

Drivers of torpor during the active season of Hazel Dormouse

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Abstract

Torpor is a life history strategy within more than half of mammalian orders, to achieve the conservation of energy particularly when species are experiencing unfavourable conditions. Daily torpor is limited to a duration of less than 24 hours and occurs when an animal reduces its metabolic rate and lowers its body temperature between bouts of activity. Hazel Dormice utilise daily torpor as an energy saving strategy during their active period (April-October) and the prevalence of torpor varies from year to year. The intrinsic and extrinsic drivers of daily torpor in Hazel Dormice are not yet well understood. I have identified drivers of torpor among Hazel Dormice which include climatic variables and the life history of individual animals. Dormice were more likely to be found in torpor on colder and wetter days and during colder and wetter seasons. Weight was a strong predictor of torpor; lighter individuals were more likely to be torpid earlier in the year (April-August) and heavier individuals later in the year (September-October). Individuals found in breeding nest boxes rarely enter torpor and solitary animals are more likely to be torpid. Sex only affects the prevalence of torpor in two months, August and September; males were more likely to be torpid in August and females in September. Using the resulting model I can predict how daily torpor occurrence might change under a changing climate. This will have consequences for Hazel Dormice in the UK as it is likely to affect survival and breeding rates.

Keywords

Daily torpor, climate change, Hazel Dormice

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