



The University of Hong Kong
School of Biological Sciences

**Public
Seminar**

Fishponds as biodiversity hotspots: Implications for management and restoration of wetlands in Hong Kong

Date: 31 July, 2026 (Friday)

Time: 10:00 am

Venue: 6N-11



About the speaker:

Tse Cham Man is a PhD candidate supervised by Prof. Juan Diego Gaitán-Espitia. His research focus is to integrate novel ecological and molecular approaches in wetland management.



Abstract:

Fishponds are one of Hong Kong's wetland habitats, yet their ecological value and optimal management remain poorly understood. This thesis examines the temporal dynamics, biodiversity, and ecosystem function of Deep Bay fishponds under different management regimes to guide wetland conservation in urbanizing landscapes. Historical aerial images spanning six decades revealed a landscape shaped by distinct phases of expansion and decline — an initial period of rapid growth through the early 1980s, followed by decades of loss — with recent trends showing a marked slowdown in the rate of decline, suggesting the pace of change may be shifting. Multi-marker eDNA metabarcoding across fishponds under different management types (Commercial, Conservation, and Abandoned) indicated that environmental conditions play a considerable role in shaping community diversity, while management practices appeared to influence taxonomic groups (e.g. bacteria) in context-dependent, season-specific ways rather than favoring any single approach uniformly. Comparisons across genetic markers further revealed minimal taxonomic overlap between markers, suggesting that relying on a single marker may not fully capture the biodiversity present in these systems. Ecosystem metabolism measurements pointed to a clear difference in gross primary production between commercial and conservation-oriented ponds, while other functional and biogeochemical parameters showed considerable variability both within and between pond categories. Interestingly, these functional patterns were not clearly mirrored by corresponding differences in microbial community composition, raising questions about the relationship between community structure and ecosystem activity. Together, these findings suggest that human-modified wetlands may hold meaningful potential as biodiversity hotspots, and that a diversity of management approaches — rather than a single optimal strategy — could best support Hong Kong's remaining fishpond ecosystems.