



DIWPA News Letter

No.19

Office: Center for Ecological Reserach, Kyoto University, Otsu, Japan

Message from the Chairperson

Biodiversity trend in 2005

The year 2005 has started with very sad news. I express my sincere sympathy for the people who suffered from the big disaster, tsunami, hit the coasts around Andaman Sea at the end of the last year. It was really shocking disaster that I have never heard even in Japan where the word tsunami was invented. I wish the earliest recovery after the disaster.

As for the story of biodiversity, a lot of activities on biodiversity are planned this year. They are,

- 1) Biodiversity: Science and Governance, 24-28 January 2005, Paris, France, Organised by the French Ministry for Research, co-sponsored by DIVERSITAS. Though this meeting must have already held when this newsletter appears, information is available at the website: <http://www.diversitas-international.org/>
- 2) Tenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-CBD), Bangkok, Thailand, 14 - 18 February 2005. I expect some of you are going to attend the meeting. Unfortunately DIWPA cannot send our delegation, I hope to hear from some of you how the meeting would work.
- 3) First DIVERSITAS Open Science Conference (DIVERSITAS: OSC1), 9-20 November 2005, Mexico. The

theme of the meeting is "Integrating biodiversity science for human well-being 9-20 November 2005". DIWPA proposed a session in this meeting, though unfortunately the proposal was not accepted because of the limited space and time of the session. However, DIVERSITAS expect all of you to join the meeting. You can get detailed information through internet (<http://www.diversitas-osc1.org/>), and the internet registration will be available in February.

In the last meeting of DIWPA Steering Committee, we decided to promote three directions of biodiversity: 1) Follow-up of IBOY, 2) Carbon and Biodiversity, and 3) Landscape change and biodiversity. Now, inter-governmental meeting of G8 decided to promote the Global Environmental Observation System of Systems (GEOSS), in which biodiversity and ecosystem are included out of 9 items to be observed. The system also intends to establish the complex of observation of multi-aspects (That is why it is named as 'System of systems'. In this context, there are some possibilities for the Japanese Government to provide the support of biodiversity observation like IBOY. However, the observation on biodiversity requires more human resource and it will take long time to train people to make observation. In this sense, DIWPA might be necessary to take part of the



capacity building.

Last year, DIWPA got the APN support to promote the action for Carbon and biodiversity. It is increasingly becoming important issues after Russian government decided to join Kyoto Protocol. Dr Kitayama and Forest Department Saba, Malaysia, had collaborating meeting last October, and made preparation for further funding. As for landscape and biodiversity, we have not succeeded to obtain financial support yet. We should make more detailed discussion in earliest opportunity.

The secretary of DIWPA is now applying the funding to Japanese government, to support the international collaborations on biodiversity. If it is accepted, we could accelerate the DIWPA activities and discussion on new directions on biodiversity in Western Pacific and Asia. Thus, I hope the DIWPA activities are going to expand greatly, and expect your kind cooperation in the new year.

Tohru Nakashizuka
Chairperson

Asia-Pacific Network (APN) Grant Awarded to the DIWPA Project

“Synergy between Ecosystem-Change and Biodiversity Studies in the Western Pacific and Asia:
Establishing Case Studies for Carbon Management and Biodiversity Conservation”

DIWPA has adopted two emphasis areas as the post-IBOY activities, one of which is the area “Carbon and Biodiversity.” Carbon and biodiversity are the two important issues in global change studies, yet they have not been treated in a harmonized way. For instance, the Kyoto Protocol incorporates the vital role of forests and wetlands in its mechanisms to reduce green house gases, favoring fast growing

Asia-Pacific Network (APN). After competitive screenings, DIWPA has successfully received a research grant 2004-13-NMY (one-year contract for 2004/2005).

