



СЕКЦІЯ 1

СУЧАСНИЙ СТАН ВОДНИХ РЕСУРСІВ, АНТРОПОГЕННИ ВПЛИВИ ТА РИЗИКИ ВСЬОГО СТАНУ

Lukash O. V., Mulach V. S.

CRITICAL LIMITATIONS OF WATER RESOURCES MONITORING AND MANAGEMENT IN CHERNIHIV REGION UNDER CONDITIONS OF TOTAL MINING POLLUTION OF THE DNEIPER AND DESNA FLOODPLAINS

At the current stage, Ukraine is recognized as the most heavily mined country in the world, posing unprecedented challenges to environmental security. River floodplains are among the most difficult areas for humanitarian demining due to their specific hydrological conditions. For the Chernihiv region, this issue is of strategic importance, as the region serves as a formation zone for a significant portion of the discharge of the Dnieper and Desna basins. According to the Water Code of Ukraine [1], water resources management must follow the river basin principle. However, the total mining of coastal zones de facto blocks the implementation of these norms, transforming floodplains into «blind zones» for state monitoring.

Special attention must be paid to the state of the Desna River – the only major European artery without dams, which maintains a unique natural hydrological regime. However, the intensive pollution of its floodplains with explosive objects (EO) threatens this status. High flow energy and annual floods cause unpredictable hydrodynamic migration of mines. Areas recorded as safe during the summer may contain new EO hotspots brought by the current after spring floods. Furthermore, the silting of ammunition in soft floodplain soils makes the detection and neutralization process – regulated by the Law of Ukraine «On Mine Action in Ukraine» [5] – extremely complex and time-consuming.

The mining of floodplains directly hinders Ukraine's obligations within the framework of European integration. Specifically, Directive 2000/60/EC (Water Framework Directive) [3] requires achieving «good ecological status» for all water bodies. However, due to mine danger, it is impossible to fully implement the Procedure for State Water Monitoring approved by Cabinet of Ministers Decree №758 [4]. The lack of access to gauging stations and the inability to perform physical sampling in border areas with Russia and Belarus make the verification of transboundary pollution impossible. Any anthropogenic discharge from adjacent territories becomes inaccessible for analysis, turning the Dnieper and Desna rivers into corridors of uncontrolled environmental risk.

Furthermore, the floodplains of the Dnieper and Desna rivers are designated as Emerald Network sites and Ramsar wetlands. The official status of these territories as «contaminated» or «potentially contaminated» with explosive objects (EO), which requires mandatory recording in the State Register according to Cabinet of Ministers Decree No. 440 (dated June 7, 2024) [2], effectively suspends all nature conservation measures. This situation leads to the degradation of ecosystems of international importance. The phenomenon of «hydrological terror», manifested through the natural downstream migration of mines, creates conditions of constant tension where each subsequent flood nullifies previous restoration efforts.

Based on the above, the technological modernization of the monitoring system must become a priority task. Since traditional research methods are physically impossible due to mine hazards, it is necessary to implement automated stations and unmanned systems (both aquatic and aerial) for remote water quality control. Integrating mine hazard maps with hydrographic data will allow for the identification of «priority safety corridors» to maintain critical infrastructure. Only a transition to digital water resources management will enable Ukraine to maintain control over the environmental situation in the Dnieper basin and ensure the state's water security amidst prolonged military aggression.

References

1. Водний кодекс України : Закон України від 06 черв. 1995 р. № 213/95-ВР. URL: <https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text> (дата звернення: 05.03.2026).
2. Деякі питання щодо створення, забезпечення функціонування та ведення реєстру територій, забруднених/імовірно забруднених вибухонебезпечними предметами: Постанова Кабінету Міністрів України від 7 черв. 2024 р. № 440. URL: <https://zakon.rada.gov.ua/laws/show/740-2024-%D0%BF#Text> (дата звернення: 05.03.2026).
3. Директива 2000/60/ЄС Європейського Парламенту і Ради від 23 жовтня 2000 року про встановлення рамок діяльності Співтовариства у сфері водної політики (Водна Рамкова Директива): офіц. пер. URL: https://zakon.rada.gov.ua/laws/show/994_962#Text (дата звернення: 06.03.2026).
4. Про затвердження Порядку здійснення державного моніторингу вод : Постанова Кабінету Міністрів України від 19 верес. 2018 р. № 758. URL: <https://zakon.rada.gov.ua/laws/show/758-2018-%D0%BF#Text> (дата звернення: 05.03.2026).
5. Про протимінну діяльність в Україні : Закон України від 06 груд. 2018 р. № 2642-VIII. URL: <https://zakon.rada.gov.ua/laws/show/2642-19#Text> (дата звернення: 05.03.2026).