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ENVIRONMENTAL MONITORING OF WATER PONDS

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***Abstract:** The importance of environmental monitoring of water ponds and the study of some physical and hydro-chemical indicators of water quality and their seasonal changes in a number of ponds in the north of Moscow.*

***Key words**: environmental monitoring, ponds, temperature, dissolved oxygen, water quality.*

The state of the biosphere changes under the influence of natural causes and under the influence of human activity. Natural changes in the state of the biosphere occur near the initial state; changes in temperature, pressure, air humidity, seasonal changes in the biomass of vegetation and animals are examples that illustrate such changes[1].Among the measures to stabilize and further improve the environmental situation in Russia, a special place is given to the formation of an environmental monitoring system, the main task of which is information support and support for decision-making procedures in the field of environmental protection and environmental safety [2].The aquatic flora and fauna are affected by such indicators as the depth of the reservoir, flow rate, acid-base properties of water, turbidity, oxygen and temperature conditions, the amount of dissolved organic matter, nitrogen and phosphorus compounds, and many others. All these parameters are influenced by both anthropogenic load and natural processes occurring in water bodies [3]. The objects for assessing the state of

freshwater ecosystems on the basis of assessing their ecological well-being or disadvantage are water, bottom sediments, communities of aquatic organisms of representatives of the main trophic levels of the aquatic ecosystem. For the assessment, a set of indicators is used, consisting of four groups: physicochemical, hydrobiological, microbiological and toxicological (biotest). For each group, assessment characteristics and parameters are established, ranked for standing relative to satisfactory, environmental emergency and environmental disaster. The assessment is carried out on the basis of data for at least one year of observation [4].

As an example of environmental monitoring of water bodies, the study is currently being conducted on five ponds located in the northern part of Moscow: Big Garden Pond, Farm Ponds RGAU-MSHA (Lower Pond- Middle Pond), Golovinsky Pond (Big Pond - Small Pond).

Environmental monitoring of ponds is carried out quarterly by taking water samples at several points of the pond (5-7) points, and at each point on three vertical levels. In the laboratory, they are kept in appropriate conditions, and then analyzes are performed for some of the physical and hydrochemical indicators commonly used in water quality analyzes. Among these indicators are temperature, pH, dissolved oxygen, nitrite, ammonia, chloride, iron, and copper.

According to the results of the analyzes and some previous studies, we have noted that

Water temperature and dynamics of its changes are the most important environmental factor for all inhabitants of water bodies. After all, temperature directly affects aquatic organisms and regulates the rate of life processes. A decrease in oxygen solubility with an increase in water temperature abnormally hot weather in summer leads to the appearance of extensive zones of hypoxia in the hypolimnion of the reservoir, which negatively affect the quality of water in it Because the metabolism rates of aquatic plants increase with the rise in water temperature, and thus the increase in their biochemical demand for oxygen, low levels of dissolved oxygen leave aquatic organisms in a weak physical condition and are more susceptible to disease, parasites and other pollutants. pH is most important in determining the corrosive nature of water. Lower the pH value higher is the corrosive nature of water. The reduced rate of photosynthetic activity and the assimilation of carbon dioxide and bicarbonates are ultimately responsible for increased pH, the low PH values coincided with high temperature during the summer months. The results of the analyzes of some elements, such as nitrite and ammonia, also showed their presence in concentrations within the permissible limits in most points, and they exceeded the permissible limits in a few points, and this changes from one season to another or from one pool to another, noting that the concentrations of these elements increase with the increase in human loads, such as pollution on the water body.

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