Background of the new project

We foresee, when the Kyoto Protocol comes into effect, that the biomass stock will increase in inland and wetland ecosystems

fastest yield per unit area per unit time. This scenario is envisaged particularly in the humid tropics where land conversions took place in the last three decades. Fast-growing plantations are typically of mono-culture with the lowest level of biodiversity of trees and accompanying fauna. These forests are in many cases of introduced exotic species. Although such forests achieve the most efficient carbon stocking in a shortest time-scale (e.g. 10 years to a few decades), the long-term effects to the global environments can be quite damaging due to 1) the accumulated litter which will produce dissolved organic matter to soil and stream water, 2) the emission of nitrous oxides and nitrogen oxides from leguminous tree plantations, which will not reduce but exacerbate the global warming, 3) increasing the risk of forest fire by higher stocking of fuel load, 4) depleting soil minerals, and 4) the loss of biodiversity which will sustain the ecological health. These ecological disasters can be prevented in many cases by practicing enrichment planting or restoring native forests thereby biodiversity and biological complexity are kept intact.

It is an urgent task for global-environment researchers to set guidelines to fill the dilemma of the Kyoto Protocol and the Convention of Biodiversity. This dilemma has been received least attention, but is now increasingly criticized. DIWPA's new proposal, thus, seeks the synergy.



DIWPA Chairperson Tohru Nakashizuka and Secretary Kanehiro Kitayama attending the opening session of the workshop. The Director of the Sabah Forestry Department, Mr. Sam Mannan (far left) giving the opening speech. Dr. Lee Ying Fah (far right) is the project collaborator.

plantations. The Convention on Biological Diversity (CBD) emphasizes the conservation and sustainable use of forest and wetlands that harbor biological diversity. Guidelines need to be developed without sacrificing these mutually exclusive requirements. The DIWPA Secretary Office has prepared a new project concept to seek the synergy between carbon sequestration and biodiversity conservation, and submitted to

through the Clean Development Mechanism (CDM). Underlying mechanisms are the conversion of sparsely-vegetated land to fast-growing tree plantations, the increase of agro-forestry practice, the restoration of native forests, and the enrichment planting in recovering ecosystems. Among these scenarios, the conversion of sparsely-vegetated land to fast growing plantations will be implemented in the largest area in Monsoon Asia to achieve the

DIWPA Workshop held in November 2004

Two modes of project activities have been proposed to APN. One is to establish a pilot study site in a Bornean logged-over tropical rain forest, where collaborators develop standardized methods to evaluate biodiversity and carbon on a landscape level, and study ecological mechanisms to conserve biodiversity while capturing carbon. Second mode is to hold an international workshop in the said project site and disseminate the synergy concept to all stakeholders. In line with this, DIWPA and the State Department of Forestry, Sabah, Malaysia (collaborator), jointly organized the international workshop "Synergy between Carbon Management & Biodiversity Conservation in Tropical Forests, 24-26 November 2004" in the Sandakan City, Sabah, Malaysia. The workshop consisted of one-day conference on 24 November, and a two-day field excursion



Workshop participants conducted a two-day field excursion to the project site.

to the pilot-project site in Deramakot, Sabah.

A total of 92 participants from 21 local and international agencies registered at the workshop. The workshop was publicized through five local-newspaper articles. The concept of synergy was successfully disseminated to the workshop participants and local communities. The Chairperson Tohru

Nakashizuka, and the Secretary Kanehiro Kitayama participated the workshop on behalf of DIWPA. Ten papers were orally presented at the conference. Its program and abstracts can be referred at the DIWPA website (<http://diwpa.ecology.kyoto-u.ac.jp/index.htm>).

Reported by K. Kitayama
(CER, Kyoto Univ.)

► Report:

2004 DIWPA Field Biology Course in Lake Biwa - Biodiversity and Ecosystem Processes in Freshwater Environments

12 – 23 August, 2004



Two young Indonesian researchers, Yurenfri and Arianto Budi Santoso participated in 2004 DIWPA Field Biology Course in Lake Biwa, which was held between 12 and 23 August. Yurenfri is from The University of Palangka Raya and Arianto from Research Center for Limnology, Indonesian Institute of Science. This course was organized by CER, Kyoto University, with a support of 21COE program (A14), in conjunction with other domestic courses in which ten Japanese students of undergraduate and graduate levels participated. Lake Biwa is one of the hotspots of biodiversity with a high level of

endemism that reflects 4 million years of its history and environmental complexity. The primary goal for Yurenfri and Arianto was to learn modern approaches to investigate biodiversity and ecosystem processes in Lake Biwa and other freshwater systems.



