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STUDY OF THE POPULATION OF MESOPHILIC RODENT SPECIES IN THE ARAL SEA REGION

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Abstract. *The article presents the results of the study of the dynamics of the ecological structure of the populations of small mammalian mesophyll species in the conditions of the Southern Aral Sea. Small mammals serve as bio-indicators in the study. Environmental conditions in the example of small mammals, natural ecosystems are traditionally and widely used as model objects.*

Keywords: *Southern Aral Sea, population, small mammals, ecology*

ИЗУЧЕНИЕ НАСЕЛЕНИЯ МЕЗОФИЛЬНЫХ ВИДОВ ГРЫЗУНОВ ПРИАРАЛЬЯ

Аннотация. *В статье представлены результаты изучения динамики экологической структуры популяций мезофильных видов мелких млекопитающих в условиях Южного Аральского моря. Мелкие млекопитающие служат биоиндикаторами в исследовании. Условия среды на примере мелких млекопитающих, природные экосистемы традиционно и широко используются в качестве модельных объектов.*

Ключевые слова: *Южное Аральское море, популяция, мелкие млекопитающие, экология.*

INTRODUCTION

In the study of terrestrial vertebrate populations, small mammals are one of the most widely used objects in environmental research [2]. Small mammals have a clear response to natural and anthropogenic changes due to their abundance, species diversity, and environmental variability, so it is very prudent to use them to identify and evaluate changes that occur naturally in natural communities. The formation and dynamics of community diversity still remains one of the most controversial issues [1, 5].

MATERIALS AND METHODS

One of the most important factors in shaping the diversity of animal communities is the spatial heterogeneity of the environment. Small mammals are important ingredients. Natural ecosystems have traditionally been widely used as model objects. In zoological and ecological research, including anthropogenic changes in landscapes, the problems also affect the population composition and population dynamics of small fauna representatives. When analyzing the biotypic advantages of small mammals in the conditions of the Southern Aral Sea, it should be noted that the largest number of species is associated with a combination of "open-dry": primarily due to the large number of desert species. In the second place is the combination of “semi-open-dry” and “semi-open-wet” associated with eco-tones and therefore rich in species diversity. The minimum number of mammal species is characterized by the lowest heat supply (e.g., muskrat), limited by biotypes with a combination of ‘closed-humid’ environmental conditions [2, 4].

RESULTS

The fauna of rodents in the Southern Aral Sea: is represented by 28 species belonging to 6 families 21 in general. Mesophyll species in the Southern Aral Sea: Sand mouse (Meriones Tamariscinus), Muskrat (Ondatra Zibethica), Marsh pole (Microtus Ilaeus). Muskrats occupy the southern shores of the Aral Sea and the waters of the Amudarya [1, 3].

In recent years, there have been significant changes in the structure, diversity, and abundance of the small mammal community in various biotypes of the Southern Aral Sea region, leading to an increase in the zonal contrast of the small mammal population. Under the influence of desertification, increased land use and other adverse factors, the range and distribution of mesophyll species are declining sharply. Intensive changes and assimilation of the Aral Sea ecosystem under the influence of anthropogenic pressure have led to a reduction in the habitats of all rodents [2, 4, 5].

DISCUSSION

The distribution, abundance, and species composition of small mammals have changed, and the proportion of rare and endangered species that are vulnerable to anthropogenic influences, mainly mesophylls and narrow-range species, has increased. Depending on the reaction of some rodent species to anthropogenic pressure and their adaptation to the agricultural landscape, they can be divided into two groups: The first group includes immigrants from the tugai-flood complex. The mosaic nature of biotypes as a result of anthropogenic changes in the landscape due to nature conservation, the number of certain species of rodents (Microtus Ilaeus), Grebenshchikovaya peschanka (Meriones Tamariscinus), Muskrat ondatra (Ondatra Zibethica) and the anthropogenic density of tropical connections and rodent populations is minimal [3, 5].

CONCLUSIONS

Different rodent species have unequal levels of binding to anthropogenic complexes. The sum of natural processes in the Aral Sea region cannot be described as an accelerating anthropogenic desertification. It really exists, its area has been growing over the years, and environmental problems are waiting to be solved based on the desertification observed in it. We need to preserve plant and animal populations adapted to this region and not allow its dynamics to decline.

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