



Human Ecology (Problems of Adapting People to Changing Environmental Conditions, Their Solutions and Pathologies Related to the Environment)

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Abstract: *The main purpose of writing this article is to look at the environmental problems that have plagued many people for many years and to find solutions to them. Today, most people face these problems. Mostly migrants and immigrants face this situation. In addition, 10-20% of the local population is included. As a person moves from one place to another, air exchange takes place. The human body, of course, senses changes in this process of metabolism and tries to adapt. Everyone has the ability to adapt and control them. The article is written to highlight the problems that may arise during these processes and to find solutions to them.*

Keywords: *ecology, human ecology, ecosystem, living parts of ecosystem, Escherichia coli, adaptation, Anabiosis, pathology, biocenosis, biotope.*

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Human ecology

Ecology is the science of the relationship between living organisms and their environment. **Human ecology** is the relationship between people and their environment. In human ecology, the environment is perceived as an ecosystem. **Ecological system (ecosystem)** - a system in which organisms and their habitats are integrated into a single functional whole through metabolism and energy; any set of organisms and their environment. An ecosystem is a unit that performs a key function in ecology.

More precisely, an ecosystem is a combination of living organisms - biocenosis (from the Greek bios - life and koinos - common) and its habitat is a biotope (from the Greek topos - place), united into a single functional whole. The exchange of substances, energy, and information binds the biotic and abiotic components of the ecosystem in such a way that it remains stable for a long time.

The term "ecosystem" was coined in 1935 by the English biologist A. Tensley to define the basic functional unit of living nature.

Ecosystems are polluted in various ways. Pollution is one of the main concerns of the world we know to contribute to the destruction of the world. In addition, it has a serious impact on human health and the environment

Air pollution is caused by nuclear facilities, chemical plants, oil refining, metallurgy, pipelines and vehicles that pose a potential threat to human health. In large cities and regional centers, the main source of air pollution is not industry, but vehicles. The car emits toxic carbon monoxide and lead compounds, as well as combustion, hydrocarbons, nitrogen oxides and a total of more than 200 components. All of these substances are heavier than air and accumulate mainly near the surface. Therefore, it has harmful effects on the human body. An example of this is the spread of respiratory diseases.

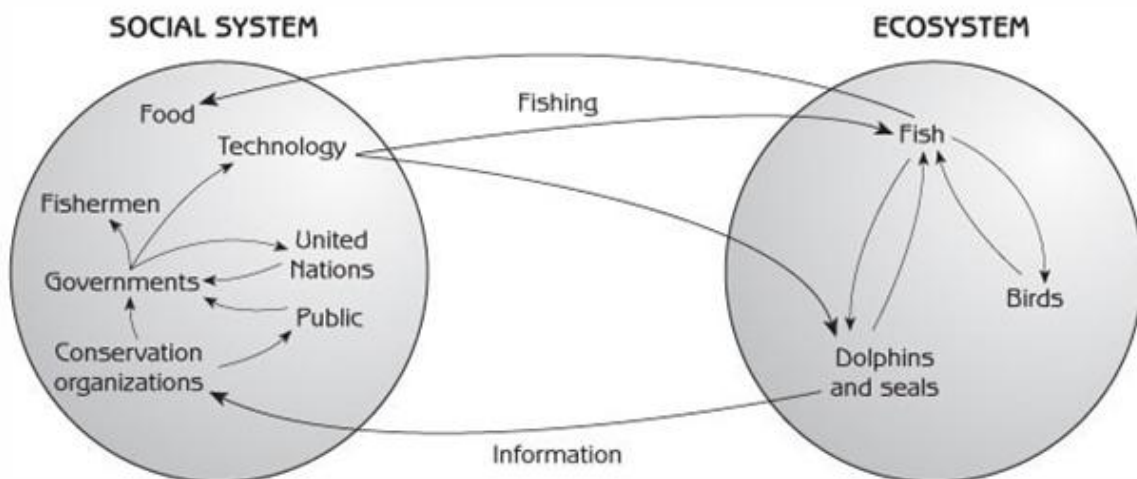
Pollution of the hydrosphere is the poisoning of industrial wastewater. At present, they pollute more than a third of the world's rivers. In addition to oil and petroleum products, heavy metals, toxic pesticides, dioxins, and radioactive waste, thermal water pollution is very dangerous, resulting in water bodies "dying". Heat is one of the types of pollution. Hot wastewater heats the reservoir, reduces the solubility of oxygen in the water, the fish die, and the turbidity of the reservoir increases sharply, which eventually leads to its swamping.

Human ecology analyzes the consequences of human activities as a chain of influences through the ecosystem and the human social system. Let's take a look at a little "fishing" story below. Fishing focuses on one part of the marine ecosystem, namely fish, but fishing has an unexpected impact on other parts of the ecosystem. These effects trigger a series of additional effects that move back and forth between the ecosystem and the social system (look at picture 1).

Drift nets are nylon nets that are invisible in water. As the fish try to swim through the nets, they get caught in the nets. In the 1980s, fishermen around the world used nets thousands of miles long to fish in the oceans. In the mid-1980s, drift nets were found to have killed large numbers of dolphins, seals, turtles, and other marine animals that had drowned after being caught - a transfer of data from the ecosystem to the social system. 'shown.

