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“Green Book”: Levels of functioning, syntaxonomy, structuring

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Abstract. In the light of modern scientific concepts of phytocenotic diversity, the study of its preservation is now a new and somewhat holistic outlook on this global problem for humanity. According to the pan-phytocenocentric concept, its solution should be implemented at the local, regional, national, and international levels. Protection of phytocenotic diversity in Ukraine has become an integral part of the concept of eco-balanced development, national programs for the conservation of biodiversity as a mandatory element of national environmental policy. Therefore, it is important to preserve phytocenotic diversity as a set of phytocenotic taxa that reflect all levels of organization of phytocenoses and which were formed during phytocenogenesis in various ecological conditions. The purpose of this paper is a comprehensive level analysis of the current composition of the rare phytocenotic pool of Ukraine, establishing a new list of rare syntaxa, working out the latest structure of the second official edition of the “Green Book of Ukraine” and outlining tasks for the future. In this context, a critical analysis of the syntaxonomic composition of the current rare phytocenotic pool of Ukraine was carried out, methodological violations of isolating syntaxa were found, and the structure of describing rare syntaxa was proposed. The authors identified 983 associations of 104 formations that will be used as the basis for the second official edition of the Green Book of Ukraine. An essential element of syntaxonomic protection of vegetation is also the creation of regional lists of rare associations, based on the principles of creating the “Green Book of Ukraine”. This study is the first to outline a modern rare phytocenotic pool for the main natural regions: Ukrainian Polissia, Ukrainian Carpathians, Podil part of the forest zone, Forest Steppe of Ukraine, Steppe of Ukraine, Mountain Crimea

Keywords: vegetation, rare association, rare phytocenotic pool, “Green Book of Ukraine”, regional green lists

Introduction

One of the priority areas of modern scientific thought is the development of principles and the formation of conceptual foundations of the latest environmental outlook. The latter increasingly becomes a philosophy of the survival of humanity in general

and the preservation of optimal conditions for the existence of heterogeneous living and non-living nature. In the real practice of the relationship between human society and nature, this task is transformed into an ideal of sustainable ecosocial de-

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velopment. Such development involves preserving the authenticity of the relevant natural objects over time, as well as increasing their self-organizing potential in a co-evolutionary way. This is evidenced by the close attention of international environmental organizations to this problem and program developments carried out under the auspices of the United Nations, UNESCO, UNEP, IUCN, and others.

For Ukraine, the problem of the ecostate stability, and therefore the state of its biodiversity, is particularly relevant, as it is recognized as a priority at the state level. Firstly, the methodology of this approach is consolidated in the Constitution of Ukraine; secondly, it is the result of signing and ratifying the relevant convention of an international multilateral treaty; and thirdly, the conservation of biodiversity is included in the seven priorities of national environmental policy. Therefore, the protection of phytocenotic diversity in Ukraine has become an integral part of the concept of eco-balanced development and national biodiversity programs. This is also noted in the draft "National Strategy for Forest Management of Ukraine until 2035".

In this area, the main focus is on preserving vegetation cover as the initial link of all bioenergetic processes that occur in the biosphere. In this regard, the urgent task is to preserve and maintain the natural phytocenogenetic process in the vegetation cover. Phytocoenoses, as elementary phytocoenoses, collectively form a higher-order structure – vegetation. Preservation of phytocoenoses solves the ecoproblem at three principal levels of the organization of living things: phytocenotic pool, phytogene pool, and ecosystems of the planet (Shelyag-Sosonko, 1999; Stoyko, 2011).

The defining stage in recognizing the importance of syntaxonomic protection of rare vegetation at the ecosystem level is the creation of "Green books" ("green lists"), as a certain register of groups that require special conservation. Usually, such registers provide information about their group structure, phytocenotic features, distribution, phytosociological and botanical value, measures to optimize conservation regimes and balanced use, and the state of conservation (Popovych, 2002; Shelyag-Sosonko, 2003a; Stoiko & Shelyag-Sosonko, 2005; Ustymenko, Shelyag-Sosonko & Vakarenko, 2007).

For the entire short history of syntaxonomic protection in Ukraine as a science, theoretical foundations for the preservation of rare groupings

were developed and the principles of their isolation were formulated, a model of the structure was proposed and three editions of the "Green Book of Ukraine" were made: two scientific monographic works "Green Book of the Ukrainian SSR: rare, disappearing and typical plant communities in need of protection" (Shelyag-Sosopko, 1987), "Green Book of Ukraine. Forests" (Shelyag-Sosonko, Ustymenko, Popovuch & Vakarenko, 2002), the first official publication – "Green Book of Ukraine" (Didukh, 2009).

