



DIWPA News Letter

Office: Center for Ecological Research No.30 Kyoto U



Shin-ichi Nakano
the Chairperson

It is now the season around the end of this year 2013 in Japan. In the present fiscal year, I have been having numerous meetings at Kyoto University Main Campus, because of the reformation of departments in our university. Due to the reformation, Center for Ecological Research may have some changes in its organization. Even if we at the CER have these changes, we will keep our most important mission and raison d'être: Joint Usage / Research Center and the center of biodiversity researches in Western Pacific and Asia. Recently, we have been more frequently making contact with the people of Future Earth in Japan. We intend to contribute to Future Earth in terms of biodiversity issues, and this is what our scientific communities hope.



Atsushi Ishida
the Secretary General

In October 2013, we conducted International Field Biology Course (IFBC) for ecophysiology of woody plants at the Ogasawara (Bonin) Islands, a World Natural Heritage site. In the IFBC, we were able to invite a student from Kasetsart University in Thailand. The Islands are small oceanic islands, located in subtropical North Pacific Ocean approximately 1,000 km South of Tokyo. There is no airport in the islands, because of too small islands. Thus we have to go there by ship from Tokyo, taking 25.5 hr. From September to October, it is usually the main season of typhoons in Japan. Especially, many typhoons came to Japan in 2013, maybe due to the effects of global warming. However, we could conduct

By the way, we DIWPA office have finished editing a new biodiversity book: S. Nakano, T. Yahara and T. Nakashizuka (Eds) (2014, in press) *The Biodiversity Observation Network in Asia-Pacific Region: Integrative Observations and Assessments*, Springer, Tokyo. The book, which will be available after the summer of 2014, is the second volume from an AP-BON book series "Biodiversity Observation Network" as a subseries in Ecological Research Monographs. In addition, we have already started editing the third volume. If you are interested in the book, and if you want to publish your work in it, please let me know. The theme of the third volume is going to be "Biodiversity and Human beings: Traditional knowledge and forefront technology for biodiversity researches".

the IFBC between comings of typhoons. We were so lucky and she worked well in the islands. Here, we focused mainly on 'why' and 'how' we measure leaf gas exchange, leaf water potential and twig hydraulic conductivity. Following the IFBC, we conducted an excursion in Tokyo. At Tokyo, it was windy because of influence from a typhoon. I think that she had good experience for study and could enjoy in Japan. She reports her experience in the IFBC in this volume (pp 2-6). DIWPA will make efforts to continue IFBC. DIWPA Newsletters always call various information in Biodiversity and conservation from your countries. It is our great pleasure to send your papers to DIWPA Office (diwpa@ecology.kyoto-u.ac.jp).

The Field Biology Course in 2013 at the Ogasawara (Bonin) Islands in Japan

A-Kakhun Sawitree

Faculty of Forestry, Kasetsart University
(Thailand)



(Photo1) Ogasawara-maru



(Photo2) A view from the Nagasaki in Chichi-juma

In the morning of July 26th 2013, my advisor recommended me to write a resume for participating in the International Field Biology Course. When I knew that there was such a good program, I was really excited. Japan is always my dream country since I was young. In addition, this project was directly related to my thesis fortunately. Therefore, I couldn't wait a minute to attend the program and hoped to be accepted.

When the day came, I got an email that I was the lucky one. I was overwhelmed with the good news. It was the first time going abroad for me. I was so nervous but I encouraged myself that it would be alright. I went to Japan from October 2nd to 10th, 2013 for taking the Field Biology Course.

I flew from Thailand in the morning on October 2nd. When I arrived in Japan in the afternoon, Professor Ishida from Kyoto University had waited for me at the Narita airport. The professor, he was very kind and he helped me with everything including this project. I was amazed at all things I saw; the city was truly clean, people were friendly. At the first night, we had a dinner in Tokyo and stayed at a hotel near Tokyo Bay because it was easier to get on a ship to go to the Ogasawara Islands.

