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Dynamics of biodiversity of terrestrial vertebrate animals in the Lena river basin (NE Eurasia)

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Abstract

The fauna of terrestrial vertebrate animals in the Lena river basin was thoroughly studied in the 19-21st centuries (Malk, 1886; Bunge, 1883; Hall, 1903; Ivanov, 1927; Tugarinov and et al, 1934; Naumov and et al, 1956, 1960, 1967; Vorobiov, 1963; Tavrovsky and et al, 1971; Solomonov, 1973). Basing on the analytical review of literature data and proper materials gathered over the last 50 years we have established that over the recent 100-150 years there was a serious variation in the qualitative and quantitative fauna composition of the land vertebrate animals. First of all these are movements of new species northward because of the climatic changes and anthropogenic impact and area expansion of earlier inhabiting species. Conversely, because of the negative influence of human activity there is reduction in the number and in some cases even complete disappearance of the indigenous species. The paper brings materials about current trends evidencing the change in biodiversity and the role of climate warming and human activity in these processes. Instrument measurements of the air temperature in Yakutsk over the last 180 years indicate an essential increase in the mean annual (by 2.5^0C) and mean January (by 7.5^0C) air temperatures. The climate warming and intensive agricultural development and urbanization of the region cause the area extension and increase in abundance of agricultural and forest pests as well as dominant bird and mammal species which are keepers and carriers of hazardous infections.