DIWPA: DIVERSITAS in the Western Pacific and Asia

DIWPA News Letter

Office: Center for Ecological Research, Kyoto University, Otsu, Shiga, Japan

August 2025

No. 53

Message from the New Chairperson
Keisuke Koba

It is my great pleasure to greet you as the new Director of the Center for Ecological Research (CER), succeeding Professor Shin-ichi Nakano, who also served for many years as Chairperson of DIWPA. I assumed this role in April 2025, and I am honored to carry forward the strong foundation that DIWPA has built over the years.

For many years, DIWPA has been a cornerstone program of CER and an important network linking Japan with ecological research communities across Western Pacific and Asia. Its value will remain undiminished, but I hope we can work together to make it even stronger. Your thoughts, ideas, and feedback will be crucial as we move forward. I warmly invite you to share your perspectives on how we can best shape our future.

As our Secretary General, Professor Ishida, will introduce in detail, we are launching a new program for the DIWPA International Field Biology Course this year. Ecology covers a remarkable diversity of topics, and our research methods are expanding rapidly. While it is impossible to cover everything, I hope we can seize every opportunity to learn new approaches together to deepen our understanding of the complexity of ecosystems.

In July 2025, the University of Tokyo hosted EAFES 2025,bringing together a vibrant community of researchers, particularly early-career scientists from across Asia. The discussions were lively, and the energy was inspiring. Although the Ecological Society of Japan also hosts many young researchers, the atmosphere at EAFES was especially dynamic. I would like to express my sincere graritude to everyone who contributed to the success of this event.

The next EAFES will be held in China in two years. I look forward to seeing you there, hopefully even sooner, to exchange ideas and discuss the future of ecology in Western Pacific and Asia.

Message from the Secretary General
Atsushi Ishida

We are now planning to hold this year's DIWPA International Field Biology Course (IFBC) in Sri Lanka. The focus of the IFBC will be primatology. In this issue, we are publishing a report by primatological researchers from Sri Lanka. According to the report, there are five species of primates in Sri Lanka, each with unique behaviors and habitats. If you or your students are able to attend the IFBC, you will gain valuable and diverse field experiences. See page 9 of this newsletter for more details.We look forward to many of you applying to join the course. It will be the first time the DIWPA IFBC has been held overseas, since 2020 for an aquatic ecosystem course in Indonesia and since 2016 for a terrestrial ecosystem course in Thailand, both of which took place before the COVID-19 pandemic. We hope that in the future, more international researchers will take the initiative to propose holding the DIWPA IFBC abroad. DIWPA's future development depends on the continued activities of all its members

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Please send them to
diwpa@ecology.kyoto-u.ac.jp

New Site 1

Sinharaja Forest Reserve
World Heritage Site in Sri Lanka

Kamal Ranatunga

Center for Marine Science & Technology, Department of Zoology,
University of Sri Jayewardenepra (Sri Lanka)

Sinharaja forest is located in the Southwest lowland and mid-elevation wet zone of Sri Lanka, between latitudes 6°21' - 6°26'N and longitudes 80°21' - 80°34'E (Fig.1). It spans parts of Rathnapura, Galle, and Matara administrative districts fall within the forest area. It covers an area of 11,187 ha and is known as the Sri Lankas' largest, relatively undisturbed primary rainforest (de Zoysa and Raheem, 1990) and globally recognized as a biodiversity hotspot.

Between 1971 and 1977, selective logging for plywood production has been carried out in the western parts of the forest. It was eventually banned because of an outcry from conservationists. In 1978, an area of 8,500ha was designated as an International Man and Biosphere (IMAB) Reserve under the administration of the Department of Forest Conservation. Later, an additional 2,687 ha of sub-montane forest located on the eastern side were incorporated into the reserve, expanding the total area to 11,187ha. The entire area was declared a National Heritage Wilderness Area (NHWA) under the National Heritage Wilderness Areas Act, and was Gazetted on October 21, 1988. Subsequently, UNESCO recognised it as Sri Lanka's first Natural World Heritage Site (WHS) (Bambaradeniya *et al.*, 2006).

