

# SEMINAR

**Fri, 9 Oct 2020 | 9 am | Online Zoom Session**

Hosted by Prof Koh Lian Pin

## The vegetation ecology of tropical freshwater swamp forests

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**By Chong Kwek Yan**

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Tropical forests are major storehouses of carbon globally. Where vegetation occurs over poorly drained conditions, organic matter produced by plants will accumulate instead of decomposing and being released back into the atmosphere. Tropical wetland forests are therefore even more important as natural sequesters of carbon, in addition to their unique biodiversity. Very little progress has been made to understand the non-peat freshwater swamp forests of tropical Asia, even though it has been proposed that such freshwater swamp forests were the precursors to the carbon-rich peat swamp forests. How will these highly diverse plant communities and their ecosystem processes respond when the natural associations between soil and hydrology become uncoupled with changing climate or weather patterns, in addition to being affected by other anthropogenic stressors such as land cover change and fragmentation? Using the catchment containing Singapore's last substantial remnant of intact freshwater swamp forest—often referred to as the Nee Soon swamp forest—as a model system, I am developing predictive models of forest dynamics that integrate across different scales of ecological organisation, from eco-physiological traits to emergent ecosystem-level processes. This would allow us to design better strategies to safeguard or even enhance the climate mitigation potential of the world's remaining wetland forests.