

УДК 502.4:556.5:574.2(477)

I. Kupriianchuk,
Doctor of Economic Sciences, Professor, Professor of the Department of Land Management,
National University of Life and Environmental Sciences of Ukraine
ORCID ID: <https://orcid.org/0000-0003-1348-2128>

DOI: 10.32702/2306-6792.2025.21.11

PROBLEMS OF BALANCED USE AND CONSERVATION OF WETLANDS OF INTERNATIONAL IMPORTANCE IN UKRAINE

І. П. Купріяничук,
д. е. н., професор, професор кафедри управління земельними ресурсами,
Національний університет біоресурсів та природокористування України

ПРОБЛЕМИ ЗБАЛАНСОВАНОГО ВИКОРИСТАННЯ ТА ЗБЕРЕЖЕННЯ ВОДНО-БОЛОТНИХ УГІДЬ МІЖНАРОДНОГО ЗНАЧЕННЯ В УКРАЇНІ

The article presents a comprehensive study of the current state, challenges and ways to improve the management of wetland ecosystems in the context of European integration, climate change and military threats.

Wetlands are among the most valuable natural ecosystems, performing important functions in preserving biodiversity, regulating the hydrological regime, purifying water and combating climate change. Ukraine has 50 wetlands of international importance included in the Ramsar List, with a total area of over 800,000 hectares. The article analyses current issues of sustainable use and conservation of these areas in the context of European integration, climate change challenges and armed aggression against Ukraine.

The study focuses on the main threats to wetlands: land drainage and reclamation, intensive agriculture, urbanisation, invasive species, as well as the consequences of military actions that cause the destruction of hydraulic structures and the degradation of ecosystems. It reveals the imperfection of spatial planning, the fragmentation of the monitoring system, and the institutional weakness of environmental management.

It substantiates the need to integrate an ecosystem approach to wetland management in accordance with the provisions of the Ramsar Convention. A concept of integrated management has been proposed, which provides for the creation of a national database for the ecological certification of wetlands, the introduction of spatial planning taking into account ecological zoning, the development of an eco-monitoring system, and the active involvement of communities in joint management processes.

The results of the study can be used to improve state policy in the field of wetland protection, to develop comprehensive spatial development plans for local communities, and to develop environmental safety and climate change adaptation programmes. The proposed approaches are consistent with the UN Sustainable Development Goals, in particular SDG 13 (Climate Action) and SDG 15 (Life on Land), and contribute to the formation of Ukraine's environmental security system in the context of growing climatic and anthropogenic risks.

У статті представлено комплексне дослідження сучасного стану, викликів і шляхів удосконалення управління водно-болотними екосистемами у контексті європейської інтеграції, зміни клімату та воєнних загроз.

Водно-болотні угіддя є одними з найцінніших природних екосистем, які виконують важливі функції у збереженні біорізноманіття, регулюванні гідрологічного режиму, очищенні води та боротьбі зі зміною клімату. В Україні налічується 50 водно-болотних угідь міжнародного значення, включених до Рамсарського списку, загальною площею понад 800 тисяч гектарів. Стаття присвячена аналізу сучасних проблем збалансованого використання та збереження цих територій у контексті процесів європейської інтеграції, викликів зміни клімату та збройної агресії проти України.

У дослідженні зосереджено увагу на основних загрозах для водно-болотних угідь: осушення та меліорація земель, інтенсивне сільське господарство, урбанізація, інвазивні види, а також наслідки військових дій, що спричиняють руйнування гідротехнічних споруд та деградацію екосистем. Виявлено недосконалість просторового планування, фрагментацію системи моніторингу та інституційну слабкість управління навколишнім середовищем.

Обґрунтовано необхідність інтеграції екосистемного підходу до управління водно-болотними угіддями відповідно до положень Рамсарської конвенції. Запропоновано концепцію інтегрованого управління, яка передбачає створення національної бази даних для екологічної сертифікації водно-болотних угідь, впровадження просторового планування з урахуванням екологічного зонування, розвиток системи екомоніторингу та активне залучення громад до процесів спільного управління.