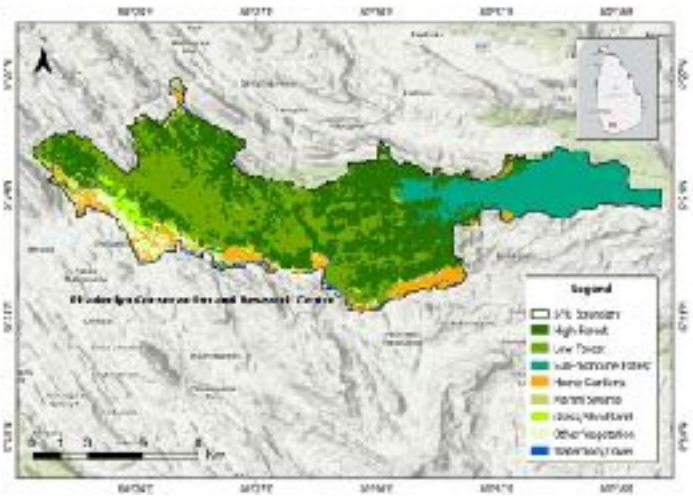

Fig. 1. Map of Sinharaja Forest Reserve

The forest is bordered by the tributaries of 'Kalu Ganga' to the north, and 'Gin Ganga' to the south (Bambaradeniya *et al.*, 2006). The steep hills and valleys of Rakwana Mountains with nine peaks ranging from 575m to 1,170m lie within the forest. The mean annual rainfall at Sinharaja varies between 3,600 - 5,000 mm with dry spells being rare (Bambaradeniya *et al.*, 2006). The main sources of rain are the southwest monsoon that occurs from May to July and northeast monsoon from November to January. The mean annual temperature ranges between 19°C and 27°C. The Sinharaja forest is valued for its watershed protection for the Kalu and Gin Rivers and regulation of climate and carbon sequestration (Bambaradeniya *et al.*, 2006). It also plays an important role in soil conservation.

The vegetation is primarily composed of tropical lowland wet evergreen rainforest, with areas of lower-montane forest and grassland habitats in higher altitudes. Approximately 340 species of woody plant, representing 71 families have been recorded from Sinharaja, which account for approximately 35% of woody plant species recorded in Sri Lanka. (Fig.2) Nearly 60% of the woody plants recorded from Sinharaja, are endemic to the island. In some plant families, such as Dipterocarpacea, that dominate the forest canopy, endemism exceeds 90%. The herbaceous plant community is equally rich. A diverse community of lower plants including ferns, fungi, bryophytes are also found in Sinharaja (Bambaradeniya *et al.*, 2006).

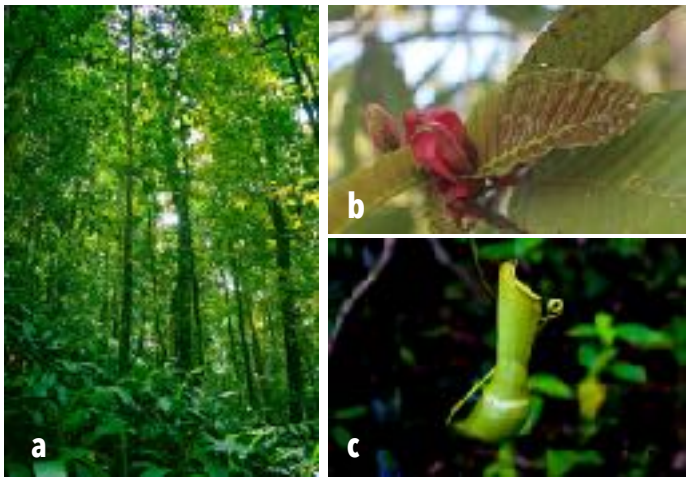

Fig. 2. Understorey vegetation of the secondary forest in Sinharaja Forest Reserve (a) and the Sri Lanka's endemic plants, *Dipterocarpus zeylanicus* (b) and *Nepenthes distillatoria* (c)