An essential event for the development of the science of rare plant communities was the publication of S.Y. Popovych's monograph "Synphytozoology of forests of Ukraine" (Popovych, 2002). The author conducted a theoretical and methodological generalization of scientific materials on the protection of forest vegetation of Ukraine, revealed the theoretical foundations of the strategy for the protection of phytocenodiversity at the basic levels of its ecosystem organization, presented a new approach to the allocation of phytocenodiversity according to regional and horological criteria, carried out a synphytozoological assessment of the forest cenotic pool.

The monograph "Management of protected forests of Ukraine" (Shelyag-Sosonko, 2003b) provides a list and brief scientific and environmental characteristics of rare forest associations of nature reserves of Ukraine.

Considerable factual material of research on the rare phytocenotic pool of Ukraine, which has been tested in numerous scientific papers and reports on scientific research, is critically summarized in the monograph "Rare phytocenotic pool of Ukraine" (Ustymenko, Shelyag-Sosonko & Vakarenko, 2007). The authors highlighted modern aspects of phytocenological and synphytozoological studies, analysed the state of conservation of phytocenodiversity of the nature reserve fund of Ukraine for categories of the highest geosociological rank. In this thorough study, a rare phytocenotic pool is also characterized and analysed in terms of phytocenotic, phytosociological, botanical, and geographical significance, representativeness, amplitude and density of distribution, the nature of changes in phytocenotic areas, position in the succession series, and the potential for recovery of phytocoenoses.

In the context of the development of the ecological network of Ukraine for the identified key territories of the international, national, and regional

levels of Forest-Steppe and Steppe, a list of rare phytocenoses is given, the rare phytocenotic pool is analysed, the degree of transformation of these groups is established and the main threats for them are clarified (Dubyna & Movchan, 2013; Ustymenko et al., 2018).

Thus, the idea of preserving a rare phytocenotic pool is especially relevant for Ukraine, whose vegetation cover has undergone substantial quantitative and qualitative transformations, which has led to the depletion of the phytocenotic pool and the deterioration of the phytocenogenesis. Over the past decades, a considerable series of other publications has covered this issue, continuing the discussion of methodological foundations and practical measures for the conservation of rare phytocenoses in Ukraine.

The purpose of the present paper was a comprehensive level analysis of the current composition of the rare phytocenotic pool of Ukraine, establishing a new list of rare syntaxa, as well as working out the latest structure of the second official publication of the “Green Book of Ukraine”.

Materials and Methods

The research materials were the rare phytocenotic pool of Ukraine, modern geobotanic literature, and field factual material of the authors collected in all natural regions of the country over the past half-century.

The methodology for determining rare phytocenotaxonomic diversity is based on a set of methods for syntaxa inventory and matrix synphytosozological assessment of the phytocenotic pool (Didukh, 2009), which are well tested in the Ukrainian phytocenological literature. Field studies were carried out using classical geobotanical methods (detailed route, cartographic, laying of temporary experimental plots, geobotanical description, etc.) (Yakubenko et al., 2018). During the desk stage of research, field data were systematized and synphytosozological analysis was performed. Rare syntaxa of forest vegetation were identified on the principles of dominant classification (Didukh, 2009). Synphytosozological assessment of the phytocenotic pool was carried out per the “Methodology of synphytosozological assessment of natural plant communities subject to protection and included in the Green Book of Ukraine”, approved by the Order of the Ministry of Environmental Protection and Natural Resources of Ukraine No. 257 dated 27.05.2009.

Results and Discussion

According to the panphytocenocentric concept, all rare plant groups at all levels of phytostroma organization are subject to continuous protection. Let us briefly consider synphytosozological problems at each of these principal levels.

International level.

Global warming of the biosphere climate has become one of the most urgent environmental problems of the present time, with a far-reaching impact of these processes on society, the environment, and the economy. Undoubtedly, the main effects of such an impact primarily affect the state of natural indigenous ecosystems. Therefore, it is not difficult to predict the consequences:

1) the growing areas of some species of biodiversity will be changed due to changes in the boundaries of natural zones, in some cases some species will completely disappear;

2) the modes, types, intensity, and frequency of exposure to vegetation of various natural environmental factors – floods, hurricanes, landslides, fires, insects, pathogens, etc. – will change;

3) there will be mostly negative changes in the stability of life, primarily in forest, steppe, and swamp ecosystems, and the productivity of autochthonous woody and herbaceous plants;

4) the efficiency of functioning of vulnerable ecosystems will change rapidly, specifically their impact on biogeochemical cycles, the state of biodiversity, and the reduction of carbon sequestration by forests (with the implementation of rapid growth of such scenarios, forests will turn from carbon storage facilities into sources of emissions);

5) the reproductive cycles of species of biodiversity of natural ecosystems, the course of their successions will change, and their ecotic and social functions will change;

6) there will be a decrease in the amount of natural population biodiversity, especially species with a narrow climatic range (stenotopic), as well as species on the border of their ranges, relicts and endemics.

