

**CHOROLOGICAL DATA FOR SOME RARE PLANT SPECIES FROM  
ROSCI0222 SĂRĂTURILE JIJIA INFERIOARĂ-PRUT AND ROSPA0042  
ELEȘTEELE JIJIEI ȘI MILETINULUI (IAȘI COUNTY)**

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**Abstract:** Standard Data Forms of some Natura 2000 sites from Romania often contain very few and outdated data. This case applies for the Natura 2000 sites that make the object of our study, ROSCI0222 and ROSPA0042. Therefore, we aimed to highlight the presence of some rare plant species in the area of the studied Natura 2000 sites and to update their chorological information. Only three plant species are included in the Standard Data Forms of the sites and considered of conservative interest: *Fritillaria meleagris* subsp. *meleagris*, *Salvinia natans* (for ROSCI0222) and *Iris sintenisii* subsp. *brandzae* (for ROSPA0042). Of them, *Salvinia natans* and *Iris sintenisii* subsp. *brandzae* were confirmed in situ, while *Fritillaria meleagris* has not been identified within the sites' limits and most likely has been confused with *Fritillaria meleagroides*. Our research led to the identification of 17 rare plant species important for conservation (belonging to different zoological categories on both European and national level). For each plant species we provide the location, zoological category and the plant communities in which it has been identified.

**Keywords:** Natura 2000 site, rare species, chorology, Iași County, Romania

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### **Introduction**

There is a growing interest in understanding of the main biogeographic patterns and environmental gradients in floras and vegetation, for modelling ecological niches, wherefore an accurate location of the plots is needed (Douda et al. 2015). Updated chorological studies provide valuable information either in the context of non-native species (Șirbu 2006, Anastasiu 2010, Oprea et al. 2011) or in that of the rare ones (Anastasiu 2010, Țupu 2010, Bartók et al. 2014, Bartók et al. 2016, Filipaș et al. 2016, Pușcaș et al. 2016, Irimia & Mânzu 2018), also enabling the rediscovery of species considered as disappeared from some areas (Mátis et al. 2014, Balázs et al. 2016, Bartók et al. 2019), or even identifying new species (Mátis et al. 2017).

Whether we refer to rare or non-native species, new recordings from different areas, as well as their confirmation from previous locations, may serve to understanding the way the combined action of climate changes and anthropic factors (through agricultural practices and changes in land uses) affect plant species through reduction and fragmentation of the natural and semi-natural habitats.

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In terms of flora and vegetation, very few studies were carried out in the area, most of them focusing on vegetation description (mainly meadows vegetation) (Bucur & Turcu 1966, Răvăruf et al. 1968, Chifu et al. 1998). Besides, according to the Standard Data Forms of the ROSCI0222/ ROSPA0042, the only botanical source mentioned as a reference is a synthesis on the flora of Iaşi County (Mititelu et al. 1995). As a result, only three plant species were considered of conservative interest: *Fritillaria meleagris* subsp. *meleagris*, *Salvinia natans* (for ROSCI0222) and *Iris sintenisii* subsp. *brandzae* (for ROSPA0042).

Therefore, the aim of this study is to provide an updated situation on the presence and chorology of some rare plant species (belonging to different zoological categories at European and/ or national level) from two Natura 2000 sites, ROSCI022 and ROSPA0042, that underwent profound changes because of the anthropic impact in the last 100 years (Cişlariu et al. 2020).

### Material and methods

For our study we conducted field research, both in ROSCI0222 and ROSPA0042, because of their partial overlap. ROSCI0222 - Sărăturile Jijia inferioară-Prut (10,613 ha) and ROSPA0042 - Eleşteele Jijiei şi Miletinului (19,078 ha) are located in the North-Eastern region of Romania, on the territory of Iaşi County (Fig. 1).

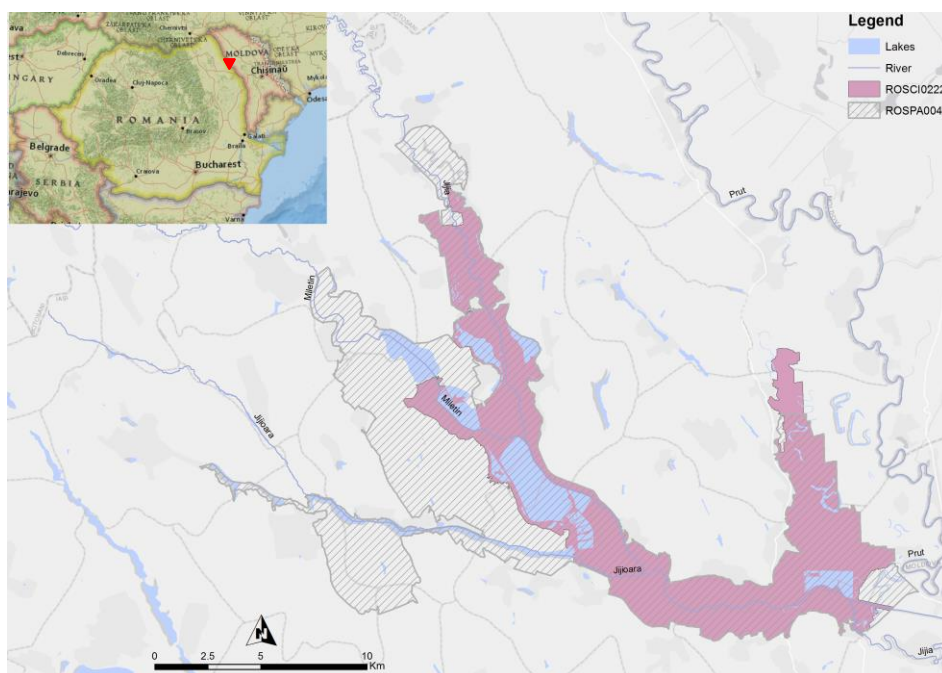


Fig. 1. Study area location and limits: ROSCI0222/ ROSPA0042

The field studies were carried out in the period March 2018 - July 2019. Plant identification was established according to Ciocârlan (2009) and Sârbu et al. (2013). The nomenclature follows the Euro+Med PlantBase, while for the plant communities'

identification and Natura 2000 habitats' classification we used Chifu et al. (2006) and Gafta & Mountford (2008).

For each species we provide the GPS coordinates (Table 1), zoological categories (Table 2) and the plant communities in which they were identified (Table 3). The specimens collected have been lodged in the Alexandru Ioan Cuza University Herbarium (I) (acronyms according to Thiers 2020).