Part I. Field trip in Lake Biwa

12 August

After the self-introduction by staff and students, the general guidance and lecture were given at a lecture room of CER. Dr. Nagata introduced the outline of Lake Biwa ecosystem with an emphasis on physical, chemical and biological processes in the pelagic area. Biodiversity of fish and the function of littoral zone were introduced by Dr. Yuhma.

13 -15 August

A three-day field trip was carried out to learn how to examine pelagic and littoral ecosystems. During the cruise on the research boat “Hasu” participants experienced a wide variety of lake environments with different levels of human impacts. At a pelagic site, the Conductivity-Temperature-Depth profiler that is equipped with multiple sensors was used to obtain high precision profiles of temperature, light intensity, chlorophyll, and dissolved oxygen. Participants also learnt the method of collecting water samples, plankton and

benthos. The site for investigating biodiversity in littoral zone was the Okishima island where participants and staff stayed together at a Japanese style accommodation called “min-shuku”. At Okishima, Yurenfri and Arianto collected fish samples by using a casting net and then prepared samples for gut content and stable isotope analyses. On the mid day of the field trip, Dr. Yamamura gave a special lecture regarding mathematical models of aquatic ecosystems.

16-18 Aug

Samples collected during the field trip were analyzed at CER.

Measurements included chlorophyll concentration, bacteria abundance, phyto- and zooplankton community, benthic animals and fish gut content. Physical and chemical data obtained at the pelagic site were also analyzed. On 18 August, participants presented their data and discussed on various aspects of Lake Biwa ecosystems.

Part II. Stable isotope ecology

19-23 Aug

Yurenfri and Arianto, together with other students, processed the biological samples (fishes, shrimps, plankton, sediment, and benthos etc.) obtained during the field trip (Part I) and measured the isotope ratios. Lectures (basic knowledge of stable isotopes by Dr. Tayasu, application of stable isotope technique on ornithology by Dr. Kameda, and food web



research based on methanotrophic bacteria by Dr. Kohzu) and a practical lecture on the use of a mass spectrometer were given to the students. In addition with the aquatic samples (group A, Yurenfri), we have provided terrestrial samples that were affected by the droppings of the great cormorant, which feeds on fishes in Lake Biwa (group B, Arianto). After getting the results, the students have discussed among them and made their presentations. On the final day, each group presented a talk and the students have compared aquatic system with terrestrial system.



Staff, Lecturer and Teaching Assistant

Toshi Nagata, Masahide Yuhma, Ichiro Tayasu, Tetsuya Narita, Norio Yamamura, Chikage Yoshimizu, Toshitada Koitabashi, Takahiro Miyano, Ayato Kohzu, Kayoko Kameda, Chisato Hori, Atsushi Maruyama, Yoko Nishimura, Chulgoo Kim, Yuki Kobayashi, Taichi Yokokawa, Chiaki Motegi, Hiroki Yamanaka, Yukio Onoda

Reported by T. Nagata and I. Tayasu (CER, Kyoto Univ.)

► Report:

CTFS-AA International Field Biology Course 2004 at Lambir Hills National Park

Last summer the Center for Tropical Forest Science Arnold Arboretum Asia Program held a month long post-graduate field course at Lambir Hills National Park, Sarawak. The course was attended by 20 students from nine countries (USA, Japan, Taiwan, Philippines, Malaysia, Singapore, Thailand, India, & Sri Lanka) and over 30 resource staff from various regional and international institutes gave lectures and practical instruction. Five Japanese researchers (Dr. K. Kuraji, Tokyo University; Dr T. Nakashizuka, Research Institute for Humanity and Nature; Dr M. Nakagawa, Research Institute for Humanity and Nature; Dr Y. Inui, Osaka Kyouiku University; and Dr A. Itoh, Osaka City University) involved with the Canopy Biology Program and the CTFS-AA 52 ha plot at Lambir Hills gave presentations and I would like to thank them for their contributions to the course and DIWPA for providing support for travel expenses. I would also like to acknowledge the help of those working in the Japanese lab at Lambir Hills, in particular Dr M. Nakagawa, for allowing me to use many of the facilities, for lending equipment, and generally assisting me with the smooth running of the course wherever possible. DIWPA is of course no stranger to these types of course having run several of its own, including one at Lambir Hills in 1995, and also in collaboration with CTFS-AA at Pasoh Forest Reserve, Peninsular Malaysia in 2001.

