



Effect of climatic warming on the emergence date and flight period of Irish moth species

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Temperatures in Ireland have been increasing due to anthropogenic-driven climate change. This increase in temperature has been shown to effect the phenological phases of plants and birds, but little is known about the effect on the phenophases of Lepidoptera. Observation records of the flight periods of 58 common species of Irish moths were obtained from a public monitoring group. These participants have been monitoring moth activity from eight to 36 years. Statistical analysis by generalized additive models (GAMs) showed that 29 out of 58 species are emerging significantly earlier (7-168 days) in the year now than when observation began in 1974 and that 25 out of 58 species have a significantly longer flight period (2-224 days). These changes varied across the country and by life history and were correlated with raising temperatures, primarily in the late spring/early summer. We discuss the possibilities of potential mismatches with their food plants and predators if warming continues as predicted.