To slow down the above-mentioned processes in Europe for the implementation of the “Convention on the Conservation of Wild Flora and Fauna and Natural Habitats in Europe” (Bern, 1979) and numerous relevant initiatives, resolutions, directives (especially Annex I of the Biotope Directive and Resolution 4) the concept of biotope protection has been

introduced, which provides only partial preservation of associational phytocenodiversity and a minimal share of rarity. According to this document, coastal, halophytic, non-marine aquatic, herbaceous, shrubby, forest, continental rocky, scree, psammophytic, and sparse forest communities are subject to conservation in Europe (Andrienko & Onyshchenko, 2008), which usually characterize higher taxonomic ranks. Biotopes are very rarely identified at the level of plant associations, as is customary for “green books”. In general, in the EU countries, the leading area of biodiversity protection is the preservation of local populations of rare plant and animal species, as well as unique or reference natural ecotopes, regardless of whether rare species of biodiversity occur there. Already after the adoption of the Bern Convention and the so-called housing directive, the Strategy for the Preservation of Plant Life or its analogues for different regions was agreed at the international level, the Convention on Biodiversity (Rio de Janeiro, 1992) was approved, as well as dozens of other documents that allow fulfilling the purpose of preserving living nature in its various manifestations. It is the Convention on Biodiversity that makes provision for the biocenotic level of wildlife conservation. The pan-European strategy for the preservation of biological and landscape diversity (Sofia, 1995) is a demonstrative example of the implementation of this convention, which comprehensively covers various aspects and approaches of environmental protection activities – from population to biocenotic and eco-network. Undoubtedly, such activities are organized in a more complex way at the planetary level. However, biotope protection and syntaxonomic protection are related concepts, but not identical.

In this context, the problem of preserving the types of living organization, which ensures the functioning of the biosphere and the maintenance of eco-balance at the phytostromal level, first of all, in the most sensitive component of phytocenodiversity – rarity, becomes relevant. In this regard, in 1996, Yu.R. Shelyag-Sosonko and T.L. Andrienko called for work to be started on the selection of plant groups rare for Europe and the creation of the “Green Book of Europe”. They also believed that the selected syntaxa should be cited not only according to the dominant classification, but also according to the Braun-Blanquet system (Shelyag-Sosonko & Andrienko, 1996). This proposal is considered in the

scheme for describing a rare phytocenosis for the new edition of the “Green Book of Ukraine”.

National level.

In Ukraine, the first official publication of the Green Book of Ukraine (2009) became a defining event for the history of syntaxonomic protection of rare vegetation at the ecosystem level. At this stage of the development of synphytosozology, this publication became a register of plant communities that needed special preservation. For each phytocenosis, information about its vertical and horizontal structure, features of functioning, distribution, phytosozological and scientific value, measures to optimize conservation regimes and balanced use, and representativeness of the nature reserve fund is provided.

The structure of the “Green Book of Ukraine” was developed per the requirements of the “Regulations on the Green Book of Ukraine”, which was approved by the Resolution of the Cabinet of Ministers of Ukraine in 2002. To identify rare groupings, a synphytosozological assessment of plant associations was carried out according to this method. Such assessment is based on the principles of the importance of dominant species involved in the formation of phytocenosis both as functional and specific-territorial biosystem. In addition, according to this method, eight diagnostic features of groups are distinguished (phytocenotic, phytosozological, botanical-geographical significance, regional representativeness, ecological-phytocenotic amplitude and density of distribution, nature of changes in the cenoareal, position in the successional series, potential for recovery), each of which has four gradations. Furthermore, the authors of this study prepared materials for the new edition of the “Regulations on the Green Book of Ukraine” in the context of the second edition of the “Green Book of Ukraine”. The content of its text has been corrected, to which changes and clarifications have been introduced, which will contribute to the quality improvement of the implementation of particular, effective measures to preserve and reproduce rare plant groups. Therefore, the “Green Book of Ukraine” is a legally established mechanism for the protection of rare phytocenoses and their habitats in Ukraine, which are necessary for joint preservation. This official document supports a consistent legal tradition in the field of biodiversity protection in Ukraine.

