

UDC 504.03:502.3

ENVIRONMENTAL SECURITY OF SOCIETY UNDER ECOSYSTEM SHIFTS:
MECHANISMS FOR OVERCOMING ECO-THREATS AND THE CONSEQUENCES OF
ECOCIDE

Buriak A.A.

National University «Yuri Kondratyuk Poltava Polytechnic»

[*fem.buryak@nupp.edu.ua*](mailto:fem.buryak@nupp.edu.ua)

As of late 2025, the issue of environmental security has gained critical importance due to large-scale disruptions of natural systems caused by military actions, technological incidents, and accelerating climate change. Ecocide – understood as deliberate or consequential destruction of the natural environment – generates a new type of threats that extend far beyond local ecosystem degradation and create long-term risks for public health, economic stability, and international security [1]. The development of integrated mechanisms for overcoming eco-threats has become a key task of state environmental policy and international cooperation.

In Ukraine, the consequences of ecocide manifest themselves in soil degradation, contamination of water resources, loss of biodiversity, and destruction of protected natural areas. Restoring ecosystems requires the integration of economic, legal, financial, and environmental tools, including through the involvement of investment and credit resources of international institutions [2]. Ecocide, as a form of intentional or secondary environmental destruction, reshapes the interaction between society and nature by generating a wave of interconnected risks. These include air pollution with toxic emissions, destruction of wetlands, large-scale siltation and poisoning of river systems, degradation of arable land, and declining productivity of agroecosystems. These processes intensify during wartime, when the operation of wastewater treatment facilities is disrupted, uncontrolled fires occur, and the chemical load on the environment increases.

From the standpoint of global approaches, environmental security is understood as a society's ability to minimize the impact of hazardous factors, maintain ecosystem resilience, and safeguard environmental rights of citizens. For Ukraine, critical directions include [3]: development of environmental monitoring systems using satellite analytics and artificial intelligence; creation of registries of environmental damage and integrated digital maps of ecocide; implementation of “green” recovery mechanisms aligned with European standards; mobilization of financial instruments of international financial organizations to eliminate ecological consequences of disasters.

A key trend of late 2025 is the transition to models of adaptive resource management, which employ an ecosystem-based approach to territorial restoration, strengthening the natural resilience of forests, aquatic ecosystems, and coastal zones. International organizations emphasize the need to assess transboundary impacts of eco-threats because environmental risks do not adhere to geographical boundaries [4].

Managing the consequences of ecocide is impossible without analytical assessment of the dynamics of critical indicators. The following table provides analytically generalized data reflecting trends in ecosystem degradation and environmental restoration in Ukraine.

Dynamics of key environmental indicators of Ukraine, 2022–2025 is shown in table 1.

Table 1

Dynamics of key environmental indicators of Ukraine, 2022–2025

Indicator	2022	2023	2024	2025 (forecast)	Change 2022– 2025, %
Area of ecologically damaged territories, thousand ha	312	356	389	405	+29,8
Surface water pollution index	1,74	1,82	1,95	2,03	+16,7
Number of recorded technogenic emissions, units	128	143	166	172	+34,4
Share of restored ecosystems, %	7	11	17	25	+257,1

Source: author’s compilation based on data of the Ministry of Environmental Protection of Ukraine, State Emergency Service of Ukraine, and European Environment Agency, 2022–2025.

Strengthening environmental resilience requires the development of an efficient environmental governance model oriented toward long-term sustainability. Its key components include: expanding protected areas, ensuring environmental expertise of investment projects, implementing decarbonization programs, and developing international “green” funds. In the long run, legal qualification of ecocide as an international crime with defined mechanisms of accountability and compensation becomes essential.

Overcoming eco-threats and the consequences of ecocide is a strategic prerequisite for ensuring environmental security of society. For Ukraine in late 2025, this issue is especially critical due to the scale of environmental losses and their long-term effects on public health and economic development. Establishing an advanced environmental monitoring system, integrating European reforms, attracting international investments, and developing legal mechanisms for ecocide accountability create a solid foundation for national ecological recovery and enhanced resilience to future threats.

Reference:

1. Levchenko I., Buriak A., Maksiuta N., Cherkaska D. *Challenges and prospects of implementation environmental and social initiatives in international business. Актуальні проблеми сталого розвитку.* 2024. № 2. Том 1. С. 57 – 64. DOI: [https://doi.org/10.60022/2\(2\)-8SD](https://doi.org/10.60022/2(2)-8SD).

2. Buriak A., Levchenko I. *The role of international organizations in the formation of a security-oriented information environment and the implementation of strategies for ensuring the economic and ecological security of Ukraine. Актуальні проблеми сталого розвитку.* 2024. № 1. Том 1. С. 7 – 12. DOI: [https://doi.org/10.60022/1\(1\)-1SD](https://doi.org/10.60022/1(1)-1SD).

3. Буряк А.А., Левченко І.В. *Роль інвестиційно-кредитних ресурсів міжнародних інститутів у подоланні загроз екологічної безпеки України. Науково-виробничий журнал «Бізнес-навігатор».* 2025. Випуск 5 (82). С. 457 – 461. DOI: <https://doi.org/10.32782/business-navigator.82-71>

4. Левченко І.В., Буряк А.А., Максютя Н.С. *Екологічна безпека країни: імплементація європейських реформ в Україні. Причорноморські економічні студії.* 2025. Випуск 94. С. 120 – 125. DOI: <https://doi.org/10.32782/bses.94-18>