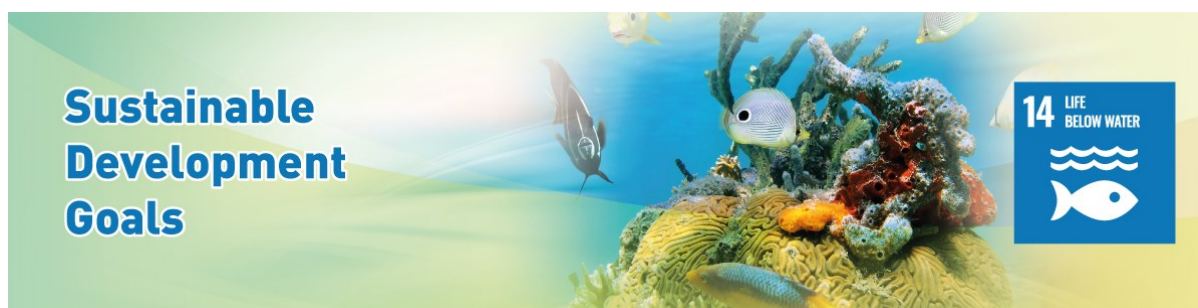


Lingnan University SDG Report



Lingnan University strongly supports and promotes science and sustainability through academic programmes, educational projects, and research activities. Research and knowledge transfer projects conducted by the Science Unit focus on biodiversity and environmental conservation, which relates to the Sustainable Development Goal (SDG) 14 “Life below water”. The key initiatives are as follows:

Educational programmes and courses

Minor in Environmental and Scientific Literacy

The rapid increase in human population and advances in technology have placed great stress on the environment. The future generations need to be environmentally literate to make informed decisions about local and global issues that will influence the quality of life, such as climate change, pollution, and habitat destruction. As such, Lingnan launched a minor programme in Environmental and Scientific Literacy in 2020–21 to promote the development of “science literacy” as a lifelong skill that can be applied to a variety of scientific and technological issues. Students study different topics related to sustainable development, including location intelligence, conservation and biodiversity, climate change, and earth sciences. In a practicum course SCI3008 Internship in Environment and Sustainability offered from Summer Term 2022, students were sent to 14 renowned industry partners for exposure and hands-on training in sustainability issues.

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 to study environmental issues and human impacts on the environment. Students carry out independent research projects related to biodiversity and environmental conservation. The programme also trains students to communicate their knowledge to the general public and

policymakers, and apply their knowledge to advance the needs of society.

One of the key areas of study, emphasis in evolution, ecology, and conservation (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). Students are trained in an interdisciplinary fashion, incorporating rigorous biological approaches (fieldwork, laboratory work, statistical analyses) while addressing governmental and conservation policy. In close collaboration with partners from governmental (Agriculture, Fisheries and Conservation Department [AFCD]) and non-governmental organizations (Kadoorie Farm and Botanic Gardens [KFBG], World Wide Fund for Nature [WWF], Ocean Park Conservation Foundation [OPCF], and Hong Kong Bird Watching Society [HKBWS]), students are able to look into the agenda from a more comprehensive perspective.

Undergraduate courses

Among the courses recently offered in Lingnan, 28 undergraduate level courses address SDG14 Life Below Water, with 8 out of the 28 highly focus on marine pollution and environmental conservation. The courses with content highly related to SDG14 are as follows:

[CLD9008](#) Life Sciences: The Way Life Works

[CLD9015](#) Understanding Evolution

[CLD9017](#) Ecology:SciEnvironmentalIssues

[CLD9027](#) Blue Planet

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

[SCI3003](#) Conservation and Biodiversity

[SCI3005](#) Earth Science

[SLP1101](#) Community Engage Service-Learn

More information about courses covering components related to SDGs:

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

The Hong Kong Ocean Environmental Pioneer Academy

The project funded by the Environment and Conservation Fund, was created to drive awareness and spark actions to protect the ocean and seashore of Hong Kong. A group of 120 Ocean Environmental Pioneers (OEPs) were provided with background and knowledge in marine science and environmental technology by the Science Unit. They were later trained by the Lingnan Entrepreneurship Initiative (LEI) in design thinking to understand challenges related to Hong Kong's seashore conservation, and proposed solution by applying design

innovation of mature technology. The goal of the project was to influence another 1000 individuals by the 120 OEPs, creating an impactful ripple effect on ocean conservation in Hong Kong. In 2022–23, 67 activities were organised and successfully engaged 2,733 participants in the forms of training workshops, beach cleaning activities, and ceremonies.