The current official edition of the “Green Book of Ukraine” (2009) also contains information on the condition, distribution, and features of rare and endangered species, as well as typical natural plant communities subject to protection. This edition comprises 160 articles that provide information about 800 associations of 111 vegetation formations in Ukraine. Among the types of vegetation in Ukraine, the richest is the rare phytocenotic pool of forest vegetation, which has 308 associations, 62% of which are confined to mountain ecosystems. The rare phytocenotic pool of Steppe vegetation has 222 associations, and the highest aquatic vegetation has 137 associations. In other types of vegetation, it is less numerous: shrubby and prostrate shrubby vegetation of the Carpathians and Crimea – 32 associations, grass and prostrate shrubby vegetation of xerotic type on outcrops and sands – 32, meadow vegetation – 20, swamp vegetation – 39, halophytic vegetation – 10 associations. This representation of rare associations generally correlates with the phytocenotic richness and diversity of vegetation types in Ukraine, the degrees of their conservation and disturbance, the diversity of ecotopes, botanical and geographical features, etc. (Ustymenko, Dubyna & Vakarenko, 2010). Thus, the “Green Book of Ukraine” has become a theoretical foundation for developing practical measures for the conservation, reproduction, and use of plant communities.

Currently, work has begun in Ukraine on the preparation of a new (second) official edition of the “Green Book of Ukraine”, in which the authors of this paper are directly involved. Since the publication of the first official edition, a lot of new synphytosozological and geobotanic information about the rare phytocenotic diversity has been accumulated, which, together with the materials of special studies of the rare phytocenotic pool, is a sufficient basis for preparing a new edition. This process requires the presentation of up to date geobotanic information for each of the rare syntaxa, detailed cartographic material, clarification of the main threats, and development of types of conservation modes.

The quantitative and qualitative state and composition of rare plant communities in Ukraine have changed substantially over the past few decades. The number of localities with rare phytocenoses, which, due to their ecobiotic characteristics and origin, are sensitive to anthropic influence, has considerably decreased. Their phytocenotic content has

also changed. Therefore, the obvious phytosozological task of today is a critical analysis of the available lists of rare vegetation syntaxa, conducting the most complete inventory of them based on the results of the latest phytocenological studies, synphytosozological assessment, and ensuring comprehensive preservation.

In recent years, the authors of this paper have thoroughly analysed the syntaxonomic composition of the current rare phytocenodiversity of Ukraine and critically evaluated the content of geobotanic descriptions in the phytosociological database. As a result, several problematic issues were identified that needed to be considered upon drafting a new list of rare groups for inclusion in the second official edition of the “Green Book of Ukraine”. The following aspects of the legitimacy of a considerable share of syntaxa turned out to be problematic: the inconsistency of association names with the content of geobotanical descriptions, based on which they were established; selection of associations by individual descriptions; violation of the principles of syntaxonomic protection; associations were established based on small fragments of the mosaic of plant communities; assignment of true association rank to syntaxons of lower rank, i.e., sub-associations or variants of associations were considered associations; inclusion of syntaxa that have disappeared from autochthonous indigenous ecotopes due to natural or anthropogenic factors in the list of rare phytocenotic pool; associations were described several decades ago and are currently not confirmed by modern research, etc. In total, the authors of this paper identified 134 illegitimate rare associations, including 83 forest associations, two shrub associations, 30 steppe associations, two meadow associations, seven swamp associations, and two water associations, as well as eight associations for outcrop and sand groups (Fig. 1).

A detailed analysis of the current rare phytocenotic pool, the latest results of modern synphytosozological research and the latest geobotanical information on rare phytocenotic diversity, as well as the materials of the authors’ own research, allowed establishing quantitative and qualitative indicators of the current state and composition of the rare phytocenotic pool of Ukraine, which will form the basis for the preparation of the second official edition of the “Green Book of Ukraine”.

