

ENVIRONMENTAL QUALITY ASSESSMENT INDICATORS AND THEIR SIGNIFICANCE

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ПОКАЗАТЕЛИ ОЦЕНКИ КАЧЕСТВА ОКРУЖАЮЩЕЙ СРЕДЫ И ИХ ЗНАЧЕНИЕ.

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Annotation. This article provides information on the types of indicator organisms that assess the quality of the environment in nature and the mechanisms for assessing the quality of the environment.

Keywords. Organisms, species, environment, ecology, ecosystem, environmental policy, indicator organisms, biodiversity, algae, water pollution, water bodies.

Аннотация. В данной статье представлена информация о типах организмов-индикаторов, оценивающих качество окружающей среды в природе, и механизмах оценки качества окружающей среды.

Ключевые слова. Организмы, виды, окружающая среда, экология, экосистема, экологическая политика, индикаторные организмы, биоразнообразие, водоросли, загрязнение воды, водные объекты.

Introduction. Today, the influence of the population on the geographical environment has increased so much that the initial natural state of the atmosphere, hydrosphere, biosphere, and lithosphere has changed somewhat. If the atmosphere, soil, and water are not kept clean, soil can be subjected to erosion, the number of plant and

animal species may decrease, which can lead to damage to the national economy and negatively affect human health. The main sources of pollution of the republic's industry are factories and plants, the mining industry, utilities, transport, and agriculture.

Research methods. The word "indicator" comes from the Latin word "indicare," which means "to show, to mark." The word indicator is usually used as a means or sign indicating the state or change of something. This word is often used in science, technology, economics, and other fields. In the field of science, indicators are used to observe chemical reactions or biological processes.

An ecological indicator is the formation of flora or fauna organisms that provide information about the state of living organisms growing in the desired environment. To improve environmental monitoring, the Committee for Nature Protection of the Republic of Uzbekistan has developed a system of environmental indicators that quickly reveals environmental impacts. The legal basis of the Environmental Indicators System (EIS) is the Law "On Environmental Protection," approved by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated April 3, 2002, N-1. According to available environmental data in the republic and international experts, 91 emissions from Warsaw and Sapporo into the atmosphere are in Uzbekistan, while 22 indicators are for wastewater pollution. Since the species of plants growing in nature are diverse, the degree of their exposure to these harmful substances also varies. Some are affected by even a small amount of sulfur dioxide, and the increase in the amount of harmful gases in the atmosphere can be detected by observing highly sensitive plants. Among lower plants, lichens belong to the category of organisms that are easily exposed to polluted atmospheres; first their clustered species, then their leafy species, and then the lichens themselves die completely.

Result of scientific work. The main goal of studying indicator organisms that determine the ecological state of the environment is to assess the health of the ecosystem and the ecological state. Such indicator organisms are used to identify various plant, animal, or microorganisms that are usually used as biological indicators, changes in the environment, pollution, or other negative factors.

Aquatic ecology: Water pollution and its impact (e.g., fish, plants). Air quality measurement: (Monitoring of air pollution by plants and lichens). Contaminated lands: (determining soil quality through rainfall and bacteria).

Trout (*salmo trutta* and other types of fish) is one of the indicator fish, as it helps determine the ecological state of water and the purity of water resources. The indicator properties of trout are as follows. The trout is very sensitive to oxygen and cannot survive in water with low oxygen levels. Therefore, their presence or absence indicates sufficient oxygen in the water. Trout fish live in cold water, and the temperature for their survival is around 10-15°C. Trout prefer clean and unpolluted water. If there is a high level of pollution in the water, their population will decrease or disappear altogether. These fish are sensitive to chemicals in the water (such as pesticides, heavy metals) and are used as indicators to indicate water pollution.

Lichens are used to detect air pollution, especially the presence of acids and harmful gases. They change when the amount of acid in the air increases. Therefore, they are a good indicator for monitoring air pollution.

Some birds, such as waterfowl, are sensitive to changes in terrestrial or aquatic ecosystems, and their numbers and species help them understand the state of the environment. Changed migration or housing habits indicate changes in mortality rates.

The saltwort plant (that is, the genus *salsola*) is adapted to many ecological conditions and is used as an important indicator for agricultural crops. The Solyanka plant grows mainly in saline and saline soils. Therefore, it shows the state of soil in saline and salty environments. If the saltwort plant is developing well, this indicates a high salinity or salt content in the soil.

Festula avina (also called desert grass) This plant is often found in areas with low moisture levels in dry, poorly nutrient-rich soils.

Conclusion. Indicator organisms that determine the ecological state of the environment, namely plants, animals, and microorganisms, play a crucial role in monitoring changes and pollution in the ecological system. They effectively assist in assessing the health and sustainability of the environment. It is extremely important to

maintain the cleanliness of natural water bodies, recognizing their important role in human life. Everyone should contribute to keeping it clean, and for this, it is necessary to explain to our children from an early age that they love nature and must keep it clean and pure, and that environmental pollution and water pollution lead to negative consequences for us. Therefore, let's protect and cherish nature!

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