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## PROBLEMS OF BIODIVERSITY AND MEASURES FOR ITS CONSERVATION

<sup>1</sup> **Urinova Adolat Abdivasievna,**

PhD, Head of the Biodiversity Conservation Laboratory,  
Research Institute of the Environment and Nature Protection Technologies

<sup>2</sup> **Sobirov Faridun Shavkatovich,**

Samarkand State University named after Sharof Rashidov

**Abstract.** *Not only in the world, but also in our country, existing species in nature are decreasing. To date, the processes of biodiversity reduction have reached record levels. The level of productivity in our lands is sharply decreasing. More than a million species of flora and fauna around the world are at risk of extinction. Humanity is faced with new biological threats. The article provides information about the attention to biodiversity conservation in Uzbekistan and the biodiversity conservation measures implemented today.*

**Keywords.** *Biodiversity, ecology, flora, fauna, nature, biosphere.*

Biodiversity includes all existing species of life and natural systems on our planet. It is not a static concept, but interdependence and interdependence of all biological parts existing in nature. Different levels of this concept are distinguished in scientific sources: biological diversity of species, genetic diversity and diversity of ecological systems. These levels together make up biodiversity. Therefore, conservation of each of these levels is essential to the conservation of biodiversity as a whole.

**Introduction.** Humanity lives in the living part of our planet, i.e. "biosphere". The biosphere is a very vast structure, and because of the richness of its various biological components, it is very stable in terms of sustaining life. The biosphere can withstand external influences only because of the wealth of living things.

As the diversity of life on Earth decreases, the resistance of the biosphere to external influences decreases. The greater the biodiversity, the higher the chances of our planet's long-term survival. Biodiversity that we see today is the result and product of a complex evolutionary process that took place over hundreds of millions of years

as a result of external and internal natural processes on Earth. In recent years, as a result of increased anthropogenic (as well as man-made) influence on nature, ecological changes and the reduction of the area occupied by forests (especially humid tropical forests) due to deforestation, biodiversity has been damaged, many plant and animal species have completely disappeared or their numbers have decreased dramatically. .

Biodiversity means preserving the life resources of our planet. Biodiversity is an important source of economic, aesthetic, health and cultural well-being of the people in our region. But the fact that biological diversity is shrinking all over the world, such as the disappearance of unique genes, species and ecological systems, affects our country as well. One of the main reasons for this is anthropogenic factors. In the last 100 years, mankind has created such conditions that the number of species that have become extinct at this time is more than the number of species that have become extinct in the entire history since the time of the dinosaurs 65 million years ago.

If the current rate of reduction of biological diversity on our planet is maintained, half of the world's species will die in less than 100 years as a result of human efforts to destroy natural habitats, pollution, and climate change.

For example, over the past 40 years, fishing has increased from 20 million tons to 135 million tons per year. 75% of fish stocks have disappeared. Nevertheless, fish is part of the diet of every fifth person living on Earth.

We can say that the main factors of human impact on biodiversity are the growing consumption of bioresources, human production, agriculture, and the expansion of human settlements.

In the process of producing benefits for human life and existence, all people should strive to find ways not to harm biodiversity and preserve it for future generations.

According to the United Nations, while the Earth's population is increasing rapidly, the animal world is decreasing by 3/1.

In particular, 21 percent of mammals, 30 percent of reptiles, 12 percent of birds, 17 percent of sharks, and 27 percent of corals may disappear from the Earth. Especially in Europe, the number of birds in agricultural areas has decreased by 40% due to industrial development, and the number of seabirds has decreased by 44% due to climate change.

According to these data, biodiversity is decreasing at an unprecedented rate, and the rate of loss of plant and animal species is extremely high.

The reasons for this are the deterioration of the natural environment, the disappearance and shrinking of the Amazonian forests, the decrease in the volume of fresh water in the lakes, the loss of the natural habitat of organisms, and the destruction of the coral reef ecosystem.

