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Integrated species distribution modelling with citizen science data

Species distribution models are valuable tools for studying and mapping species distributions. These models also have the potential to be valuable tools in the investigation of seasonal and climatic changes in species distributions. However, to effectively investigate seasonal and climatic changes large amounts of data covering vast periods of time and space are needed but such data do not exist. A possible remedy is to combine various ecological data sets in a task called integrated species distribution modelling. Integrated Species Distribution Models (IDMs) typically combine structured survey data with unstructured opportunistic data such as that obtained via citizen science. Citizen science data sets however typically contain sampling bias. Not accounting for this bias can lead to models that perform markedly worse than models built on a single data set. In this presentation we discuss the development of an integrated modelling strategy that allows for effective handling of sampling bias in citizen science data.