

The problem of proper use of water resources

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Annotation. The article deals with modern problems of water resources protection. For at least two millennia, water quality has been steadily deteriorating and reaches levels of pollution where the use of water for various purposes is severely limited or water can be harmful to humans. This deterioration is associated with socio-economic development within the river basin, but long-range atmospheric transport of pollutants has now changed this condition: even remote areas can be polluted.

Keywords. Hydrological and environmental factors, rational use of thermal and biological energy, suspended particles, wastewater, artificial reservoirs, water use regime.

Water is the most important element of the natural environment, but also an active hydrological, geographical and bioecological factor; it is a carrier of mechanical, chemical, thermal and biological energy, transports various substances and plays an important role in the exchange of substances and energy between geospheres and various natural zones.

The universal role of water in nature is explained by many of its peculiar physical, chemical and biological properties. These properties determine all processes occurring not only in water bodies, but also many features of climatic, meteorological, hydrological and bioecological processes on the Planet.

The population of the hydrosphere is aquatic organisms or hydrobionts and their various bioecological communities. They play a very important role in human life, especially during the period of continuous development of various natural and in the creation of new artificial types of reservoirs. When developing continental reservoirs and seas, it is necessary to study their populations in order to clarify their positive and negative role in our lives. These and other tasks are studied in one ecology.

The problem of rational use of water resources at the enterprises of the electrode sub-sector is solved by circulating water supply. However, the most effective way to protect reservoirs from pollution by industrial wastewater is to create fully closed systems of circulating water supply and transition to a drainless water use regime that best meets the task of preserving natural resources and protecting the environment.

For the rational use of water resources and to strengthen the protection of natural waters from pollution, technical solutions should be developed for the reuse of treated wastewater in industrial water supply systems.

The protection and rational use of water resources consists in the organization of mechanized sinks at the bases of mechanization and motor transport with drainage

systems for wastewater treatment, as well as in the prohibition of washing machines in and near open reservoirs.

Water plays an extremely important role in nature. It creates favorable conditions for the life of plants, animals, and microorganisms. Water remains a liquid in the temperature range most favorable for their life processes, for a huge mass of organisms it is a habitat. Organisms living in water are protected from sudden spontaneous fluctuations in temperature and composition, as they constantly adapt to slow rhythmic fluctuations - daily, seasonal, annual, etc.

Water plays a huge role in human life support. It is used by them directly for drinking and household needs, as a means of transportation and raw materials for obtaining industrial and agricultural products, has recreational significance, its aesthetic significance is great.

In most cases, fresh water pollution remains invisible because pollutants are dissolved in the water. But there are exceptions: foaming detergents, as well as petroleum products floating on the surface, and untreated drains. There are several natural pollutants. Aluminum compounds located in the ground enter the system of freshwater reservoirs as a result of chemical reactions. Food products wash out magnesium compounds from seawater, which causes huge damage to fish stocks.

However, the volume of natural pollutants is negligible compared to those produced by humans. Every year thousands of chemicals with unpredictable effects enter the water basins, many of which are new chemical compounds. Elevated concentrations of toxic heavy metals (such as cadmium, mercury, lead, chromium), pesticides, nitrates and phosphates, petroleum products, surfactants can be detected in the water. As you know, up to 12 million tons of oil enter the seas and oceans every year.

Acid rain also contributes to an increase in the concentration of heavy metals in water. They are able to dissolve minerals in the soil, which leads to an increase in the content of heavy metal ions in the water. Radioactive waste gets into the water cycle in nature from nuclear power plants.

The discharge of untreated wastewater into water sources leads to microbiological contamination of water. According to estimates of the World Health Organization (WHO), 80% of diseases in the world are caused by improper quality and unsanitary condition of water. In rural areas, the problem of water quality is particularly acute – about 90% of all rural residents in the world constantly use polluted water for drinking and bathing.

Since the middle of the twentieth century and occurring simultaneously with the acceleration of industrial growth, various types of water pollution problems have undergone a rapid change of stages. Currently, there are few rivers left in the world that would not be polluted by human waste products.

In the past, water pollution in developing countries occurred mainly from the discharge of untreated wastewater. These problems are now more complex as a result of the production of hazardous industrial waste and the rapidly increasing use of pesticides in agriculture. In fact, water pollution today in some developing countries, at least developing a new industry, is a more serious problem than in developed countries. Unfortunately, developing countries as a whole are lagging far behind in controlling their main sources of pollution. As one of the consequences, the state of the environment in developing countries is constantly deteriorating.

Two factors hinder the maintenance of water quality at the proper level: the failure of attempts to introduce coercive measures to combat the main sources of pollution, especially industrial ones, and the non-compliance of sanitary systems and garbage collection and disposal with modern standards. Diseases arising from pathogens entering the digestive tract from contaminated water have a huge impact on health everywhere in the world. "It is estimated that 80% of all diseases and more than a third of deaths in developing countries are caused by the use of contaminated water, and on average at least one tenth of each person's productive time is devoted to water-related diseases."

Water-related diseases constitute the largest single category of diseases that contribute significantly to infant mortality in developing countries. Health problems associated with chemicals dissolved in water arise directly from the properties of these substances to cause adverse effects with prolonged exposure; pollutants with cumulative toxic properties deserve special attention - heavy metals and some organic micro pollutants, carcinogenic substances and substances that can cause adverse reproductive consequences and affect development.

Environmental pollution has multiple impacts on the quality of fresh water, which has long-lasting consequences. Among the main reasons for the deterioration of water quality on a local, state and global scale are industrial development, the emergence of intensive agricultural technologies, exponential population growth, as well as the production and use of tens of thousands of synthetic chemicals.

The main problem of water pollution is related to actual or planned water use. The economic consequences of water pollution can be quite serious due to harmful effects on human health or on the environment. The deterioration of health often reduces the efficiency of human labor, and the destruction of the environment reduces the productivity of water resources directly used by people.

Rational use of water resources is currently an extremely urgent problem. This is primarily the protection of water spaces from pollution, and since industrial effluents occupy the first place in terms of volume and damage they cause, it is first of all necessary to solve the problem of dumping them into rivers. production, cleaning and disposal technologies. Another important aspect is the collection of fees for the discharge of wastewater and pollutants and the transfer of funds charged for the development of new waste-free technologies and treatment facilities.

It is necessary to reduce the amount of fees for environmental pollution to enterprises with minimal emissions and discharges, which in the future will serve as a priority to maintain a minimum discharge or reduce it. Apparently, the ways to solve the problem of water pollution in Uzbekistan lie primarily in the development of a developed legislative framework that would really protect the environment from harmful anthropogenic impact, as well as finding ways to implement these laws in practice.

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