### Results and discussion

***Crambe tataria*** Sebeök – Brassicaceae (Plate I, A) is a plant species protected both at European and national level, being registered in various Red Lists under different protection status (Table 2). Considered a Ponto-Pannonian element, the area of *C. tataria* range from Pannonia, through the steppes of the Northern Black Sea region, to Western Siberia (Nyárády 1955, Ball 1993, Euro+Med PlantBase 2020, POWO 2020). In Romania, it grows in arid and semi-arid meadows of the steppe and sylvosteppe zone (Sârbu et al. 2013), being known from Bacău, Bistrița-Năsăud, Botoșani, Brașov, Buzău, Cluj, Galați, Iași, Mureș, Suceava, Sibiu, Timiș, and Vaslui counties (Oprea 2005).

As yet, *C. tataria* is not included in the Standard Data Form of ROSCI0222, nor in that of ROSPA0042, although the species has been reported from Epureni and Larga Jijia since the middle of the 20<sup>th</sup> century (Răvăruț 1941, Nyárády 1955). It should be noted that while the literature mentions the species from near Epureni village, nowadays there is no locality known under this name within the sites' limits. Yet, there are two localities named Iepureni (one in Movileni and the other one in Andrieșeni commune), situated about 20 km away from each other. For this reason we consider this location as ambiguous. During our research, we identified *C. tataria* in the area between Rediu Mitropoliei and Iepureni (Movileni), but outside the sites' limits. The identified populations are relatively dispersed (Table 1, Fig. 2), being threatened by the agricultural practices and grazing. The largest population of *C. tataria* has been identified between Alexandru cel Bun and Șoldana localities, where we inventoried (in 2018) 946 individuals (with only 349 inside the ROSCI0222's limits). The phytocoenoses with *C. tataria* (Table 3) belong to the priority habitat 62C0\* (Table 3).

***Pontechium maculatum*** (L.) Böhle & Hilger (*Echium maculatum* L., *E. rubrum* Jacq., non Forssk., *E. russicum* J. F. Gmel.) – Boraginaceae (Plate I, B). Although this is a plant species of community importance (Table 2), it has not been included in the Standard Data Form of ROSCI0222 and ROSPA0042. As a Ponto-Pannonian species, with an area extending from Central Europe to Caucasus (Grințescu 1960, Gibbs 1972, Euro+Med PlantBase 2020, POWO 2020), *P. maculatum* grows in arid and semi-arid grasslands from the steppe and sylvosteppe area (Sârbu et al. 2013). In Romania, the species is considered as frequent in the continental and steppic bioregions (Mihăilescu et al. 2015).

In ROSCI0222/ ROSPA0042, we identified two populations of this species, at a distance of about 3.5 km from each other (Table 1, Fig. 2). In 2018, we inventoried 109 individuals in both populations. The phytocoenoses with *P. maculatum* are characteristic for the habitat 62C0\* (Table 3).

***Iris aphylla*** L. (*I. hungarica* Waldst. et Kit.; *I. aphylla* L. subsp. *hungarica* (Waldst. et Kit.) Asch. et Graebn.) – Iridaceae (Plate I, C). With an areal extending from

Central and Southern Europe to Southern Russia (Prodan & Nyárády 1966, Euro+Med PlantBase 2020, POWO 2020), *I. aphylla* grows in Romania in xeric grasslands, on various types of substrate, from the sylvosteppe to subalpine area (Alba, Argeş, Botoşani, Braşov, Buzău, Cluj, Covasna, Galaţi, Harghita, Hunedoara, Iaşi, Maramureş, Mureş, Neamţ, Satu Mare, Sibiu, Tulcea, Vaslui, Vrancea, and Suceava counties (Oprea 2005, Sârbu et al. 2013, Mihăilescu et al. 2015).

*I. aphylla* is also a species of community interest (Table 2, Fig. 2) and was identified in a single small population (approximately 25 flowering ramets), very close to the border of the ROSCI0222/ ROSPA0042 (Table 1), but outside of the actual limits, in phytocoenoses with *Crambe tatarica* (included in 62C0\* habitat type) (Table 3).

*Prunus tenella* Batsch (*Amygdalus nana* L.) – Rosaceae (Plate I, D). A data deficient species in Europe (Table 2), also growing in other steppe grasslands from Iaşi County (such as Valea lui David, Dealul lui Dumnezeu, between Iepureni and Ursoaia), was identified in a single location in ROSPA0042 (Table 1, Fig. 3). Alongside *Prunus spinosa*, this population of *P. tenella* represent remnants of shrub-steppe communities, that suffered a massive reduction because of the anthropo-zoogenic impact.



Fig. 2. Location of the Natura 2000 species: A - Şoldana, B - Vlădeni, C - Hălceni-Iazu Vechi

*Iris sintenisii* Janka subsp. *brandzae* (Prodán) D.A. Webb & Chater (*I. brandzae* Prodan) – Iridaceae (Plate II, A). Considered by some authors as a getic (Sârbu et al. 2013) or pontic floristic element (Ciocârlan 2009), the area of this subspecies is restricted to Romania and Republic of Moldova (Prodan & Nyárády 1966, Euro+Med PlantBase 2020). It is a xero-mesophilous, sometimes halophilous species, cited from

Botoșani, Brașov, Buzău, Galați, Iași, Prahova, Vaslui, and Vrancea counties (Prodan & Nyárády 1966, Oprea 2005).

A subspecies with various status in national Red Lists (Table 2), *I. sintenisii* subsp. *brandzae* was identified in xerophilous phytocoenoses on the territory of ROSCI0222/ ROSPA0042 (Tables 1, 3, Fig. 3).

*Colchicum bulbocodium* Ker Gawl. subsp. *versicolor* (Ker Gawl.) K. Pers. (*Bulbocodium versicolor* (Ker Gawl.) Spreng.) – Liliaceae (Plate II, B). This Ponto-Pannonian element, with a range extending from Pannonia to Southern Russia, is relatively rare in Romania, being known from Bihor, Cluj, Vaslui, and Iași counties (Zahariadi 1966, Oprea 2005, Ciocârlan 2009, Sîrbu et al. 2019, Euro+Med PlantBase 2020, POWO 2020). In Romanian Red Lists, *C. bulbocodium* is registered under various status (Table 2).

The first report of this species from Iași County dates since 2016, from Cotu Morii locality (Sîrbu et al. 2019). Our studies confirm this record, supplementing the species' chorology with a new location from Probota-Bălteni area (Table 1, Fig. 3). In both areas, *C. bulbocodium* was identified in phytocoenoses dominated by *Elytrigia repens* (Table 3).