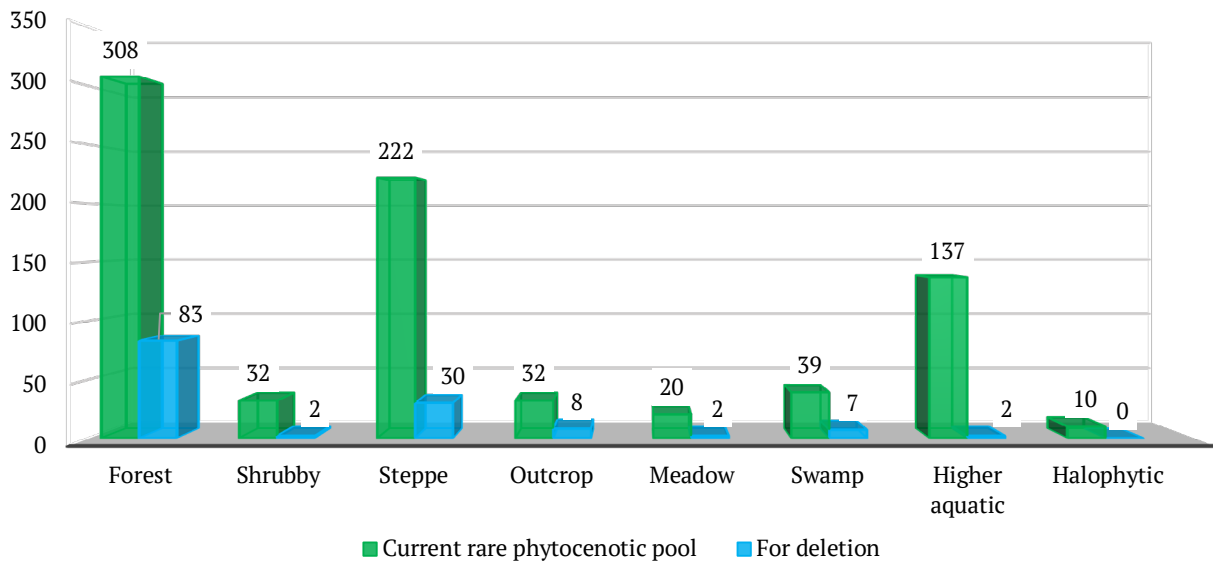


Figure 1. Quantitative ratios of legitimate and illegitimate rare associations of Ukraine

Thus, the modern rare phytocenotic pool of Ukraine has 983 associations, which are included in 104 formations. Forest vegetation is characterized by the most numerous rare phytocenotic pool, which has 363 associations of 22 formations. Shrubby vegetation is represented by 32 rare associations of eight formations; steppe – 300 associations of 24 formations; grass and prostrate shrub groups of xerotic type on outcrops and sands have 31 associations of seven formations; meadow vegetation is represented by 20 associations of five formations;

for swamp vegetation, 61 associations of 10 formations are established; halophytic vegetation is distinguished by the smallest rare phytocenotic pool, which has 12 associations of three formations; the highest water vegetation covers 163 associations of 25 formations (Fig. 2). As a result of the comparison of the quantitative compositions of the rare phytocenotic pool of the two official editions of the “Green Book of Ukraine” (current and new), it was established that the phytocenotic pool proposed for protection will be increased by 186 associations (Fig. 3).

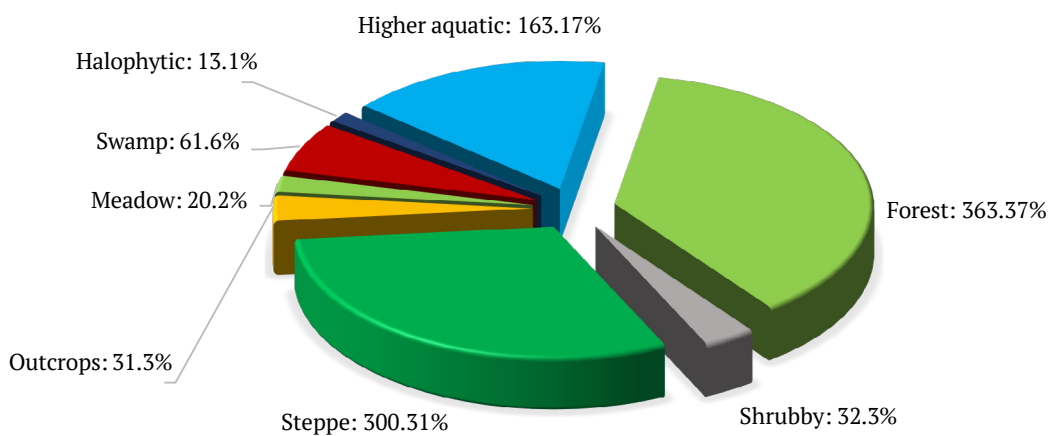


Figure 2. Rare phytocenotic pool of vegetation types in Ukraine: richness and ratio