I heard the Ogasawara Islands are a World Natural Heritage site since June of 2011. There is no airport in the islands. The only means of transportation is Ogasawara-maru (Photo 1), a liner that connects Takeshiba



(Photo 3) Sampling *Hibiscus glaber* at Matsum by permission



(Photo 4) The measurements of leaf LI-6400



(Photo 5) The measurement of leaf pressure chamber

port (Tokyo) and Chichi-jima island (the main island of Ogasawara). It took about 25.5 hours for one-way trip. This island has promoted ecotourism, such as scuba diving and whale watching. This was the first time in my life travelling by cruise. There were many convenient stuffs, including nice foods in the ship. We are a group of five persons; Professor Ishida, two students, a researcher and me. They were all friendly and took care of me superbly (Photo 2)

After the long journey, we arrived at the Ogasawara Islands. Just on arrival at

the island, I loved the atmosphere there.

The people of this island looked happy and friendly, and the blue sea was very beautiful.

The vegetation in the mountains of islands is dwarf forests, because of thin soil and relatively low precipitation, especially in summer. 70% of woody plant species are endemic. I spent four days in this island. The most interesting thing for me was learning

how to use the LI-6400 (a portable leaf gas exchange measurement system) (Photo 3, 4, 5)

because I would have to use the same machine for my Forest Tree Improvement



A baby *Chelonia mydas* (L.) in Ogasawara Marine Center



A Green *Anolis carolinensis*, alien species (See DIWPA News Letter No. 29 for detail)

Thesis. I focused on photosynthesis using LI-6400 for my study. Professor Ishida taught me how I could adapt LI-6400 for my thesis perfectly. Another important point for me is the measurements of leaf water potential in the night time, using a pressure chamber. I had never done such measurements. I was surprised and interested in the measurements because I had no idea about the differences of leaf water potential between daytime and night time. Professor Ishida told me that why we needed to measure leaf water potential not only at daytime but also before

dawn to understand tree survival. When night respiration is enough small, leaf water potential before dawn is equilibrium to soil water potential around their root systems. Therefore, we can get some useful information, such as soil water potential and the species variations of root depth, from the data of leaf water potential before dawn. Moreover, I understood that the values of daytime leaf water potential become less negative under cloudy conditions, and become almost 0 under rainy conditions.

After that, in a laboratory, I learned about hydraulic conductivity and vulnerability curve in twigs, all of which were new for me. By making vulnerability curves in twigs, we can compare the tolerance in xylem cavitation due to drought or desiccation among tree species. Because I had never learned these measurements, it was quite difficult for me. The professor explained the principals and methods to me. Then



(Photo6) Professor Ishida cooked



Professor Ishida and A-Kakhun Sawitree

he adapted the experimental equipment on his own, which based on the important principals. I did respect him a lot for this, and watched the experimental procedure which was done by him and his students. I thought that the equipment was too expensive. However, Professor Ishida said that because he has studied in Thailand, he could introduce these machines into Thailand to examine the pressure levels when xylem conduits cavitated in Thai trees. I respected the patience and accuracy of Japanese researchers. We should have them as good role model. When I came back to Thailand, I tried to research what I had studied so I could understand more. I found out that it was really interesting but only few people knew about it because it took quite a long time to

do the research and all experiments.

After these hard workings, the professor took us to a restaurant to have seafood such as Sashimi in the island but it was so delicious. I was very impressed. Moreover, the professor kindly cooked for us which was so good (Photo). I was super happy and learned so many new things on this island during only a few days. I told myself that I would tell everything about these wonderful experiences to my family, professors and friends when going back to Thailand. After this overwhelming time on the island, we went back to Tokyo getting on the ship again. In Tokyo, Professor Ishida took me with his colleagues around the city as an excursion. It was truly amazing. First, we went to Tokyo Sky Tree Town. Unfortunately, it was

too windy because a typhoon was coming. Thus we couldn't go up on the top of Sky Tree. Watching the form at the place where I stood, I couldn't find beauty. Nevertheless, we entered an aquarium in the Tokyo Sky Tree Town. We could look at babies of sea turtles from the Ogasawara islands at the aquarium. After that, he took me to Asakusa temple, one of famous temples in Japan. The Asakusa temple is very popular among Thai people. It was unfortunate for me again that there was some re-construction work in the temple. However, the temple was really graceful. I loved Japanese culture; it is beautiful and so unique. As my strong impression, they kept places clean and they properly followed laws. Additionally, education and researches were innovative and progressive.