Результати дослідження можуть бути використані для вдосконалення державної політики у сфері охорони водно-болотних угідь, формування комплексних планів просторового розвитку територіальних громад, а також при розробці програм екологічної безпеки та адаптації до зміни клімату. Запропоновані підходи узгоджуються з Цілями сталого розвитку ООН, зокрема ЦСР 13 (Боротьба зі зміною клімату) і ЦСР 15 (Збереження екосистем суші), та сприяють формуванню системи екологічної безпеки України в умовах зростаючих кліматичних і антропогенних ризиків.

Key words: wetlands; Ramsar Convention; ecosystem approach; spatial planning; climate change; land reclamation; environmental security; biodiversity; environmental monitoring; ecosystem services.

Ключові слова: водно-болотні угіддя; Рамсарська конвенція; екосистемний підхід; просторове планування; зміна клімату; меліорація земель; екологічна безпека; біорізноманіття; екологічний моніторинг, екосистемні послуги.

STATEMENT OF THE PROBLEM

Wetlands are among the most valuable ecosystems on the planet, performing essential functions such as ecological regulation, climate moderation, water purification, and the preservation of biodiversity. Ukraine is home to more than 50 wetlands of international importance that are included in the Ramsar List, including the Shatsk Lakes, the Tuzly Lagoons, and the Danube River Delta wetlands, among others. However, the conservation of these areas in a favourable ecological state faces numerous challenges of both natural and anthropogenic origin.

Increasing pressure on natural resources from agricultural activities, land reclamation, urbanization, infrastructure development, and the impacts of climate change — such as desiccation, declining groundwater levels, and ecosystem degradation — have led to the deterioration of the natural environment in wetland areas. A significant portion of these ecosystems is experiencing fragmentation, salinization, and disruption of hydrological regimes, all of which directly undermine their ecological integrity and biodiversity.

The urgency of the problem has been further exacerbated by the ongoing war in Ukraine, which has introduced new threats to protected areas. These include the destruction of hydrotechnical infrastructure, disruptions to the protective regime of conservation zones, and the inability to conduct systematic monitoring and effective management. At the same time, Ukraine's integration into the European environmental governance space necessitates the implementation of modern approaches to sustainable wetland management in accordance with EU directives and the Ramsar Convention.

The core scientific and practical issue lies in the search for effective models of wetland use that harmonize ecological conservation with the principles of rational natural resource management. This requires significant improvements in spatial planning of watershed basins, ecosystem-based zoning of territories, economic valuation of ecosystem services, and the establishment of appropriate legal frameworks to safeguard wetlands at both national and regional levels.

Consequently, there is a critical need to develop a comprehensive concept for the balanced management of wetlands of international importance in Ukraine — one that accounts for ecological, socio-economic, and legal dimensions and aligns with international environmental protection standards.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

The sustainable use and conservation of wetlands, particularly those of international importance, have become a central concern of both international environmental governance and national policy-making in Ukraine. The Ramsar Convention (1971), ratified by Ukraine in 1991, provides the foundational legal and strategic framework for wetland protection. According to the Convention on Wetlands of International Importance especially as Waterfowl Habitat [2], the member states commit to maintaining the ecological character of designated wetlands and promoting their wise use.

The Ramsar Sites Information Service (RSIS) [8] serves as a global repository of designated wetlands and their ecological profiles. As of 2025, Ukraine hosts 50 Ramsar sites, covering over 800,000 hectares, yet challenges persist in terms of mo-

monitoring, management efficiency, and adaptation to climate change impacts. The Strategic Framework and Guidelines for the Future Development of the List of Wetlands of International Importance (Resolution VII.11) [10] emphasizes the need for representativeness, ecological functionality, and conservation priority in selecting and managing Ramsar sites.

Additionally, the RSIS [8] outlines the principles for site designation, ecological characterization, and integrated governance. It calls for improved coordination between national authorities, scientific institutions, and local communities in the preparation of site dossiers and management plans. Recommendation 4.7 [11] further encourages contracting parties to enhance national capacities through institutional reforms and by embedding Ramsar priorities into national legislation and policy frameworks.

From a typological perspective, Resolution VI.5 [9] expands the classification of wetlands to include subterranean karst wetlands—an ecologically significant type relevant to Ukraine's Polissia and Carpathian regions, yet still underrepresented in national inventories. Within the Ukrainian scholarly discourse, researchers such as N. V. Dehtiar (2012) and B. O. Sydoruk (2016) have emphasized the need to transition toward ecosystem-based management of wetlands. Their work aligns with the Ramsar vision of "wise use," highlighting the need to preserve ecosystem services, biodiversity, and climate regulation functions of wetlands. Sydoruk, in particular, notes the importance of integrating wetlands into spatial planning and ecological networks, while Dehtiar advocates for adaptive management models that respond to climate vulnerabilities. [4,12].