Research

Funded by governmental departments (RGC, ECF, AFCD and CEDD), Lingnan (DG, FRG, LWRF) and non-governmental organisations (OPCF), Lingnan has conducted research and developed publications to inform public and policy makers of the importance of wildlife conservation.

Highlighted on-going projects in 2022-23:

- 1 GRF. Conservation genomics of two endangered Hong Kong turtles—the big-headed turtle (*Platysternon megacephalum*) and Beal's eyed turtle (*Sacalia bealei*)
- 2 OPCF. Assessing the genetic diversity and ecological role of the endangered wattle-necked softshell turtle (*Palea steindachneri*) through the study of remnant populations
- 3 ECS. Evaluating the effects of chemical defense, parasitism, and anthropogenic disturbance on Hong Kong newt survival: A comprehensive approach to endangered species management
- 4 LCF. A comprehensive survey of the diadromous animals of Lantau: assessment of distribution, population status, and conservation strategies
- 5 AFCD. Camera Surveillance & Trap Search in Freshwater Turtle Population Key Sites
- 6 ECF. Assessing prevalence of pathogens in endangered freshwater turtle populations
- 7 LWRF. Deposit-feeding crabs as ecosystem engineers: crab bioturbation and its functional importance in sandy shore ecology
- 8 FRG. Predicting tidal states based on habitat temperature patterns on rocky shores
- 9 FRG. Assessing captures of recreational fishery in Hong Kong through social media
- 10 DG. Movement and Habitat use of a new invasive crayfish in Hong Kong streams and reservoirs

More information available at: <https://www.ln.edu.hk/scienceunit/researchgrants.php>.

Highlighted publications (Lingnan staff in bold):

- 1 Li M, Zhang T, Liu Y, Li Y, **Fong JJ**, Yu Y, Wang J, Shi HT, Lin L (2023) Revisiting the genetic diversity and population structure of the endangered Green Sea Turtle (*Chelonia mydas*) breeding populations in the Xisha (Paracel) Islands, South China Sea. PeerJ. 2023 Mar 22;11:e15115. doi: 10.7717/peerj.15115. PMID: 36974137; PMCID: PMC10039654.

- 2 **Chan JCF, Tsang AHF, Yau SM, Hui TCH, Lau A, Tan HH, Low BW, Dudgeon D, Liew JH** (2023) The non-native freshwater fishes of Hong Kong : diversity, distributions and origins. *Raffles Bulletin of Zoology*, 71, 128-168. Advance online publication. <https://doi.org/10.26107/RBZ-2023-0012>
- 3 Pang CC, **Sung YH**, Chung YT, Ying HK, Fong HNH, Yu YT (2023) Full Migration Routes of Two Little Egrets (*Egretta garzetta*) Display Breeding and Wintering Site Fidelity. *Ornithological Science*, 22(1), 81-86. Advance online publication. <https://doi.org/10.2326/osj.22.81>
- 4 **Lee WH, Fong JJ, Lee WH, Sung YH** (2022) Mercy or messy: distribution and differentiation of native and released Chinese bullfrogs (*Hoplobatrachus rugulosus*) in Hong Kong using genetic and morphological analyses. *Management of Biological Invasions* 13: 246–258. doi: 10.3391/mbi.2022.13.1.15.
- 5 **Lam IPY, Sung YH, Fong JJ** (2022) Using eDNA techniques to find the endangered big-headed turtle (*Platysternon megacephalum*). *PLoS ONE* 17: e0262015. doi: 10.1371/journal.pone.0262015.
- 6 **Sung YH, Lee WH, Lau MWN, Lau A, Wong PPY, Dingle C, Yeung HY, Fong JJ** (2021) Species list and distribution of non-native freshwater turtles in Hong Kong. *BioInvasions Records* 10: 960–968.
- 7 **Yau SM, Lau A** (2021) First record of the Australian redclaw crayfish *Cherax quadricarinatus* (Von martens, 1868) in Hong Kong, China. *BioInvasions Records*, 10: 369–377.

More information available at: <https://www.ln.edu.hk/scienceunit/publications.php>.