Dominant species include *Shorea trapezifolia*, *Mesua ferrea*, *Doona congestiflora*, and *Dipterocarpus zeylanicus*. The understorey is dense, composed of shrubs, lianas, and herbaceous plants, many of which are also endemic or rare. Because of its isolated and relatively undisturbed nature, Sinharaja provides a valuable natural laboratory for ecological, behavioral, and evolutionary studies. It also plays a critical role in watershed protection, carbon sequestration, and microclimatic regulation, making its conservation a national priority.

A total of 320 vertebrate species, including 43 mammal species, 154 bird species, 71 reptile species, 33 amphibian species, and 19 fish species are found in the SNHWA. An estimated 35% of the native vertebrate species of the forest is endemic to Sri Lanka (Bambaradeniya *et al.*, 2006). It harbors over 147 species of birds, with 21 endemics, including the Sri Lanka blue magpie (*Urocissa ornata*), Sri Lanka junglefowl *(Gallus lafayettii*), and green-billed coucal (*Centropus chlororhynchos*). Notable mammal species found in Sinharaja include species such as the elephant (*Elephas maximus*), leopard *(Panthera pardus)*, purple-faced leaf monkey (*Semnopithecus vetulus*), fishing cat (*P. viverrinus*) and rusty spotted cat (*P. rubiginosa*). Amphibians and reptiles are highly diverse, with many species restricted to this forest type. (Fig. 3)

Fig. 4. The Pitadeniya Conservation and Research Centre, located in the southern boundary of Sinharaja Forest Reserve

Pitadeniya Area : Gateway to the Southern Sinharaja

The Pitadeniya Conservation and Research Centre, located on the southern boundary of Sinharaja between Lankagama and Deniyaya, serves as one of the primary access points for researchers, conservationists, and eco-tourists. Pitadeniya area, administered by the Department of Forest Conservation, has become an important base for low-impact ecotourism and scientific exploration (Fig. 4).

The area is characterized by steep terrain, riverine ecosystems, and a system of natural forest trails that pass through several natural waterfalls. The Gin Ganga (Gin River), one of the major rivers originating from Sinharaja, flows through this area, creating riparian habitats that support specialized flora and fauna. These microhabitats around the

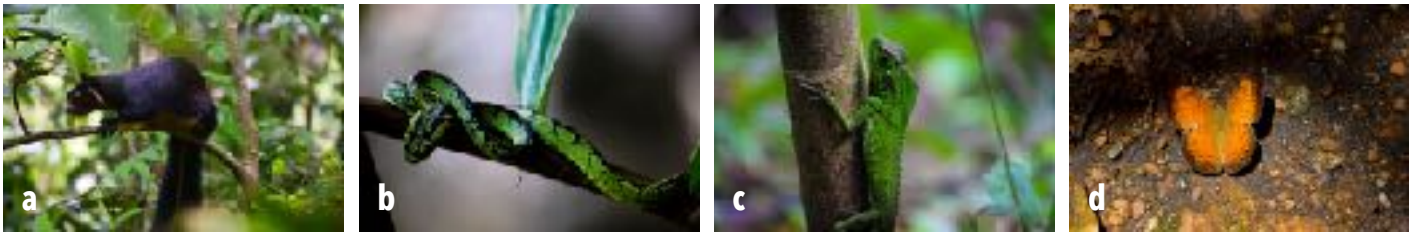

Fig.3. Fauna in Sinharaja Forest Reserve: The Sri Lankan giant squirrel (*Ratufa macroura*) (a), the Sri Lankan green pit viper (*Trimeresurus trigonocephalus*) (b), the hump-nosed lizard (*Lyriocephalus scutatus*) (c), and the yeoman (*Cirrochroa thais*) (d)

riverbanks are ideal for observing amphibians, reptiles, freshwater crabs, dragonflies, and rare fish species. Visitors to the Pitadeniya entrance of Sinharaja may be rewarded with a rarely seen white morph of the endemic purple face leaf monkey (*Semnopithecus vetulus*), a variant observed only in this region of the forest. (Fig. 5)

