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THE INFLUENCE OF NATURAL AND SOCIAL CONDITIONS ON THE STATE AND QUALITY OF THE URBAN ENVIRONMENT

Abstract: Anthropogenic objects of the artificial urban environment occupy the main part of the city. These include residential, public and industrial buildings, streets, highways, squares, underpasses, stadiums, TV towers and other structures. The number of anthropogenic objects also includes transport and other mobile and technical means. Anthropogenic objects are divided into town-planning, industrial and urban infrastructure objects: transport, engineering and social.

Keywords: ecology, resource, anthropogenic factors, city, population.

A city is an ecological system created by people. The main representative of the biota of the city is man. Man dominates other organisms - plants, animals, birds, insects, microorganisms, which also live in the urban area. The ratio of phytomass to zoomass in an urban ecosystem is different compared to natural ecosystems. The biomass of people is not balanced with the biomass of green plants [1].

The abiotic component of the urban ecosystem is the urban environment. It is the environment of human life, as well as the habitat of other organisms. In urban planning, it is customary to call the urban environment a set of urban planning objects and objects of urban infrastructure that form the architectural and planning structure of the city. The artificial urban environment is created by urban planning means. Its function is to satisfy the functional-utilitarian and artistic-aesthetic needs of a person. Functional-utilitarian needs are provided by the so-called functional system of urban environment organization in the theory of urban planning. This is the organization of labor and life of the population, sanitary and hygienic improvement, etc. The compositional system organizes the artistic and aesthetic needs of a person.

The components of the natural environment of the city are atmospheric air, surface and ground waters, soils, soils, sunlight. These are components of the environment, without which the life of man and other organisms is impossible.

Cities as artificial ecological systems are different from natural ecosystems. Urban systems are heterotrophic. They are characterized by a huge need for energy. At the same time, solar energy is supplemented by concentrated fuel energy.

Thus, the city needs energy, clean water, food, raw materials. He receives all this from the outside, and therefore depends on his environment, i.e. is a dependent ecosystem. The city accumulates a huge amount of substances and waste on its territory and beyond. The city is a storage ecosystem.

The model of the city, compiled according to the principle of balance, can be represented as follows. The city receives flows of electric energy, fuel, raw materials, food products [2]. After their processing and production within the territory of the city, gases, aerosols, dust are emitted into the atmosphere, industrial and domestic effluents are discharged into suburban waters, and waste is sent to city dumps. Emissions, effluents, solid and concentrated waste contain substances that pollute the air, water and soil of the city.

The vital activity of the city is a sequence of continuous flows of energy, substances and products of their processing. The intensity of these flows depends on the size and density of the urban population, the status of the city - the type and development of industry, the volume and structure of transport.

The urban system, unlike the natural one, cannot be self-regulating. All processes of life of the city should be regulated by society. This is the consumption of energy, natural resources, food products by the city.

The flows of substances and energy, as well as products of their processing, entering the territory of the city, disrupt the material and energy balance of the natural environment and change the natural processes of the circulation of substances and the transition of energy along trophic chains. The city is a non-

equilibrium system. The state of disequilibrium is determined by the scale of the city's anthropogenic loads on the environment. Indicators of anthropogenic loads are: population density, area of built-up and paved areas, loads from the gravity of buildings and structures, industrial production volumes, level of motorization, etc.

The characteristics of the functioning of the natural environment that determine the ecological balance are: the reproductive capacity of the territory, its ecological capacity, geochemical and biochemical activity, and the resistance of territories to physical stress [3]. These characteristics are expressed in quantitative terms.

- 1. The reproductive capacity of the territory is the ability of the territory to reproduce the main components of the natural environment: atmospheric oxygen, water, soil and vegetation cover.
- 2. The ecological capacity of a territory is defined as the density of the biomass of representatives of the animal and plant world per unit of territory, taking into account the optimal composition and abundance for a given natural and geographical area. The ecosystem is the more resistant to adverse anthropogenic impacts, the more complete its species composition, that is, the greater its biodiversity.
- 3. Geochemical activity of the territory is the ability of the territory to process and remove products of technogenic activity pollutants from its borders.
- 4. The biochemical activity of the territory is due to its ability to biologically process organic pollution and neutralize the harmful effects of inorganic pollutants.
- 5. The resistance of the territory to physical stress characterizes the resistance of the landscape to physical anthropogenic stress (the impact of development, transport, engineering infrastructure, recreational areas, etc.).

It is believed that the territory is in a state of complete ecological balance if the natural environment ensures the reproduction of its components, the phyto- and zoomasses of these territories are balanced and the existing biodiversity is preserved, the degree of geochemical activity of landscapes and the degree of biochemical activity of ecosystems correspond to the level of anthropogenic pollution, and the level of physical stability of landscapes corresponds to the strength of technogenic loads. Complete ecological balance depends on the climatic and hydrological conditions of the area, forest cover, and economic development of the territory [4].

Complete ecological balance of developed territories is not always achievable. Therefore, in addition to the complete one, the conditional and relative ecological balance of territories are distinguished [5]. With a conditional ecological balance, the components of the natural environment are not fully reproduced. With relative ecological equilibrium, both the conditions for the reproducibility of the components of the natural environment and the conditions for the balance of biomass are not met; at the same time, geochemical, biochemical activity, as well as the physical stability of the territory correspond to anthropogenic impacts.

The anthropogenic load created by the city is compensated by the natural environment of the suburbs and adjacent territories [6]. It is possible to bring the urban ecosystem closer to the state of ecological balance by increasing the area of natural landscapes and green areas of the city, as well as reducing anthropogenic pressures. For this, a set of environmental measures is used to reduce the negative impact of economic activity on the environment. The city is a non-self-regulating ecosystem [7]. Therefore, society must regulate the quality of the urban environment and the impact of anthropogenic pressures on it.

With the development of urbanization, anthropogenic pressures on the environment are increasing: the population density is increasing, the territories of cities and agglomerations are expanding, the density of urban areas and their saturation with engineering infrastructure are increasing, industrial production is increasing, and the level of motorization is growing. All this leads to an aggravation of the environmental problems of the urban environment.

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