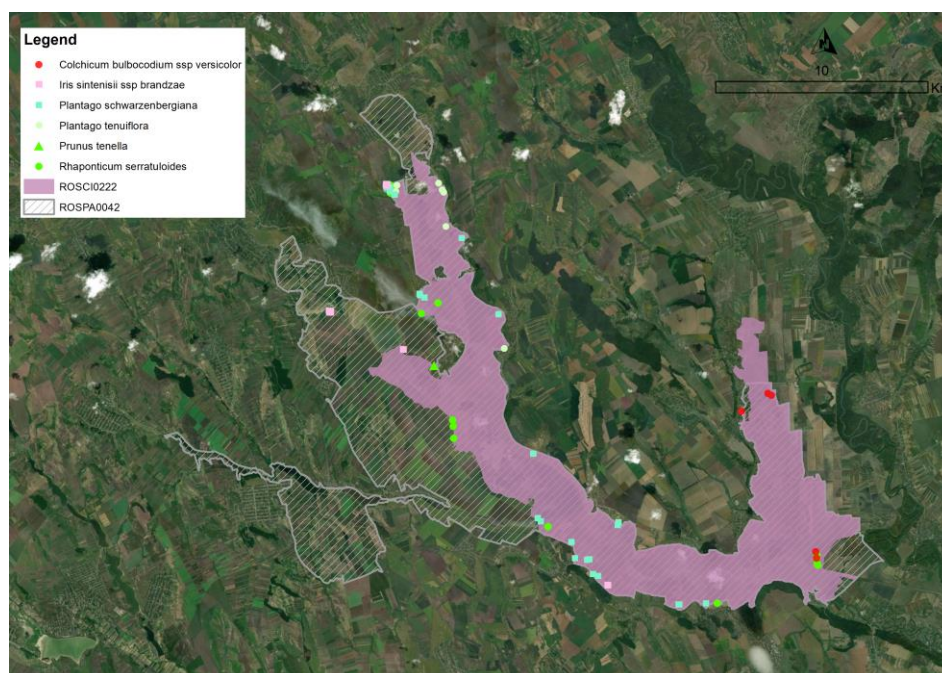


Fig. 3. Location of *Colchicum bulbocodium* subsp. *versicolor*, *Iris sintenisii* subsp. *brandzae*, *Plantago schwarzenbergiana*, *P. tenuiflora*, *Prunus tenella* and *Rhaponticum serratuloides* in ROSCI0222 and ROSPA0042

*Plantago schwarzenbergiana* Schur – Plantaginaceae. Depending on the authors of the national Red Lists, the status of this species varies from “data deficient” to “rare” (Table 2). We identified this species on saline soils, in phytocoenoses characteristic for

the habitat 1530\* (Tables 1, 3, Fig. 3). *P. schwarzenbergiana* was also mentioned from Vlădeni, Alexandru cel Bun (Răvăruţ 1941, Paucă & Nyárády 1961), and Fântânele (Paucă & Nyárády 1961), within the study area's limits. Without further information, the record from Fântânele remains ambiguous, in Iaşi County being two localities known under this name, one within the ROSPA0042's limits.

***Plantago tenuiflora*** Waldst. et Kit. – Plantaginaceae. This annual species, considered as rare in Romania (Table 2), was previously cited from Alexandru cel Bun (Țopa 1939, Răvăruţ 1941, Paucă & Nyárády 1961) and Iacobeni (Țopa 1939, Paucă & Nyárády 1961) (ROSCI0222/ ROSPA0042). The phytocoenoses in which we identified the species are saline meadows of the habitat 1530\* (Tables 1, 3, Fig. 3).

***Rhaponticum serratuloides*** (Georgi) Bobrov (*Centaurea serratuloides* Georgi, *Stemmacantha serratuloides* (Georgi) M. Dittrich, *Leuzea altaica* (Spreng.) Link, *L. salina* Spreng.) – Asteraceae (Plate II, C). This species, with a range extending from Balkans, through European part of Russia to Western Siberia (Nyárády 1964, Ciocârlan 2009, Euro+Med Plantbase 2020, POWO 2020), has a different status in the national Red Lists (Table 2), being known from Botoşani, Brăila, Buzău, Galaţi, Ialomiţa, Iaşi, Ilfov, Prahova, Vaslui, Vrancea, and Tulcea counties (Nyárády 1964, Oprea 2005, Ciocârlan 2009, Sârbu et al. 2013).

In ROSCI02222 it was identified on more or less saline soils, in most cases in phytocoenoses dominated by *Elytrigia repens* (Tables 1, 3, Fig. 3).

***Beta trigyna*** Waldst. et Kit. – Chenopodiaceae. The presence of this species is known only from Southern and Eastern Romania (Mehedinţi, Constanţa, Tulcea, and Iaşi counties) (Oprea 2005, Sârbu et al. 2013), having a different status according to the authors of the national Red Lists (Table 2). Previously cited from the study area from near Vlădeni and Andrieşeni localities (Răvăruţ 1945), the species has been identified during our research from Vlădeni and between Iazu Vechi and Săveni (Table 1, Fig. 4).

***Fritillaria meleagroides*** Patrin ex Schult. & Schult. fil. – Liliaceae (Plate II, D) is a perennial plant species which grows on mesophilous meadows, more or less saline, temporary inundated lands. Described for the first time in Romania by Oprea et al. (2015), *F. meleagroides* is currently known only from Iaşi and Botoşani counties (Sârbu et al. 2019). As a new species for the Romanian flora, *F. meleagroides* was not assigned to any category of national Red Lists so far.

As a result of the field survey during the 2018-2019 period, new recordings of the species were provided from the area between Larga Jijia train station and Larga Jijia fish farm, and North from Cotu Morii, in the Probota area (Table 1, Fig. 4). The species was found in phytocoenoses either dominated by *Elytrigia repens* or *Bolboschoenus maritimus* (Table 3).

***Iris halophila*** Pall. (*I. spuria* L. subsp. *halophila* (Pall.) D.A. Webb et Chater) – Iridaceae (Plate III, A). This species has a limited distribution in Romania (the steppe and sylvo-steppe area of Dolj, Galaţi, Ialomiţa, Iaşi, Prahova, Vaslui, and Vrancea counties) (Oprea 2005, Sârbu et al. 2013), being registered under different status in Romanian Red Lists (Table 2).

