

# SPECIES SPECIFICITY OF BIOTOPIC PREFERENCES AS A FACTOR IN INTERSPECIFIC ISOLATION IN MAMMALS (BY THE EXAMPLE OF GENUS SPERMOPHILUS)

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**Abstract.** *Background.* Biotopical preferences of contact species are the first-level factors of hybridization. They provide the "primary contact" of heterospecifics individuals. All subsequent events depend on the degree of heterospecifics "mixing": whether the contact will be short-term and accidental or the mixed population with a particular spatial structure will form. The research was aimed at studying the species specificity of biotopic preferences as a factor in interspecific isolation by the example of single-species colonies consisting of three members of the genus *Spermophilus* (russet (*Spermophilus major*), yellow (*S. fulvus*) and spotted (*S. suslicus*) ground squirrels) inhabiting the Volga region in the areas of sympatry. *Materials and methods.* Analysis of biotopical preferences of ground squirrels was carried out in 10 model colonies. The geobotanical sites were described using the method of random squares. The discount areas (75×75 m) were laid out for geobotanical descriptions, where the mapping of contours was conducted. The parameters of the environment and the number of holes were defined there. In total 705 holes were recorded, 536 of which belonged to spotted ground squirrel, 129 – to russet ground squirrel, and 40 – to yellow ground squirrel. The preferences in microhabitats demonstrated by ground squirrels were evaluated according to the density of holes per the contour. The coefficient ( $R^S$ ) of Spearman's rank correlation was calculated to determine the influence of these factors on the preferences of ground squirrels in the particular areas of the biotope. The factorial and stepwise discriminant analyses were carried out to define the influence of these factors on the preferences of ground squirrels in the particular areas of the biotope and to highlight the habitat niches of species. *Results.* The analysis of indicators in biotopical preferences of spotted, russet and yellow ground squirrels revealed valid differences. Based on the results of the factor analysis, the indicators used to describe biotopes render the most important properties of the habitat for rodents living in holes in open spaces and are suitable for characterizing the biotopical preferences of the studied ground squirrels in the contact colonies. The ecological niches of the studied ground squirrels obtained in the discriminant analysis are well differentiated by biotopical factors indicating the abundance of forage resources and protection (an overview). *Conclusion.* The characteristics of habitat preferences demonstrated by three hybridized species of ground squirrels allow drawing the general conclusion about species-specific features of the landscape preferences of their colonies. The narrow in the diversity of cereals, but broad in the diversity of herbs habitat niche is common to the spotted ground squirrel. On the contrary, the broad in the diversity of cereals, but narrow in the diversity of steppe herbs habitat niche is common to the yellow squirrel. The broad habitat niche, characterized by almost the entire spectrum of changes in the studied biotopical parameters, was revealed for the russet ground squirrel.

**Key words:** Ground Squirrels, biotopic preferences, environmental factors, interspecific isolation, Volga region.