The classification and mapping of wetlands, as undertaken by Klymenko et al. (2021) for the Shatsk National Nature Park, correspond with the Ramsar requirement for ecological inventories and habitat representativeness. Their work demonstrates the diversity of wetland types in the Shatsk region and the need for differentiated conservation strategies. Efforts toward ecological passportization, as proposed by Bondar and Konishchuk (2012), are vital for compiling standardized data on wetland status and threats. This approach resonates with Ramsar's guidelines for site documentation and monitoring, and offers a framework for evidence-based restoration efforts. Regional case studies, such as those presented by Danylchenko and Herasymenko (2020) and Karpiuk et al. (2021), provide important insights into local conservation challenges, community involvement, and institutional gaps in wetland

governance in Volyn and Sumy regions. These examples underscore the need to link national Ramsar obligations with local implementation capacities. [1, 3, 6, 7].

However, as highlighted in recent analyses, the issues of integrated ecosystem-based management, ecological assessment, adaptation to climate change, and the incorporation of local socio-environmental contexts require more in-depth research. The ultimate objective remains the development of an effective national policy for wetland protection as a critical element of Ukraine's environmental security, in alignment with international obligations and local realities.

FORMATION OF THE OBJECTIVES OF THE ARTICLE

The purpose of this article is to substantiate the theoretical and methodological foundations for ensuring the sustainable use and effective conservation of wetlands of international importance in Ukraine through the integration of the ecosystem-based approach, the provisions of the Ramsar Convention, climate change adaptation strategies, and consideration of local environmental and social factors.

RESEARCH METHODS

In the process of studying the problems of balanced use and conservation of wetlands of international importance in Ukraine, a complex of general scientific, economic, environmental and special methods was applied, which ensured a multifaceted study of the issue under study. In particular, the analysis of regulatory and legal documents, statistical analysis, and comparative analysis of European practices were used.

RESULTS OF THE STUDY

The nature of Ukraine is characterized by a high degree of diversity — there are steppes, forests, mountain ranges, swamps, rivers, estuaries, alpine meadows, fresh and salt lakes, sea coasts, as well as many unique and rare biotopes. A special group among them is wetlands, which, according to the provisions of the Ramsar Convention (ratified by Ukraine), include both wetlands and freshwater or brackish water bodies with a depth of up to six meters at low tide.

According to the obligations of the Ramsar Convention, member states must identify and protect national lands of international importance, preserve waterfowl, and create nature conservation sites. Today, 2,372 Ramsar sites have been registered in the world, of which 50 are located in Ukraine. They cover an area of 789,702.2 hectares. [14, 15]

In the General Scheme of Territorial Planning of Ukraine, these lands are classified as natural territories that are important for the preservation of landscape and biological diversity. They are included in the national ecological network, as they ensure sustainable development of territories, contribute to the formation of a favorable living environment and support the natural and historical identity of regions. [16]

According to Part 8 of Article 16-1 of the Law of Ukraine "On Regulation of Urban Planning Activities", information on water fund objects, including wetlands, is the starting point for the development of a comprehensive plan for the spatial development of communities. This plan, which combines the functions of urban planning and land management documentation, determines the spatial organization of the territory, its functional purpose, directions for the development of transport, social and engineering infrastructure, measures for civil protection and environmental protection, including components of the natural environment and cultural heritage sites. In addition, as stipulated in Part 10 of Article 16-1 of the same Law, the design decisions of the comprehensive plan must include data on wetland ecosystems, which allows them to be integrated into the general model of spatial planning and conservation of the natural environment. [17]

In order to integrate the ecosystem approach to spatial planning and nature management in wetland areas, which will contribute to increasing the ecological sustainability of landscapes and reducing anthropogenic load, it is worth analyzing the threats to wetlands of Ukraine. Based on the synthesis of data from international and Ukrainian sources, the main anthropogenic and climatic threats to wetlands of Ukraine have been identified.

