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International Association for Ecology

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Future of Ecology

Building a global network for observing biodiversity: The Group on Earth Observations Biodiversity Observation Network (GEO BON)

Rob H.G. Jongman¹ and Michele Walters²

¹ Alterra, Wageningen UR, the Netherlands

² CSIR, South Africa

GEO and GEO BON

The GEO Biodiversity Observation Network, or GEO BON, was established by the Group on Earth Observations to address the Biodiversity Societal Benefit Area (SBA), which is one of nine SBAs within GEO (the others being agriculture, climate, disasters, ecosystems, energy, health, water and weather). GEO BON grew out of GEO's biodiversity Community of Practice and is a network of networks designed to help strengthen and coordinate the activities of a diverse set of partners towards achieving a common goal-improved biodiversity information for a wide range of users. The creation of GEO BON is led by DIVERSITAS, the European Commission (at present through the FP7 EBONE project) and the US National Aeronautics and Space Administration (NASA).

GEO is a growing, voluntary, global endeavour and currently supported by 86 member governments, the European Commission and 61 participating organizations (including about a dozen UN bodies). These partners collaborate through GEO to coordinate their observation strategies and investments and share their environmental data, information and know-how. They are developing the Global Earth Observation System of Systems



(GEOSS) by interlinking their environmental monitoring systems made up of space, aerial, ocean and land-based networks. By generating cross-cutting data, information and analyses, in some cases in near-real-time, GEOSS promises to improve prediction and support science-based decision-making on major global challenges.

Why global biodiversity observations are essential

Timely and relevant data on biodiversity are critical to the effective conservation and sustainable management of the natural world. These data underpin the scientific assessments that, in turn, inform biodiversity policy and management at the global, national and local levels. Scientists have better data and knowledge about the chemical and physical components of the planet than they do about biological resources. While the geosphere has been relatively well quantified, the biosphere has not.

Many excellent biodiversity observation systems and databases have been established in recent years. Field observations by scientists and camera traps, laboratory studies, sonar and radar instruments and computerized databases have multiplied. Satellites too, have become part of the biodiversity observation toolkit and, over the past decade, they have been increasingly useful in providing continuous records for certain aspects of biodiversity over large spatial scales.

These biodiversity information systems, however, have been developed independently of one another, making it difficult to integrate data or to conduct global-level assessments. Biodiversity data are scattered among thousands of independent systems, often in a variety of incompatible formats. Furthermore, as has been noted by several authors¹, biodiversity data are often uneven in spatial, temporal, and topical coverage.

Observation systems are vital for determining where and how biodiversity is being lost and for understanding how this loss is impacting the ecosystem services that people depend upon. Although the average citizen may not think about it, these services - the provision of food, clean water, climate control, building

materials and much more-are of enormous value. Our ability to quantify and track changes in ecosystem services will benefit enormously from better biodiversity data thus increasing our ability to make informed management decisions.

The GEO Biodiversity Observation Network

GEO BON is being developed by a number of government agencies, international organizations and the European Commission with a commitment to improving global access to sustained, cross-cutting and integrated biodiversity data and information. Guided by a detailed implementation plan, they are working together as part of a voluntary, best-efforts partnership to coordinate and connect their observation systems. They aim to build a global, sustained, harmonized and scientifically-robust framework for collecting and delivering data, information services, and decision-support products.

GEO BON is being built on the existing activities of leading organizations and programs, such as the Global Biodiversity Information Facility (GBIF), the UNEP World Conservation Monitoring Centre (UNEP-WCMC), the International Union for the Conservation of Nature (IUCN), as well as many national agencies, NGO-based monitoring programs and independent scientific research. All systems, products and services, whether contributed to GEO BON or initiated by it, remain under the full ownership of the organizations or programs that produce and manage them. GEO BON is also identifying gaps in the current network of observation systems and starting new initiatives and activities to address them.

Objectives and activities

GEO BON is building a truly global biodiversity community of practice by:

- (i) building a network of people and organizations willing to collaborate and share ideas and information;
- (ii) identifying providers of observation systems, data and databases, information services and other resources, and inviting them to join the network;

¹ <http://www.esajournals.org/doi/full/10.1890/10.1890/10.WB.23>



- (iii) developing a coordinated strategy for assessing biodiversity at the genetic, species and ecosystem levels;
- (iv) facilitating the establishment of monitoring systems that enable frequent, repeated assessments of trends and distributions of species and ecosystems;
- (v) facilitating consensus on data collection protocols and coordinating the development of interoperability among monitoring programs;
- (vi) identifying gaps in data coverage and barriers for data sharing and developing partnerships to address these gaps and barriers; and
- (vii) advocating the strengthening, harmonizing, and sustaining of existing monitoring systems.

