

Master thesis project in Conservation Biology of Bats



Forests suitable for Greater Mouse-eared Bat's (*Myotis myotis*) foraging

Bats rely in their life cycle on three core locations: roosts, foraging areas and the inter-connecting corridors, each offering unique approaches for conservation. While roosts of *Myotis myotis* are quite well known and protected in Switzerland, locations of flight corridors and foraging areas are far less established. In this project the foraging areas of Greater Mouse-eared Bats in forests will be targeted.

In an initial step, candidate forests, which are within reach of flight from large colonies of *Myotis myotis* in Switzerland, will be selected in the GIS, based on expert knowledge of expected habitat requirements. Some of these forests will subsequently be tested in a stratified random design for the foraging of *Myotis myotis*. Automated acoustic recorders will be deployed to detect the species' presence. Activity levels of Greater Mouse-eared Bats will then be related to available habitat data, including existing and self-surveyed forestry measures, as well as remote sensing data like LiDAR. The results will finally be used to improve the modeling of forest suitability for foraging Greater Mouse-eared Bats.

The thesis will be part of a larger project of WSL and partners on flight corridors of bats from roosts to foraging areas. The results will lead to an optimized model of such corridors by allowing a more accurate targeting of suitable forests.

The master candidate will investigate forests throughout the summer (2019 or 2020) with standardized ultrasound recorders. Analyses will comprise species identification of the acoustic recordings, GIS investigations on the distribution of the activity and R analyses on the dominant habitat variables. The student should strive for a scientific publication of the thesis' results.

Transport and housing will be compensated for during the field season.

Prerequisites: organizing skills; driving license and experience; willing to travel; experience in english writing; knowledgeable in GIS-techniques and R.

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