Message

Global environmental issues facing humanity are among the most urgent and complex challenges of the 21st century. However, identifying these issues, understanding their underlying mechanisms, and formulating effective solutions remains challenging unfortunately. Addressing these issues requires an integrative perspective that considers both natural and social dimensions. Ecological science, which elucidates the relationships between organisms and their environments, is central to this integrative approach. Consequently, the societal importance of ecology has become increasingly evident in recentyears.

The Center for Ecological Research (CER) at Kyoto University is dedicated to advancing ecological science to help adress these grobal environmental challenges. CER researchers are experts in fields such as molecular biology, stable isotope analysis, and theoretical ecology, and they conduct collaborative research across a wide range of ecosystems. Their studies encompass a variety of organisms, including animals, plants, and microorganisms. Through interdisciplinary research, CER aims to reveal the mechanisms that sustain biodiversity and ecosystem functioning, while also developing the theoretical foundations for effective conservation. Through these efforts, CER actively promotes ecological research both in Japan and internationally. CER is also committed to contributing to the development of a sustainable relationship between humanity and nature by studying biodiversity and ecosystems and cultivating the next generation of researchers.

Director
Keisuke Koba

History

Nov. 25th, 1914
Establishment of Hydrobiological Station, Faculty of Medicine, Kyoto Imperial University

Apr. 1st, 1922
Reorganized as Otsu Hydrobiological Station (OHS), Faculty of Science, Kyoto Imperial University

Apr. 1st, 1964
Establishment of Plant Ecological Research Station (PERS), Faculty of Science, Kyoto University

Apr. 12th, 1991
Merger of OHS and PERS to form a new research institution, Center for Ecological Research (CER)

Oct. 1st, 1998
Completion of and relocation to a new laboratory building at Seta, Otsu.

Apr. 1st, 2001
Establishment of partnership with Research Institute for Humanity and Nature.

Apr. 1st, 2004
Incorporation of Kyoto University as a national university corporation

Apr. 1st, 2010
Designated as Joint Usage/Collaborative Research Center for Ecology and Biodiversity Sciences by Ministry of Education, Culture, Sports, Science and Technology (-Mar. 31st 2016)

Apr. 1st, 2016
Re-designated as Joint Usage/Collaborative Research Center for Ecology and Biodiversity Sciences by Ministry of Education, Culture, Sports, Science and Technology (-Mar. 31st 2022)

Apr. 1st, 2022
Re-designated as Joint Usage/Collaborative Research Center for Ecology and Biodiversity Sciences by Ministry of Education, Culture, Sports, Science and Technology (-Mar. 31st 2028)

Joint Usage / Collaborative Research

We function as a nationally shared facility that promotes collaborative research in ecology. And we accept applications anually for collaborative research projects, research meetings, and workshops.

共同

Donate
Biodiversity and Ecology Research Fund

Thank you for your support the future of ecology!

基金

■From JR Kyoto Station (Platform 2 or 3 for Otsu, Maibara)

- **Local & Rapid train** (17 minutes) → **Seta Station**
- **New rapid train** (17 minutes) → **Minami-Kusatsu Station**

●From Seta Station (Teisan BUS 301 line)

- Bound for Daigaku Byoin (15 minutes)
  Get off at the last stop Daigaku byoin and 15 minutes walk

●From Minami-Kusatsu Station (Ohmi Railway BUS stop no.5)

- Bound for Matsugaoka 5 Chome (20 minutes)
  Get off at the last stop Matsugaoka 5 Chome and 10 minutes walk
- Bound for Kenritsu Cho-jyu Shakai-Fukushi Center (20 minutes)
  Get off at Seitaigaku Kenkyu Center (Center for Ecological Research)

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Center for Ecological Reseach, Kyoto University

English

京都大学 生態学研究センター

Center for Ecological Research

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https://www.ecology.kyoto-u.ac.jp/
Inuyama Campus (Center for the Evolutionary Origins of Human Behavior, Kyoto University)
https://www.ehub-kyoto-u.com/

KYOTO UNIVERSITY FOUNDED 1897 KYOTO JAPAN

Research Areas

The research department consists of four fields.
Graduate students are assigned to one of the following divisions within the Department of Biological Sciences, Graduate School of Science: Ecological Science **I** (Zoology), **II** (Botany), or **III** (Primatology/Wildlife). Ecological Science **I** & **II** are located at the Seta Campus, and **III** is at the Inuyama Campus .

Biodiversity Ecology

In nature, a number of species form entangled webs of interactions. We focus on such webs (networks) of species interactions to elucidate the mechanisms that maintain and create biodiversity. Based on interdisciplinary approaches integrating fieldwork, molecular biology, and theoreticalecology, we explore ways for conserving biodiversity and restoring natural ecosystems.

Akira Yamao / Yumiko Higuchi / Takuya Sato

Environmental Ecology

Biological organisms and/or ecosystems show various responses to environmental changes, and vice versa. In "Anthropocene", the present time with remarkable deterioration of natural environments through human activities, understanding the interactions among biological organisms, ecosystems and environments is crucial for human well-being. We have been conducting studies on the investigation, assessment and conservation of ecosystem and/or biodiversity for our sustainable use of natural resources.