Ecosystems are affected when people use resources such as water, fish, timber and pastures. After using ecosystem materials, people return the materials to the ecosystems as waste. People deliberately modify or reorganize existing ecosystems and create new ones to better meet their needs.

Picture 1. The process of exchange between ecosystem and social system



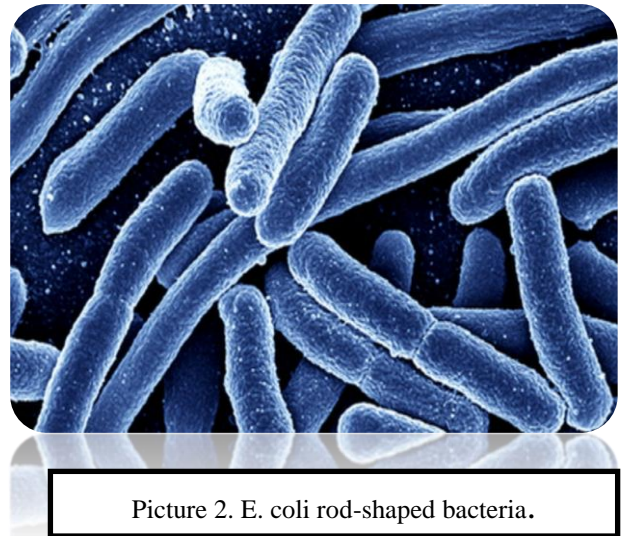
Problems of adapting people to changing environmental conditions and their solutions

There are several levels at which organisms adapt to environmental conditions. One of the most important of these is the Cellular Level.

For example, let's look at how a single-celled organism - E. coli (picture 2 Escherichia coli - a bacterium that usually lives in the intestines of healthy people and animals. Some E. coli infections can be dangerous) adapts to environmental conditions.

It is known to grow and multiply well in an environment that contains only sugar - glucose. Living in such an environment, its cells do not need the enzymes needed to convert other sugars such as lactose to glucose. But when bacteria are grown in a lactose-containing environment, the cells immediately begin an intensive synthesis of enzymes that convert lactose into glucose.

Consequently, Escherichia coli can restore its vital activity to restore new living conditions. This example applies to all other cells, including the cells of higher organisms.



Picture 2. E. coli rod-shaped bacteria.

Adaptation is the adaptation of an organism to environmental conditions due to a complex of morphological, physiological and behavioral traits. Everyone on earth has a unique immune system. Ecosystems can affect everyone in different ways. Humans have the ability to adapt to any environment, no matter what the circumstances. During adaptation, the human immune system is renewed. You don't even feel sick. These diseases can develop over months and years, causing serious complications.

Before we move from one place to another, we must know about the environment and ecosystem of the area we are going to visit, and as a result, we will be protected from the spread of various diseases.

Pathologies related to the environment

Pathology (Greek pathos - disease and logic) - a branch of theoretical and clinical medicine; studies the causes, patterns, course and consequences of the disease. The general laws and causes of pathological processes are studied in general pathology, and diseases of certain organs and systems in private pathology. Various diseases can occur with environmental damage. If we live without environmental pollution, our lives will be better. Air and water pollution are different from all of them. We will then look at what the main consequences of pollution are for health and society.

1. Water poisoning

In addition to industrial waste and vehicles, there are other sources of pollution closer to our activities than we thought. Examples include fertilizers used in our gardens, oil spilled from the sink, or batteries used without recycling.

2. Harmful substances

Even if they are not added to our products, we can still find polluting chemicals or naturally harmful substances in our products. Their presence in products is mainly related to the stages of production, processing and transportation, as well as environmental pollution.

Due to environmental pollution, some heavy metals may be present in our foods. The effects of these harmful substances depend on the concentration found in the foods we consume. It can be natural. This includes harmful radiation coming from the sun's rays. It can also be caused by the emission of pollutant fumes from the engines of vehicles.

3. Major pollution in cities

The effects of pollution affect human health and society as a whole. And as a result, city dwellers suffer. Coughing and shortness of breath are common symptoms in urban residents.

It is estimated that 7 million people worldwide die each year due to pathologies related to air pollution. Cities with high population concentrations are the most polluted areas. The city is mainly polluted by vehicles, industrial, heating system products, and so on.

4. Injuries during exercise

Due to the polluted air in the city, we may be concerned about human exposure during morning exercise. It is always best to exercise in the fresh air and in the bosom of nature. During exercise, we need a lot of oxygen and breathe. If we do so in such polluted air, we will inhale a lot of harmful substances and get sick.

5. Development of diseases

Short-term or long-term exposure to toxic substances has a toxicological effect on living things, and it is clear that this includes us as humans.

Air pollution differs from the types of pollution that are the main risk factors. If a person is exposed to this type of contamination, the development of diseases such as asthma, lung cancer, ventricular hypertrophy, autism, retinopathy, or degenerative diseases such as Alzheimer's and Parkinson's will be high. The immune system, endocrine and reproductive systems are also damaged.

6. Extinction of species

Pollution destroys ecosystems and destabilizes food chains, leading to the extinction of all life forms

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