Drainage and land reclamation. In the 20th century, Ukraine actively implemented a policy of reclamation of wetlands, which provided for the drainage of territories in order to attract them to agricultural cultivation. According to estimates, more than 3.5 million hectares of land have been drained in Ukraine, of which about 1 million hectares are peatlands. The largest areas of drained territories are concentrated in the regions of Polissya (Volyn, Rivne, Zhytomyr regions) and in the northern parts of Kyiv region. These measures were often carried out without proper environmental assessment, which led to a number of environmental and socio-economic problems. Drainage of the wetland areas, especially in Polissya and the Dnieper basin, is the most significant threat.

Agriculture. Ukraine is one of the largest agrarian countries in Europe: about 69% of land is

used for agriculture, of which only 6% is irrigated, which adds to the burden on the wetland areas during irrigation and the use of chemical fertilizers. [5]

Climate change. An analysis of 40-year meteorological data showed (1982—2022) that the average temperature of the growing season increased by +0.8-1.2°C, with a decrease in precipitation in Polissya — this causes more frequent aridity and degradation of biotopes.

Invasive species. New fauna and flora arriving as a result of environmental changes are displacing native species, especially in protected areas of the Shatsk and Odessa estuaries — detailed assessments of the level of invasion are still lacking.

Pollution. At least 490 cases of damage to wetlands have been recorded as a result of hostilities. Low institutional capacity. A systematic analysis showed that 44% of key protected areas remain uncontrolled as a result of armed conflict, and the management structure has remained centralized and ineffective for decades.

Today, there are significant differences between the approaches of the European Union and Ukraine to wetland conservation. The EU implements an integrated environmental policy, in which wetlands are considered not only as natural areas, but also as elements of infrastructure that provide ecosystem services. Systematic planning, effective monitoring, community involvement and stable financing allow EU countries to successfully implement strategies for the conservation and restoration of such areas. (Table 1).

At the same time, in Ukraine, despite the presence of international obligations and positive initiatives, the fragmentation of the institutional system, lack of data and the absence of full-scale wetland restoration programs persist. The transition to European approaches requires strengthening institutions, implementing integrated management and increasing the priority of wetlands in state environmental policy.

Modern urban planning policy in Ukraine, in particular the provisions of the updated legislation on spatial development of territorial communities, opens up new opportunities for integrating environmental components into strategic planning of territories. In this context, wetlands should be considered not only as valuable natural centers, but also as an infrastructure of ecological security. According to the provisions of the Laws of Ukraine "On Regulation of Urban Planning Activities" and "On the Ecological Network of Ukraine", wetlands should be taken into account in the structure of the ecological network as key elements that ensure the connectivity of natural areas, the preservation of ecosystem processes and the genetic fund of biota.

Table 1. Comparison of the European Union and Ukrainian approaches to wetland conservation

Criterion	European Union	Ukraine
Legal framework	EU Directives: Water Framework Directive, Habitats Directive, Birds Directive, Biodiversity Strategy 2030	Ramsar Convention (1991), Law on Environmental Protection, Cabinet of Ministers of Ukraine, Resolution № 1287 (2002)
Ecosystem approach	Integrated into EU policy (green infrastructure, ecosystem services, Natural Capital Accounting)	Initiated but fragmented; traditional conservation model still prevails
Spatial planning	Natura 2000, GIS tools, zoning, buffer zones	General Spatial Planning Scheme of Ukraine, integrated community plans (since 2021 include wetlands)
Monitoring and data	Copernicus, satellite observation, indicators from the European Environment Agency	Limited monitoring; partial integration with RSIS, GIS databases under development
Wetland conservation funding	LIFE Programme, agri-environment payments under CAP, PES mechanisms	State and donor funding (GEF, UNDP projects), PES not implemented
Public participation	Advanced co-management tools, ecotourism, environmental education	Growing role of local communities and initiatives, but lacks systemic support
Ecosystem restoration	Rewilding, large-scale peatland restoration programmes, 2030 targets	Individual initiatives (for example in Polissia), no national restoration programme
Institutional coordination	Unified system within EU environmental policy	Decentralized structure, fragmented authority across agencies
Climate adaptation	Integrated in all nature protection strategies, dedicated funds	Some legal provisions exist, but not a priority in wetland policy

This means that they should be considered as restrictions for urban development of the territory or as zones subject to a special use regime.