Over the first two weeks or so students were exposed to basic tropical forest botany and zoology, field techniques, and excursions were organized to Sarawak Oil Palm, Samling Fibreboard Industries, and the limestone caves at Niah National Park. We then had an extended field trip to Mt Kinabalu and Tenom Agricultural Park in Sabah. On returning to Lambir Hills the students were given a more ecologically orientated series of lectures and practicals, before engaging in independent research projects. There was also a final excursion to swamp forest at Loagan Bunut National Park. Finally on the last day of the course the students presented the findings of their group and independent projects to the rest of the course and we finished off with a farewell party at a nearby longhouse. Throughout the course we were very fortunate in the generosity of researchers and hosts, who put so much into making the course a success. To recall a few highlights: Niah National Park where Dr Philip Piper gave a guided tour of the archeological dig and the discovery of the "deep skull"(40 000 years old); Mt Kinabalu where Dr Jamili Nais and Alim Buim gave an excellent series of talks and guided walks, Tenom gardens where Dr Tony Lamb enchanted students with tales of plant exploring; and taking students up on the canopy walkway at Lambir Hills, where many saw the forest for the first time from this perspective. A pdf of the course report, which contains the program, lecture abstracts and reports of the excursions and student projects, is available. If anyone should like a copy please write to me.

From June 15 to July 14 2005
CTFS-AA is planning to run the

fifth International Field Biology Course at Khao Chong in peninsular Thailand. Khao Chong is one of the most diverse forests in Thailand, where over 600 tree species have been recorded in a 24 ha plot established by CTFS-AA and the Royal Forest Department Thailand. Khao Chong has long been a focus for research on seasonal forests in SE Asia but the establishment of the CTFS-AA 24 ha plot in 2002 has galvanized recent research on topics ranging from soils and hydrology to entomology and plant-insect interactions. Again the field course will be aimed at graduate entry level students (Masters or 1st year doctorate students) and will provide a broad-based introduction to the ecology of tropical forests in SE Asia. I would be very interested to hear from prospective students and any researchers who would be willing to contribute to the teaching of the course (ifbc2005@yahoo.com).

Another exciting result of the IFBC2004 at Lambir Hills was that Sarawak Forestry Corporation approached CTFS-AA to help them set up a permanent education facility at the park. As of December 2004 the State government has submitted an application to the federal government for funds to build the facility and I will be preparing a grant application for the running costs in the near future. We plan to establish a facility that can both host courses run by other institutes and also, in collaboration with partners such as DIWPA and CTFS-AA, organize our own graduate and undergraduate courses.

Reported by R. Harrison
(Smithsonian Tropical Research
Inst.)

► Announcement

2005 DIWPA/COE Field Biology Course in Lake Biwa, Japan

Coordinated by Center for Ecological Research, Kyoto University

Part I: Biodiversity and Ecosystem Processes in Lake Biwa

17 Aug – 23 Aug 2005 (tentative)

Lake Biwa is a large (surface area, 688 square kilometer; maximum depth, 103 m), ancient lake located in the central part of the Honshu Island, Japan. This lake is one of the biodiversity hotspots of aquatic organisms with the high level of endemism, reflecting 4 million years of its history and environmental complexity. Participants of the “2005 Field Biology Course in Lake Biwa” will learn structure and function of freshwater ecosystems by examining distribution and diversity of plankton, microorganisms, benthic animals and fish in pelagic, profundal and littoral areas of this lake. A three day field trip will be conducted to visit a wide variety of environments including pelagic, littoral and human-impacted areas. At pelagic sites, students will learn how to measure the physical and chemical parameters by using sophisticated gears. Samplings will be carried out to collect phyto- and zooplankton, microorganisms and benthic animals. At littoral sites, fish and invertebrates will be collected. During this trip, students and staffs will stay at a Japanese style accommodation at the Okishima Island. Biological samples collected during the field trip will be examined at lab to learn tax-

onomy and ecology of freshwater organisms. On the final day, each student will give a talk to discuss about ecological implications of his or her results.