Since its launch in 2008, GEO BON started coordinating the gathering of data and the delivery of information. Based on an early concept document, GEO BON released a detailed implementation plan in May 2010. Eight topical working groups are currently implementing the activities set out in the plan, and Regional, as well as National Biodiversity Observation Networks, are under development. Over the next few years, GEO BON will provide a growing number of innovative and policy-relevant information products and services.

Recognition of GEO BON

The need for a network such as GEO BON has been widely recognized. An early vision for GEO BON was published in the journal *Science*² in 2008. A 2010 editorial in *Nature* recognized GEO BON as a crucial mechanism for supporting the newly-established Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

The activities of GEO BON have been fully endorsed by meetings of the GEO Plenary and by the GEO Ministerial Summits. In addition, the Convention

on Biological Diversity (CBD) adopted decisions recognizing the value of GEO BON in 2008⁴ and 2010^{5, 6} and encourages the "participation in, and support to, the Group on Earth Observations Biodiversity Observation Network (GEO - BON)".

Eight years ago, governments set a target of reducing the rate at which global biodiversity is being lost by 2010. During the 10th meeting of the Conference of the Parties to the CBD in October 2010 in Nagoya, Japan, governments acknowledged that this target had not been met. As part of the CBD's 2011-2020 Strategic Plan for Biodiversity they adopted the Aichi Biodiversity Targets for protecting biodiversity by 2020 and requested GEO BON to prepare an evaluation of existing observation capabilities relevant to the 20 new biodiversity targets.

GEO BON took immediate action by convening over 50 experts for an International Expert Meeting from 1 to 3 March 2011, hosted by Alterra, Wageningen University and Research Center in The Netherlands, to prepare an assessment of the "Adequacy of Biodiversity Observation Systems to support the CBD 2020 Targets."⁷ The report constitutes the first attempt to assess the adequacy of global observation systems for the monitoring of biodiversity and was presented to the CBD's Ad Hoc Technical Expert Group (AHTEG) on Indicators in June. It will also be presented to the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) before their meeting in November.

Having recognised GEO BON's expertise in a variety of areas, such as freshwater ecosystems, modelling and forecasting changes in biodiversity, ecosystem services, and data integration and interoperability, GEO BON was approached by the Ramsar Convention on Wetlands to help with the creation of a Global Wetlands Observing System or G-WOS. Such a system would need to collate and

² www.earthobservations.org/documents/cop/bi_geobon/200808_science_toward_a_global_biodiversity_observing_system.pdf

³ www.nature.com/nature/journal/v465/n7298/full/465525a.html

⁴ www.cbd.int/decision/cop/?id=11658

⁵ <http://www.cbd.int/decision/cop/?id=12273>

⁶ <http://www.cbd.int/decision/cop/?id=12268>

⁷ http://www.earthobservations.org/documents/cop/bi_geobon/2011_cbd_adequacy_report.pdf



consolidate all relevant, currently scattered, information about changes in the status of the world's wetlands. It is envisioned that such a system be in place by 2015 to aid in reporting on progress toward the Aichi Targets.

The increasing recognition and buy-in from important organizations in biodiversity policy operating locally, nationally and globally, means that GEO BON as a Community of Practice is starting to mobilize

knowledge. It is organizing and providing the necessary data and models for monitoring and reporting in the framework of biodiversity-related conventions, as well as stimulating the provision of new information and tools to fill gaps in current biodiversity research.

GEO BON contact:

Michele Walters (mwalters@csir.co.za) and Brad Reed (breed@geosec.org)





Global Forum

1. Challenge of Science Communication

Geethanjali Monto (S. Ramaseshan Fellow)
Current Science Association, Bangalore, India
E-mail: geethum@hotmail.com

The general perception is that scientists are bad communicators, said Dipankar Banerjee (Indian Institute of Science (IISc), Bangalore) who moderated a lecture by V. S. Ramamurthy of India on the 'Challenge of science communication'. Banerjee drew attention to the fact that Niels Bohr never even wanted to answer questions! But there have also been scientists like Feynman who were good communicators. Do scientists have to communicate to the public at large? To answer this question, Banerjee invited Ramamurthy who is a nuclear scientist and science promoter and who has been awarded the Padma Bhushan by the Government of India in 2005 for his services to the growth of science and technology.

