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RESTRUCTURING OF THE BIRD RESERVE "LEBYAZHIY" UNDER ANTHROPOGENIC TRANSFORMATION

Environmental problems of the urban environment, disturbing millions of people today. In recent years, this concept includes not only nature, but also the urban environment (Dolbik, MS, 1974). The purpose of research - to assess the current impact of urban development on the avifauna of the reserve "Lebyazhiy". The scientific novelty of this work lies in the fact that for the first time in reserve "Lebyazhiy" was studied modern species composition and structure of bird population, distribution patterns on habitats depending on their properties and human activities with complex investigations.

The place of research was a republican reserve "Lebyazhiy". This is a unique, virtually transformed area located in the city of Minsk. Also, in recent years this reserve has increased the anthropogenic influence dramatically, and the strain with it.

Reserve "Lebyazhiy" is located in the floodplain area of the Svisloch River, in the south of Market "Lebyazhiy" and in the west of the reservoir «Drozdy». Natural, there are no areas free from human impact on the ecosystem adjacent to the reservoir. All of it more or less susceptible to mechanical stress (trampling, fireplace, fires, logging, etc.), or through environmental contamination by harmful substances in the air basin, soil or water (aided by road). Noticeable influence of a large city Minsk which only intensified in recent years (Khandogiy, 2005).

The material for the writing of this work served as research data for 2014–2016 years spent in the reserve "Lebyazhiy". The account number was performed using the routing method in the period of greatest activity of birds. Comparison of data from different years of observations was carried out with the help of statistical methods (the methods of descriptive statistics, Wilcoxon test).

Model species was carried out accounting for the analysis, divided into 4 categories, according to environmental groups: wetlands, open landscapes, synanthropic and forest. We have compared the total number of species in a particular ecological group, as well as changes in the number of model species in the period of 2014–2016 years.

The results showed (by Wilcoxon test), that between the data obtained in 2014, 2015 and 2016, there are statistically significant differences (for environmental groups: 2014–2015, $p = 0.0144128$, 2014–2016, $p = 0.0128455$; 2015–2016, $p = 0.0715001$; for the number of model types: 2014–2015, $p = 0.0379472$, 2014–2015, $p = 0.0068681$, 2015–2016, $p = 0.0084380$).

Thus, it was found that increasing the load on the human landscape reduces the number of different species of birds of various environmental groups. Also an in-

creasing number of anthropogenic species of birds is an additional threat to the rare and protected species.

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ANALYSIS OF SURFACE WATER QUALITY IN THE CONTEXT OF ENVIRONMENTAL LAW OF THE REPUBLIC OF BELARUS

Nowadays Belarus has the problem of pollution of surface water nitrogen and phosphorus compounds, which are formed by the decomposition of organic substances. The compounds can get into water areas with domestic, industrial and agricultural effluents, as well as a result of fertilizer runoff from fields. According to the service of the National Environmental Monitoring Environmental control center environment, exceeding the standards for nitrogen and phosphorus compounds noted in 18% of samples of water of natural water bodies. It is fixed that in 2009 - 2010 in areas where fertilizer and pesticides used intensive, groundwater heavily polluted by nitrates, so drinking water from 11% of wells in rural areas is dangerous for consumption. In regions where water abstraction for the needs of the population is carried out with surface water, very high risk of contracting viral infections (such as from Vilejka reservoir.) Despite of infection diseases, toxic metals are found in surface waters as a result of the uncontrolled discharge into rivers and lakes industrial and agricultural wastes. In this connection, the concentration of heavy metals exceeds the permissible limits many times.

The most contaminated areas of rivers in Belarus Svisloch below Minsk, Gomel region in the Ouse, below Usha Molodechno, Zapadnaya Dvina in the Polotsk region, Novopolotsk and Verkhnedvinsk, Yaselda following Birch, Pripyat below Pinsk, the Zapadny Bug at Brest and Mukhavets about Kobrin. It was found that out of the total volume discharged into the sewage waters, about 70% passed through water treatment plants, and the rest, regardless of value-added, into rivers and lakes without treatment. In addition, built 25–30 years ago, wastewater treatment plants, operating with outdated technology, based on the removal of wastewater easily oxidized organic matter and suspended solids. Those present in the effluent nutrients (nitrogen and phosphorus) with the help of these older buildings cannot be recycled. Therefore, a key focus of the protection of surface waters in the reservoirs of the country should be recognized as improving treatment technology of wastewater discharged while reducing their volumes. Without a radical reconstruction of existing and construction of new sewage treatment plants with denitrification and defosfatirovaniya technology, it is impossible to achieve the required level of wastewater treatment.

The solution to this problem lies in strict compliance with Articles 71,72, 84, 96, 98, 99 of the Water Code of the Republic of Belarus, including articles