

Lingnan University SDG Report



Lingnan, as an advocate of wildlife conservation and sustainable environment, put great effort in and support to relevant research projects and academic programmes. These projects and programmes enhance the public's awareness of environmental issues and their implications to our daily life.

Research Projects and Publications

From 2018 to 2023, 45+ research projects have been conducted by the Science Unit (SU) at Lingnan to closely study the ecosystem of various species. The projects resulted in a large number of publications which highlight urgency to take significant actions to save the nature and our environment. Three highlighted on-going research projects in 2022–23 are below:

Conservation of Romer's tree frogs: Assessment of population status across Lantau and impacts of emerging threats funded by Lantau Conservation Fund

The project aims to provide scientific information which is conducive to the survival of the endangered Romer's tree frog on Lantau Island. Two conservation issues will be addressed in the project including the reasons of population decline in two native populations (Chek Lap Kok and Tung Chung Sha Tsui Tau), and the shortcomings in the long-term population monitoring programme. Recommendations to mitigate the identified impacts will be proposed. The stud will also explore the feasibility of using automated audio reorders for population monitoring of the species, with a view to optimize amphibian surveys in future environmental impact assessment and ecological research in Hong Kong.

Nature-based greening solutions for insect pollinator conservation and sustainable agriculture development funded Environment and Conservation Fund

Urban agriculture provides many benefits for people and biodiversity. However, its success

depends on the presence of pollinators, which rely on flowers in urban green spaces. Unfortunately, not all flowers are equally appealing to pollinators, and this important factor is often overlooked. To develop effective strategies for nature-based urban greening, it is crucial to understand the types of pollinators present and the flowers they prefer. In collaboration with local NGOs and farmers, this study aims to develop the first pollinator-friendly planting list for Hong Kong. This list will inform decisions about urban farming and greening practices, ensuring they align with the needs of nature

Development of a publicly accessible Natural History Collection

In January 2021, Lingnan has established a natural history collection of over 500 specimens of local amphibians and reptiles to document Hong Kong's biodiversity, and for research, conservation, and education purposes. The collection, funded by the Environment and Conservation Fund of the HKSAR Government, contributes to the goals of Hong Kong Biodiversity Strategy and Action Plan.

The database of various species of amphibians and reptiles that have high conservation or scientific research values, including Romer's Tree Frog and the White-headed Blind Snake, is available online to the general public. Local and international scientists and schools may borrow specimens for research and teaching purposes. The collection provides valuable data for the conservation management of Hong Kong species, in particular Romer's Tree Frog, and more importantly, serves as valuable resource for teaching and research.

Highlighted publications (Lingnan staff in bold):

- 1 Dufour PC, Miot EF, So TC, Tang SL, Jones EE, Kong TC, Yuan FL, **Sung YH**, Dingle C, Bonebrake TC (2022) Home and hub: pet trade and traditional medicine impact reptile populations in source locations and destinations. *Proc Biol Sci.* 289(1982):20221011. doi: 10.1098/rspb.2022.1011. Epub 2022 Sep 14. PMID: 36100029; PMCID: PMC9470258.
- 2 Aksornneam A, **Sung YH**, Aowphol A. (2023). Effect of habitat structure on abundance and body conditions of two sympatric geckos, *Cyrtodactylus saiyok* and *Cyrtodactylus tigroides*, in the karst forest of western Thailand. *Journal of Natural History.* 57. 395-407. 10.1080/00222933.2023.2186808.
- 3 Lee C, **Fong JJ**, Jiang J, Li P, Waldman B, Chong JR, Lee H, Min M (2021) Phylogeographic study of the *Bufo gargarizans* species complex, with emphasis on Northeast Asia. *Animals Cells and Systems* 25: 434–444. doi: 10.1080/19768354.2021.2015438.
- 4 Zhou J, **Fong JJ** (2021) Strong agricultural management effects on soil microbial community in a non-experimental agroecosystem. *Applied Soil Ecology* 165: 103970.

doi: 10.1016/j.apsoil.2021.103970.

- 5 Allcock JA, Bonebrake TC, **Sung YH**, Dingle C (2022) Shifts in phenology of autumn migration and wing length among reedbed passerines along the East Asian–Australasian Flyway. *Avian Research* 13: 100052. doi: [10.1016/j.avrs.2022.100052](https://doi.org/10.1016/j.avrs.2022.100052)
- 6 **Sung YH, Lee WH, Leung FKW, Fong JJ** (2021) Prevalence of illegal turtle trade on social media and implications for wildlife trade monitoring. *Biological Conservation* 261:109245.
- 7 Liew JH, Kho ZY, Lim RBH, Dingle C, Bonebrake TC, **Sung YH**, Dudgeon D (2021) International socioeconomic inequality favours higher network connectivity in the global wild animal trade. *Science Advances* 9:eabf7679.

More information about research projects available at:

<https://www.ln.edu.hk/scienceunit/researchgrants.php>.

More information about publications available at:

<https://www.ln.edu.hk/scienceunit/publications.php>.

Academic Programmes and Courses

Minor in Environmental and Scientific Literacy

In 2020–21, Lingnan launched a minor in Environmental and Scientific Literacy which addresses local and global emerging environmental issues that will influence the quality of life such as climate change, pollution, and habitat destruction. The programme aims to equip student with updated knowledge and academic skills, as well as critical thinking and problem-solving skills to make informed decisions. In Summer Term 2022, a practicum course was added to the programme to enrich students' learning experience through hands-on training in the real-world workplace.

MPhil in Environmental Science

To promote environmental science and sustainability, Lingnan adopted an interdisciplinary approach to deliver an MPhil programme that draws on the natural sciences and urban studies to review environmental issues and human impacts on the environment. Students carry out an independent research projects related to biodiversity and environmental conservation. Additionally, students are trained to communicate their knowledge to the general public and policymakers, and apply their knowledge to advance the needs of society.

There are two key research areas available in the programme: (1) evolution, ecology, and conservation (EEC), and (2) urban climate, air pollution, and environmental health. The first research area, EEC, focuses on understanding organisms (evolution), their interaction with the environment (ecology), and approaches to protect species (e.g. amphibians, reptiles, and birds in Asia) against extinction (conservation). The latter research area focuses on air pollution exposure, urban climate, geographical information system (GIS) modeling, and environmental health. Key partners to enhance course and research work come from governmental units (Agriculture, Fisheries and Conservation Department [AFCD], Environmental Protection Department [EPD]), NGOs (World Wide Fund for Nature [WWF], Ocean Park Conservation Foundation [OPCF]), and industrial sectors (Smart City Consortium [SCC]).

Undergraduate courses

Among the courses recently offered in Lingnan, 32 undergraduate-level courses address SDG15 Life on Land, with 11 out of the 32 highly focus on nature understanding and environmental conservation. Example courses include:

[CLA9026](#) Nature Appreciation through Arts and Creative Media

[CLD9017](#) Ecology: The Science of Environmental Issues

[CLD9018](#) Natural History of Hong Kong

[GOV4303](#) Global Environmental Politics

[HST1196](#) Human-Animal Relationship In History

[SCI3003](#) Conservation and Biodiversity

More information about courses covering components related to SDGs:

<https://www.ln.edu.hk/scienceunit/SEI.php>