

Strategic ecological assessment of the state of the transboundary catchment basin of the Dnieper river under extensive agricultural load

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Abstract
The most promising is a practical evidence-based implementation of basin principle of nature, which involves the use of an integrated approach to land-and water conservation measures on the basis of the systematic research. The basis of the research objectives is entrusted with the implementation of Strategic Environmental Assessment (SEA) of space-time transformation of landscape of the ecosystems of the Dnieper river catchment area on the basis of river basin approach. Strategic environmental assessment and spatial clustering was carried out on six indicators of agrogenic transformation of structural and functional state of landscape ecosystems of the Dnieper river basin: forest cover, plowing, squares slopes more 1°, squares slopes of southern exposure, the area cultivated slopes, eroded areas of arable land. As a result, SEA and geo-modeling determined that more than 50% of the Dnieper basin has high agrogenic transformation of the structural and functional status of the landscape ecosystems. The main criterion for the destabilization of agricultural landscapes is a high level of tillage. In this case the most effective tool for improving the ecological balance of the territory of the trans-boundary basin study is the reduction of arable land for other land or environmental fund 470 sub-basin boundaries with a total area of ~ 346.3 thousand km². Rational land use in accordance with the strategic environmental assessment should take into account the characteristics and features of the landscape, promote the protection and reproduction of soil, vegetation and other natural components in a single agreement between the countries of trans-boundary basin.

Author keywords
Agricultural development; Dnieper river; Forest area. Erosion potential; Geo-modeling; GIS-technologies; River basins; Strategic environmental assessment

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