In ROSCI0222/ ROSPA0042 is a common presence in phytocoenoses preferring more or less saline soils, but it was also found in xerophilous or xero-mesophilous phytocoenoses (Tables 1, 3, Fig. 4). As with *Crambe tataria*, the species was also cited from Epurenii (Prodan & Nyárády 1966), further considering this record as being, as

well, ambiguous (see the explanation from *Crambe tataria*). Our research led to the identification of *I. halophila* in the study area near both Iepureni villages (Table 1).

***Dianthus guttatus*** M. Bieb. (*D. pseudogrisebachii* Grecescu) – Caryophyllaceae. This Ponto-getic element has an area limited to Romania, Moldova and Ukraine (including Crimea) (Euro+Med Plantbase 2020, POWO 2020).

In Romania, it was cited from Bacău, Botoșani, Brăila, Buzău, Constanța, Dolj, Galați, Ialomița, Iași, Tulcea, Vaslui, and Vrancea counties (Prodan 1953, Oprea 2005, Filipaș et al. 2016), having different status in Red Lists (Table 2).

In ROSCI0222 the species was identified in xero-mesophilous meadows dominated by *Elytrigia repens* (Tables 1, 3, Fig. 4).

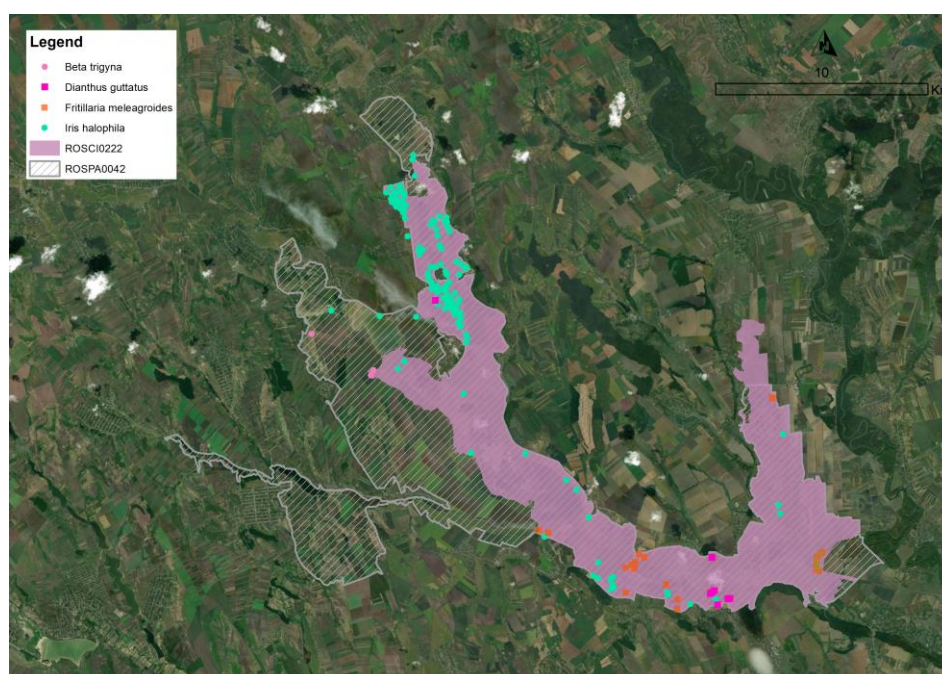


Fig. 4. Location of *Beta trigyna*, *Dianthus guttatus*, *Fritillaria meleagroides* and *Iris halophila* in ROSCI0222 and ROSPA0042

***Salvinia natans*** (L.) All. – Salviniaceae (Plate III, B) - Included in the Bern Convention and different national Red Lists (Table 2), this annual, aquatic-floating species, was identified in only two close locations, in the Eastern part of the ROSCI0222 (Table 1, Fig. 5). Because of the conversion of former swamps in grasslands or arable land, the actual habitat of *S. natans* in ROSCI0222 is reduced to drainage channels or temporary flooded ponds. As a result of inconstant water flow, one population identified in 2018 (near Probota) was not found again in 2019.

***Utricularia vulgaris*** L. – Lentibulariaceae (Plate III, C), a perennial, floating species, is treated with concern both at a national and European level (Table 2), despite being widespread in Europe, Asia, and Africa (Euro+Med Plantbase 2020, POWO 2020). In ROSCI0222, it was found in only one location (in phytocoenoses with

*Salvinia natans*), in a drainage channel from the formerly floodplain of the Prut river (Table 1, Fig. 5). Another record of *U. vulgaris* from the study area (between Borşa and Vlădeni) dating since 1961 (Țopa 1961), was not confirmed by our observations.

***Potamogeton trichoides*** Cham. et Schldtl. – Potamogetonaceae. In Iași County, this species was cited from Ungheni, Cristești, Iași, and Mircești (Țopa 1966). The new recordings of *P. trichoides* within the study sites' limits are from the Miletin river (near Vlădeni fish farm) (Tables 1, 3, Fig. 5). Despite having a wide range of distribution (from Europe, through Caucasus, Siberia, to Western and Central Asia and Africa), *P. trichoides* is a species of conservative interest, both on the European and national level (Table 2).

***Najas marina*** L. – Najadaceae (Plate III, D). Considered by some authors as vulnerable in Romania (Boşcaiu et al. 1994), *N. marina* is a submersed, annual, aquatic plant species. Within the sites' limits it has been identified in the fishponds from Larga Jijia and Vlădeni fish farms (Tables 1, 2, Fig. 5). Despite being an IUCN Red List species (Table 2), with ROSCI0222, *N. marina* may be considered as having an invasive potential when it forms dense, almost monospecific phytocoenosis in fishponds. A similar situation is with *N. minor*, an IUCN Red List species (Lansdown 2014a), but considered as invasive according to GISD (2020).

