Vascular flora of sub-Mediterranean grasslands and scrubs at the foot of the Promina Mountain (Northern Dalmatia, Croatia)

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Abstract

A floristic study of the plateau at the foot of the Promina Mountain, located between the rivers Krka and Čikola, was conducted in the period 2019-2021. On an area covered largely by sub-Mediterranean dry grasslands and scrubs 275 vascular plant taxa were recorded. Recorded taxa belong to 60 families, among which Fabaceae (14.91%), Poaceae (10.91%) and Asteraceae s. str. (8.00%) are the most abundant. Life-form analysis indicates the dominance of hemicryptophytes (44.73%) and therophytes (21.09%), and as for chorology, there is a domination of South-European (32.73%) and Mediterranean (29.45%) floral element. Only two invasive alien species, *Ailanthus altissima* and *Robinia pseudoacacia* were recorded. There are 15 endemic and 26 strictly protected taxa, while 19 taxa are included on the Croatian Red List. Results of the floristic analysis reflect the climate conditions and phytogeographical position of the studied area as well as the history of land use.

Keywords: chorotypes, life-forms, pastures, succession

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Sažetak

Floristično istraživanje platoa u podnožju planine Promine, koji se nalazi između rijeka Krke i Čikole, provedeno je u periodu od 2019. do 2021. godine. Na području većinski prekrivenom submediteranskim suhim travnjacima i šikarama zabilježeno je 275 vaskularnih biljnih svojti. Zabilježene svojte pripadaju u 60 porodica, od kojih su najzastupljenije Fabaceae (14,91 %), Poaceae (10,91 %) i Asteraceae s. str. (8,00 %). Analiza životnih oblika ukazuje na dominaciju hemikriptofita (44,73 %) i terofita (21,09 %), a od flornih elemenata dominiraju južnoeuropski (32,73 %) i mediteranski (29,45 %) florni element. Zabilježene su samo dvije invazivne vrste: *Ailanthus altissima* i *Robinia pseudoacacia*. Pronađeno je 15 endemičnih i 26 strogo zaštićenih svojti, dok je 19 svojti na Crvenom popisu vaskularne flore Hrvatske. Rezultati floristične analize odražavaju klimu i fitogeografski položaj istraživanog područja, ali i povijest korištenja prostora.

Ključne riječi: florni elementi, životni oblici, pašnjaci, sukcesija

Introduction

Studied area is located in Northern Dalmatia at the foot of the Promina Mountain, on the karst plateau between the Krka River canyon in the west and Čikola River canyon in the south. Designated area of 4537 ha is located at altitudes from 245 to 300 m a. s. l. in the uniform landscape covered largely with sub-Mediterranean grasslands and scrubs. Mean annual temperatures of the nearby Krka valley are ranging from 10 °C to 15 °C. Winters are mild with mean monthly temperature in January higher than 0 °C, mostly between 4 °C and 6 °C and an average of eight days of frost in the coldest months (Zaninović et al. 2008). Summer season is dry and hot with mean air temperatures in July varying from 22 °C to 25 °C; while autumn has the highest amount of precipitation (more than 100 mm) (Perica et al. 2005). Therefore, according to Köppen's climatic classification, the climate is temperate with dry and hot summer (Csa) (Šegota & Filipčić 2003).

Phytogeographically, studied area is a part of the sub-Mediterranean zone of the Mediterranean biogeographic macroregion with the characteristic climazonal vegetation of the association *Querco-Carpinetum orientalis* Horvatić 1939. However, during the past, forest vegetation was systematically degraded to use the space for fodder and agriculture purposes. Nowadays, most of the area is covered by rocky grasslands and pastures of the order *Scorzoneretalia villosae* Horvatić 1975, with two alliances of sub-Mediterranean dry grasslands (*Chrysopogono grylli-Koelerion splendentis* Horvatić 1973 and *Scorzonerion villosae* Horvatić 1949) making up more than a half of the studied area (54.74%). Due to depopulation and the abandonment of the traditional way of life, studied grasslands are in different successional stages towards climazonal forest vegetation, thus scrubs of pubescent oak and oriental hornbeam currently cover almost two fifths of the studied area (38.29%). Remaining (semi)natural habitats are rather sparse and include a few minor agricultural mosaics and water bodies, as well as a few larger areas with prickly juniper (*Juniperus oxycedrus* L.) scrubs.

