



The University of Hong Kong
School of Biological Sciences

**Public
Seminar**

Community traits responses to land-use conversion and temperature increase, with new approaches to investigate ectotherms thermal tolerance and resilience

Date: 11 August 2022 (Thu)

Time: 09:30

Venue: Zoom



IBBL Insect Biodiversity &
Biogeography Lab
SCHOOL OF BIOLOGICAL SCIENCES • THE UNIVERSITY OF HONG KONG



About the speaker:

LEONG, Chi-Man (Danny) is a PhD candidate in the Insect Biodiversity and Biogeography Laboratory. He is passionate about urban biodiversity and ecology, and his PhD work focused on animal responses to land-use changes using ecophysiology, community ecology and landscape ecology approaches.



Abstract:

Land-use conversion modifies environmental conditions and threaten local biodiversity. Yet, little is known about the ecological and physiological drivers and mechanisms leading to biodiversity loss and animals' multiple traits response to habitat change and temperature increase. In my PhD thesis, I used ants as the study model, a dominant and bioindicator group within terrestrial ecosystems to study land-use changes. First, I investigated the methodology used in upper thermal limit measurements to accurately estimate this key trait in predicting species responses to temperature changes. Second, I identified a suitable ramping rate and investigated thermal resilience through the study of post heat-coma recovery, an important trait to estimate species fitness under extreme heat temperatures. Third, I investigated the impacts of land conversion from forest to rubber plantation on ant assemblage trait composition in Thailand. Integrating both thermal and morphological traits, my findings revealed the importance of including multiple traits in functional ecology. Fourth, I investigated the impacts of urbanization and land-use change through a trait-based approach at the community-level, while accounting for the scale of effect. Overall, my results present new approaches in the study of thermal tolerance and resilience; and support the importance and uniqueness of thermal traits in explaining species community and their responses to land-use changes.