The visitor center at Pitadeniya also promotes environmental education and supports community-based conservation initiatives, involving local community in forest protection and sustainable tourism. Importantly, the site provides a less-crowded alternative to the more frequented Kudawa entrance, allowing for minimized anthropogenic disturbance during sensitive ecological studies.

Fig. 5. A trail in the Forest Reserve (a), the waterfall (b) and the Gin River (c) in the Pitadenia Area in south of Sinharaja

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New Site 2

Sri Lanka, a Researcher's Paradise

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[2.] Institute of Tropical Medicine, Nagasaki University (retired in March 2023 from Kyoto University) (Japan)

Sri Lanka serves as a significant outdoor laboratory for the study of anthropology, evolutionary ecology, behavior, and natural history. Situated southeast of the Indian subcontinent, the land area of Sri Lanka covers 65,610 km², measuring 435 km from north to south at its longest point and 225 km from east to west at its widest point (6°-10°N, 79°-82°E). Despite its relatively small size, Sri Lanka is renowned for its extensive subspeciation of plants, invertebrates, and vertebrates across the island's diverse climatic and elevational zones. The climate and geography are closely interconnected, exposing it to two major monsoon seasons: the Northeast Monsoon and the Southwest Monsoon.

A Biodiversity Hotspot

Sri Lanka's diverse topography varies from sea level to its highest point of 2,524 m, and it is divided into three peneplains—lowlands, uplands, and highlands—as well as three climatic zones: the dry zone (65% of landmass), the intermediate zone (12%), and the wet zone (23%), with annual rainfall ranging from 1,000 mm in the dry zone to as much as 4,840 mm in the wet zone (Fig. 1).

There are at least 12 species of small to medium-sized mammals known to have between 2 and 6 subspecies each, isolated from one another across these zones, and two of these species are primates. Sri Lanka has 5 species of primates: 3 diurnal- the toque macaque (*Macaca sinica*: 3 subspecies), the grey langur (*Semnopithecus priam*: 1 subspecies), and the purple-faced langur (*S. vetulus*: 4 subspecies), - 2 nocturnal - the red slender loris (*Loris tardigradus:* 2 subspecies) and the grey slender loris (*L. lydekkerianus:* 2 subspecies). Except for the gray langur and the grey slender loris, all of these species are endemic to Sri Lanka.

My Beginnings in Primatology

In 2003, I came to Japan to study primatology at the Primate Research Institute of Kyoto University. Taking leave from my post as probationary lecturer in the Department of Sociology and Anthropology at the University of Sri Jayewardenepura, I came with a mandate to develop my country's first curriculum in Primatology and Biological Anthropology. Early in my studies on Japanese macaques, I began to pursue possibilities for long-term research sites back home after I returned. My advisor, Dr. Huffman, was highly supportive and happy to assist. In 2004, we began a long collaboration of research in Sri Lanka. Fast forward, 21 years later, I am now a senior professor in the Department of Anthropology, which I helped to establish in 2018.

