

Abstract. The inventory of flora objects on the territory of JSC "Keramin" has been carried out. Species of flora objects have been identified. The main types of plantings have been identified and schematic maps with the application of all identified flora objects have been drawn.

Ryshkel I., Murashko U.

*International Sakharov Environmental Institute of Belarusian State University,
Minsk, Republic of Belarus*

COMPARATIVE ANALYSIS OF ENVIRONMENTAL POLLUTION BIOINDICATION METHODS

Nowadays environment is in a state of ecological crisis. It is closely connected with current human activity. Since the highly developed industrial society appeared man's hazardous interference into nature has increased significantly, it has become diverse and today it threatens to become a global danger for humanity. Various methods of air pollution monitoring are used, including methods based on bioindication.

Bioindication is a method of assessment of geophysical environment pollution using plants and living organisms, bioindicators. Plants are an important element of biological monitoring as they react acutely to the state of environment.

One of bioindication method is lichen indication method, which is a method of the assessment of atmosphere pollution using lichen research, and the scots pine needles bioindication method, which is a research for pine needles damage.

To conduct the following research two sample areas of the Pinsk forestry were chosen. After the identification of the lichen species of the sample area and the assessment of each species proportion of the sample total area, we made a calculation of average frequency and cover for each lichen species. We compared the lichen bioindication method research results and on the basis of relative atmosphere purity data it was found out that the atmosphere in Pinsk region (sample area № 1) ranks a bit below in its quality than sample area № 2 in the countryside (mixed forest site near Sokolovka village, Minsk region)

In the reference areas where relative atmosphere purity was assessed with the help of lichens, we evaluated the degree of damage to the scots pine needles.

After analysis of the obtained results, it can be stated with certainty that scots pines growing in the area №1 are under heavy anthropogenic pressure, which reflects on the condition of pines. In the area № 2 only 12% needles have noncritical spots, whereas in the area №1 this figure is 57, 5%, which is five times more.

Both methods deserve attention, but in our research, atmosphere state estimation based on the pine needles condition proved its worth as a more sensitive method, since the difference in the two discount areas was more distinct.

Information obtained in the result of research using these methods allows to indicate the level of atmospheric contamination. In its turn it can help us control the

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

Sachnyouk A., Kishkurno D., Khandohiy A.
Belarusian State University, Minsk, Republic of Belarus

DIFFERENTIATION OF GULLS HABITAT CONDITIONS IN THE URBAN ENVIRONMENT OF MINSK

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