

Ecological Consequences of Mass Insect Migrations

Dr Jason Chapman,
University of Exeter, UK

Date: 2 May 2024 (Thursday)

Time: 11:00am – 12:00pm

Venue: Science Centre L5

From Prof. Chapman

In this seminar, I will introduce the work I have been doing recently with a team of international collaborators, to quantify the intensity and patterns of mass insect migrations around the globe. We have also done some important work to estimate the ecosystem services provided by beneficial migratory species, and the implications of migration for crop damage and disease spread. In this seminar, I will also briefly introduce my university and campus, and outline the opportunities for Masters and Postgraduate study at Exeter.

Brief biography

Dr Jason Chapman is a Professor of Migration Ecology, and Director for Global Engagement, in the Centre for Ecology and Conservation (CEC), at the University of Exeter in the UK. He is also Visiting Professor of Insect Migration in the lab of Prof Gao Hu at Nanjing Agricultural University and works extensively in China. He has made many important discoveries about insect migration during the past 25 years, and regularly publishes these results in the top scientific journals, e.g. *Science* (x3), *Nature*, *PNAS* (x4), *Current Biology* (x5), and the *Annual Review of Entomology* (x3). Much of this work has been done in collaboration with Prof Gao Hu at Nanjing Agricultural University, Dr Lei Zhang at CAAS (Beijing) and Dr Hongqiang Feng at HAAS (Zhengzhou). A few of his key recent papers are listed below:

1. Hu G, Feng HQ, et al & **Chapman JW** (2024). The East Asian insect flyway: geographical and climatic factors driving migration among diverse crop pests. ***Annual Review of Entomology***.
2. Huang JR, et al, Hu G & **Chapman JW** (2024). Massive seasonal high-altitude migrations of nocturnal insects above the agricultural plains of eastern China. ***PNAS***.
3. Lv H, et al, **Chapman JW** & Hu G (2023). Changing patterns of the East Asian monsoon drive shifts in migration and abundance of a globally important rice pest. ***Global Change Biology***.
4. Lehmann T, **Chapman JW**, et al (2023). Urban malaria may be spreading via the wind – here's why that's important. ***PNAS***.
5. Menz MHM, et al, **Chapman JW** & Wikelski M (2022). Migrating hawk-moths compensate for wind to maintain consistent headings. ***Science* 377: 764-768**.
6. Hu G, et al & **Chapman JW** (2021). Environmental drivers of population fluctuations in a trans-Saharan insect migrant. ***PNAS***.
7. Huestis DL, et al, **Chapman JW**, et al & Lehmann T (2019). Windborne long-distance migration of malaria mosquitoes in the Sahel. ***Nature***.
8. Hu G, et al & **Chapman JW** (2019). Long-term seasonal forecasting of a major migrant insect pest: the brown planthopper in the Lower Yangtze River Valley. ***Journal of Pest Science* 92**.
9. Hu G, et al & **Chapman JW** (2016). Mass seasonal bioflows of high-flying insect migrants. ***Science***.