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COMPARATIVE ANALYSIS OF ANTHROPOGENIC IMPACT ON THE ENVIRONMENT IN MODERN RUSSIA

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Abstract

This article discusses the main trends in the historical development of Russia in the field of environmental protection. Changes in the socio-economic policy of Russia in the field of environmental protection are shown. The authors pay attention, first of all, to the most rational use of natural resources, as well as to the problems associated with the state of the ecological situation in industrial cities, where environmental risks are highest due to the imperfection of the applied technological methods, equipment wear and low efficiency of treatment facilities. Based on the materials presented in this article, a number of recommendations are given to improve the system of environmental and social measures aimed at improving the health of the population.

Keywords: ecology, man, society, state, industry.

I. INTRODUCTION

Currently, the problem of anthropogenic impact on natural complexes and ecosystems is becoming more and more urgent. One of the most important tasks of environmental protection is the monitoring of changes occurring in it under the influence of anthropogenic factors. Any environmental control system consists of environmental monitoring and analysis of the data obtained, on the basis of which decisions are made about the prospects for the functioning and practical use of the ecosystem.

Currently, the development of methods for assessing anthropogenic impact on the soil is of particular importance. In the practice of soil monitoring, the most common approach remains the analysis of concentrations of toxic compounds, radionuclides using physico-chemical methods. However, there are too many uncertainties associated with such estimates. In particular, this approach does not take into account the possibility of synergistic and antagonistic effects with simultaneous exposure to several adverse factors. The development of environmental standards for soils lags far behind the development of standards for other environments (atmosphere, water systems).

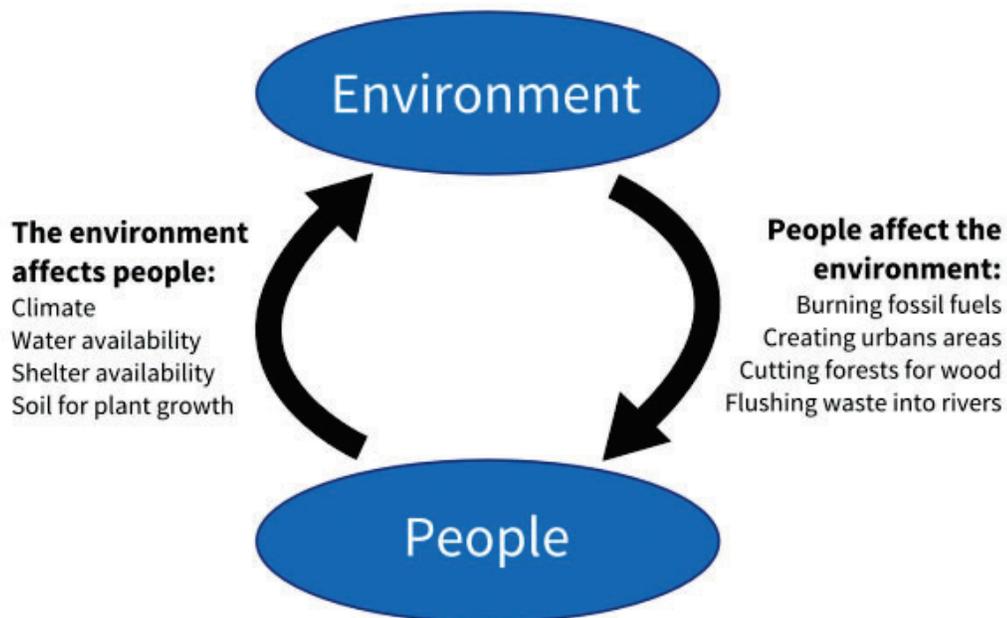


II. METHODOLOGY AND RESULTS

Theoretical, methodological, basis, research was the results of domestic and foreign theoretical and practical research in the field of nature management, environmental assessment of the situation and environmental protection; publications on the preparation of environmentally sound economic solutions, evaluation of the economic efficiency of investments, project analysis.

The information and empirical base of the study was federal laws, decrees of the Government of the Russian Federation, decrees of the President of the Russian Federation, legal, statistical and analytical materials of the State Statistics Committee of Russia, the Ministry of Natural Resources of Russia, the State Construction Committee of Russia, the State Sanitary and Epidemiological Supervision of Russia, federal targeted programs, monographs of domestic scientists conducted by the authors of the study and other regulatory legal acts. A comprehensive assessment of the changes made in nature began relatively recently, only 20-30 years ago. Studies by scientists from different countries have shown that such changes cover the entire planet, not just individual regions and states. On this issue, the scale of changes in individual elements of nature is mainly assessed and all the consequences that inevitably arise due to the interconnectedness of all elements of nature are not always revealed.

