CZU: 581.5/.9:582(478) https://doi.org/10.67857/conbio2026.13

NEW FINDINGS OF RARE VASCULAR PLANTS IN LEFT BANK TRANSNISTRIA, REPUBLIC OF MOLDOVA

IZVERSCAIA Tatiana ORCID: 0009-0003-8530-0140
GHENDOV V. ORCID: 0000-0001-6405-3935
National Botanical Garden (Institute) of Moldova State University, Republic of Moldova
e-mail: t_izverskaya@mail.ru

INTRODUCTION

A major frontier in botany is the development of scientific foundations to protect rare plant gene pools at the regional level. To accomplish this, scientists are actively identifying wild flora, refining methods to monitor population structures, and establishing techniques to actively reconstruct threatened plant communities. Based on field surveys conducted in 2025 in the natural steppe vegetation near Lunga Nouă village in the Dubăsari district, new growing sites of five rare species were registered. Confined to the slopes of the Tamașlîc River, a left tributary of the Dniester, this ecosystem remains relatively resilient under conditions of minor natural pressure and moderate human activity. Field data underscore the high conservation value of this floristically rich site, which hosts populations of numerous species protected at the national level [1-3, 8, 13].

MATERIAL AND METHODS

Taxon nomenclature is presented in accordance with recent nomenclatural revisions [6, 9, 11, 16]. The geographic element of each species was established by analyzing its global distribution using published literature [6, 9]. To characterize the steppe communities hosting these rare species populations, geobotanical descriptions were performed following generally accepted methodological frameworks [12, 14].

The profile for each rare species includes data on its life form, habit photographs, flowering phenology, reproductive methods, beneficial properties, and geoelement. It further details its distribution both within the Republic of Moldova and specifically near the village of Lunga Nouă in the Dubăsari district (Left-bank Transnistria), alongside population statuses, growth habits, and total occupied area. Methodologically, rarity categories follow IUCN recommendations [7], while legislative protection status is derived from national and regional Red Lists [6, 8, 13, 15], the global IUCN Red List [10], CITES [4], and European Union wildlife trade frameworks, specifically Council Regulation (EC) No 338/97 [5].

RESULTS AND DISCUSSIONS

Comprehensive floristic inventories carried out in 2025 new growing sites findings for five rare vascular plant species: Astragalus dasyanthus Pall., Astragalus pubiflorus DC., Eremogone biebersteinii (D.F.K.Schltdl.) Holub, Iris pontica Zapał. and Nepeta parviflora M.Bieb. Their conservation importance is reflected by their inclusion in the second and third editions of the Red Data Book of the Republic of Moldova, the second edition of the Red Data Book of Transnistria, and the threatened species frameworks of adjacent territories.

Astragalus dasyanthus Pall. (Fabaceae). This species is a perennial hemicryptophyte (Fig. 1) characterized by a summer flowering phenology (June–July) and seed-based recruitment, possessing valuable medicinal, ornamental, melliferous, and fodder properties. As a Balkan-Pannonian-Pontic steppe geoelement, its regional presence in Moldova is sporadic, marking the northernmost edge of its general distribution. In the vicinity of Lunga Nouă village, it is occasionally integrated into the steppe herbage on slopes of differing exposures. Its spatial structure is sparse, characterized by single scattered individuals or minimal clusters of 3 to 4 specimens with an abundance level of 1. Demographic monitoring indicates an aging or recruitment-limited population, as only generative plants were recorded.

Figure 1. *Astragalus dasyanthus* Pall.

From a regulatory standpoint, the species carries a conservation status of Near Threatened (NT) and is granted legal protection under Category IV national frameworks [8]. This priority is reinforced by its inclusion as a vulnerable taxon in the Red Data Book of the Republic of Moldova [2, 3], alongside official listings in the Red Data Books of the Transnistrian Moldavian Republic [13] and Ukraine [15].

