HIBERNATING *RHINOLOPHUS FERRUMEQUINUM* IN THE COMARNIC CAVE (ANINA MOUNTAINS, ROMANIA) – EMERGING PATTERNS OF MICROHABITAT CHOICE

PAVEL I. OVIDIU

Faculty of Biology and Geology, „Babeş-Bolyai" University, Gh. Bilaşcu St., No. 44, 400015, Cluj Napoca, Romania; E-mail: pavel.i.ovidiu@gmail.com

Bat activity in the Comarnic Cave has been studied over two hibernation periods and the period between, on seven occasions in total. The data has been analyzed using ArcView, a very efficient method for bat study and for maintaining a database. Observations show that the cave is purely a hibernaculum, being used by 200 to 500 *R. ferrumequinum*, making it an important site. The cave is a reserve, but it is also touristic from May to September. The data gathered showed some recent changes in the occupation of the shelter: the bats have started to use an area much closer to one of the entrances, which, according the little data available, has not been used before. This may be due to the changing of the gate in 2004. The new gate is a solid steel, as opposed to the previous one, which had vertical and horizontal bars. The new gate does not seem to affect bat access to the cave, since there are six more entrances, but the way they are dispersed inside the cave suggests that access is made through that area. Most definitely it has affected air flow and increased the temperature, making it suitable for hibernating bats. Air and rock temperature measurements have been used to create a predictive occupation model for hibernacula, which still needs further work. The optimal temperature zone for this species has been determined by using scatter plots of air and rock temperature and the difference between them. These show the optimal temperature zone to be much narrower than the tolerable one. Interestingly the active part of the cave is seldom used by bats, only the dry fossil part. Probably percolating water and lack of ventilation compensates for a lower humidity. The Comarnic Cave is an important hibernaculum and the first thoroughly studied cave in the Banat region (southwestern Romania), for which there is little data available.