From the environmental point of view, various forms of human attitude to nature were constructive, destructive and amphistructive. The constructive attitude consisted in the positive influence of a person on the world around him. Over time, a person learned to keep the fire, and then to receive it, which was a progressive achievement that had important consequences. Fire contributed to the transition of primitive man to a qualitatively new way of eating, which affected the metabolic processes of the body, and, consequently, physiological and mental development, as well as lifestyle.

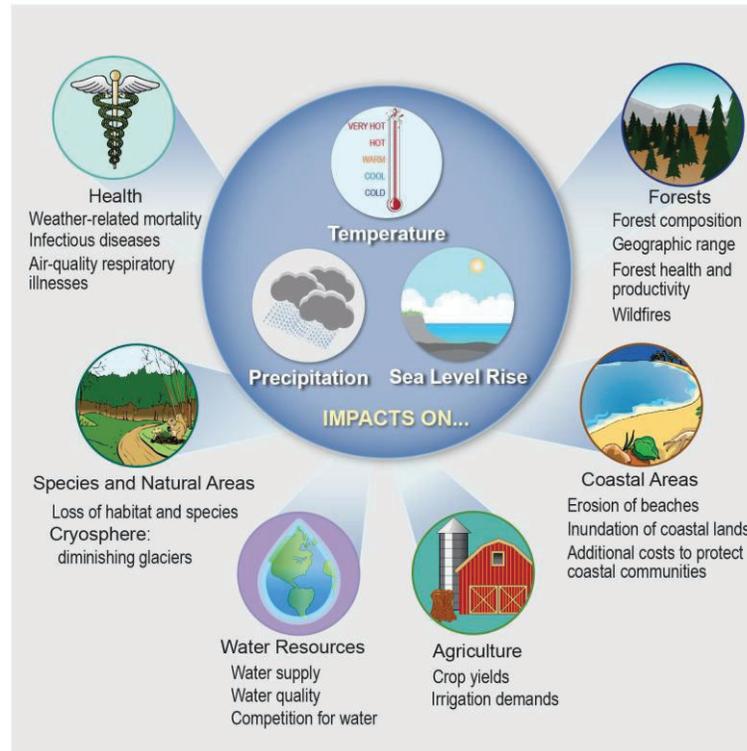


The environment affects people and people affect the environment.



The destructive attitude consisted in the fact that already in prehistoric times, carelessly using fire, a person destroyed vegetation cover on huge areas, and in arid areas, improper human behavior contributed to changing the landscape. Amphistructive influence combines the forms of positive and negative human influence on nature. The farming system was often accompanied by the development of erosion processes, the death of soil and aboveground fauna, and the digression of vegetation cover. New species of plants and animals introduced by humans in some cases turned out to be dangerous for the local flora and fauna. When transporting plants, animals or agricultural products, individual pests were introduced (phylloxera, Colorado potato beetle, white American butterfly, etc.). The negative consequences of man-made consequences began to appear on the scale of the entire biosphere and even approached the natural forces of nature in their influence. Therefore, the protection of the biosphere is becoming the most important environmental and socio-economic problem of our time. The modern economic progress of mankind testifies that constructive influence prevailed in its attitude to nature. The natural world around us is more diverse and rich than in the pre-agricultural period. Therefore, such a tendency in the relationship between society and nature can be considered normal. Sources of pollution are very diverse: among them are not only industrial enterprises and the thermal power complex, but also household waste, animal husbandry waste, transport, as well as chemicals intentionally introduced by humans into ecosystems to protect useful producers from pests, diseases and weeds. Among the ingredients of pollution are thousands of chemical compounds, especially metals and oxides, toxic substances, aerosols. Different sources of emissions may be the same in composition and nature of pollutants. Thus, hydrocarbons enter the atmosphere both during fuel combustion and from the oil refining and gas production industries. A pollutant can be any physical agent, chemical substance and biological species (mainly microorganisms) entering the environment or arising in it in quantities beyond their usual concentration – the limit of natural fluctuations or the average natural background at the time under consideration.