First floristic data in the wider area were recorded in the 19th century in the work of the botanist Visiani (1826, 1842-1852, 1972). At the beginning of the 20th century, Dragutin Hirc (1909) and Adamović (1911, 1913), in their floristic research of Dalmatia, covered the area of the Krka River. In the second half of the 20th century Horvatić (1963), Marković (1964), Trinajstić (1979), Gaži-Baskova (1983), Garnweidner (1987), Lovrić et al. (1987), Lovrić & Bedalov (1987) and Lovrić & Rac (1989) included parts of the wider designated area in their floristic and vegetation research. At the end of the 20th century, comprehensive floristic research of the Krka National Park began, including parts of the karst plateau rising above the Krka River canyon. First researches were conducted by Šegulja (1990), Lovašen-Eberhadt & Martinis (1990) and Marković et al. (1990, 1993). At the beginning of the 21st century, flora of the Krka National Park was further studied by Milović (2001, 2002), Milović & Mitić (2009), Sedlar et al. (2010) and Milović (2016), until it was finally supplemented and analysed by Hršak et al. (2022).

Not many researches on sub-Mediterranean flora in Croatia have been published so far. Hršak et al. (2022) presented the flora of Krka National Park which belongs to the sub-Mediterranean vegetation zone and includes a variety of different habitat types. Milović (2002) studied the flora of the nearby city of Šibenik and its surroundings, including both eu-Mediterranean and sub-Mediterranean vegetation zones. Ljubičić et al. (2012) studied *Chrysopogono grylli-Koelerion splendentis* pastures on the island of Pag. Milović et al. (2021) studied the flora of the nearby Svilaja Mountain, which, due to the large range of altitudes and more pronounced continentality, comprises more diverse plant communities and a more continental flora.

The aim of this research was to explore the vascular plant taxa of the plateau at the foot of the Promina Mountain with special emphasis on sub-Mediterranean dry grasslands and pubescent oak and

prickly juniper scrubs; to conduct an analysis of the recorded flora according to taxonomic preferences, life-forms, chorological types, endemism, conservation status and IUCN category; as well as to compare the results with those of floristic analyses of others, above mentioned, neighbouring areas and areas with similar vegetation.

Materials and methods

The plateau at the foot of the Promina Mountain was floristically surveyed in May and June from 2019 to 2021, for the purpose of Environmental Impact Assessment and Appropriate Assessment procedures for different (private) clients. Studied area includes buffer zones around the project construction zones and is therefore larger than the actual expected impact area of the planned projects. Regarding the trade secret, the exact location of the studied area cannot be presented (Fig. 1), however, data on the distribution of individual species will be available as observations in the Flora Croatica Database upon completion of the project.

The area was studied with the aim of collecting data on the presence and distribution of flora, especially strictly protected and Natura 2000 taxa; endangered and rare habitats and creation of a more detailed habitat map. Altogether 117 localities were visited and most of them were surveyed once within a radius ranging from approximately 50-150 m. However, localities within habitats other than grasslands or scrubs were not comprehensively researched and only taxa of special interest were recorded (primarily previously unrecorded taxa in the research and strictly protected taxa). Vascular plant taxa were mostly identified directly in the field, however, some were photographed or collected, pressed and dried in order to be identified or additionally confirmed. For this purpose, standard and specialized identification keys and iconographies were used: Pignatti (1982), Jávorka & Csapody (1991), Domac (1994), Delforge (2006), Eggenberg & Mohl (2007), Rothmaler & Jäger (2007) and Nikolić (2019).

