

# PATTERN OF SPATIAL DISTRIBUTION OF HIBERNATING BATS (CHIROPTERA: VESPERTILIONIDAE) DEPENDING ON AIR TEMPERATURE AND HUMIDITY IN ARTIFICIAL CAVES OF SAMARA LUKA

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**Abstract.** This paper explores the features of bat distribution during hibernating in artificial caves of the Samara Bend (in the Samara Region). Data on microclimatic preferences of 7 species of hibernating bats and their tolerance limits in relation to air temperature and humidity in shelters were obtained, mathematical models of the dependence of bat distribution on the above factors were compiled. The study found that the species *Plecotus auritus* (Linnaeus, 1758), *Eptesicus (Cnephaeus) nilssonii* (Keyserling & Blasius, 1839), *Myotis daubentonii* (Kuhl, 1817) and *M. mystacinus* (Kuhl, 1817) have a relatively wide tolerance to the temperature of the shelter, relative stenothermy was found for *M. dasycneme* (Boie, 1825) and slightly less for *M. nattereri* (Kuhl, 1817). The temperature optimum for most bat species is +2...+4 °C. Species that tend to form clusters or occupy internal microshelters are able to endure hibernation in cooler parts of the caves. All the studied bat species are characterized by high tolerance to air humidity values in shelters.

**Keywords:** bats, hibernation, abiotic factors, air humidity, air temperature, microclimate of winter shelters

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