The challenge on this path is the lack of spatial databases that would fully take into account the characteristics of wetlands, their ecological status, hydrological regime, degree of anthropogenic load, etc. Currently, such information is only partially integrated into cadastral and urban planning documentation. In this regard, it is advisable to develop:

— a single geoinformation monitoring da-

tabase for wetlands, integrated with the State Land Cadastre and RSIS (Ramsar Sites Information Service);

— ecological zoning standards within the framework of comprehensive spatial development plans that would take into account the specifics of wetlands as objects of sustainable management;

— indicators of ecological sustainability of wetlands, which can be used to make decisions on permissible loads, use regimes, restoration or restrictions on economic activity.

Effective management of wetlands requires not only spatial identification, but also proper interagency coordination. Today, wetland ecosystems in Ukraine are managed within the framework of the powers of the Ministry of Environmental Protection and Natural Resources, the State Water Agency, state forestry enterprises, nature reserve fund institutions, and local governments. However, the dispersion of functions, the lack of clear mechanisms for transferring information and coordinating decisions between structures often make it impossible to take a comprehensive approach.

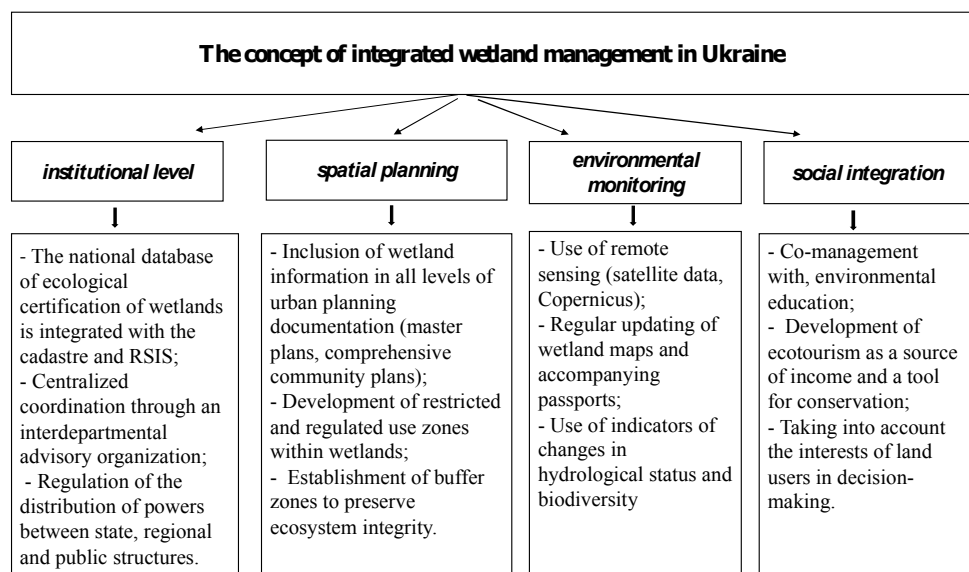
The main areas of improving institutional interaction include:

— creation of a single coordinating body;

— introduction of co-management programs with local communities and environmental organizations;

— coordination of urban planning, environmental, and water management strategies at the level of territorial communities;

— development of ecosystem management tools, including eco-monitoring, certifica-


Fig. 1. A model of integrated management of wetlands

tion, and ecological certification of territories.

Wetland conservation is not an end in itself — it is part of a broader transformation of the nature management system in Ukraine. In the context of climate change adaptation, biodiversity loss, and the reduction of the hydrological stability of basins, the implementation of an ecosystem approach to spatial planning becomes not just a recommended practice, but a necessary condition for the formation of national ecological security.

Accordingly, based on the analysis, a model of integrated management of wetlands is proposed, which includes the institutional level, spatial planning, environmental monitoring, and social integration. (see Fig. 1).

CONCLUSION

Wetlands of Ukraine have extraordinary ecological, climatic and socio-cultural value, performing key functions in maintaining hydrological balance, preserving biodiversity and adapting to climate change. The state of implementation of the provisions of the Ramsar Convention in Ukraine is fragmentary, with a predominantly declarative nature without an effective implementation mechanism in spatial planning and nature management. Therefore, it is necessary to introduce a national system of certification, monitoring and spatial integration of wetlands as mandatory elements in urban planning, environmental and land management documentation.

It is the ecosystem approach that should become the methodological basis for reforming planning, financing and management tools for natural areas at all levels — from national to community.