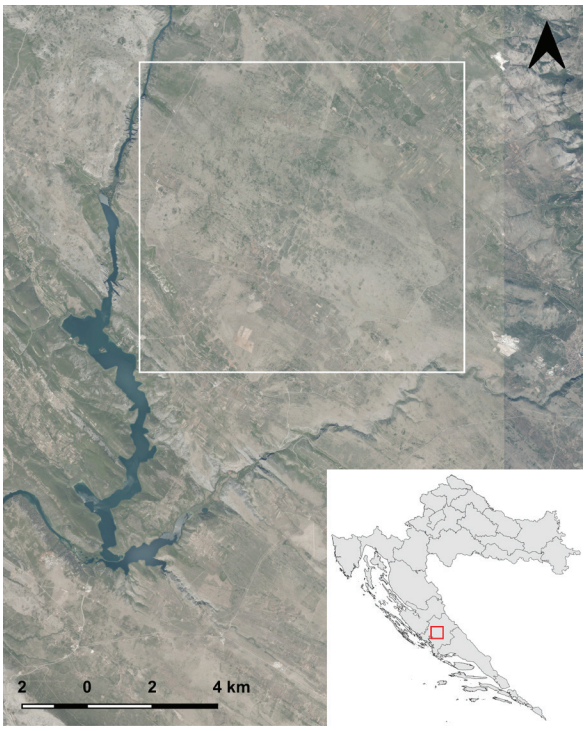

Figure 1. Geographical position of the studied area on the plateau with Krka River canyon in the west, Čikola River canyon in the south and Promina Mountain in the east

Rare and protected specimens were not collected but photographed only. Nomenclature was given according to Flora Croatica Database (Nikolić 2005-onwards). Taxa were presented in alphabetical order of families, genera and species.

Data on life-forms and chorological types were attributed to each species and subspecies of the checklist. Data from Pignatti et al. (2005), Klotz et al. (2002) and Nikolić (2005-onwards) were used in the preparation of the life-form spectrum, with the following abbreviations: Ch – chamaephytes, G – geophytes, H – hemicryptophytes, Hy – hydrophytes, P – phanerophytes and T – therophytes. Chorological analysis was carried out according to Horvatić (1963), Horvatić et al. (1968) and Pignatii (1982) using the following abbreviations: 1 – Mediterranean floral element, 2 – Illyrian-Balkan floral element, 3 – South-European floral element, 4 – East-European-Pontic floral element,

5 – Southeast-European floral element, 6 – Central-European floral element, 7 – European floral element, 8 – Eurasian floral element, 9 – Circumholarctic floral element, 10 – Widespread plants, 11 – Cultivated and adventitious plants.

The legal protection status in Croatia is in accordance with the Appendix I of the Ordinance on strictly protected species (Anonymous 2016), while data on endemic and invasive taxa are obtained from the Flora Croatica Database (Nikolić 2005-onwards). Data on threat level according to IUCN criteria were obtained from the Red Book of the Vascular Flora of Croatia (Nikolić & Topić 2005) where corresponding abbreviations mark the degree of threat for each taxon as follows: CR – Critically Endangered, EN – Endangered, VU – Vulnerable, NT – Near Threatened, LC – Least Concern and DD – Data Deficient.

Spectra of families, life-forms and chorological types were compared with flora of areas with similar vegetation i. e. with flora of Šibenik and its surroundings, grasslands of the island of Pag and flora of Svilaja Mountain.

Results and discussion

Altogether 275 vascular plant taxa (256 species and 19 subspecies) have been recorded on the studied area. Identified taxa belong to 176 genera and 60 families. The total number of plant taxa is rather small given the large studied area as other studies of similar vegetation record larger numbers of taxa. There are few factors that affected this result. Most importantly, this research was not a complete inventory of the flora of the area with the emphasis being on characteristic taxa and taxa of special importance. Also, field research was limited to the period between the end of May and the beginning of June each year, leading to the failure of recording early spring and autumn plants; and it was conducted on a uniform landscape with uniform ecological conditions and only a few (semi)natural habitat types (scrubs and grasslands). Therefore, the number of taxa recorded in this study should not be considered final as many localities remain unexplored and early and late species unknown. On the other hand, taxonomic, life-form and phytogeographical analysis are much more comparable with aforementioned studies.