The official language of the course will be English. The participants of the Field Biology Course should be talented graduate and undergraduate students from the DIWPA region. The COE program of Kyoto University provides stipends to limited numbers of participants to cover part of their expenses for accommodation and travel. Applicants should send a CV, a statement about their interests in the field of ecology and a recommendation letter written by the supervisor by May 6th 2005 to:

Ichiro Tayasu
Center for Ecological Research
Kyoto University
2-509-3 Hirano, Otsu
520-2113 Shiga, Japan
E-mail: tayasu@ecology.kyoto-u.ac.jp

Part II: Stable Isotope Approaches in Ecology

29 Aug – 2 Sept 2005 (tentative)

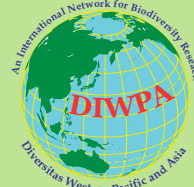
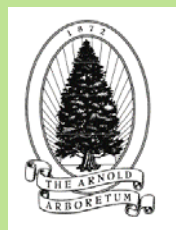
Stable isotope approach has been widely used in ecological research, especially on the study of food-webs. Recent progress of an on-line technique (continuous-flow system) allows us to analyze C and N isotope ratios rapidly. Each

student will process the biological samples obtained in Lake Biwa (Part I) and measure the isotope ratios. Additional topic will be provided and students will learn stable isotope approach in ecology. This course includes lectures (basic knowledge of stable isotopes, application to food web research, etc.), lab course (preparation of samples and the use of a mass spectrometer), and discussions (presentation of the results and discussion with experts).

The official language of the course will be English. The participants of the Field Biology Course should be talented graduate and undergraduate students from the DIWPA region. The COE program of Kyoto University provides stipends to limited numbers of participants to cover part of their expenses for accommodation and travel. Applicants should send a CV, a statement about their interests in the field of ecology and a recommendation letter written by the supervisor by May 6th 2005 to:

Ichiro Tayasu
Center for Ecological Research
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2-509-3 Hirano, Otsu
520-2113 Shiga, Japan
E-mail: tayasu@ecology.kyoto-u.ac.jp

Thai
Royal
Forest
Department



International Field Biology Course 2005 Khao Chong, Thailand

15 June - 14 July 2005

PROGRAM

15-Jun		Arrival at Trang Airport Registration at Khao Chong Talk: "Introduction to CTFS-AA"
16-Jun	9:00 10:00 – 12:00 14:00 – 18:00	Opening ceremony Orientation to Khao Chong Lectures start
16 – 25 June		Lectures and practicals Group projects
20-Jun		Field trip to Kantang Mangroves
23-Jun	9:00 14:00	Excursion to rubber plantation Excursion to Peninsular Botanic Gardens
26 – 30 June		Field trip to Doi Inthanon National Park
30 June – 5 July		Lectures and practicals
5-Jul		Field trip to Thale Luang
6 – 10 July		Independent student projects
11 – 12 July		Data analyses and write-up
13-Jul		Presentations of group and independent student projects. Farewell party.
14-Jul		Depart Trang Airport

The course fees at \$1000 including accommodation and food, and domestic travel during the course.

CTFS-AA only funds students from SE Asian countries.

The email address is ifbc2005@yahoo.com.

More information is available at www.ctfs-aa.org.

Applicants should send a cv and cover letter explaining why they want to join the course to the following address.

Dr. Rhett D. Harrison
Smithsonian Tropical Research Institute,
Unit 0948, APO AA34002-0948, U.S.A.
Tel: 507-212-8000 Fax: 507-212-8148
email: harrisonr@tivoli.si.edu (harrisonr@tivoli.si.edu)

DIWPA OFFICE

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