The proposed conceptual management model will be able to ensure multisectoral integration and will allow for balanced use of wetland resources while preserving their ecosystem functions.

Література:

1. Бондар, О. І., Коніщук, В. В. Наукові основи екологічної паспортизації боліт, торфовищ та осушених земель України. Екологія боліт і торфовищ (Т. 1, с. 27—40). 2012. Київ: ДІА.
2. Конвенція про водно-болотні угіддя, що мають міжнародне значення, особливо як місце проживання водоплавних птахів (Рамсарська конвенція). (1971). URL: https://zakon.rada.gov.ua/laws/show/995_031
3. Данильченко, О. С., Герасименко, М. М. Водно-болотні угіддя як унікальні природні об'єкти (на регіональному та місцевому рівнях).

Наукові записки Сумського державного педагогічного університету. Географічні науки, 2, 2020, 39—48 с.

4. Дехтяр, Н. В. Екосистемні принципи управління водно-болотними угіддями. Ефективна економіка, (9), 2012. URL: <http://www.economy.nayka.com.ua/?op=1&z=1405>

5. Дорош, О., Купріянич, І., Дорош, Ю., Бутенко, Ю. Українське сільське господарство в умовах війни: аналіз програм підтримки. Дослідження в галузі аграрної економіки, 126 (2), 2024, 84—89. <https://doi.org/10.7896/j.2875>

6. Карпюк, З. К., Фесюк, В. О., Антипюк, О. В., Качаровський, Р. Є. Охорона болотних екосистем у мережі природних заповідників Волинської області у Шацькому болотно-озерному масиві в умовах зміни клімату. Волинський національний університет імені Лесі Українки. 2021.

7. Клименко, М. О., Клименко, О. М., Ковальчук, С. В. Класифікація водно-болотних угідь Шацького національного природного парку. Сільське та лісове господарство, (22), 2021, с. 135—144.

8. Інформаційна служба Рамсарських угідь. URL: <https://rsis.ramsar.org/>

9. Секретаріат Рамсарської конвенції. (1996). Резолюція VI.5: Включення підземних карстових водно-болотних угідь як типу водно-болотних угідь до системи класифікації Рамсарської конвенції. URL: https://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_vi.05e.pdf

10. Секретаріат Рамсарської конвенції. (1999). Резолюція VII.11: Стратегічна основа та керівні принципи для майбутнього розвитку Списку водно-болотних угідь міжнародного значення. URL: https://www.ramsar.org/sites/default/files/documents/library/key_res_vii.11e.pdf

11. Секретаріат Рамсарської конвенції. (1990). Рекомендація 4.7: Механізми для покращення застосування Рамсарської конвенції. URL: https://www.ramsar.org/sites/default/files/documents/library/key_rec_4.07e.pdf

12. Сидорук, Б. О. Забезпечення сталого використання водно-болотних угідь та торфовищ на основі екосистемного підходу. Стале використання природи, (1), 2016, с. 16—21.

13 "Про порядок надання водно-болотним угіддям статусу водно-болотних угідь міжнародного значення". Кабінет Міністрів України, постанова № 1287 URL: <https://zakon.rada.gov.ua/laws/show/1287-2002-%D0%BF#Text>

14. "Про затвердження надання водно-болотним угіддям статусу водно-болотних угідь

міжнародного значення". Кабінет Міністрів України, постанова № 147-URL: <https://zakon.rada.gov.ua/laws/show/147-2011-%D1%80#Text>

15. "Про затвердження надання водно-болотним угіддям статусу водно-болотних угідь міжнародного значення". Кабінет Міністрів України, Постанова № 895-р. URL: <https://zakon.rada.gov.ua/laws/show/895-2011-%D1%80#Text>

16. "Про затвердження Генерального плану планування території України". Закон України. URL: <https://zakon.rada.gov.ua/laws/show/3059-14#Text>

17. "Про регулювання містобудівної діяльності". Закон України. URL: <https://zakon.rada.gov.ua/laws/show/3038-17#Text>

References:

1. Bondar, O. I. and Konischuk, V. V. (2012), "Scientific basis for ecological certification of bogs, peatlands and drained lands of Ukraine", *Ekologhiia bolit i torfovysch*, vol. 1, pp. 27—40.