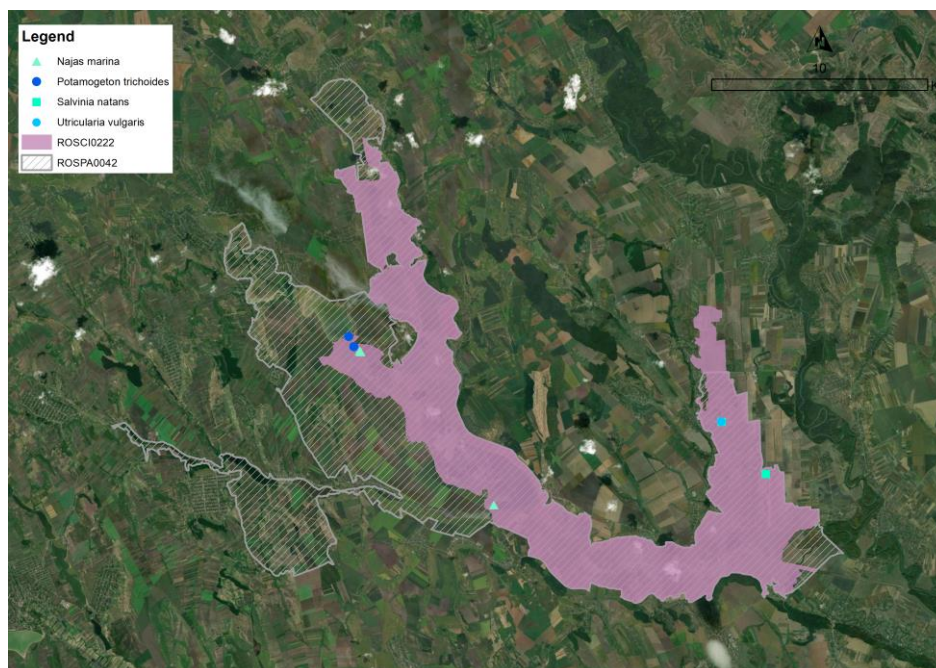


Fig. 5. Location of the rare aquatic plant species in ROSCI0222 and ROSPA0042



Table 1. Species distribution in ROSCI0222/ ROSPA0042

Species	GPS Coordinates Y (°N) X (°E)	The nearest locality	Bibliographical sources for the previously known chorological data in the area
<i>Crambe tataria</i>	47,335 N/27,265 E	Gropnița	
	47,3375 N/27,34305 E	Potângeni	
	47,40456 N/27,275 E	Vlădeni	Răvăruț 1941, Nyárády 1955
	47,43108 N/27,25078 E	Hălçeni-Iazu Vechi	
	47,47394 N/27,29803 E 47,47994 N/27,28964 E	Șoldana	
<i>Pontechium maculatum</i>	47,40436 N/27,27597 E	Vlădeni	
	47,43214 N/27,25036 E	Hălçeni-Iazu Vechi	
<i>Iris aphylla</i>	47,47872 N/27,29017 E	Șoldana	
<i>Prunus tenella</i>	47,4075 N/27,31472 E	Vlădeni	
<i>Iris sintenisii</i> subsp. <i>brandzae</i>	47,3122 N/27,4189 E	Larga Jijia-Iepureni	
	47,4313 N/27,2508 E	Hălçeni-Iazu Vechi	
	47,4844 N/27,2881 E	Șoldana	Răvăruț 1941, Prodan & Nyárády 1966
	47,41467 N/27,29579 E	Vlădeni	Țopa 1939, Răvăruț 1941, Prodan & Nyárády 1966
<i>Colchicum bulbocodium</i> subsp. <i>versicolor</i>	47,32085 N/27,54956 E	Cotu Morii	Oprea et al. 2019
	47,38416 N/27,50555 E	Probota	
	47,39138 N/27,5225 E	Probota-Bălteni	
<i>Plantago schwarzenbergiana</i>	47,46125 N/27,33436 E	Broșteni	
	47,43644 N/27,31006 E	Iacobeni	
	47,32331 N/27,40644 E	Larga Jijia	Răvăruț 1941, Paucă & Nyárády 1961
	47,31719 N/27,40981 E	Larga Jijia-Iepureni	
	47,33867 N/27,42683 E	Mihail Kogălniceanu-Borșa	
	47,36891 N/27,37493 E	Șoldana	
	47,48047 N/27,29306 E	Șoldana	
	47,30312 N/27,46267 E	Țipilești	
	47,42852 N/27,35574 E	Vâlcele	
<i>Plantago tenuiflora</i>	47,41389 N/27,35864 E	Borșa	
	47,46631 N/27,32458 E	Iepureni (Andrieșeni)	
	47,48183 N/27,29406 E	Șoldana	
	47,48081 N/27,32397 E	Spineni	
	<i>Rhaponticum serratuloides</i>	47,31786 N/27,55028 E	Cotu Morii
47,33778 N/27,38267 E		Larga Jijia	Țopa 1939, Răvăruț 1941, Nyárády 1964
47,37647 N/27,32569 E		Larga Jijia-Vlădeni	
47,30319 N/27,48676 E		Rediu Mitropoliei	
47,48111 N/27,29055 E		Șoldana	Răvăruț 1941, Nyárády 1964
47,42972 N/27,30777 E		Vlădeni	Țopa 1939, Răvăruț 1941, Nyárády 1964
47,43406 N/27,31842 E		Vlădeni-Iacobeni	
<i>Beta trigyna</i>	47,42333 N/27,23861 E	Iazu Vechi-Săveni	
	47,40511 N/27,27464 E	Vlădeni	Răvăruț 1945
<i>Fritillaria meleagroides</i>	47,3164 N/27,5511 E	Cotu Morii	Oprea et al. 2015
	47,3098 N/27,43 E	Iepureni (Movileni)	
	47,31266 N/27,45531 E		
	47,3361 N/27,3828 E 47,3373 N/27,377 E	Larga Jijia	

	47,39 N/27,5258 E	Probota	
	47,3197 N/27,43582 E	Țigănași	
	47,3021 E/27,4617 E	Țipilești	
<i>Iris halophila</i>	47,45564 N/27,30769 E	Alexandru cel Bun	Răvaruț 1941, Prodan & Nyárády 1966, Chifu et al. 1998
	47,44667 N/27,33217 E	Broșteni	
	47,34105 N/27,5278 E	Cârnăceni	
	47,31728 N/27,54992 E	Cotu Morii	Oprea et al. 2019
	47,43 N/27,28166 E	Hălăceni	Răvaruț et al. 1968
	47,43286 N/27,25142 E	Hălăceni-Iazu Vechi	
	47,43925 N/27,31842 E	Iacobeni	Țopa 1939, Răvaruț 1941, Prodan & Nyárády 1966, Răvaruț et al. 1968
	47,46973 N/27,31648 E	Iepureni (Andrieșeni)	
	47,31556 N/27,42078 E	Iepureni-Larga Jijia	Răvaruț et al. 1968
	47,33442 N/27,38033 E	Larga Jijia	
	47,37094 N/27,33628 E	Larga Jijia-Vlădeni	
	47,35814 N/27,39501 E	Mihail Kogălniceanu-Borșa	
	47,34204 N/27,4083 E		
	47,3747 N/27,53136 E	Probota	Chifu et al. 1998
	47,30319 N/27,48676 E	Rediu Mitropoliei	
	47,47358 N/27,29825 E	Șoldana	
	47,48892 N/27,30622 E	Spineni	Țopa 1939, Răvaruț et al. 1968, Chifu et al. 1998
	47,30401 N/27,46985 E	Țipilești	
	47,30817 N/27,45617 E	Țipilești-Iepureni	
	47,39603 N/27,33264 E	Vlădeni	Țopa 1939, Răvaruț 1941, Prodan & Nyárády 1966
	47,43511 N/27,33125 E	Vlădeni-Iacobeni	
<i>Dianthus guttatus</i>	47,43583 N/27,31638 E	Iacobeni	
	47,30933 N/27,48514 E	Rediu Mitropoliei	
	47,3233 N/27,48413 E	Țigănași	
<i>Salvinia natans</i>	47,35305 N/27,54555 E	Cârnăceni	
	47,37542 N/27,51947 E	Probota	
<i>Utricularia vulgaris</i>	47,37555 N/27,51916 E	Probota	
<i>Potamogeton trichoides</i>	47,41558 N/27,29203 E	Vlădeni	
	47,41128 N/27,29483 E	Vlădeni	
<i>Najas marina</i>	47,34361 N/27,37805 E	Larga Jijia	
	47,40902 N/27,29907 E	Vlădeni	
	47,41014N/27,29682 E	Vlădeni	

