

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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## **ASSESSMENT OF THE LEVEL OF ECOLOGICAL SAFETY OF MOUNTAIN ECOSYSTEMS**

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**Introduction.** Human activity in recent decades has led to a disturbance in the balance of development of the mountain ecosystems of the Eastern Carpathians, which has led to a decrease in the level of ecological safety of the region. Using the example of the Pokutsko-Bukovynsky Carpathian model, the effectiveness of a combined system approach (organizational-management and engineering-technical) for the preservation and reproduction of sensitive mountain ecosystems is shown.

**The aim of the study.** Without exaggeration, it can be stated that the catastrophic ecological state of the Eastern Carpathians today is the result of a disturbance in the balance of natural ecosystems as a result of increasing anthropogenic pressure on the environment. Thus, the social component is decisive in the formation of ecological safety in the region. However, given the state of the devastated mountain systems of the Eastern Carpathians, organizational and management measures alone cannot restore or at least stop the further degradation of the mountain ecosystem with its far-reaching consequences.

**Material and methods.** The system approach proposed by us involves the combined use of organizational management and engineering-technical measures for the preservation of vulnerable mountain ecosystems under the conditions of their natural state. On the example of a small, but specific landscape-climatic and socio-economic conditions region of the Eastern Carpathians - Pokutsko-Bukovynsky Carpathians, a model of such an approach has been worked out. Our monitoring studies of the sanitary and microbiological state showed the effectiveness of the above-described approaches to prevent soil and surface water pollution from organic pollutants from polony farms and the household sector. In order to minimize the ecological danger from the pollution of the hydrosphere by effluents of small processing enterprises (provided there are practically no centralized treatment facilities in the region), a reagent method of pollution neutralization (using sodium hypochlorite solution) was used, which is effective, reliable, and allows to ensure the required degree of purification.

**Results.** In addition to the above-mentioned engineering and technical solutions, we have developed proposals for solving environmental problems and increasing the level of ecological safety of the Ukrainian Carpathians through organizational and management methods. Among them: a clear definition of national, regional and local environmental priorities, taking into account the peculiarities of socio-economic development; promoting and demonstrating among the local population the benefits of ecologically safe farming methods; increasing the interest of government structures in the involvement of non-governmental organizations to preserve the environment, forming a public forum to promote the implementation of the provisions of the Carpathian Convention and the Carpathian Ecoregion Initiative.

**Conclusions.** Population health indicators are an important integral criterion characterizing the state of ecological safety of the mountain areas we studied. Studying the dynamics of demographic indices indicates a general trend of decreasing natural growth in the region over the past five years. Mountain regions are characterized by a reduction in the average age of the population and an increase in the demographic burden compared to the corresponding indicators in the Chernivtsi region. One of the limiting reasons is the growth of morbidity in the region's population and the state of the environment. The conducted studies indicate the existence of a close correlation between the level of population health of residents of the foothills and mountain areas of Chernivtsi region and the hygienic quality of the environment.