2. Verkhovna Rada of Ukraine (1971), "Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention)", available at: https://zakon.rada.gov.ua/laws/show/995_031 (Accessed 15 Oct 2025).

3. Danyl'chenko, O. S. and Herasymenko, M. M. (2020), "Wetlands as unique natural objects (at regional and local levels)", *Naukovi zapysky Sums'koho derzhavnoho pedahohichnoho universytetu. Heohrafichni nauky*, vol. 2, pp. 39—48s.

4. Dekhtiar, N. V. (2012), "Ecosystem principles of wetland management", *Efektyvna ekonomika*, vol. (9), available at: <http://www.economy.nayka.com.ua/?op=1&z=1405> (Accessed 15 Oct 2025).

5. Dorosh, O., Kupriianchyk, I., Dorosh, Yu. and Butenko, Yu. (2024), "Ukrainian agriculture in wartime: analysis of support programs", *Doslidzhennia v haluzi aharnoї ekonomiky*, vol. 126 (2), pp. 84—89. <https://doi.org/10.7896/j.2875>

6. Karpiuk, Z. K., Fesiuk, V. O., Antypuk, O. V. and Kacharovs'kyj, R. Ye. (2021), *Okhorona bolotnykh ekosystem u merezhi pryrodnykh zapovidnykiv Volyn's'koi oblasti u Shats'komu bolotno-ozernomu masyvi v umovakh zminy klimatu* [Protection of swamp ecosystems in the network of nature reserves of Volyn region in the Shatsk swamp-lake massif under climate change], Volyn's'kyj natsional'nyj universytet imeni Lesi Ukrainky, Luts'k, Ukraine.

7. Klymenko, M. O., Klymenko, O. M., and Koval'chuk, S. V. (2021), "Classification of wetlands of Shatsk National Nature Park", *Sil's'ke ta*

lisove hospodarstvo, vol. (22), pp. 135—144.

8. Ramsar Information Service (2025), available at: <https://rsis.ramsar.org/> (Accessed 15 Oct 2025).

9. Ramsar Convention Secretariat (1996), "Resolution VI.5: Inclusion of underground karst wetlands as a wetland type in the Ramsar Convention classification system", available at: https://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_vi.05e.pdf (Accessed 15 Oct 2025).

10. Ramsar Convention Secretariat (1999), "Resolution VII.11: Strategic framework and guidelines for the future development of the List of Wetlands of International Importance", available at: https://www.ramsar.org/sites/default/files/documents/library/key_res_vii.11e.pdf (Accessed 15 Oct 2025).

11. Ramsar Convention Secretariat (1990), "Recommendation 4.7: Mechanisms to improve the implementation of the Ramsar Convention", available at: https://www.ramsar.org/sites/default/files/documents/library/key_rec_4.07e.pdf (Accessed 15 Oct 2025).

12. Sydoruk, B. O. (2016), "Ensuring the sustainable use of wetlands and peatlands based on an ecosystem approach", *Stale vykorystannia pryrody*, vol. (1), pp. 16—21.

13. Cabinet of Ministers of Ukraine (2002), Resolution "On the procedure for granting wetlands the status of wetlands of international importance", available at: <https://zakon.rada.gov.ua/laws/show/1287-2002-%D0%BF#Text> (Accessed 15 Oct 2025).

14. Cabinet of Ministers of Ukraine (2011), Resolution "On the procedure for granting wetlands the status of wetlands of international importance", available at: <https://zakon.rada.gov.ua/laws/show/147-2011-%D1%80#Text> (Accessed 15 Oct 2025).

15. Cabinet of Ministers of Ukraine (2011), Resolution "On the procedure for granting wetlands the status of wetlands of international importance", available at: <https://zakon.rada.gov.ua/laws/show/895-2011-%D1%80#Text> (Accessed 15 Oct 2025).

16. Verkhovna Rada of Ukraine (2002), The Law of Ukraine "On the General Scheme for Planning the Ukrainian Territory", available at: <https://zakon.rada.gov.ua/laws/show/3059-14#Text> (Accessed 15 Oct 2025).

17. Verkhovna Rada of Ukraine (2011), The Law of Ukraine "On the regulation of urban development activities", available at: <https://zakon.rada.gov.ua/laws/show/3038-17#Text> (Accessed 15 Oct 2025).

Стаття надійшла до редакції 13.10.2025 р.