Table 2. Zoological categories of the recorded species

Species	BC	HD	IUCN Red List		National Red Lists
			Europe	Global	
<i>Crambe tataria</i>	-	Iib	LC (Kell 2011)	-	VU (Dihoru & Dihoru 1994, Coldea et al. 2001, Oprea 2005), VU/R (Oltean et al. 1994), R (Sârbu & Chifu 2003)
<i>Pontechium maculatum</i>	-	Iib	LC (Bernhardt et al. 2011)	-	VU (Oprea 2005)
<i>Iris aphylla</i>	-	Iib	NT (Bilz & Khela 2013)	-	VU (Oprea 2005), R (Dihoru & Dihoru 1994, Coldea et al. 2001)

<i>Prunus tenella</i>	-	-	DD (Wilson 2018)	-	VU (Oltean et al. 1994, Oprea 2005), R (Sârбу & Chifu 2003)
<i>Iris sintenisii</i> subsp. <i>brandzae</i>	-	-	-	-	LR (Dihoru & Negrean 2009), VU (Dihoru & Dihoru 1994, Coldea et al. 2001, Oprea 2005), VU/R (Oltean et al. 1994), R (Sârбу & Chifu 2003)
<i>Colchicum bulbocodium</i> subsp. <i>versicolor</i>	-	-	-	-	NT (Oprea 2005), VU (Boşcaiu et al. 1994, Dihoru & Dihoru 1994, Coldea et al. 2001, Sârбу & Chifu, 2003, Dihoru & Negrean 2009), R (Oltean et al. 1994)
<i>Plantago schwarzenbergiana</i>	-	-	-	-	DD (Dihoru & Dihoru 1994), NT (Oprea 2005), R (Oltean et al. 1994, Coldea et al. 2001, Sârбу & Chifu 2003)
<i>Plantago tenuiflora</i>	-	-	-	-	R (Coldea et al. 2001)
<i>Rhaponticum serratuloides</i>	-	-	-	-	NT (Oprea 2005), VU (Dihoru & Dihoru 1994, Sârбу & Chifu 2003), R (Oltean et al. 1994, Boşcaiu et al. 1994, Coldea et al. 2001)
<i>Beta trigyna</i>	-	-	-	-	VU (Oprea 2005), VU/R (Oltean et al. 1994), R (Dihoru & Dihoru 1994)
<i>Fritillaria meleagroides</i>	-	-	-	-	Not assigned
<i>Iris halophila</i>	-	-	-	-	NT (Sârбу & Chifu 2003, Oprea 2005), LR (Dihoru & Negrean 2009), VU (Dihoru & Dihoru 1994, Coldea et al. 2001), R (Oltean et al. 1994)
<i>Dianthus guttatus</i>	-	-	-	-	EN (Dihoru & Dihoru 1994), VU (Oprea 2005), VU/R (Oltean et al. 1994), R (Sârбу & Chifu 2003)
<i>Salvinia natans</i>	X	-	NT (Christenhusz et al. 2017)	LC (Allen 2011)	NT (Oltean et al. 1994, Sârбу & Chifu 2003), LC (Oprea 2005)
<i>Utricularia vulgaris</i>	-	-	LC (Lansdown 2011b)	LC (Lansdown 2014b)	NT (Oprea 2005), VU (Dihoru & Dihoru 1994), R (Oltean et al. 1994, Sârбу & Chifu 2003)
<i>Potamogeton trichoides</i>	-	-	LC (Lansdown 2011a)	LC (Allen 2017)	NT (Oprea 2005), R (Dihoru & Dihoru 1994, Oltean et al. 1994, Sârбу & Chifu 2003)
<i>Najas marina</i>	-	-	LC (Lansdown 2011c)	LC (Lansdown 2019)	VU (Boşcaiu et al. 1994)
Abbreviations: BC - Bern Convention; HD - The Habitats Directive; DD – Data Deficient; EN – Endangered; LC – Least Concern; LR – Lower Risk; NT – Near Threatened (IUCN); NT – Not Threatened (National Red List), R – Rare; VU/R – Vulnerable/Rare; VU – Vulnerable.					

Table 3. Plant communities and habitat types in which the recorded species were identified