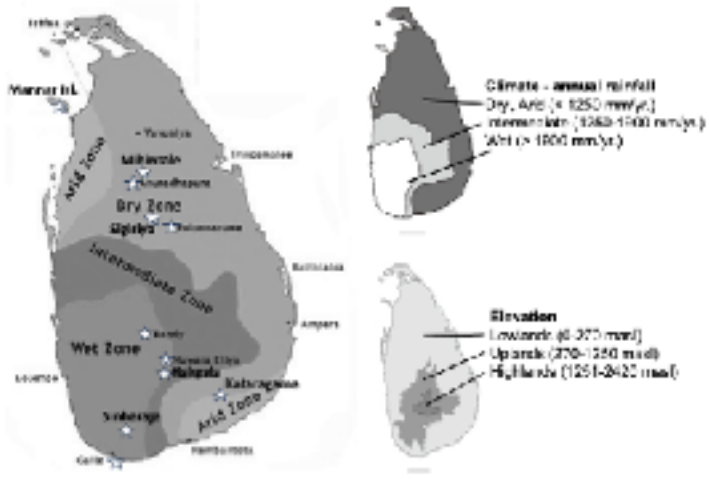

Fig. 1. Some research sites (stars), climate, and topography of Sri Lanka. Prepared by MA Huffman

Together, in collaboration with Dr. Huffman, our local colleagues, undergraduate and graduate students in the department, and researchers from Kyoto University, including Dr. Hiroyuki Tanaka from the Center for Ecological Research, we have been conducting primatological field and laboratory research, while training future generations of Sri Lankan primatologists.

To date, various diverse topics have been investigated, including host-parasite ecology, ethnoprimatology, phylogeography, human-primate interactions, and the comparative dentition of extant and fossil primates, among others (see reference list below).

Island-Wide Primate Distribution Surveys

As part of our long-term research program, we have conducted distribution surveys of the three diurnal primate species to confirm their subspecies habitat range and social organization (Fig. 2).

The toque macaque and purple-faced langurs inhabit all three climatic zones, ranging from the coast to the highest peak on the island, Mt. Pidurutalagala, in the Central Province, near Nuwara Eliya (Fig. 1). They each have multiple subspecies, separated by eco-climatic zones. In contrast, the gray langur occupies a broad area but is confined to a single climatic zone: the dry zone, extending from sea level to about 500 m in elevation (Fig. 2). Its other subspecies, *S. p. priam*, resides in a similar habitat in southern India. Interestingly, gray langurs form multi-male, multi-female groups in Sri Lanka, but only single male, multi-female groups in India. Like other macaques, toque macaques live in multi-male, multi-female social groups, while purple-faced langurs live in single-male, multi-female social groups.

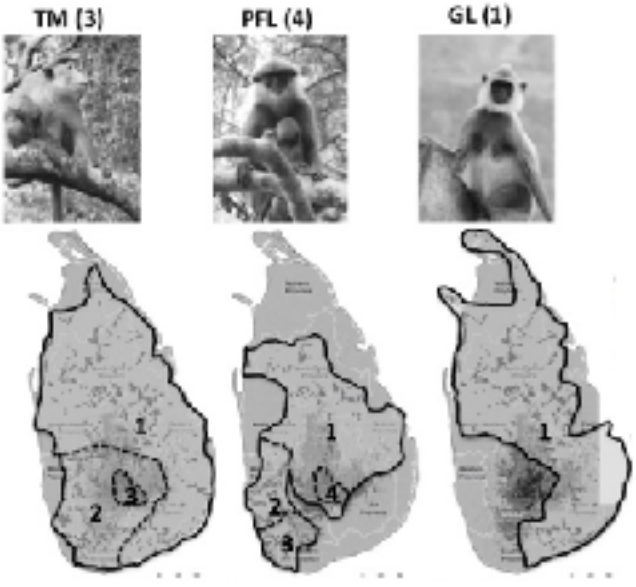

Fig. 2. The biogeography of the subspecies of toque macaque (TM: 1. *Macaca s. sinica*, 2. *M. s. opisthomelas*, 3. *M. s. aurifrons*), purple-faced langur (PFL: 1. *Semnopithecus vetulus philbricki*, 2. *S. v. nestor*, 3. *S. v. vetulus*, 4. *S. v. monticola*), and grey langur (GL: *Semnopithecus priam thersites*). Data compiled from field visit surveys and questionnaires conducted between 2006 and 2020 (N=14,563 GPS points, represented by the light brown dots within the respective species distribution areas). Prepared by MA Huffman.