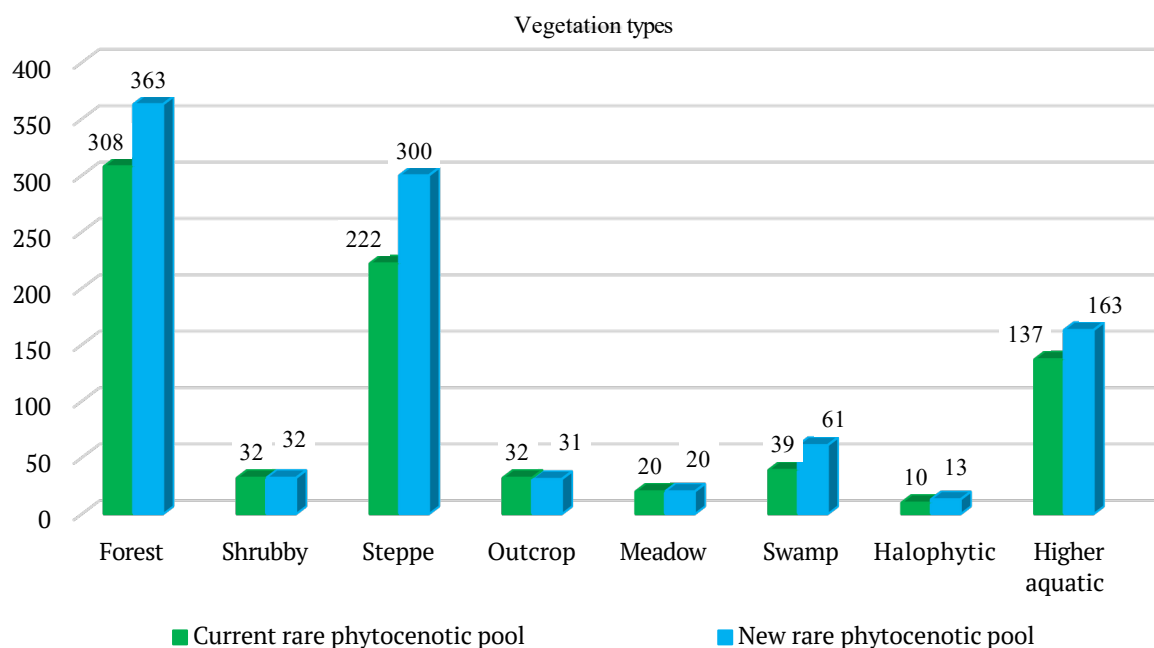


Figure 3. The ratio of the number of rare associations in the current (2009) and planned editions of the “Green Book of Ukraine”

In connection with the above, the authors of this paper believe that the scientific foundation of improving the description scheme of rare phytocenoses of the “Green Book of Ukraine” is one of the methodological foundations of the development of modern synphytosozology in Ukraine. From a practical standpoint, scientific foundations are also necessary to develop the organizational component of plant life conservation in Ukraine.

For more detailed information about the status of a rare syntaxon in relation to its scientific and phytosozological value, the new edition of the “Green Book of Ukraine” suggests describing it according to the following indicators:

- ✓ binominal scientific name of the dominant plant association;
- ✓ ecological and floristic classification syntaxa corresponding to the dominant association;
- ✓ synphytosozological category, index, and grouping status; phytocenotic range and state of distribution in Ukraine;
- ✓ eco-conditions;
- ✓ biotope;
- ✓ scientific botanical value;
- ✓ motives of protection;
- ✓ general phytocenotic characteristics; renewable potential;

- ✓ representation in the nature reserve fund, position in the eco-network system;
- ✓ factors of negative influence;
- ✓ biotechnical and sociotechnical recommendations;
- ✓ main sources of information;
- ✓ distribution map of the rare group.

In the future, it is worth moving on to evaluating indicators only for environmental content.

In the new “Green Book of Ukraine” all types of vegetation organization will be presented according to a single scheme based on the classification of vegetation according to the dominant principle. As noted above, the factual material obtained based on descriptions of rare phytocenoses revealed considerable heterogeneity of associations of different types of vegetation. Therefore, the structure of the new edition of the “Green Book of Ukraine” justifies the need to adopt a morphological and physiognomic principle, according to which the predominance of life forms and the resulting physiognomy of a rare phytocenosis are taken into account. This edition will also encourage further steps in the development of syntaxonomic vegetation protection, namely:

- 1) identification of new localities of rare plant communities;

2) creation of new nature reserves in places of newly discovered localities of rare phytocenoses;

3) organization of a system of phytocenological monitoring of the state of rare phytocenoses and conducting necessary scientific research: the current state of groupings, ecotope conditions, mapping with geographical coordinates, forecasting natural and anthropic transformation, etc.;

4) development of a system of practical measures to introduce differentiated regimes for the conservation, reproduction, and eco-balanced use of rare plant communities;

5) conducting appropriate environmental and educational work and informing the public, state authorities, and local self-government about the state of rare phytocenoses.

For the national level, it is worth noting another important aspect of the issue – the beginning of the so-called monographic typological “green lists” in Ukraine. In this context, in 2002, the first monograph “The Green Book of Ukraine. Forests” was released (Sheliah-Sosonko, Ustymenko, Popovych, Vakarenko, 2002). In this genre of publications, it is advisable to present security syntaxa in more detail at the level of individual vegetation types. Therefore, due to the intensive degradation of the steppe biome, first of all, it is necessary to prepare scientific editions “Green List of the Steppe of Ukraine”, and in the future for other types of vegetation as well, primarily hydrophilic ones.