Species	Plant communities	Habitat type Natura2000
<i>Crambe tataria</i>	<i>Taraxaco serotini-Bothriochloëtum ischaemi</i> (Burduja et al., 1956) Sârbu et al. 1999; <i>Taraxaco serotini-Festucetum valesiacae</i> (Burduja et al., 1956, Răvăruf et al., 1956) Sârbu et al. 1999; <i>Stipetum lessingianae</i> Soó (1927 n.n.) 1947; <i>Elytrigietum hispidi</i> (Dihoru 1970) Popescu et Sanda 1988	62C0*
	<i>Galio octonarii-Stipetum tirsae</i> (Ciocârlan 1969) Popescu et Sanda 1992	-
<i>Pontechium maculatum</i>	<i>Taraxaco serotini-Festucetum valesiacae</i> (Burduja et al., 1956, Răvăruf et al., 1956) Sârbu et al. 1999; <i>Carici humilis-Stipetum joannis</i> Pop et Hodişan 1985	62C0*
	<i>Galio octonarii-Stipetum tirsae</i> (Ciocârlan 1969) Popescu et Sanda 1992	-
<i>Iris aphylla</i>	<i>Elytrigietum hispidi</i> (Dihoru 1970) Popescu et Sanda 1988	62C0*
<i>Prunus tenella</i>	Remnants of steppe shrubs communities	-
<i>Iris sintenisii</i> subsp. <i>brandzae</i>	<i>Stipetum lessingianae</i> Soó (1927 n.n.) 1947; <i>Taraxaco serotini-Festucetum valesiacae</i> (Burduja et al., 1956, Răvăruf et al., 1956) Sârbu et al. 1999	62C0*
	<i>Stipetum capillatae</i> (Hueck 1931) Krausch 1961	6240*
	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950	-
<i>Colchicum bulbocodium</i> subsp. <i>versicolor</i>	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950	-
<i>Plantago schwarzenbergiana</i>	<i>Puccinellietum limosae</i> Rapaics ex Soó 1933; <i>Limonio gmelini-Artemisietum monogynae</i> Ţopa 1939; <i>Camphorosmetum annuae</i> (Rapaics 1916) Soó 1933	1530*
	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950	-
<i>Plantago tenuiflora</i>	<i>Puccinellietum limosae</i> Rapaics ex Soó 1933; <i>Iridetum halophilae</i> (Prodan 1939 n.n) Şerbănescu 1965; <i>Limonio gmelini-Artemisietum monogynae</i> Ţopa 1939	1530*
<i>Rhaponticum serratuloides</i>	<i>Artemisio-Petrosimonetum triandrae</i> Soó (1927) 1947	1530*
	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950	-
<i>Beta trigyna</i>	Ruderal/segetal places	-
<i>Fritillaria meleagroides</i>	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950; <i>Bolboschoenetum maritimi</i> Egger 1933	-
<i>Iris halophila</i>	<i>Taraxaco serotini-Festucetum valesiacae</i> (Burduja et al., 1956, Răvăruf et al., 1956) Sârbu et al. 1999; <i>Elytrigietum hispidi</i> (Dihoru 1970) Popescu et Sanda 1988	62C0*
	<i>Puccinellietum limosae</i> Rapaics ex Soó 1933; <i>Achilleo-Festucetum pseudovinae</i> Soó (1933) corr. Borhidi 1996; <i>Iridetum halofilae</i> (Prodan 1939 n.n.) Şerbănescu 1965	1530
	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950; <i>Trifolio-Lolietum perennis</i> Krippelova 1967 subass. <i>Elytrigietosum repentis</i> Chifu 1995	-
<i>Dianthus guttatus</i>	<i>Rorripo austriacae-Agropyretum repentis</i> (Timár 1947) R. Tüxen 1950	-
<i>Salvinia natans</i>	<i>Lemnetum gibbae</i> Miyawaki et Tüxen 1960; <i>Ceratophylletum demersii</i> Hild 1956; <i>Lemno-Utricularietum vulgaris</i> Soó (1928) 1947	3150
<i>Utricularia vulgaris</i>	<i>Lemno-Utricularietum vulgaris</i> Soó (1928) 1947	3150

<i>Potamogeton trichoides</i>	<i>Potamogeton pectinati</i> Carstensen 1955	3150
	<i>Potamogeton trichoidis</i> Freit et al. 1956	-
<i>Najas marina</i>	<i>Lemnetum minoris</i> Soó 1927; <i>Lemnetum gibbae</i> Miyawaki et Tüxen 1960; <i>Ceratophylletum demersii</i> Hild 1956; <i>Potamo-Ceratophylletum submersi</i> I. Pop 1962	3150
	<i>Potametum natantis</i> Soó 1934	3160
	<i>Najadetum marinae</i> Fukarek 1961	1160

### Conclusions

As against the rare plant species cited in the Standard Data Forms of ROSCI0222/ ROSPA0042 (3 species in total), our study led to the identification of 17 plant species with different zoological status, with three Natura 2000 species. Amongst the species included in the sites' Standard Data Forms, only *Iris sintenisii* subsp. *brandzae* was cited, while *Fritillaria meleagris* was not confirmed (further considering this species as being confounded with the recently described *F. meleagroides* from Romania). Although previously cited from the study area and confirmed by our field surveys, one Natura 2000 species (*Crambe tataria*) and other six rare species were not included in the Standard Data Forms of the ROSCI0222 and ROSPA0042.

It is therefore noticeable that the designation of a Natura 2000 site needs more accurate preliminary studies. Addressing flexible policies (along with providing the necessary funding) are also necessary in order to update the Standard Data Forms of the Natura 2000 sites, in terms of geographic limits, habitat types and the surfaces they cover, as well as the list of species of conservative interest. An accurate, updated Standard Data Form represents the primary starting point for a proper management of a Natura 2000 site.