Ramamurthy observed that the twentieth century has been a century of science and technology with 'a series of path breaking scientific discoveries in quick succession, a series of new technologies arising out of these discoveries, new products and new services.' The twenty first century is one of information with the 'capability to acquire, store, analyse, display and disseminate digital information at unbelievable speeds and in unbelievable volumes.' But, has better connectivity led to better communication? Ramamurthy said that it has - in the case of computers. When two computers talk, they exchange data. However, when two people talk, a lot more goes on underneath the interchange. Different civilizations use different methods of communication to communicate different information. This communication is predominantly a learnt skill and is a part of culture.

There are barriers to communication and challenges in science communication. The term science communication has been used 'to imply removal of superstition, debunking of claims of supernatural powers and more generally creation of scientific temper among population at large.' Ramamurthy pointed out

that even the Department of Science and Technology had labelled it 'science popularization'; but seeing that it sounded as if science was being sold, they changed it to 'science communication'. He indicated that as technology options become more common, the need for a basic understanding of the underlying technology is necessary. He gave some examples of the types of decisions which people face today.

There are also 'global choices' like climate change where decisions are made by someone on our behalf. It could be scientists and technologists who make these choices; but this is not possible today - not because the scientists have become unreliable but the issues are so complex (e.g. genetically modified crops) that even professional scientists have difficulty in giving an answer. Then, the Government can take a decision, provided we have chosen the right Government. The third option is the market to which all decisions cannot be assigned. Also, technological decisions cannot be taken by the Judiciary on the basis of laws written 100 or 200 years ago. In that case, we ourselves need to take these decisions, but are we ready to take the blame?

Ramamurthy confirmed that we are stuck with decisions and we need to be prepared to take these decisions. How do we empower the whole community (both scientists and non-scientists) to take informed decisions? We need to communicate to them-what is at stake, what are the options available, the advantages and the disadvantages. We do not take the decision for them. There will be uncertainties in science and these too need to be communicated. Science communication has become extremely important today but it has not become a part of the culture of science and technology.

Who are our science communicators? Ramamurthy gave the example of Pallava Bagla, an NDTV science correspondent, who usually appears in the picture when there are scams like the IPCC issue. Have we reduced



science communication to a scam related activity? Even when we have good science communicators in the media, we are misusing them. People like Bagla do a thorough study, talk to the people concerned and come up with a report. But, as Ramamurthy pointed out, one hand is adequate to count the number of such people in India. Given the significant role of media in a democracy, there is a need for journalists familiar with science and technology. Another point is that our media may not be mature to handle essential information if it is given to them openly, which makes persons with information withhold the same.

There is also a need for scientists and technologists

trained in communication. Ramamurthy believes that science communication should be made a formal stream in institutions like IISc. Could we ask these scientists to spend 10 per cent of their time in communication? For instance, D. Balasubramanian writes well-researched articles in *The Hindu* every week! But another problem is that our newspapers do not prioritize science and technology articles. This leads to a requirement of platforms for science communicators.

Ramamurthy ended his lecture saying that today, science communication is at a crossroads and as scientists, we have a responsibility to address this.



Photo. V. S. Ramamurthy delivering the eleventh lectures of the IIScAA Science Forum-Popular Lecture Series on 12 March 2011

2. It is time to realize the new Global Forum after RIO-92

Prof. Alexander Tetior
Moscow State University of Environmental Engineering
#19, Prjanishnicov St., 127550, Moscow, Russia
E-mail: ale-tetior@yandex.ru

Almost 20 years have passed after the Global Social-Ecological Forum RIO-92 and the acceptance of "Agenda 21". For this time there were numerous great changes in development of mankind; to one of the major changes began a global popular network of internet with the various social programs, resulted in occurrence of an opportunity of fast influence on a public opinion, together with to criminality. Confirmation of sharp change of strategy of development of the world became constant wars, unknown earlier "green" revolutions, huge number of

refugees, growth of natural accidents, global changes of a climate and thawing of glaciers, unprecedented earlier expansion of terrorism (occurrence unknown before the state terrorism), a wide circulation of the narcotism, kept poverty and inequality in the world, developing ecological crisis, growth of volume of waste products, use of genetically modified products unchecked on consequences, occurrence of new illnesses, use of the numerous badly checked up technologies and medicines, kinds of food, and so forth. Many new changes in development of mankind have resulted in



occurrence of new important challenges to mankind which are absent in "Agenda 21". Probably, there has come time of preparation and realization of new Global Forum with the purpose of development of new "Agenda 21", directed on the decision of new problems in development of mankind. In connection with a deepening and expansion of problems of development of the world, the future Forum should be devoted to problems of survival of mankind together with nature of the Earth, instead of more simple development of mankind.