Regional level.

An essential element of the syntaxonomic protection of vegetation is also the creation of regional (for natural and administrative regions) “green lists” of rare associations based on the principles of creating the “Green Book of Ukraine”, which should be the only legal document in the country. First of all, for certain natural regions of Western Ukraine, S.M. Stoyko and his colleagues (Stoyko, Milkina, Yaschenko et al., 1998) developed and published the “Regional Green Book” for the first time, which lists rare phytocenotic pool for the Ukrainian Carpathians, Western Polissia and the broad-leaved forest zone of Ukraine. For the administrative regions of Ukraine, this process is still at the initial stage of formation, since now, such lists are compiled only for some administrative regions (Zakarpattia, Kyiv, Kirovohrad, Odessa, Poltava, Kharkiv). Undoubtedly, these lists require critical analysis. It is also important that leading experts in this field are involved in their compilation.

Developing this area of research, the authors of this paper most fully determined the modern quantitative and qualitative composition of the rare phytocenotic pool for the Ukrainian Polissia, the Ukrainian Carpathians, the Podil part of the forest zone, the Forest Steppe, the Steppe, and the Mountain Crimea (Fig. 4).

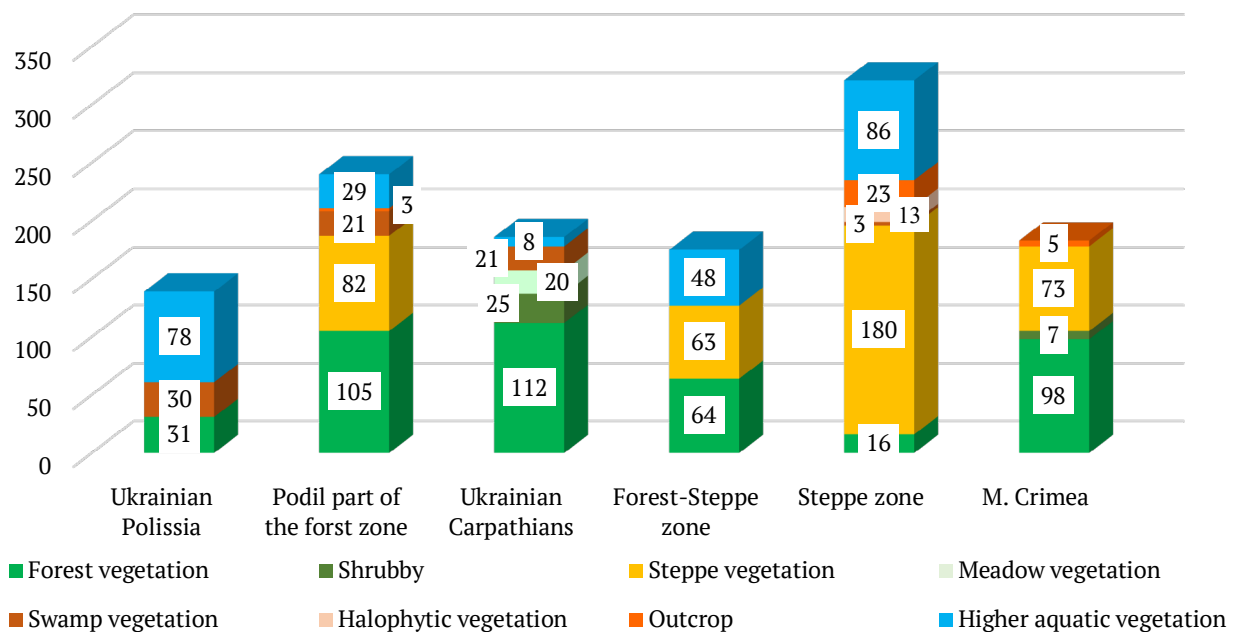


Figure 4. Number of rare associations in natural regions of Ukraine

Of these natural and geographical regions, the steppe zone (321 associations) is syntaxonomically the richest rare phytocenotic pool, and it is the least numerous in the Ukrainian Polissia (139 associations). For other regions, these indicators are approximately equal, they range from 175 (Forest-Steppe) to 240 associations in the Podil part of the forest zone. Rare phytocenotic pools of the Steppe zone, the Ukrainian Carpathians and the Podil part of the forest zone are more diverse. They cover rare associations of five types of vegetation, for the Mountain Crimea it is formed by associations of four types of vegetation, and for the Ukrainian Polissia and Forest-Steppe it is represented by associations of three types of vegetation. Such proportions of indicators generally correspond to the phytocenotic richness and diversity of vegetation in the regions, the degree of its preservation, and the volume of use of natural resources. Among the vegetation types, only rare forest associations are represented in all natural regions, the richness of which ranges from 16 associations in the steppe zone to 112 associations in the Ukrainian Carpathians. In four natural regions, there are rare associations of Steppe, swamp, and higher aquatic vegetation. Rare meadow vegetation is found only in the Ukrainian Carpathians.