Making a Long Tail Short

During our surveys, we observed intriguing differences in body proportions among the subspecies of toque macaques (Fig. 2). Our curiosity drove us to investigate this further, considering Bergma
nn's and Allen's rules of ecogeographical anatomical variation in body size and appendage proportions. These rules predict that populations or species from hot climates will be smaller (Bergmann) and have extremities (ears, tails, limbs, snouts, *etc*.) that are long and thin (Allen). We utilized digital photos and engineering design software to measure body and tail length in pixels, allowing us to calculate an index of relative tail length.

We succeeded in demonstrating Allen's rule (Huffman *et al.* 2020; Fig. 3). Our preliminary data suggest that this is not the case, however, for

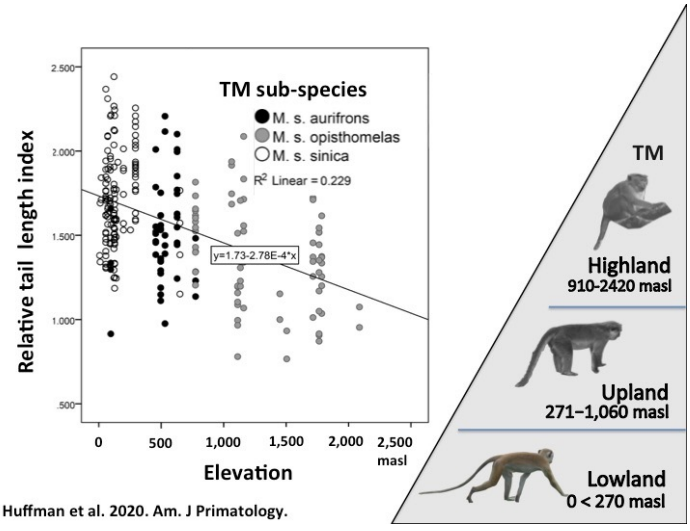

Fig. 3. Toque macaque tail length variation across elevational clines. Prepared by MA Huffman

purple-faced langurs. We are continuing to collect additional data from various populations across different ecoclimatic zones, utilizing the same non-invasive digital photo analysis techniques. We hypothesize that they have retained their long tails for ease of mobility in the trees and invested in other body temperature regulation strategies like coat color and body mass.

Field Research Study Sites

Across Sri Lanka, there are numerous large temple complexes and tourist sites where free-ranging primates can easily be found and observed (Fig. 4). Some of the sites we most frequently visit for research purposes are shown in Fig. 1. Here, we describe one special place where we have conducted some intensive research.

Mihintale is perhaps the world's oldest wildlife sanctuary, established more than 2,300 years ago by King Devanam Piyatissa in 247. This is a valuable study site because of the fact that all three dry zone subspecies of the three diurnal primates live here (*M. sinica sinica, S. vetulus philbricki, S. priam thersites*). All are habituated to humans. Polonnaruwa, Anuradhapura, and Sigiriya are three other easily accessible sites with long histories of primate-human interactions.

Mihintale is considered one of the few field sites where we have seen toque macaques approaching gray langur groups alone or in pairs to groom them (Fig. 5). Despite toque macaques being smaller, they are dominant over the larger gray langurs, and easily approach and groom adult gray langurs, sometimes spending several minutes at a time. Additionally, in the southern dry zone, not far from Kataragama, we observed a lone adult female toque macaque with her infant, traveling together with a troop of gray langurs. The reason why toque macaques leave their groups to join grey langurs remains a mystery. There is still much to learn about primates in Sri Lanka.

In late January 2026, DIWPA International Field Biology Course will be held in Sri Lanka. This is a practical training course to extract DNA from feces found in and around agricultural fields to identify the species causing damage. We are very much looking forward to this unique opportunity to share our knowledge, collaborate with international students and researchers, and further promote primatological and ecological research in Sri Lanka.

