

Abstract

Main goal of this thesis was to compare geographical variability of sizes of colonies in the relationship with the type of roost of 6 models of originally cave bats species: Greater mouse-eared bat (*Myotis myotis*), Geoffroy's bat (*Myotis emarginatus*), Common bent-wing bat (*Miniopterus schreibersii*), Greater horseshoe bat (*Rhinolophus ferrumequinum*), Lesser horseshoe bat (*Rhinolophus hipposideros*) a Mediterranean horseshoe bat (*Rhinolophus euryale*). The selected data set was also analyzed the possible influence of the composition of land cover in roosts around the variability of the size of the colonies. Based on compilation of literature and active communication with regional bat-monitoring coordinators, entries about size of colonies from 2 603 locations in 24 countries of Europe were collected. 1 952 entries were from roosts in buildings and 651 from caves.

Based on statistical analysis, conclusive influence of type of roost on size of colonies by *M. schreibersii*, *M. myotis* a *R. hipposideros* was discovered. While in *M. schreibersii* and *M. myotis* are human colonies in smaller buildings, in *R. hipposideros* by contrast, they are larger. Simultaneously, north-west gradient in geographical distribution of maternal bat-colonies in dependence on type of roost (caves vs. buildings): in southern areas significantly dominated roosts in caves, while to the north is increasing roosts in buildings. Also in east-west gradient, unequal distribution of both roosts was apparent. Two of the three selected species (*M. emarginatus*, *R. hipposideros*) failed to show any relationship between the size and the structure of the colony land cover in a nearby roost in a representative sample of data from roosts in buildings from Central Europe. For *M. myotis* has been found significant dependence between the area of forest habitats near the roost, and the size of the colonies. However, the proportion of the explained variability was very small.

Key words: *Myotis myotis*, *Myotis emarginatus*, *Miniopterus schreibersii*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Rhinolophus euryale*, distribution of maternity roost, geographical variability, influence of landscape cover