Understanding large scale status and trends in biodiversity

Susan Jarvis

UK Centre for Ecology and Hydrology

Understanding the existing distribution of biodiversity at national and international scales, how and why biodiversity has changed over time and what might happen in the future is a key focus for many ecologists. For example, understanding whether insects are declining at national or global scales (popularly referred to as “insectageddon”) is a current priority, due to the key ecosystem functions that may be at risk. However, answering questions at this scale is far from simple and several key challenges arise. There is much available data on biodiversity but data are often highly non-representative spatially, temporally, environmentally and taxonomically. Data are also hugely variable and novel technologies to monitor biodiversity are constantly being developed which must be integrated with traditional data sources, and their information value assessed to guide future monitoring. We often lack useful mechanistic knowledge to isolate drivers of interest and must develop approaches to isolate key drivers from large numbers of possible predictors. These issues and others mean answers to questions such as “are insects declining?” can be widely variable dependent on the analytical choices. In a biodiversity crisis we need novel ideas and methods to address these challenges and help us deliver robust answers to urgent questions.