ABSTRACT

The degree of spatial activity, especially the home-range size, is one of the basic biological characteristics of animals and whether it has enough resources is crucial for the survival and reproduction of the individual. Therefore, it is not surprising that many studies trying to make clear the effect of various ecological and morphological variables and explain the variability of space activities. Bats are a group of mammals, for which until recently, existed only few information about their spatial activity. However, due to the miniaturization of technology and the use of radiotelemetry amount of information rapidly increasing.

The aim of this study was to assemble the most complete information about the home-range size and foraging distance of bats and analyze the effect of variables that can influence the spatial activity. From published papers I collected data on 106 species representing 8 families. The influence of 6 variables (weight, wing loading, aspect ratio, food specialization, colony size, primary productivity of environment) on home-range size and average foraging distance of bat was analysed by phylogenetic regression (PGLS).

The best predictor of the home-range size is the primary productivity of the environment, food specialization and body size. The best explanation of the variability of the average foraging distance is not paradoxically body size, but the wing loading, colony size and net primary productivity of the environment. The study has also shown that carnivorous species of bats have a higher spatial activity than herbivorous and for carnivorous species there is a difference observed between the different foraging strategy. So this work should contribute to a better understanding of spatial activity of bats.

Key words:

spatial activity, Chiroptera, bats, home-range, foraging distance, scaling