Fig.4

Fig. 4.

(a) Inside Sinharaja Forest Reserve. This primary tropical rainforest is designated a Biosphere Reserve and a World Heritage Site by UNESCO. Photo by H. Tanaka

(b) Student in her home village, preparing a primate skeleton as part of her research project. Photo by MA Huffman

(c) Dr. Hiroyuki Tanaka with two students in the field collecting primate fecal samples. Photo by Dilan Thisaru

(d) Student and Nahallage interviewing a farmer selling produce on the roadside. Photo by MA Huffman

Fig. 5. Two toque macaques grooming an adult grey langur inside the Mihintale Wildlife Sanctuary. Photo by MA Huffman

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DIWPA International Field Biology Course in Sri Lanka will be held!!

APPLY NOW!!

We are pleased to announce that the DIWPA International Field Biology Course (IFBC) will be held in Sri Lanka in January 2026.

DIVERSITAS in the Western Pacific and Asia (DIWPA) is an international network for the promotion of cooperative studies and information exchange on biodiversity in the Western Pacific and Asia which aims to connect existing networks of people working on biodiversity and research projects in Asia and the Western Pacific. One of the main functions of DIWPA is "capacity building of scientists in particular young scientists from developing countries". In 2026, the International Field Biology Course will take place in University of Sri Jayewardenepura, in Sri Lanka.
DIWPA accepts an application for a scholarship to attend the International Field Biology Course.

Details

1. Date and schedule:
   January 26-30, 2026
   At Colombo Bandaranaike International Airport on January 25, 2026
2. Accommodation:
   TBA
3. Site:
   University of Sri Jayewardenepura
4. Financial support:
   DIWPA provides a scholarship that covers accommodations and travel expenses from Bandaranaike International Airport in Colombo. However, due to our limited budget, participants are kindly asked to cover their own travel costs to reach Bandaranaike International Airport.
5. Application:
   Applicants should be talented researchers/graduate students who belong to DIWPA on whose supervisor is the DIWPA member.
   Applicants should prepare the following documents.
   (1) CV
   (2) A statement of their interests in the field of ecology
   DIWPA IFBC in Sri Lanka, we will conduct practical training on DNA barcoding using fecal DNA: Species identification of mammals causing agricultural damage
   (3) A recommendation letter written by the supervisor
6. Application submission and deadline:
   Submit applications to DIWPA office by e-mail before October 3, 2025.
   DIWPA Officeseki: diwpa@ecology.kyoto-u.ac.jp
7. Report submission:
   Successful candidates will be asked to submit a report for DIWPA News Letter.

Only successful candidate(s) will receive the details by late October, 2025 by e-mail.

If you have any question, please feel free to contact us.
DIWPA Office: diwpa@ecology.kyoto-u.ac.jp

CALL FOR NEW MEMBER

We are now calling for membership of DIWPA. Membership fee is no charge.

When you become a member, you can;

1. Receive the DIWPA News Letter

   You can receive DIWPA News Letter by e-mail. The News Letter contains various information of biodiversity research in Asia Pacific area.

2. Apply for the Field Biology Course

   You can apply for the Field Biology Course sponsored by DIWPA. The successful candidate would participate the Field Biology Course which is organized by Kyoto University. There are few international initiatives which conduct educational activities such as DIWPA even though some of the initiatives carry out biodiversity research.

3. Run your articles regarding your biodiversity activities in DIWPA News Letter

   DIWPA introduces our member's various activities in DIWPA News Letter. Your activities would spread throughout the world, and you may receive more information about biodiversity conservation as well as the supports.

4. Build up a circle of friends within biodiversity research

   Ask DIWPA when you want some information of foreign countries regarding your biodiversity research. DIWPA can introduce people who have information you want. More than 400 members in 37 countries/regions belong to DIWPA network.

If you would like to join DIWPA, please contact to "diwpa@ecology.kyoto-u.ac.jp".

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