View of Ani-jima from Chichi-jima

If possible, I would like to study in Japan in the future. Then I could bring back knowledge and all things I had learned to Thailand, probably contributing to my university and the country. I think that this project is really helpful for young researchers. It was such a great experience for me.



Lavish send-off ceremony for Ogasawara-maru with Hachijo-daiiko (drums)

International Workshop on Ecological Knowledge for Adaptation on Climate Change

Atsushi Ishida

Center for Ecological Research, Kyoto University
(Japan)



(Photo1) The conference was conducted in this open space

In December of 2013, DIWPA, Forestry and Forest Products Research Institute (in Japan), Kasetsart University (in Thailand) and other institutes in Thailand held the “International Workshop on Ecological Knowledge for Adaptation on Climate” at Sri Nakhon Khet Khan Park in Thailand (Photo 1). We asked Professor Tohru Nakashizuka, an authority of this field in Tohoku University (Japan), to the workshop as an invited speaker. He gave a speech with the title, Ecological adaptation to climate change. We had 19 speakers and approximately 60-70 audience members over two days. The Park is located at the mouth of the Chao Phraya River, and has been designated for coexistence and cooperation between the conservation of mangrove forests and the

life of local people (Photo 2). There was an excursion at night on the first day. Here, we had a chance to look at the effort for conservation of fireflies in the mangrove forests. In this workshop, we were able to exchange information on climate change and adaptation to it for tropical dry forests in Southeast Asia. Recently, a trend of shortening of rainy-season period is found in Thailand, and that of an increase in the frequency of heavy rain is found in Japan especially in summer. This precipitation shift matches the predictions of the IPCC. To clarify the effects of precipitation shift on terrestrial ecosystem processes such as forest structure and function, more study is needed. Furthermore, we will need to consider methods for adapting to this change.



(Photo2) Near the mouth of the Chao Phraya River, Sri Nakhon Khet Khan Park

Camera trap survey in Preah Vihear Protected Forest in Northern Cambodia

Ai Suzuki¹, Tan Seta^{2,3},
Thong Sokha³, and Shigeo Kobayashi¹

1 Graduate School of Asia and Africa Area Studies, Kyoto University (Japan)

2 Forestry Administration, Ministry of Agriculture, Forestry and Fisheries,
Royal Government of Cambodia (Cambodia)

3 Wildlife Conservation Society Cambodia Program, Phnom Penh (Cambodia)

Cambodia is divided into seven regions for biodiversity management, as follows: Southern-western Coastal Ranges and Marine Waters, North-eastern Forests, Kompong Cham, Mekong Delta Region, Tonle Sap Floodplain, North-western Region and Northern Plains. Of all regions, Northern Plains is identified as one of four priority areas in the National Biodiversity Strategy and Action Plan (ICEM 2003). The Northern Plains is recognized as global conservation significance area because the large area of Indochina dry forests still remains intact and many threatened wild animals, including Asian elephant (*Elephas maximus*), Eld's deer (*Rucervus eldii*), Banteng (*Bos javanicus*), White-winged duck (*Cairina scutulata*), White-rumped vulture (*Gyps bengalensis*), Slender-billed vulture (*Gyps tenuirostris*), Red-headed vulture (*Sarcogyps calvus*), Greater adjutant (*Leptoptilos dubius*), and Giant ibis (*Pseudibis gigantea*), are still found there. Despite its conservation significance,



A pond in Preah Vihear Protected

conservation activities and research have just started since the late 1990s owing to the prolonged political instability.

Between 2005 and 2013, the Conservation Areas Landscape Management (CALM) project was implemented in the Northern Plains in Cambodia under collaboration of the Wildlife Conservation Society and the Royal Government of Cambodia, represented

New Site



(Photo 1) A calf and *Elephas maximus* Asian elephant (

by the Ministry for Agriculture, Forestry and Fisheries (Forestry Administration) and the Ministry of Environment (General Department of Nature Conservation and Protection). The CALM project covered approximately 558,000 ha, composed of three core areas, (1) Preah Vihear Protected Forest established in 2002, (2) Kulen Promtep Wildlife Sanctuary established in 1993, and (3) Chendar Plywood, under the moratorium on logging concessions.