Potential Effects of Climate Change





Anthropogenic pollutants are divided into those destroyed by biological processes and those not destroyed by them (persistent). The former enter into the natural cycles of substances and therefore quickly disappear or are destroyed by biological agents. The latter are not included in the natural cycles of substances, and therefore are destroyed by organisms in food chains. Environmental pollution can be divided into natural, caused by some natural, usually catastrophic, causes (volcanic eruption, mudflow, etc.), and anthropogenic, resulting from human activity. Among anthropogenic pollutants, the following are distinguished: biological — accidental or as a result of human activity; mechanical — contamination of the environment by agents that have only mechanical effects without physico-chemical consequences; chemical — a change in the natural chemical properties of the medium, as a result of which the average annual fluctuation in the amount of any substances for the time period under consideration increases, or the penetration into the medium of substances that are usually absent in it or in concentrations exceeding the norm. The main types of physical pollution include: 1) thermal (thermal), resulting from an increase in ambient temperature mainly due to industrial emissions of heated air, waste gases and water; 2) light — disturbance of the natural illumination of the area as a result of exposure to artificial light sources, leading to anomalies in the life of plants and animals; 3) noise, resulting from an increase in the intensity and frequency of noise above the natural level; 4) electromagnetic, resulting from changes in the electromagnetic properties of the environment (from power lines, radio and television, works of some industrial installations, etc.), leading to global and local geophysical anomalies and changes in subtle biological structures; 5) radioactive, associated with exceeding the natural level of radioactive substances in the environment. From an ecological point of view, pollution means not just the introduction of certain components alien to them into the atmosphere, soil or water. In any case, the object of pollution is an elementary structural unit of the biosphere — biogeocenosis. In addition, the excess of some substances in the natural environment or simply the presence of other substances in it means a change in the modes of environmental factors, since harmful substances, in fact, are environmental factors. Consequently, the regime of these factors (or their composition) deviates from the requirements of the ecological niche of an organism (or a link in the food chain). At the same time, the processes of other metabolism are disrupted, the intensity of assimilation of producers decreases, and hence the productivity of biogeocenosis as a whole. Environmental pollution is a complex and diverse process. Industrial waste usually ends up where it did not exist before. Many of them are chemically active and are able to interact with molecules that are part of the tissue of a living organism, or actively oxidize in air. It is clear that such substances turn out to be poisons in relation to all living things. The effects of pollution are not always felt immediately. The abrupt manifestation of pollution is often preceded by hidden ones. That is why scientists are currently intensively looking for ways to timely indirect indication of pollution in its very initial moments. But pollution is not only the release of harmful substances into the natural environment. When water is diverted into natural reservoirs from cooling systems, the natural temperature regime changes in them, which is thermal pollution. The deviation from the optimal parameters of noise levels and illumination can also be considered as pollution.

Environmental protection and the tasks of restoring natural resources should include:

- a rational strategy for pest control, knowledge and observance of agricultural practices, dosage of mineral fertilizers, good knowledge of ecological agrocenoses and the processes occurring in them, as well as at their borders with natural systems;
- improvement of technology and extraction of natural resources;
- the most complete and comprehensive extraction of all useful components from the deposit;
- land reclamation after the use of deposits;
- economical and waste-free use of raw materials in production;
- deep cleaning and technologies for the use of production waste.

In general, environmental protection and the tasks of restoring natural resources should include:

- local and global logical monitoring, i.e. measurement and control of the state of the most important characteristics of the state of the environment, the concentration of harmful substances in the atmosphere, water, soil.



III. CONCLUSION

At this stage of its development, humanity is increasingly thinking about the negative impact of its activities on nature and the threats associated with it. Already, the first steps are being taken towards solving the problems that have arisen: the transition to alternative forms of energy, the creation of nature reserves, the disposal of waste products, and the resolution of conflicts by peaceful means. But all of the above measures are extremely small for a visible result, so people will have to rethink their attitude to nature and the planet and find new ways to solve both problems that have already arisen in the course of human activity and prevent their negative impact in the future.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ АНТРОПОГЕННОГО ВОЗДЕЙСТВИЯ НА ОКРУЖАЮЩУЮ СРЕДУ В СОВРЕМЕННОЙ РОССИИ

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Аннотация

В данной статье рассматриваются основные тенденции исторического развития России в области охраны окружающей среды. Показаны изменения в социально-экономической политике России в области охраны окружающей среды. Авторы обращают внимание, прежде всего, на наиболее рациональное использование природных ресурсов, а также на проблемы, связанные с состоянием экологической обстановки в промышленных городах, где экологические риски наиболее высоки из-за несовершенства применяемых технологических методов, износа оборудования и низкой эффективности очистных сооружений. На основе материалов, представленных в данной статье, дан ряд рекомендаций по совершенствованию системы экологических и социальных мер, направленных на улучшение здоровья населения.

Ключевые слова: экология, человек, общество, государство, промышленность.

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