Astragalus pubiflorus DC. (Fabaceae). This species is a perennial hemicryptophyte (Fig. 2) characterized by a spring flowering phenology (April-May) and seed-based recruitment, valued for its ornamental appeal, melliferous qualities, and soil-binding properties. As a Balkan-Pannonian-Pontic steppe geoelement, its regional presence is critically restricted to central and southern Moldova, aligning with the southernmost margin of its general distribution. Localized mapping within the studied area identified the taxon on a northeastern slope

Figure 2. *Astragalus pubiflorus* DC.

across an area of 200 m2. Its spatial distribution ranges from isolated, solitary specimens to minimal clusters of 3 to 5 individuals with an abundance level of 1-2. Demographic analysis indicates a highly vital, all-aged population that flowers and fruits vigorously, backed by abundant seedling and juvenile regeneration.

From a regulatory perspective, modern evaluations categorize the taxon as Critically Endangered (CR), and it receives national legal protection under Category IV [8]. Reflecting its high conservation priority, it is documented in the Red Data Book of the Republic of Moldova as both Vulnerable [2] and Critically Endangered [3] across different editions, alongside an Endangered status in the Red Data Book of the Transnistrian Moldavian Republic [13] and a Vulnerable designation in the Red Data Book of Romania [1].

Eremogone biebersteinii (D.F.K.Schltdl.) Holub (Caryophyllaceae). This species is a perennial hemicryptophyte (Fig. 3) with a late-spring flowering phenology (May-June) and seed-based reproduction, valued primarily for its ornamental traits. As a Pontic-Sarmatian steppe geoelement, it shows a clear affinity for typical steppe habitats, including specialized calciphilic communities on limestone slopes. While historically distributed throughout central and southern Moldova, its modern regional presence is confirmed in only two localities within Left-bank Transnistria, notably near the village of Lunga Nouă. This area represents a peripheral boundary of its general range. Localized findings within the area near Lunga Nouă village track the taxon on northern and northeastern steppe slopes, where it grows sparsely as single individuals or minimal cohorts of 3 to 8 specimens (abundance 1). The demographic outlook for the population is precarious, as it is small and restricted strictly to mature, generative individuals.

Figure 3. *Eremogone biebersteinii* (D.F.K.Schltdl.) Holub

From a statutory perspective, modern evaluations rank the taxon as Critically Endangered (CR). This critical status is formally recognized by its inclusion in the Red Data Book of the Republic of Moldova [3] and the Red Data Book of the Transnistrian Moldavian Republic [13], both designating it as an endangered species facing an immediate risk of regional extinction.

Iris pontica Zapał. (Iridaceae). This species is a perennial geophyte (Fig. 4) with a late-spring flowering phenology (May–June) and a dual reproductive strategy utilizing both seed recruitment and rhizomatous expansion. Valued for its medicinal and ornamental qualities, this Pontic steppe geoelement extends into the North Caucasus region. Its regional populations in eastern Moldova mark the absolute northern periphery of its distribution. Localized finding within the studied area identifies the taxon on the upper crest of an open, western-facing steppe slope. It exhibits a clustered distribution, appearing in groups of 5 to 10 specimens

Figure 4. *Iris pontica* Zapał**.**

or expanding into patch-like stands across an area of about 30 m^2.

From a regulatory standpoint, the taxon holds a Vulnerable (VU) status and receives rigorous national protection under Category II legislative frameworks [8]. Reflecting its critical regional decline, it is registered as Endangered in the Red Data Book of the Republic of Moldova [3], elevated to Critically Endangered within the Red Data Books of the Transnistrian Moldavian Republic [13] and Romania [1], and categorized as Vulnerable in the Red Data Book of Ukraine [15].

Nepeta parviflora M.Bieb. **(**Lamiaceae). This species is a spring-flowering perennial hemicryptophyte (Fig. 5) that exhibits a May flowering phenology and a dual reproductive strategy, utilizing both seed recruitment and vegetative expansion. It is highly valued for its medicinal, aesthetic, and melliferous properties, as well as its status as an aromatic, essential oil-producing plant. As a Pontic steppe geoelement, the taxon displays a strong ecological affinity for intact steppe territories and the clearings associated with downy oak woodlands. Within the Republic of Moldova, its broader regional distribution spans the eastern, central, and southern sectors. Localized monitoring within the area reveals a precarious local presence, consisting of an isolated, compact cluster of several individuals situated on an eastern-facing steppe slope. The absolute spatial footprint of this local population is minimal, covering a micro-plot of just about 2 m^2.