Global climate change is considered to be one of the major environmental threats. Climate change will not fail to affect the diversity of species in many ecosystems. Fishing (about 100 million tons per year), continuous cutting of forests and extinction of various plant and animal species is higher than the capacity of species reproduction and population recovery. This situation will eventually lead to the extinction of the species altogether. Due to the process of "deforestation" occurring as a result of anthropogenic influence, only from 1990 to 1995, 65 million square meters of the Earth's surface were lost. hectare (ha) of forest has completely disappeared.

According to UNEP, a specialized organization of the United Nations, during the period of 1995-2005, the area of forests was 13 million per year. decreased to According to experts, 11.1 million ha of tropical forest are being cut down every year (21 ha every minute).

In particular, humid tropical forests are a complex natural complex that is the habitat and habitat of millions of plant and animal species. Earth's climate depends on these forests, and their continuous cutting down leads to an increase in the amount of carbon dioxide in the atmosphere and creates a "greenhouse effect". Forests play an important role in the cycle of water and carbon.

Forests are the main element of the infrastructure of the ecological system, which determines the conditions of people's life and activities. The well-being of more than 1 billion people depends on forest goods and services. Forests are a natural system that provides unique ecological services and are the habitat and environment of 80 percent of terrestrial biological species. This, in turn, ensures the stability of agriculture, health and other sectors related to flora and fauna. The main reason for the high rate of cutting and degradation of forests observed in the present period is due to the high demand for wood products and the use of forest areas for farming and animal husbandry needs. Forest fires are another anthropogenic factor that destroys forests. Fires have a devastating effect on the natural-ecological potential of the forest and in turn destroy the forest ecosystem. Due to this disaster, a large amount of chemical compounds, especially carbon, is released into the atmosphere, causing great damage to the organic part of the soil and water.

Forests are a complex natural ecological system of interconnected and closely connected nature components. This natural system is characterized by its dynamic balance, stability, high capacity for renewal and restoration, special proportional ratio of energy and matter, stability of ongoing natural processes, and geographical connection.

It is difficult to imagine the scale of products and services that are created by biodiversity. Certain types of species are vitally important. In particular, people use about 7,000 plants for food, 90 percent of the world's food products are created at the

expense of 20 species, of which 3 species (wheat, corn, rice) cover half of the world population's need for food. Biological resources are also an important source of raw materials for industry and medicine.

Recently, mankind has realized the importance of wild plant and animal species. Wild species are an integral part of natural ecosystems and are an integral component of the biota - a mixture of living organisms that have historically existed in a given area. Natural biota is a source of natural resources for agriculture, industry or medicine, and it creates wide opportunities for recreation, aesthetic, scientific needs, as well as for conducting and developing eco-business.

According to the law of geographic zoning, biodiversity is distributed in geographic zones, and the diversity of organisms increases from the poles to the equator. For example, the number of freshwater insects in humid tropical forests is 3-6 times greater than the number of freshwater insects in temperate forests. 40-100 species of trees can be found on 1 hectare of humid tropical forests in Latin America. However, in the eastern part of North America, 10-30 tree species are found on 1 ha. In general, Latin America is home to 40 percent of the world's plant and animal species.

This pattern of biodiversity on land is also characteristic of the water (marine) environment. For example, there are only a little more than 100 species of ascidians in Arctic waters, and more than 600 species in tropical waters. As for the vertical zones, as the altitude increases, the variety and number of organisms decreases. As the depth of the seas and oceans increases, the variety of organisms and the number of species decreases.

Biodiversity is a perfect system and is an important factor in ensuring ecological stability. Animals have a comprehensive effect on plant life. While many insects and birds participate in plant pollination, some mammals and birds carry plant seeds from one place to another.

In 1992, the "Convention on Biological Diversity" was adopted at the United Nations International Conference on "Environment and Development" held in Rio de Janeiro, Brazil. This Convention has been ratified by most countries of the world. In this regard, the world community celebrates May 22 as International Biodiversity Day every year. The aim is to draw the attention of the world community to important and urgent issues for the future and development of humanity, such as ensuring ecological stability, restoring and preserving biological diversity, and protecting ecosystems, and to achieve positive results in this regard [1].

