The University of Hong Kong
School of Biological Sciences

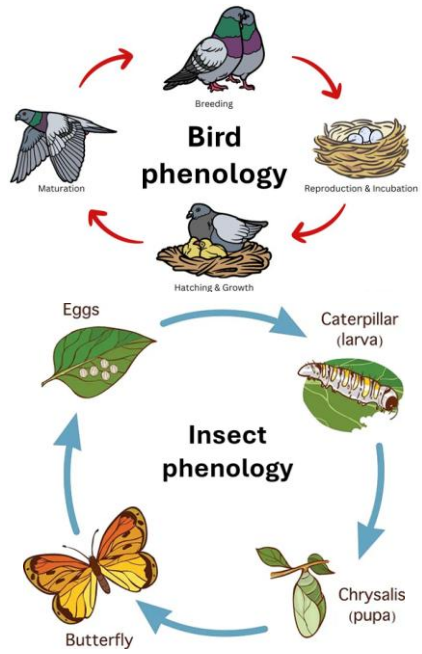
Qualifying Seminar

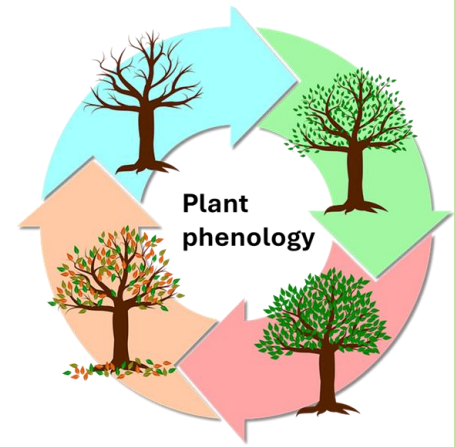
Understanding the phenological association strength through trophic level under climate change

Date: 29 January 2026

Time: 11:00 am

Venue: 6N-11





About the speaker:

Jiayue Wang is a PhD candidate supervised by Prof. Jin Wu. Her research focuses on plant phenology shifts under cliamte change and phenological association strength through trophic level.

Abstract:

Phenology, the study of the timing of biological events, is a vital aspect of understanding how ecosystems function and respond to environmental changes. As climate change accelerates, phenological shifts such as alternations in the timing of leaf out, migratory birds arriving in plants, animals, and their interactions can disrupt ecological balances, affecting biodiversity and ecosystem health. Despite increasing recognition of these phenomena, there remains a significant gap in our knowledge regarding how phenological patterns across multiple species and trophic levels are synchronized, especially over decadal timescales and under varying climate conditions. This gap hampers our ability to predict ecosystem responses and develop effective conservation strategies. To address this, my research first investigates the association strength between plant spring phenology and temperature as a baseline across species in temperate forests, analyzing decadal changes and climate influences. Later, I would like to expand this phenological association from temperature-plant to plant-pollinators-birds through trophic level, as well as interactions among plants, insects, and birds within food webs. Finally, I assess how shifts in trophic phenology impact overall ecosystem health, including biodiversity and functional stability. This research not only advances scientific understanding of phenological dynamics but also offers valuable implications for ecosystem management and conservation efforts in a rapidly changing world. It underscores the importance of maintaining phenological synchrony to ensure ecosystem resilience and sustainability in the face of future climate challenges.