Figure 5. *Nepeta parviflora* M. Bieb.

From a regulatory perspective, contemporary assessments rank the taxon as Vulnerable (VU). This classification is uniform across the border, as it is registered as a vulnerable species within the Red Data Book of the Republic of Moldova [3] and the Red Data Book of the Transnistrian Moldavian Republic [13]. Reflecting even more severe pressure at its regional periphery, it is legally designated as an Endangered species within the Red Data Book of Romania [1].

CONCLUSIONS

The execution of the scientific project – research subprogram “Research and ex situ, in situ conservation of the plant diversity of the Republic of Moldova” in the vicinity of Lunga Nouă village within the Dubăsari District of Left-bank Transnistria has unveiled a remarkably rich floristic composition, totaling 410 vascular plant species. This area serves as a critical micro-refugium for 18 rare species of national importance. The conservation urgency of the site is underscored by the status of its components: 14 species are protected under national statutory frameworks, 10 are designated as threatened within the third edition of the Red Data Book of the Republic of Moldova, and 16 are officially cataloged in the Red Data Book of the Transnistrian Moldavian Republic.

Beyond its high species richness, this territory holds immense ecological value. It is vital for maintaining environmental equilibrium in the region, preserving the specialized microclimatic conditions necessary for the persistence of vulnerable plant populations, and halting the loss of the irreplaceable genetic fund of wild flora indigenous to these steppe and rocky petrophytic ecosystems. Consequently, as soon as more exhaustive seasonal data on the local vegetation are secured, it is highly appropriate to advance a legal proposal to incorporate this territory into the “Dry Tămășlîc Valley” Landscape Reserve.

Acknowledgements: *The study was carried out within the following research project: Subprogram entitled: “Research and ex situ, in situ conservation of the plant diversity of the Republic of Moldova” (subprogram code 010101), funded by the Ministry of Education and Research of the Republic of Moldova.*

REFERENCES

1. Cartea Roşie a plantelor vasculare din România. Bucureşti: Editura Academiei Române, 2009. 630 p.
2. Cartea Roşie a Republicii Moldova. Ed. II. Chişinău: Ştiinţa, 2001. 287 p.
3. Cartea Roşie a Republicii Moldova. Ed. III. Chişinău: Ştiinţa. 2015. 492 p.
4. CITES. Convention on International Trade in Endangered Species of Wild Fauna and Flora. https://www.fisheries.noaa.gov/national/international-affairs/convention-international-trade-endangered-species-wild-fauna-and
5. European Union Wildlife Trade Regulations. January 2015. https://environment.ec.europa.eu/topics/nature-and-biodiversity/wildlife-trade_en
6. GBIF – the Global Biodiversity Information Facility. https://www.gbif.org/species/7721690
7. IUCN Standards and Petitions Subcommittee. 2010. Guidelines for Using the IUCN Red List Categories and Criteria. – Version 8.1. Prepared by the Standards and Petitions Subcommittee in March 2010. http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf
8. Legislaţia ecologică a Republicii Moldova (1996-1998). Chişinău: Societatea Ecologică „Biotica”, 1999. 233 p.

9. Plants of the World Online. Royal Botanical Garden. https://powo.science.kew.org/
10. The IUCN Red List of Threatened Species. 2026. https://www.iucnredlist.org/
11. The World Flora Online. https://www.worldfloraonline.org/
12. Корчагин А.А. Видовой (флористический) состав растительных сообществ и методы его изучения /Полевая геоботаника. Т. III. Л.: Наука, 1964. С. 39-202.
13. Красная книга Приднестровья /М-во природных ресурсов и экол. Контроля Приднестр. Молд. Респ. 2-издание. Тирасполь: ГУИПП «Бендерская типография «Полиграфист», 2020. 560 с.
14. Понятовская В.М. Учет обилия и особенности размещения видов в естественных растительных сообществах /Полевая геоботаника. Т. III. Л.: Наука, 1964. С. 209-432.
15. Червона книга України. Рослинний свит /ред. Я. П. Дідуха. Київ: Глобалконсалтинг, 2009. 912 с.
16. Черепанов С.К. Сосудистые растения России и сопредельных государств (в пределах бывшего СССР). Санкт-Петербург. 1995. 990 с.