

Population dynamics of cavity-nesting bees and wasps in lime-stone quarries



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Wild bees and wasp often find suitable living conditions within quarries. This is caused by the unique environmental conditions of these habitats with high levels of open soil, a high abundance and richness of flowering plant species, hilly terrain and warm microclimate.

During 2020, we installed trap nests in 20 lime-stone quarries in the surrounding of Göttingen. The use of trap nests is a well-established method to evaluate the abundance and species richness of cavity-nesting bees, wasps and their parasitoids.

With the help of the trap nests, we want to find out how the abundance and richness of cavity-nesting bees, wasps and parasitoids is influenced by local quarry characteristics (e.g. quarry size, quarry age, area of open spoil and shrub land) and the surrounding landscape composition (e.g. land-use types). Possessing trap nests data of the same locations from 1999 and 2019, a comparison between the three years is also of high interest for us.

We are looking for a MSc student who wants to conduct her or his Master Thesis about these trap nests and their inhabitants.

Tasks: Your main responsibility would be the dissection of trap nests. In this process, you need to quantify the number of brood cells and identify bees, wasps and parasitoids based on nest characteristics and cocoons. Afterwards, you should process your data and conduct statistical analyses with R. Optionally; you could help us processing maps with QGIS or ArcGIS.

Requirements: You should have good taxonomic knowledge and good data management skills with Excel. Knowledge of R, QGIS and ArcGIS is an asset. Furthermore, you should be willing to write in English.

The dissection of the nests needs to be done between December 2020 and February 2021. However, it is possible to start earlier with this task. Data processing, statistical analyses and writing can take place between March and Mai 2020.

If you are interested, please contact:

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