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THE ROLE OF WATER IN NATURE AND IN HUMAN LIFE

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Annotation: Water circulates nutrients in nature and is a habitat for numerous species of plants and animals. Understanding the role of water in nature and in human life is becoming especially relevant in the context of modern environmental problems associated with a shortage of clean fresh water. The article highlights the important role of water in nature and in human life.

Keywords:a living organism, biochemical processes, balance in ecosystems, the role of water in nature and in human life, environmental problems, fresh water.

Water is one of the most important substances on planet Earth. No living organism can exist without water. It is the basis of biochemical processes, regulates climatic conditions, shapes landscapes and maintains balance in ecosystems.

Water occupies about 71% of the Earth's surface, but only 2.5% of all water is fresh and drinkable. All living organisms depend on water to one degree or another: plants use it for photosynthesis, animals use it to support the vital functions of the body.

Water circulates nutrients in nature and is a habitat for numerous species of plants and animals. Seas, rivers, lakes and swamps are important elements of the biosphere, on the condition of which the diversity of life on the planet depends.

An important feature of water is its unique ability to maintain a temperature balance in ecosystems. Due to its high heat capacity, water softens temperature fluctuations, creating favorable conditions for life [1].

The water cycle is a global process of water movement between the oceans, atmosphere and land. This process includes evaporation of water from the surface of the seas and oceans, condensation of moisture in the atmosphere, precipitation and the return of water back to reservoirs through rivers and groundwater [3].

The water cycle ensures the constant renewal of fresh water reserves on the planet, regulates the climate and maintains soil fertility.There is no single "reservoir" for water on Earth; it is constantly moving and redistributing, creating a dynamic system.

The human body consists of about 60-70% of water [2]. Water is a part of blood, lymph, and intercellular fluid, participates in metabolic processes, delivers nutrients to cells and removes waste products.

Without water, a person cannot survive for more than three to five days. Lack of water in the body leads to dehydration, disruption of internal organs and, in severe cases, death.

Water also plays an important role in thermoregulation. The daily water requirement of an adult is on average 2-2.5 liters [5], and all sources of water intake are taken into account: drinking, food, and metabolic water (formed during the oxidation of fats, proteins, and carbohydrates).

Water in agriculture and industry

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Agriculture is the largest consumer of fresh water: it accounts for about 70% of global water consumption [6].Water is needed for irrigation of fields, livestock maintenance, and processing of agricultural products. Industry also consumes significant amounts of water. For example, it takes about 300 liters of water to produce one kilogram of steel [7].Lack of water resources can significantly reduce crop yields, lead to higher food prices and disrupt economic stability in the regions.

Today, about 2 billion people in the world are experiencing a shortage of clean drinking water. The reasons for the shortage include climate change, population growth, pollution of water bodies, and inefficient use of resources. In some regions (for example, in Africa and the Middle East), water scarcity leads to serious humanitarian crises, forced migration of the population, and exacerbation of conflicts over access to water sources.

Large cities also face water supply problems due to depletion of groundwater aquifers and surface water pollution.

Ways to solve the problem of water scarcity

Solving the problem of water scarcity requires an integrated approach at the global and local levels. The main areas of action include:

- Development of seawater desalination technologies.Modern methods, such as reverse osmosis, make it possible to obtain fresh water from seawater;
- Rational use of water resources.This includes the use of drip irrigation in agriculture, the use of water-saving technologies in industry and everyday life.;
- Wastewater treatment. Recycling and reuse of water can reduce the burden on natural sources.;
- Protection of fresh water sources It is important to prevent pollution of rivers, lakes and groundwater by industrial waste and household garbage;
- Raising public awareness.Educational campaigns help to create a responsible attitude towards water consumption.

According to experts, the introduction of effective water-saving technologies can reduce water scarcity by 40% by 2050.

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