In general, among the natural regions of Ukraine, the phytocenotic pool of mountain ecosystems – the mountainous Crimea and the Ukrainian Carpathians, as well as the Podil part of the forest zone – is characterized by the richness and diversity of rare associations. This fact is explained by the considerable diversity of ecotopes of these regions (areas of slopes of different steepness and exposure, different heights above sea level, different hydrothermal regimes), the significant breadth of ecological and phytocenotic amplitudes of edifiers, which

determines the syntaxonomical richness of phytocenoses formed by them, the participation in the creation of phytocenoses of a significant number of sozophytes and species of considerable botanical and geographical importance, the originality of the phytocenotic pool.

Local level.

It is also expedient for the development of science and nature conservation practice to draft “green lists” for certain important botanical areas, especially nature-reserve territories of higher ranks – biosphere and nature reserves, national natural and regional landscape parks, certified forestry enterprises, etc. For this level, it is also worth noting this aspect of the problem. In times of global eco-challenges, it is also important for a phytocenologist to record the beginning of the formation of evolutionary-anthropically new phytocenotic systems, especially aggregations of autochthonous and exotic plants with a high phytocenotypical involvement.

Conclusions

The principal area of protection of rare phytocenoses should be the prevention of negative anthropogenic influence and their protection from destructive natural phenomena. Ecological justification of sozotechnical measures for such groups to stabilize negative changes in the phytocenotic diversity of vegetation cover in wider landscapes should be based on the principles of applying a system of preventive and direct protection methods depending on homeostasis and their geosozological category, as well as a differentiated approach to the introduction of various types of conservation regimes for rare phytocenoses depending on their intended purpose. From an ecological standpoint,

an essential task is to justify conservation regimes in local areas, considering the severity and duration of reservation. The specifics of conservation of rare phytocenoses also depend on the number and area of their localities, the characteristics of edaphotopes, dynamic trends in groupings, and the degree of threat of their extinction.

Generally, the idea of preserving a rare phytocenotic pool is especially relevant for Ukraine, whose vegetation cover has undergone substantial quantitative and qualitative transformations, which

has led to the depletion of the phytocenotic pool and the deterioration of the phytocenogenesis. Therefore, a relevant and urgent environmental issue still is the study of the current state of the country's rare phytocenotic pool, an adequate action of which is the maintenance of the "Green Book of Ukraine" and other "green lists". Next is the development and legislative approval of fees for the illegal destruction or destruction of legitimate rare phytocenoses. Each rare plant group also needs a synphytosozological passport.

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«Зелена Книга»: рівні функціонування, синтаксономія, структуризація

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Анотація. Дослідження фітоценотичної різноманітності у світлі сучасних наукових концепцій її збереження нині є новим і певною мірою холістичним світоглядом щодо цієї глобальної для людства проблеми. Відповідно до панфітоценоцентричної концепції її вирішення має здійснюватися на локальному, регіональному, національному і міжнародному рівнях. Охорона фітоценотичної різноманітності в Україні стала невід’ємною частиною концепції екозбалансованого розвитку, національних програм збереження біорізноманітності як обов’язкового елементу державної природоохоронної політики. Тому актуальним є збереження фітоценотичної різноманітності як сукупності фітоценотичних таксонів, які відображають усі рівні організації фітоценосистем та які утворилися у процесі філоценогенезу в різноманітних екоумовах. Метою публікації є комплексний рівневий аналіз сучасного складу раритетного фітоценофонду України, встановлення нового переліку раритетних синтаксонів, опрацювання новітньої структури другого офіційного видання «Зеленої книги України» та окреслення завдань на майбутнє. У цьому контексті проведено критичний аналіз синтаксономічного складу нинішнього раритетного фітоценофонду України, виявлено методичні порушення їхнього виділення, запропоновано структуру опису раритетних синтаксонів. Автори визначили 983 асоціації 104 формацій, які будуть взяті за основу другого офіційного видання «Зеленої книги України». Важливим елементом синтаксономічної охорони рослинності є також створення регіональних (обласних) переліків раритетних асоціацій за принципами створення «Зеленої книги України». Уперше визначено сучасний раритетний фітоценофонд для основних природних регіонів: Українського Полісся, Українських Карпат, подільської частини лісової зони, Лісостепу України, Степу України, Гірського Криму

Ключові слова: рослинність, раритетна асоціація, раритетний фітоценофонд, «Зелена книга України», регіональні зелені списки