Our research site is one of these areas, Preah Vihear Protected Forest (latitude

104° 51' 42" to 105° 47' 04" Forest is in tropical monsoon climate with the wet season from April and October. In the dry season, human-induced forest fire occur in deciduous forests. The average annual rainfall is 1,556 mm and the average temperature ranges from 32.1°C to 3 Protected Forest covers 190,027 ha in total, and consists of several forest types: deciduous forests (127,198 ha, 66.94%), evergreen forests (35,710 ha, 18.79%), semi-evergreen forests (18,231 ha, 9.59%), and dry bushes/shrubs (438 ha, 0.23%) (Forestry Administration 2010). Longitude

New Site



(Photo 2) An infant and adult Indochinese silvered langur (*Trachypithecus germaini*)



(Photo 3) A large-spotted civet (*Viverra zibethica*)

Since 2012, we have launched a camera-trap survey project focusing on carnivores in the Protected Forest. Between October 2012 and April 2013, camera traps were set at 49 locations along animal trails with a minimum distance of 1 km between cameras. These cameras were mounted on tree at 30-50cm above the ground. During this period, 29 medium- and large terrestrial mammals were recorded including five species classified as Endangered species in the IUCN Redlist. We also confirmed two Asian elephant calves (*Elephas maximus*) (Photo 1) and an infant Indochinese silvered langur (*Trachypithecus germaini*) (Photo 2). For target taxa, a total 588 photographs of carnivores were obtained and identified 16 species such as Leopard (*Panthera pardus*), Sun bear (*Helarctos malayanus*), Golden jackal (*Canis aureus*) and Dhole (*Cuon alpinus*). Of these 16 carnivore species, two species are might be especially interesting to introduce here.

Firstly, the presence of Clouded leopards (*Neofelis nebulosa*) was confirmed for the first time in the Northern Cambodia. Clouded leopards are likely to associate with evergreen forests (Sanderson et al. 2008). It would be of worth to mention the presence of Clouded leopards in the protected forest which covered by deciduous forest for the most of part. As of January 2014, at least three individuals of clouded leopard were confirmed in the protected forest. Secondly, the second most frequently photographed carnivore was Large-spotted civet (*Viverra zibethica*) (Photo 3). Cambodia is a possible stronghold of this little-known civet while its population in other range countries has been fragmented (Duckworth et al. 2008). Preah Vihear Protected Forest may also be able to play essential role in conservation and provide us a great opportunity for research on Large-spotted civets.

Preah Vihear Protected Forest is

New Site

previously known as critically important area for large birds such as Giant ibis (Photo 1), White-shouldered ibis, and 3 species of critically endangered vultures (Photo 2) however, the results of camera trap survey indicated that this protected forest has also global significance and its research, not only for rare species but also for poorly known species.



(Photo 4) A pair of *Pseudibis gigantea* ibis



(Photo 5) Vultures on tree

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Nominations Open for The MIDORI Prize for Biodiversity 2014

Tokyo, Montreal, 28 February 2014 – Biodiversity public are international recognition a MIDORI Prize relative to the nomination of to three outstanding individuals with a base academic, invited for the MIDORI Prize for Biodiversity 2014. The call for nominations remains open from 1 March to 31 May 2014.

The MIDORI Prize, a biennial award for the prizees to the organized by the AEON Environmental Foundation, is organized by the AEON Environmental Foundation, a biennial award for the prizees to the Secretariat of the Convention on Biological Diversity (CBD), honours individuals who have made a significant contribution to the conservation and sustainable use of biodiversity.

Nominations: Accepted through the website www.midoripress-aeon.net/

Established by the AEON Environmental Foundation during the 2010 International Biodiversity Day, the Prize aims to encourage positive actions for biodiversity and inspire others by showcasing the notable work of those it honours. This year marks the third time that the MIDORI Prize is being awarded.

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Center for Ecological Research
Kyoto University
509-3, 2-chome, Hirano,
Osaka 590-2113, JAPAN
Tel & Fax: +81-77-549-8238
E-mail: diwpa@ecology.kyoto-u.ac.jp
<http://diwpa.ecology.kyoto-u.ac.jp>