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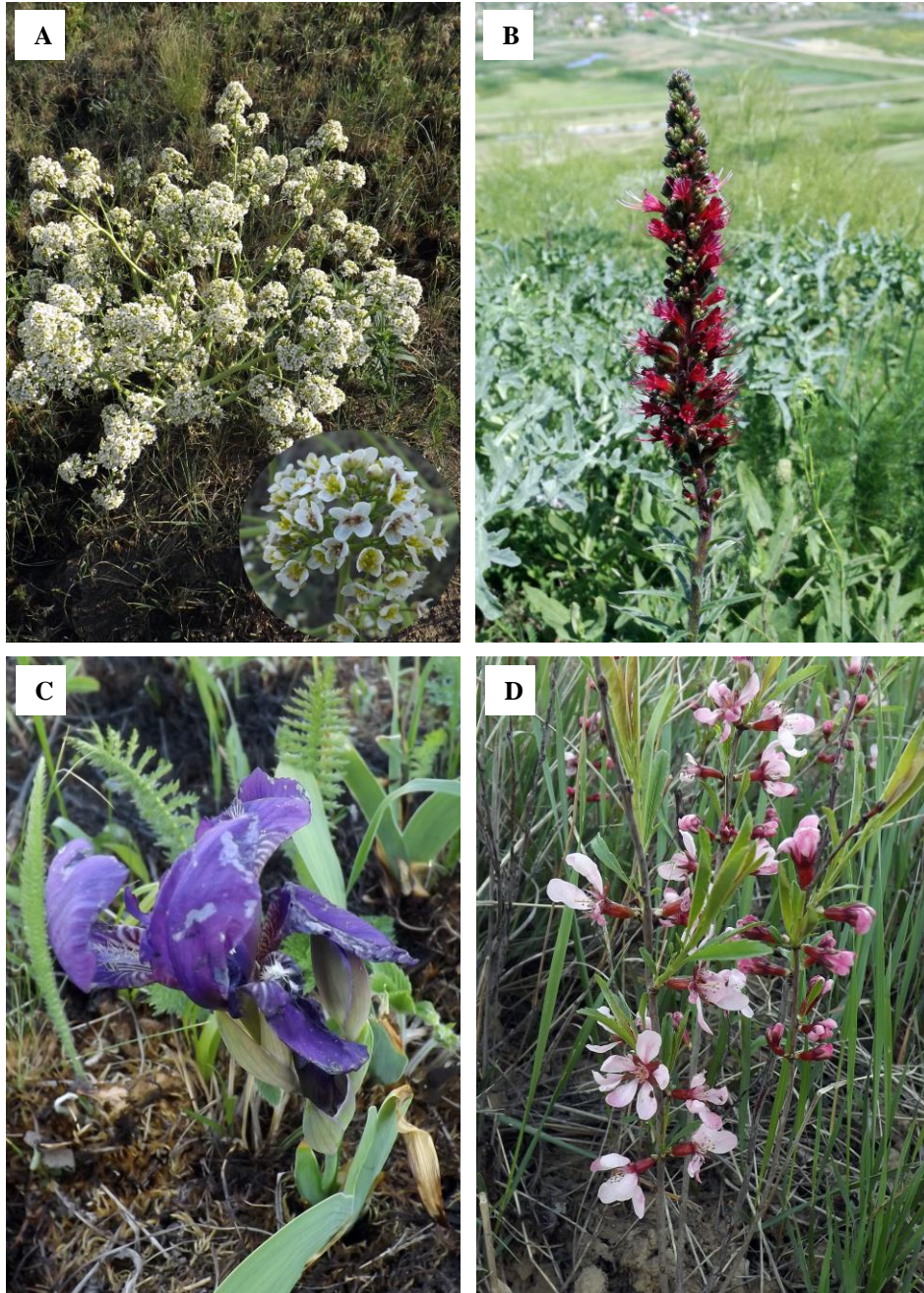


Plate I. A: *Crambe tataria*; B: *Pontechium maculatum*; C: *Iris aphylla*; D: *Prunus tenella*.



Plate II. A: *Iris sintenisii* subsp. *brandzae*; B: *Colchicum bulbocodium* subsp. *versicolor*; C: *Rhaponticum serratuloides*; D: *Fritillaria meleagroides*.

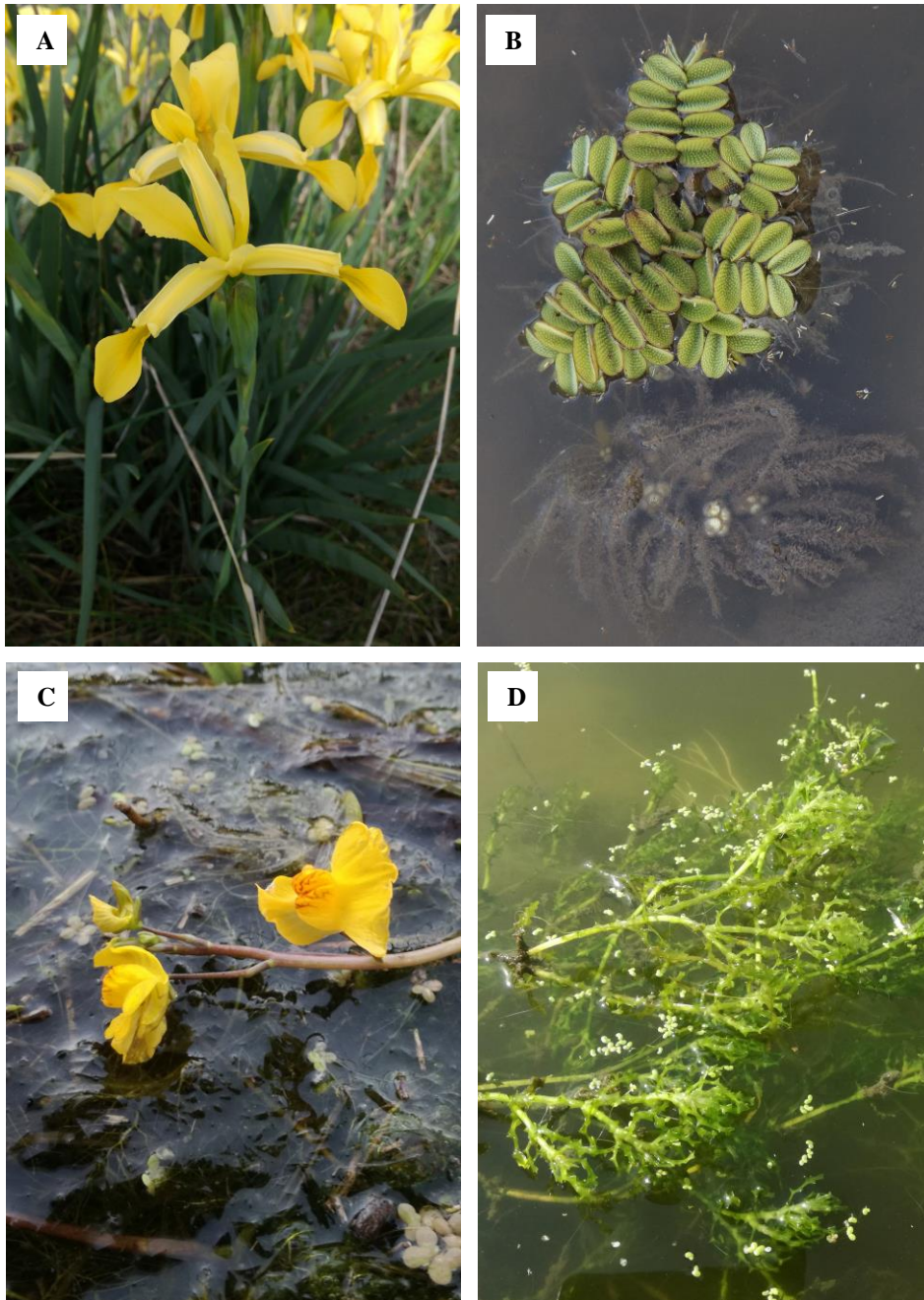


Plate III. A: *Iris halophila*; B: *Salvinia natans*; C: *Utricularia vulgaris*;  
D: *Najas marina*.