The author would like to propose the preparation and realization of new (second after RIO-92) Global Forum "Conception and program of well-founded dependable survival of mankind together with nature". The global situation has quickly changed after RIO-92; new dangers and challenges have appeared: global changes of climate, global terrorism, color revolutions, cosmic dangers for Earth, economic crisis, forthcoming shortage of the important resources, etc. These dangers concern all people of planet; the first problem becomes the survival of mankind together with nature of planet. New "Agenda" of new World Forum should contain vitally important factors and problems of mankind survival in compliance with modified realities of world. The honored United Nations Organization should give to hope to mankind in modern period of very unstable world development. New Global Forum should examine all new important problems of modern intricate development of mankind. As a result Forum should create the new acceptable all-embracing conception and new "Agenda" for 21st century and for near future. New development should be dependable balancing development with guaranteed vitally important factors of survival of mankind, including preservation of well-founded natural territory and resources. Author would like to propose basic topics for Forum:

1. Recognition of necessity of conversion to dependable balancing development with guaranteed survival of mankind and nature.
2. Acceptance by the states of the uniform "Agenda-21st" with decisions concerning survival of mankind and nature in conditions of new global challenges and new negative influences.
3. Acceptance by the states of the uniform basic laws directed on constant democratic changing of

governments and on constant their renovation.

4. Acceptance by the states of the uniform basic laws directed on exception of excessive riches and poverty, on equal access of inhabitants of planet to all resources, on equality of rights.
5. Recognition of negative role of excessive riches in development of world (greedy rich people will spoil our planet).
6. Acceptance by the developed states of the uniform basic laws directed on exception of unfounded rapid growth of needs in developed countries; reduction of ecological footprint and its leveling in scale of planet.
7. Deep recognition and consensus about real ecological ways of World development: constant economics growth or gradual conversion to zero economical growth and to reduction of speed of development for preservation of nature, resources and mankind.
8. Global analysis of presence of vitally important resources necessary for survival of mankind (carbohydrates, drinking water, forest, etc.).
9. Consensus about decision of problems of access to vitally important World resources of all mankind.
10. Global analysis of possibility of exception of terrorism owing to guaranteeing of equality of rights, exception of poverty, respect for all religions, etc.
11. Creation of well-founded (foolproof) ecological infrastructure with all-embracing ecologization of all activity in cities and countries. Analysis of optimum allocation of cities and people on territory of planet.
12. Acceptance by the states of the uniform international sanctions for pollution of nature and exhaustion of resources.
13. Decision of problems of preservation of races and nationalities. Maintenance of equivalent development of separate races and nationalities.
14. Liquidation of excessive arms. Interdiction on creation of excessively effective arms.
15. Acceptance of global interdiction on large-scale meddling in nature and in mankind, which can be inadmissible for nature and for person.

References

- Tetior A. 2004. Holism, beauty and expediency of World of plural nature.



Meeting Report

The 8th IALE World Congress August 18-23, 2011, Beijing, China

"Landscape Ecology for Sustainable Environment and Culture"

Prof. Xiuzhen Li
Deputy Director for International Affairs
State Key Laboratory of Estuarine and Coastal Research
East China Normal University
Zhongshan N. Rd 3663, Shanghai 200062, China
E-mail: xzli@sklec.ecnu.edu.cn; landscape2001@sina.com

The 8th IALE World Congress was held at China National Convention Centre (CNCC) in Beijing during Aug. 18-23, 2011. More than 850 participants from 48 countries/regions attended this event, about half of which were from mainland China. This was the first time that the IALE World Congress was held in a developing country and in Asia. Twenty-five students and ten young scientists from 25 countries have received the financial awards sponsored by IALE and the Chinese Academy of Sciences, to participate in the congress.

