

purity of the air we breathe and consequently decrease the anthropogenic pressure on our health.

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## **DIFFERENTIATION OF GULLS HABITAT CONDITIONS IN THE URBAN ENVIRONMENT OF MINSK**

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Study of fauna and population of urban landscapes is the actual trend of current environmental research. Especially actively studied avifauna major Western European and Russian cities (Yudin, Firsov, 2002). To date considerable data on the fauna and population of birds in urban areas is gained. However, until recently, it was not so much work, exploring gulls in Belarus (Nikiforov, Shklyarov, 1979).

The proposed work is the first attempt in the relative assessing of qualitative and quantitative composition of the gulls in the urban landscapes of the city Minsk.

The main objective of the work is ecological and faunal study gulls of large city on an example of Minsk.

The studies were conducted from September 2014 till October 2016.

The object of the study were gulls – birds living in the district of river the Svisloch river (within city limits).

Species composition of birds was determined visually according to standard diagnostic features (Peterson, 1985).

For investigating the influence of environmental factors on the structure of communities of waterbirds of Minsk it were being identified the following characteristics of reservoirs: reservoir area, water surface area, the area of the islands surface vegetation. These parameters were determined both visually and with using satellite images in the program OziExplorer v. 3.95.5 n.

We have found that species diversity of the communities of waterbirds in the waters of Minsk in the summer had low levels and ranged from  $H' = 0,91 \pm 0,04$  at the Svisloch river and up to  $H' = 1,3 \pm 0,05$  on Tsnyanskoe Reservoir.

In all water bodies of Minsk in summer sharing of black-headed gull and common gull higher (by 20% on the river Svisloch and 60% for Chizhovskoe Reservoir.) than the herring gull, caspian gull and lesser black-backed gull (from 0.3% for the Svisloch river to 7.6% on Chizhovskoe Reservoir.). Consistently high total density of birds wetland complex observed on the river Svisloch in all seasons. In the structure of bird communities the major share of the total bird abundance accounted for Mallard, which ranges from 63.4% in autumn to 91.9% in winter. As for the gulls, the share of blue-gray and black-headed gulls increased from summer to winter – from 8.8% in the summer to 10.4% in the autumn and of 8.3% in summer to 18.7% in the spring respectively. Their differences are determined by the presence of local features related to environmental habitat conditions: degree of overgrowing of coastal aquatic vegetation, anthropogenic load on the coastal zone

of the river bed and a cascade of reservoirs, rich habitats and other favorable living conditions in urban areas is enhance the ecological capacity of the species and groups of species of gulls as a whole. The main factors influencing the difference in the structure of communities of waterbirds reservoirs during the summer period, which includes gulls bird is overgrowing of coast with vegetation on the perimeter, which should be 0.20.

Thus, the analysis of the impact of environmental factors on the difference communities of waterbirds of Minsk showed that the ponds favorable for habitat of gulls are reservoirs: Chizhovskoe, Tsnianskoe and Drozdy.

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## **USE OF HERPETOLOGICAL DATA FOR RECONSTRUCTION OF ENVIRONMENTAL CONDITIONS**

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During the Quaternary period recurrent coming of glaciers from Scandinavia to the East European Plain forced animals that were living there to migrate as temperatures were decreasing and natural zones were changing. It influenced on all species, but especially – on ectothermic (cold-blooded), which include reptiles and amphibians. In addition to the disappearance of herpetofauna directly from areas covered by glaciers, the number and diversity of species varied considerably in periglacial zone too. But, if small mammals used to form specific complexes that are not typical for nowadays and help to identify the climatic conditions of their existence, for amphibians and reptiles only the degree of diversity distinguishes assemblages from different climatic periods.

However, herpetological information can be very useful for biostratigraphy. At first, the presence of representatives of the cold-blooded animals in sediments suggests the absence of ice cover in the area. Secondly, the change of forest associations in the forest-steppe and steppe, under the current forest area, may indicate a climate aridization as a result of proximation of climatic conditions to glacial. Also, some types of amphibians that have shown changes in their areas of distribution in the past may be used to determine regional stratigraphic age, but only relatively large intervals. Nevertheless, each case within the history of the area should be examined carefully.

There are different approaches to reconstruction of paleogeographic and paleoclimatic conditions according to the data of research of herpetofauna. European method relies only on the composition of species in the burials, not taking into account the number of specimen or the taphonomy of a location. This approach may lead to wrong conclusions, which can be avoided if you take into account the proportion of species belonging to different ecological types. Considering this aspect, we can talk about the predominance of certain habitats, and therefore - about exist-