Plant Biology and biotechnology, St Xavier's College during the invited talk explained the causes of global warming and its effect. He listed 62 major impacts that have been predicted to happen in next few decades. He also

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suggested some mitigation measures to meet Climate change challenges.

The second day started with the presentation of Dr. Venkataraman Kumar, Reader, VOC College, on Bioprospecting of seaweeds for marine bioresources. Bioprospecting describes the systematic search for and development of new sources of chemical compounds, genes, micro and macro-organisms and other valuable products from nature. He highlighted that seaweeds or benthic macroscopic marine algae are presently used as raw material for the manufacturing of seaweed colloids agar-agar, algin and carragenan; as fertilizer and animal feed and as foods. He pointed out that climate change will result in alteration in natural resources like seaweeds.

Dr. S. Ajmal Khan, Department of Aquaculture CAS in Marine Biology gave detailed presentation on climate change and its impact on various natural resources. He also discussed about the process involved in climate change and the role of IPCC and their reports on climate

change. This was followed by paper presentations by other participants. The forum formed a good platform for the students to understand all about climate change and the various aspects with regard to bioresources not only on coastal ecosystem but on a wider scale. This created interest among the participants that lead to discussions with the experts gathered during the conference.

The valedictory address of the conference was given by Dr. K. Venkataramani, Dean, Fisheries college and Research Institute, Tuticorin. During his talk he said that in India, climate change could represent additional pressure on ecological and socio-economic systems that are already under stress due to rapid urbanization, industrialization, and economic development. With its huge and growing population, a 7500-km long densely-populated and low-lying coastline, and an economy that is closely tied to its natural resource base, India is considerably vulnerable to the impacts of climate change.

Learning for Life-Conservation Education in our work and world

R. Marimuthu*

ATREE, Bangalore organized two days meeting on 18-19 December on skill share workshop for practicing environmental educators, programme coordinators and applied researchers on "Learning for Life-Conservation Education in our work and world". The two days programme was held at Navadarshanam, a 100 acre commune located at 50km south of Bangalore in Krishnagiri district of Tamil Nadu. The meeting was for people who have been involved in conservation education in its diverse forms and share their work with the group, the challenges they have faced, and future directions. They have been working on conservation education as part of the formal or non-formal education system with government and private schools, the administration/government agencies, and with local communities and with other non-governmental organisations. The issues and themes have ranged from biodiversity, forests and agriculture landscapes, environment and wildlife laws, human animal conflicts, livelihood, water and soil conservation, wetlands, coastal, coral reef, High Mountain, and cold desert ecosystems, overall environment, development and urban development and zoos. Many of them have been producing or committed to producing good quality, localized resource materials in local language and English, and are engaging in conservation education activities.

Twenty participants from 10 organisations shared their work with presentations to the group. Dr. Pranav Trivedi of NCF presented his work in Ladakh area, Pramod of SACON presented his Nature Camp workshops and other education activities, Marimuthu of ZOO talked about active learning methods used in ZOO's education programmes, Cyril Rufus of Adayar Poonga presented their work at Adayar Poonga as well as Pitchandikulam Bio-Resources Centre, Nimesh Ved of Samrakshan Trust, Mizoram talked about his conservation education work at Musings, Sujatha Padamanabhan and Sharmila of Kalpavriksh talked about their CE works in Ladakh,

Naveen Namboothri of Dakshin Foundation shared his work at the coastal areas on turtles in Orissa and also other eco-regions, Peeyush Sekhsaria of Handdesign, Bangalore shared his work of developing education materials for the tsunami hit areas in Tamil Nadu. Saneesh from Keystone Foundation talked about their work on RET plant species, education about honey collecting and the bee museum, John Kineman of University of Colorado talked about valuing the nature and ATREE staffs Sunita Rao, Kavitha, Siddappa, Jahnvi, Harisha and Abhishekha shared their CE works at KMTR-Tamil Nadu, Kanakpura, MM Hills, BR Hills, Karnataka, Vembanad, Kerala. After the each presentation, time was given for interaction between the groups. Participants displayed their education materials both printed and electronic for others to see and also they supplied each other free of cost. Zoo Outreach Organisation supplied some of its sample education packets and amphibian calendars to all the participants.

At the end of the meeting, it was decided that forming a network for conservation educators for interacting with each other; group members will identify new members to join in this network. An e-group is envisioned for keeping touch with others.

ATREE has developed a CD with sampler of resources for Conservation Education. The group members were asked to contribute resources whatever they know to add on that such as book names, periodicals, games & activities, posters, maps, music, films, website and web links and other CE related materials. It was also decided that annual meeting should be conducted in different location of the country in the month of November/ December with a theme for at least three days. The meeting was coordinated by Sunita Rao, Adjunct Fellow and Dr. Gladwin Joseph, *Director, ATREE*.

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