Seven plenary presentations were given with the focus on landscape ecological principles, landscape services and planning, urban landscape ecology, ecological design, sustainable landscapes, and bio-cultural diversity, respectively. More than 520 oral presentations in 35 symposia and 9 open sessions were presented, in combination with 140 posters sorted into 10 themes. Publication of full papers as special issues in related journals has been planned by some of the symposia.

Urban ecology, landscape designing/planning, climate change, ecosystem assessments, biodiversity, pattern and process were the hot topics of the congress, with studies on cities, agricultural land, forest and water related area mainly. Coastal zones and marine landscapes are still less concerned, compared to their importance on the Earth. Patterns and structures were also more intensively studied than processes and

functions of the landscapes. Spatial modelling is the most frequently used method in contemporary landscape ecological research.

Seven mid-congress excursion routes were designed for the participants to experience the Chinese cultural landscapes in the urban and rural area, as well as practices in landscape designing and planning. Many participants were deeply impressed by the Great Wall, the Fengshui concept, the Forbidden City, the Eco-farms, the forests, and wetland restoration projects.

The World Congress was organized by the IALE-China Chapter, the Ecological Society of China, Research Centre for Eco-Environmental Sciences at the Chinese Academy of Sciences and Peking University, and supported by the Chinese Academy of Sciences, National Natural Science Foundation of China, State Key Laboratory of Urban and Regional Ecology, WWF China, Chinese Ecosystem Research Network, and Chinese Ecological Restoration Network. The congress was successfully held with strong supports from local organizers, scientific committee and volunteers. It will become a milestone in the history of the IALE World Congress and development of landscape ecology.

Before the world congress, the students training courses were held in Peking University in Beijing and East China Normal University in Shanghai. More than 80 graduate students and young scientists joined the training courses.



