



## ON-SITE BIOLOGY COLLOQUIUM

Friday, 24 Oct 2025 | 4 pm | S3 05-02 Conference Room 1

Hosted by Assistant Prof Eunice Jingmei Tan

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# Ecological Consequences of Mass Insect Migrations

By Jason Chapman

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### *About the Speaker*

*Prof Jason Chapman studies all aspects of the patterns and processes of insect migration, from the molecular and physiological control of migration, through behavioural ecology and biometeorology, to the macroecology of continental-scale movements, and he has a particular focus on the East Asian Insect Flyway. His principal research tools include entomological and weather radars, and his major study species are important crop pests and disease vectors (moths, planthoppers, mosquitos and locusts), plus beneficial natural enemies and pollinators (butterflies, hoverflies, and dragonflies). He worked at the Rothamsted Research Institute for many years, but since 2016 he has been in the Centre for Ecology and Conservation at the University of Exeter and is currently working full-time on a Changjiang Scholarship at Nanjing Agricultural University.*

Every spring in the Northern Hemisphere, trillions of insects migrate to higher latitudes, expanding northward from overwintering areas to colonize summer-breeding grounds. The long-range movements take place hundreds of meters above ground, assisted by favourable seasonal winds. In autumn the progeny return southward again as temperatures fall. These migrations are particularly important in East Asia, where the monsoon system facilitates bidirectional seasonal movements of insects, along the “East Asian Insect Flyway” (EAIF). The EAIF covers a vast region, from Mainland Southeast Asia and the Philippines, through East China, to the Russian Far East, Korea and Japan, constituting the most extensive area of intensive agriculture on Earth. Many of the species undertaking these migrations are pests and, consequently, these poleward and return bioflows are of the greatest economic and societal importance, directly impacting the food security and health of the >2 billion people that reside in this region. In this seminar I will describe some of the work we have done to characterise and quantify migratory flows, and their ecological consequences, around the globe, and how they are changing in response to climate change. I will draw examples from our research in many regions, but with a focus on the EAIF.