Nakano Shin-ichi / Atsushi Ishida / Goro Hanya
Hiroyuki Tanaka / Yurie Otake

Molecular Ecology

We are working on various ecological phenomena by utilizing techniques such as stable isotopic ratio and molecular analysis. Such new techniques reveal environment fluctuation, material flow, their mechanisms, or genetic basis of ecological phenomena that cannot be seen by ordinary methods. We are opening up new frontiers of ecological studies.

Hiroshi Kudoh / Keisuke Koba / Mie N. Honjo

Theoretical Ecology

Targeting various phenomena related to evolution, ecology, and human activities in the global ecosystem, we aim to elucidate the patterns of phenomena and the mechanisms that cause them, mainly through theoretical considerations based on mathematical models and simulations.

Atsushi Yamauchi / Shigeo Yachi

Researchers

Biodiversity Ecology

Akira Yamao Professor
Evolution & Community Ecology

Plants grow and thrive through various interactions with animals, microbes, and neighboring plants. Our laboratory aims to uncover the ecological and evolutionary roles of these interspecies relationships and to understand how they have shaped plant evolution and global biodiversity patterns.

Yumiko Higuchi Associate Professor
Plant Ecology

We are fascinated by the diverse forms exhibited by wild plants and aim to understand how these forms function and evolve in their natural environments. Currently, we primarily investigate the role of leaf shapes and patterns in interactions with herbivores through field studies and laboratory experiments.

Takuya Sato Associate Professor
Community Ecology

Our research group focuses on life-history diversity, population dynamics, and their associations with community organization and ecosystem functions in meta-ecosystems connecting forests, rivers, and oceans. Additionally, we study the causes and consequences of host manipulation by parasites as an example of the extended phenotypes.

Environmental Ecology

Shin-ichi Nakano Professor
Freshwater Ecology

I have been studying food webs among bacteria, protists, and phytoplankton, primarily in lakes. In particular, my research in the interactions between organisms surrounding cyanobacteria in lakes would be unique to aquatic ecology. Recently, I am also interested in the ecology of benthic animals (benthos).

Atsushi Ishida Professor
Tropical Ecology

I study tropical forests in Thailand and subtropical forests in the Ogasawara Islands, focusing on the physiological mechanisms that enable woody plants to tolerate drought by global climate change. I am also involved in the ecosystem conserving of the Ogasawara Islands, a UNESCO World Natural Heritage site.

Goro Hanya Associate Professor
Primate Ecology

I study feeding ecology, population ecology, gut microbiome, and relations with sympatric organisms of various wild non-human primates in Asian and African countries, in particular Japanese macaques in Yakushima.

Hiroyuki Tanaka Assistant Professor
Conservation genetics

I am conducting research on the conservation genetics of three species of large diurnal monkeys in Sri Lanka (the toque monkey, the purple-faced langur, and the gray langur), with investigating the phylogenetic relationships and gene flow among regional populations of each species.

Yurie Otake Assistant Professor
Freshwater Ecology

My research focuses on lake ecosystems and zooplankton, a major component of these ecosystems. Using them, I am engaged in a wide range of ecological and evolutionary topics, from population genetic structure to ecosystem function. In addition to microscopic observation and culture of zooplankton, I also reconstruct long-term dynamics using lake sediments.

Molecular Ecology

Hiroshi Kudo Professor
Plant molecular Ecology

Aiming to understand the life history of plants from a molecular perspective, we conduct research on the perennial plant, *Arabidopsis halleri*, in its natural habitat. By examining the relationship between the long-term changes in gene expression phenology and chromatin structure, I seek to understand the robust responses of plants under fluctuating environmental conditions.

Keisuke Koba Professor
Ecosystem Ecology

Using stable isotope ratios (such as the natural abundance ratio of ^{14}N to ^{15}N), we study interactions among organisms in various ecosystems, as well as between organisms and their environments. By examining ecosystems through the lens of biogeochemical materials, we focus particularly on the dynamic interrelationships between life and the environment.

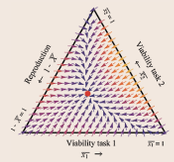
Mie N. Honjo Associate Professor
Plant molecular Ecology

Our research focuses on how plants interact with other organisms, such as microorganisms and insects, and how they survive in natural environments. We also study to understand their diversity and adaptive strategies at the genetic level using community structure and gene expression.

Theoretical Ecology

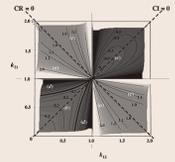
Atsushi Yamauchi Professor
Mathematical Ecology

My research aims to uncover the factors and mechanisms that shape ecological phenomena by formulating ecological processes as mathematical equations and analyzing them. The scope of my work is broad, encompassing both organic evolution and ecological dynamics. One of my current research topics focuses on the evolution of division of labor.



Shigeo Yachi Associate Professor
Theoretical Ecology

Using mathematical models (mathematical formulas), I have been trying to solve the mysteries of life phenomena occurring in the Earth's ecosystem. Currently, I am summarizing theoretical considerations on how multicellular organisms have evolved and the mechanisms by which human society and biodiversity can coexist.



DIWPA CER is the DIWPA secretariat.

DIWPA (DIVERSITAS in the Western Pacific and Asia) is an international network that promotes collaborative research and information exchange on biodiversity in the Western Pacific and Asia.