Opening ceremony



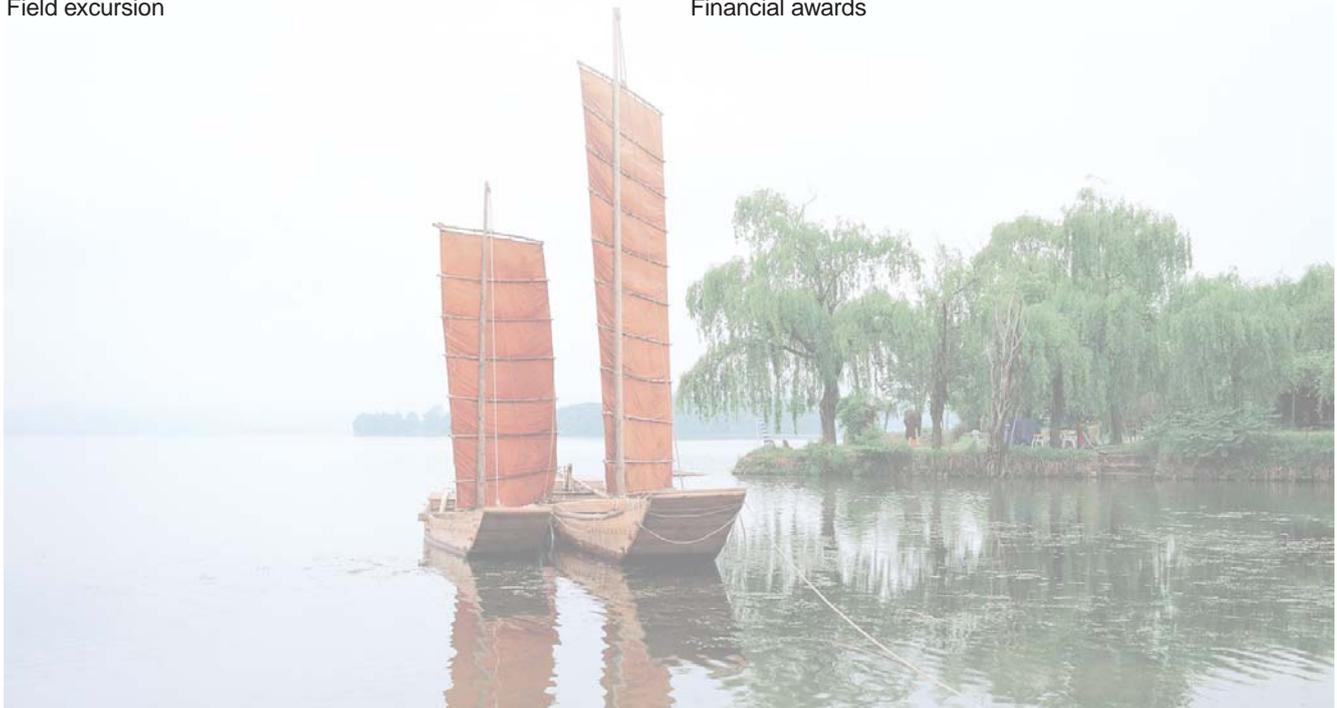
Training course



Field excursion



Financial awards





Meetings and Congresses

1. INTECOL 2013

18 - 23 August 2013, ExCel Centre, London, UK



Introduction

INTECOL 2013 is a major international ecological meeting which combines the 11th INTECOL Congress with the British Ecological Society's (BES) centenary celebrations. INTECOL and the BES are inviting the world's ecologists to London in 2013 to look towards the future of our science. We are working hard to make this Congress exciting, innovative, momentous and fun with lots of opportunities to meet new people and gain new perspectives. We hope you share our enthusiasm and want to get involved.

The theme of the Congress is advancing ecology and making it count. This reflects the ambition of both INTECOL and the BES to present outstanding ecology that truly moves the science forward. The Congress is the centre piece of the Society's Festival of Ecology centenary celebrations.

The Congress programme will include ten world class plenary speakers, symposia featuring major keynote lectures, workshops, submitted abstract sessions and extended poster slots.

Other features include innovative ways for presenting and communicating science, and a programme structured so there are many opportunities to network. This Congress will give delegates a new perspective on a wide range of ecological topics and

help establish new collaborative partnerships.

Call for Symposium proposals

We invite proposals for Congress Symposia. Symposia will be a cornerstone of the scientific programme and will have a high profile at the meeting. We are especially keen to receive proposals which focus on the future direction of ecology and present cutting edge, world class science with a broad relevance.

Each two hour Symposia comprise a keynote speaker, up to five other invited speakers and facilitated debate/question and answer session. The keynote speaker should have a high profile in their field and their talk should focus on future developments in ecological science in their area; this will provide a framework for the rest of the talks in the Symposium.

For more information on submitting a symposium proposal please go to <http://www.intecol2013.org/>. If you wish to discuss your proposal before submission please email intecol@britishecologicalsociety.org.

The deadline for submission is 30 November 2011 and the Organizing Committee will decide on successful symposium proposals by March 2012.

Contact: British Ecological Society, 12 Roger Street, London, WC1N 2JU, UK

Website: <http://www.intecol2013.org>

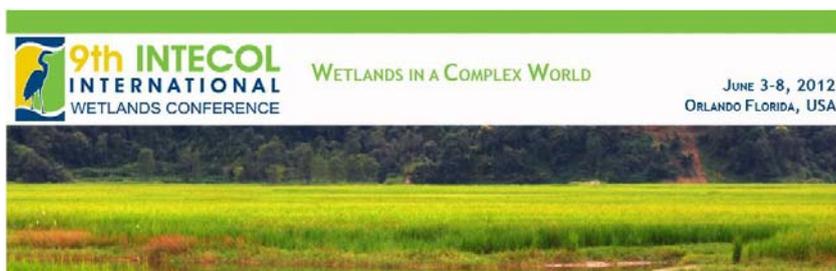
E-mail: intecol@britishecologicalsociety.org



2. 9th INTECOL International Wetlands Conference

3-8 June 2012, Orlando, Florida, USA

"Wetlands in a Complex World"



Mission

The mission of the 9th INTECOL International Wetlands Conference is to provide a platform to review advances in the physical, biogeochemical, and social sciences as they are related to wetlands, to provide integrated solutions for sustainable management of wetland resources in a complex world, and to facilitate professional relationships at regional to international scales.

Overview

Wetlands exist at the interface between terrestrial and aquatic environments. The 2 billion acres (approximately 800 million hectares) of wetlands on Earth are spread throughout all climates except the Antarctica. Although wetlands occupy only about 6% of the total landscape, their overall role from the regional to global scale is much greater than their area.

Wetlands are sources, sinks, and transformers of materials and habitats for diverse life forms. They are a source of food, fiber, and clean water for humans, a carbon sink and source, may reduce flood damage, be a site for groundwater reservoirs, be a sink for pollutants, an agent of chemical transformation, a buffer for climate change, and a corridor for migrating animals.

