

In order to ensure environmental safety, the calculation of exceeding the limit values of concentrations of emissions of pollutants in atmospheric air is made in accordance with paragraph 10 of environmental norms and rules of the EcoNaR January 17, 2006-001-2017 "Environmental protection and nature management. Environmental safety requirements" approved by the Decree of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus July 18, 2017 No. 5-T. The instruction on the procedure for establishing standards for permissible emissions of pollutants into the air determines the procedure for establishing standards (temporary standards) of permissible emissions of pollutants into the air, and also determines the composition and content of the project (project adjustment) of standards for permissible emissions of pollutants into the air.

The main goal of creating an automated system is to increase the efficiency of the work of design organizations and employees of the state environmental expertise, to simplify public access to relevant environmental information. Efficiency is expressed in reducing the time for preparing project documentation, systematizing the work of state environmental expertise experts to verify incoming documentation, and visual presentation of the results.

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COMPARATIVE ECOLOGICAL ANALYSIS OF THE AVIFAUNA OF THE PARKS OF THE CITY OF MINSK

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The paper presents data on population density, species richness, biodiversity of avifauna and the dominance of certain species of birds in the Park complexes of the city of Minsk. It is established that the most favorable place for bird habitat is the territory of the Park "Drozd". Less preferred bird habitat is the Park of the 50th anniversary of the Great October revolution.

Keywords: avifauna, biodiversity, population density, dominance

The study of birds is an important part of the study of the diversity of living organisms in any territory. Due to the high species diversity and abundance of birds can be considered good indicators of the environment, the changes of which have recently become increasingly negative. This is especially true of the environment of large cities with dense residential buildings in which the majority of environmental regimes change significantly. Therefore, an important task is to preserve any parts of the city close to natural complexes. Such complexes in the cities are parks. They are characteristic urban habitats where a complex of birds of different ecological groups adapted to urban conditions is formed. Therefore, urban parks play a major role in preserving the species diversity of the avifauna [1].

The purpose of this work is to study ecological characteristics of the avifauna of the parks of Minsk.

Place research – Park named "Chelyuskintsev" together with the Botanical garden; Park named 50th anniversary Of the great October revolution; Loshitsa estate and Park complex; nature monument of national importance "Dubrava"; forest Park "Medvezhino"; Park "Drozd".

During the research it was revealed that 61 species of birds live in the territories of Park complexes of Minsk in summer. The greatest species diversity is the Park "Drozd" – 41 species, followed by the Botanical garden and Park. "Chelyuskin" – 36, Loshitsa Park – 36, Dubrava – 34. Relatively limited species composition was observed in the forest Park "Medvezhino" – 24 species and in the Park of the 50th anniversary of the great October-20 species.

The highest total population density of birds was observed in the Park of Drozd – 443.94 ind/ha, therefore, in this area birds found the most comfortable place to live. The lowest density is observed in the Park of the 50th anniversary of the Great October-83.02 ind/ha, which indicates the lack of environmental conditions for nesting and finding food for birds.

The Shannon index was used in the analysis of bird communities to characterize the diversity and uniformity of the community [2]. The largest value of the Shannon index is Loshitsa estate and Park complex and is 3.27. This means that in this Park the community of avifauna is more diverse and the number of bird species, its components are more aligned. Therefore, this area is the most favorable for the habitat of birds. The lowest value of the index is fixed in the Park named after the 50th anniversary of the Great October-2.49. Therefore, species diversity is of the least importance.

To get a complete picture of the studied community it is necessary to have an idea not only about the species diversity, but also about the degree of dominance. The Berger-Parker index was calculated for this purpose [2]. The dominance of one of the most abundant species is observed in the Park. "Chelyuskintsev" and the Botanical garden (Finch), as well as in the Park named after the 50th anniversary of the great October (great tit). The index is 7.24 and 7.35, respectively. The natural monument "Grove" index made up of 9.65, in the Park "Medvezhino" of 10.25. This means that in these areas there is also the dominance of one species, but it is significantly weaker than in Chelyuskintsev Park and Botanical garden.

Thus, it is established that the biodiversity of birds indicates the environmental conditions of their habitats. So the most favorable place for bird habitat is the Park "Thrushes" (the greatest species diversity and population density of birds). It is located on the outskirts of the capital, anthropogenic and technogenic loads are minimal. Less attractive place for bird life is the Park named after the 50th anniversary of the great October (small species diversity and population density of birds). This area is subject to a large man-made load, as it is located within the industrial district of the city. It can also be concluded that parks play a role in the conservation of bird biodiversity in cities where natural conditions are almost gone.

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SOURCES OF HEAVY METAL INCREASE IN SOILS IN THE TERRITORY OF BREST REGION

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According to FAO, WHO, UNEP, currently heavy metals occupy one of the first places in terms of the level of danger, ahead of such dangerous environmental pollutants as pesticides, carbon dioxide, sulfur compounds, nuclear waste and solid waste. These pollutants are the most dangerous in terms of rates and volumes of release into the environment.

Keywords: sources of pollution, heavy metals, soils.

Currently among heavy metals, Pb, Cd, Zn, Hg, As, Cu are considered to be the priority pollutants. their accumulation in the environment is very fast. The content of various elements in soils is significantly influenced by the atmosphere, when contamination of TM from the atmosphere, the distance on which the soils from the primary source of pollution are important plays an important role. As you move away from it, the intensity of soil contamination decreases, but at the same time the area exposed to pollution increases. Soil contaminants, carried by air, arise not only in the course of human activities, but also in connection with a number of natural factors.

The main sources of airborne contaminants TM in Brest region: