



**"Rodens & Spatium IV"**

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# ABSTRACTS

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### RESPONSE OF SMALL MAMMAL COMMUNITIES OF THE URALS TO TECHNOGENIC DISTURBANCE

The response of natural animal populations to technogenic alteration of their environment was studied on small mammals under conditions of technogenic dumps. Stony dumps which appeared after dredging in the Urals were to a certain extent analogous to natural stone fields and were characterized by a complex mosaicity of areas with different wetting regimes and degrees of development of the soil - vegetative cover. To obtain comparable data a simultaneous research was made of the dynamics of spatial, age and sex structures of small mammals on experimental plots in the dumps and on control plots in the mountains. Mass marking of rodents has shown that the main population in the stone fields was represented by Clethrionomys rufocanus and Clethrionomys rutilus (i.e.  $\frac{3}{4}$  in all catches were Clethrionomys rufocanus (25:34) and Clethrionomys rutilus (41:54); 45.5 % of the recorded marked animals being Clethrionomys rufocanus (5 : 11) and 72.7 % (16:22) - Clethrionomys rutilus ). Small mammals settled in the stone fields regularly dispersed and actively moved in habitats outside the stone fields. Another pattern of spatial distribution was observed in the dumps: their residents formed local groupings restricted to vegetation community fragments. Low capacity of lands did not permit the animals using the whole territory on the dumps. Travellings in the dumps were restricted and did not exceed 200-300 m, there was no any distinct territories where the animals concentrated. This evidenced of the more local and intensive usage of the dumps area compared to the natural stone fields. Such changes in spatial organization result from the anthropogenic alteration on the natural biogeocoenotic structure. The average population density was very low in the dumps, within the limits of the settlements it was much higher. Lack of the reserve space in the dumps caused the involvement of density- regulating mechanisms which restricted breeding of the resident inhabitants and penetration of potential competitors for food. Thus, technogenic alteration of the environment resulted in formation of local, relatively autonomic spatial groupings in natural populattions of rodents. Research into the mammal fauna in technogenic areas in the Urals has revealed their occupation basically by wide-spread and ecologically plastic species. Thus, Microtus arvalis was found on 12 various technogenic plots predominated in catches in dredging- and coal-mine dumps and industrial fills. Appearance of other mammals on the dumps was limited by a poor food base, shortage of shelter and stations suitable for life.