Biodiversity of bioresources in Uzbekistan includes about 27,000 currently known species. Among them, there are about 11,000 species of plants and more than 15,600 species of animals. According to recent studies, the number of taxonomically defined species on Earth is about 13 million. To date, 1.75 million species have been

identified on Earth, of which 750,000 are insects, 41,000 are vertebrates, and 250,000 are plants. The rest of the species are complex invertebrates, algae, microorganisms and other organisms.

In fact, most animals eat plants and to one degree or another improve their condition, or most animals cannot live without them. Animals and plants are very important in human life. Human activity can have negative and positive effects on animals. As a result of the negative impact, it is causing some species to disappear, some to become rare, that is, to decrease in number.

It should be recognized that the Constitution of the Republic of Uzbekistan affirms that land, underground resources, water, flora and fauna and other natural resources are national wealth, the need for their rational use and that they are under state protection, and a number of laws and other regulatory documents in the field have been adopted. [2].

Since 1995, the Republic of Uzbekistan has been a party to the Convention on Biological Diversity of the United Nations, and has a number of obligations regarding the conservation and sustainable use of biodiversity, including the expansion of existing protected natural areas and the creation of new ones in order to ensure the reliable preservation of biodiversity. undertook to organize.

In Uzbekistan, protected natural areas are of particular importance in the preservation of biodiversity.

On April 1, 1998, the Republic of Uzbekistan joined this Convention, and in this regard, our government developed a National Strategy and Action Plan for the Conservation of Biological Diversity. 1997), reflected in "On Protection and Use of Animal World" [4] (26.12.1997) and other laws.

On December 3, 2004, the Law of the Republic of Uzbekistan "On Protected Natural Areas" was adopted [5]. The purpose of this Law is to preserve typical, rare, valuable natural objects and complexes, the genetic fund of plants and animals, to prevent the negative impact of human activities on nature, to study natural processes, to monitor the environment, to improve environmental education and education.

It should be mentioned that the composition of flora and fauna in Uzbekistan, i.e. biodiversity, consists of 27,000 species of plants and animals. The fauna of Uzbekistan - that is, the world of animals - includes 97 species of mammals, 424 species of birds, 58 species of insects, and 83 species of fish. The flora of Uzbekistan - the world of plants includes more than 4100 plants.

The National Strategy and Action Plan for Biodiversity Conservation has been approved. According to this document, 17% of the country's total land area is planned to be included in the category of protected natural areas.

Regarding the preservation of biological diversity, work worthy of recognition has also been done in our country. In particular, in the republic there are Zomin, Nurota, Hisar, Kyzylkum, Surkhan, Chotkal nature reserves, "Saigachiy" complex reservation reserve, Lower Amu Darya, Ugam-Chotkal biosphere reserve, Zomin, Ugom-Chotkal, Zarafshan, Khorezm, Kitab, South-Ustyurt national nature reserve. parks, 11 nature monuments, 13 private nature reserves, specialized kennel "Jayron" was established.

Also, in order to further reduce the anthropogenic effects on the flora and fauna in the reserves, in order to preserve and restore them safely, in Hisar State Reserve (11,231 ha), Zomin State Reserve (4,016 ha), Nurota State Reserve (20,313 ha), Kyzylkum State Reserve (3,104 ha), conservation zones were established in the areas adjacent to the Surkhan State Reserve (16,695 ha).

The two-volume "Red Book" of the Republic of Uzbekistan published in 2019 [6] includes 314 species of rare and endangered plants and fungi, 206 species of animals. Nature reserves, nature reserves and national parks play a special role in solving the most urgent problems of our time, such as protection of flora and fauna, preservation and reproduction of those in danger of extinction.

Special attention is paid to the preservation of biological diversity in the coastal regions, and nearly 1 million Forests were established on 700,000 hectares. Importantly, in afforested lands, the ecosystem is restored, i.e., shifting sand deserts become green areas and wildlife emerges.

