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Shifting seasons, climate change and ecosystem consequences

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In recent decades, the seasonal timing of many biological events (e.g. flowering, breeding, migration) has shifted. These phenological changes are believed to be one of the most conspicuous biological indicators of climate change. Rates and directions of phenological change have differed markedly among species, potentially threatening the seasonal synchrony of key species interactions and ultimately ecosystem functioning. Differences in phenological change among-species at different trophic levels, and with respect to other broad species traits, are likely to be driven by variations in the climatic sensitivity of phenological events. However, as yet, inconsistencies in analytical methods have hampered broad-scale assessments of variation in climate sensitivity among taxonomic and functional groups of organisms. In this presentation, results will be presented from a current collaborative project (http://www.ceh.ac.uk/sci_programmes/shifting-seasons-uk.html) in which many UK long-term data sets are being integrated in order to assess relationships between temperature/precipitation, and the timing of seasonal events for a wide range of plants and animals. Our aim is to assess which organism groups (in which locations/habitats) are most sensitive to climate. Furthermore, the role of anthropogenic climate change as a driver of phenological change is being assessed.