

# Characteristics of underground shelters used by the Edible Dormouse (*Glis glis*) in its European range.

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## Abstract

In response to the seasonally changing environment, mammals have developed a number of strategies that allow them to adapt to and avoid unfavourable weather conditions, along with the food shortages they often bring. In both cases, the selection of an appropriate shelter allows them to reduce their energy expenditure and to diminish the risk of suffering predation. Underground habitats, both natural (cave) and artificial (tunnels, bunkers, mines, cellars), differ in morphology (depth, length), substrate type and their connectivity with the exterior. In each underground shelter, zones can be distinguished as differing in light, humidity, and temperature that cause microclimate differentiation and determine potential habitat quality. Edible Dormice are considered a thermophilic species that prefers warm daily shelters during their active period. However, information from people exploring underground in both natural and artificial sites, indicates that this species is very common there. Here, we analyzed the data available from scientific and popular journals, speleological periodicals, website resources (such as iNaturalist), speleological websites, and personal contacts. Each find was characterized by the underground parameters: length, depth, location, and average yearly temperature. We identified more than 150 underground shelters, with morphological and thermal diversity, inhabited by this species across its range. These results indicate that underground, despite being a challenging environment, is potentially an important refuge for this arboreal species even during its active period.

## Keywords

*Glis glis*, underground, range, shelter characteristics

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## **Conflicts of interest**