

Living underground: Edible Dormouse (*Glis glis*) activity in the underground shelters during the active period

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Abstract

The Edible Dormouse (*Glis glis*) uses different types of shelters at particular times of the year. During hibernation, they are found in underground cavities or sometimes in caves, while during active periods they mostly use above-ground shelters: tree hollows or nest boxes. Selection of such thermally varied shelters is the result of different physiological requirements during both active and non-active periods, choosing a lower and constant temperature during hibernation and higher temperature during mating, gestation, and lactation. However, this species is also observed underground outside of hibernation. It is possible that the Edible Dormouse uses caves as alternative shelters during adverse weather conditions or food shortages. We examined the annual and circadian activity of *G. glis* in two caves (Czestochowska Upland, southern Poland). Research was conducted for three years (2019 – 2021) using a non-invasive method: camera-traps. We evaluated climatic parameters outside and inside caves and the availability of the main diet (beech seeds, *Fagus sylvatica*). Our research indicates the year-round presence of *G. glis* in both caves. Dynamics of their activity vary between seasons (masting vs non-masting), but they are similar in different sites within a year. Dormouse activity in the cave was highest during a full masting season and intermediate and lowest during a mast failure year. Circadian activity varied between phenological periods: from 24-hour activity at the beginning of the season (mating period), to becoming exclusively nocturnal in the remaining period. These results may indicate that, apart from being used for hibernation, caves are also a regular daily shelter for active dormice.

Keywords

Glis glis, non-invasive monitoring, activity patterns, undergrounds, daily shelter

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