In the period 2019-2028, approved by the Cabinet of Ministers of the Republic of Uzbekistan, the strategy for the preservation of biological diversity in the Republic envisages the implementation of the following priority tasks: increasing the area of protected natural areas to 12% of the country's territory; To carry out afforestation works on the dry bottom of the Aral Sea and increase its area to 1.2 million hectares; Increasing the number of gazelles in Bukhara specialized nursery "Jayron" to 1000; creation of a unified central link system of monitoring for biodiversity components in reference ecosystems in state reserves; creation of a unified information database of state biodiversity monitoring and state cadastre based on modern geo-information technologies (GIS-technologies); conducting geobotanical inspection of plants in natural pastures and hayfields on an area of 2 million hectares every year; integration of biodiversity conservation issues into all sectors of the economy. Chapter 4 of this strategy entitled "International Relations in the Field of Biodiversity" envisages the following tasks: Convention on Biological Diversity; Convention on International Trade in Endangered Species of Wild Fauna and Flora; Convention on Wetlands of International Importance, Especially Waterfowl Habitat (Ramsar Convention); UNESCO Convention on the Protection of the World Cultural and Natural Heritage; Convention on the Conservation of Migratory Species of Wild Animals; Convention

to Combat Desertification in Countries Experiencing Severe Drought and/or Desertification, Especially in Africa; Agreement on the Conservation of Afro-Eurasian Migratory Wetland Birds; Memorandums of understanding on the conservation of rare migratory species of animals such as white-tailed deer, Bukhara deer, Siberian white crane; Central Asia Initiative on Mammals; Membership in the agreements on the establishment of the International Fund for Saving the Island and the implementation of the listed conventions and agreements in our country are ensured.

Within the framework of measures to preserve biodiversity and implement relevant projects in our country, such as the Global Environmental Fund, the International Union for Conservation of Nature, the United Nations Environment Program, UNESCO, the World Wildlife Fund, the Michael Zukkov Foundation for Nature Conservation cooperation with international organizations. Also, in the next fifteen years, several projects were implemented in Uzbekistan with the involvement of international grants. In their framework, new approaches to conservation and management of biodiversity and natural resources in and around protected natural environments, expanding the system of protected natural environments were demonstrated. Thanks to the implementation of these projects, new categories of protected natural areas were created, their material and technical base was improved, specialists and employees of the State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan, as well as ecologists of the republic's companies and enterprises were trained in new ways to preserve biodiversity. improved training to advanced approaches.

Nature is a long tight chain, therefore the loss of each plant and animal species threatens the ecosystem of the planet Earth - the Biosphere. Biodiversity, on the other hand, is considered the main factor in ensuring the stability of biogeochemical cycles in the exchange of matter and energy in the biosphere, and is the basis of life on Earth. Diversity of natural ecosystems, in turn, ensures diversity of plant and animal species, improves soil quality, and cleans water and air. Each species is a necessary integral element of the corresponding ecosystem.

**Conclusion.** It should be said that biodiversity is a criterion of life, and it is in our common interest to preserve, reproduce and restore it. In this process, it is an important task of our youth to show the qualities of creativity and creativity in the direction of protection of the natural environment, and to awaken the feeling of bravery.

## REFERENCES

1. The United Nations (UN) conference held in Rio de Janeiro. June 3-14, 1992.
2. Constitution of the Republic of Uzbekistan. 30.04.2023.
3. Law of the Republic of Uzbekistan "On protection and use of flora". 26.12.1997.
4. Law of the Republic of Uzbekistan "On Protection and Use of Animal World". 26.12.1997.
5. Law of the Republic of Uzbekistan "On Protected Natural Areas". 03.12.2004.
6. "Red Book" of the Republic of Uzbekistan. 2019.
7. The strategy "Preservation of biological diversity in the Republic of Uzbekistan in the period 2019-2028" Resolution of the Cabinet of Ministers No. 484 of June 11, 2019