Wetlands are complex ecosystems because they are driven by many physical, chemical, and biological processes. This complexity means that understanding wetland ecosystems requires an interdisciplinary

approach that engages many specializations, including biology, chemistry, biogeochemistry, ecology, hydrology, pedology, to mention a few.

While many management practices are compatible, not all are adequate to protect wetland resources and sustain wetland values and functions. Climate change, in particular, is one of the major threats to the sustainability and integrity of many ecosystems, including wetlands. Some questions of immediate concern are: (1) how will wetland ecosystem services be affected by changing climatic condition, and (2) are the current adaptive management practices used compatible or adequate to sustain, protect and preserve wetlands and its functions and values?

The 9th INTECOL International Wetlands Conference will provide an opportunity to review and collaborate on advances in wetland science in ecological, physical, biogeochemical and social sciences pertinent to wetland management and policy. The conference will be a forum to discuss threats, challenges and integrated solutions for sustainable restoration and management of wetlands in our changing world.

Important Dates:

- Abstract Submission Deadline: December 16, 2011
- Early Registration Deadline: February 29, 2012
- Hotel Registration Deadline: May 2, 2012

For More Information: Please visit the conference website, www.conference.ifas.ufl.edu/intecol

Contact: Ms. Mandy Stage, Conference Coordinator, University of Florida, IFAS, Office of Conferences & Institutes

Tel: +1-352-392-5930 **E-mail:** mstage@ufl.edu



3. 55th Symposium of International Association for Vegetation Science (IAVS2012)

23-28 July 2012, Mokpo, Republic of Korea

Climate Change and Vegetation Science



The main theme of IAVS 2012 will be "Climate Change and Vegetation Science", although papers on all aspects of vegetation science will be welcome. There will be sessions that address new theory, methodology and application of vegetation ecology at a range of spatial and temporal scales. A particular focus will be vegetation diversity and dynamics in natural and cultural landscapes of coastal-island regions in the context of global climate change.

Suggested topics for organized sessions and abstracts

- Anthropogenic vegetation
- Biogeochemistry perspectives in vegetation science
- Conservation of plant communities and habitats
- Ecology of pine forests
- Ethnoecology: Traditional ecological knowledge in vegetation use
- Experimental vegetation science for restoration
- Landscape ecological analysis and vegetation dynamics
- Management of invasive species
- Monitoring and analysis of vegetation communities
- Paleovegetation history
- Pattern and process of coastal-island vegetation
- Plant-animal interactions as drivers of vegetation
- Plant phenology
- Vegetation and biodiversity in cultural landscapes
- Vegetation classification and mapping
- Vegetation response to climate change: past and future

Important Dates

- Online abstract submission open: 1 January 2012
- Deadline for submission of special session proposals: 4 January 2012
- Deadline for submission of abstracts: 31 March 2012
- Notification of acceptance of abstract: 30 April 2012
- Deadline for early registration with reduced fee: 15 May 2012
- Deadline for hotel reservation: 31 May 2012

Call for Special Session Proposals

We invite you to submit proposals for special organized sessions preferably related to the main theme of the Symposium, but any timely subject of broad interest for vegetation scientists will be considered. The special session will have individual talks of 15 to 30 minutes in length at the discretion of the session organizer, and will run for a maximum of 3 1/2 hours. Time for synthesis, summary and discussion is strongly encouraged. Proposals for workshops will also be considered.

Please use the submission form that will be available on the IAVS 2012 website (www.iavs2012.org) by 15 October, 2011. Proposals for special sessions must be received on or before 4 January, 2012. For further information, please contact the secretariat at

Website: www.iavs2012.org

E-mail: secretariat@iavs2012.org



INTECOL, International Association for Ecology

INTECOL is affiliated with the ICSU family of scientific organizations as the section responsible for general ecology within the International Union of Biological Sciences (IUBS). The association will assist and/or support the development of the science of ecology and the application of ecological principles to global problems, especially by assisting international cooperation; the collection, evaluation and distribution of information about ecology; national, regional and international actions which will serve ecological research, training of personal, coordination of general publications of ecological principles and the recognition of the importance of ecology for economy and society; the organization of conferences, meetings, symposia, programs and projects, conduct of speaking-series, publication of manuscripts, and measures which are deemed necessary to reach the goals of the association.

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Takakazu Yumoto (yumoto@chikyu.ac.jp)

Website: <http://www.intecol.org>

Bulletin Editor: Sun-Kee Hong (landskhong@gmail.com)

Deadline for sending information for next e-Bulletin

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