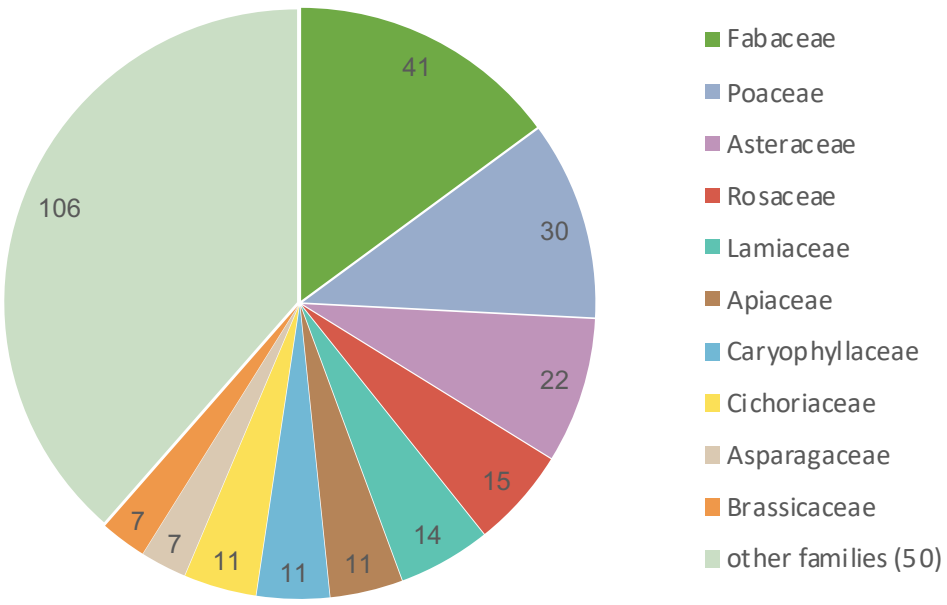

Figure 2. Families with the highest number of taxa in the flora of the plateau at the foot of the Promina Mountain.

The most abundant family is Fabaceae (14.91%), followed by Poaceae (10.91%) and Asteraceae s. str. (8.00%) while all other families account for less than 6% each (Fig. 2). The three most represented families are also dominant in the flora of Krka National Park, Svilaja Mountain, Šibenik surroundings and on the grasslands of the island of Pag. Hence the representation of families on the studied area is characteristic for eu-Mediterranean and sub-Mediterranean flora.

Regarding life-form spectrum, almost half of the recorded taxa are hemicryptophytes (44.73%), followed by therophytes (21.09%), phanerophytes (13.45%), geophytes (11.27%), hemicryptophytes (9.09%) and hydrophytes (0.36%). These proportions are expected, given that therophytes dominate in the eu-Mediterranean zone, like in the flora of Šibenik and its surroundings, which is located at the transition between the eu-Mediterranean and sub-Mediterranean zone; while hemicryptophytes in Croatia dominate in the floras with the more temperate climate, such as in those within the sub-Mediterranean zone, for example in the flora of the Svilaja Mountain and in the Krka National Park. However, the share of hemicryptophytes is the highest among all the compared areas, the causes of which may be specific, but unidentified, ecological conditions, lower habitat diversity (domination of grasslands), or the lack of research performed in different periods of the vegetation season which could result in different shares of recorded life-forms. The share of phanerophytes and geophytes is very similar to the one in Krka National Park, while in other three compared studies, the share of geophytes exceeds that of phanerophytes.

Given the intermediate position of the studied area at the transition from Mediterranean to continental climate, the results of the phytogeographic analysis were as expected. Recorded taxa belong to a total of eleven floral elements, with the domination of South-European (32.73%) and Mediterranean (29.45%) floral element (Fig. 3). Other floral elements account for less than 14% each. Considering the Cfa climate of the studied area, the share of the South-European floral element is the largest among all compared floras. Even though Krka National Park is the closest to our study area and has the

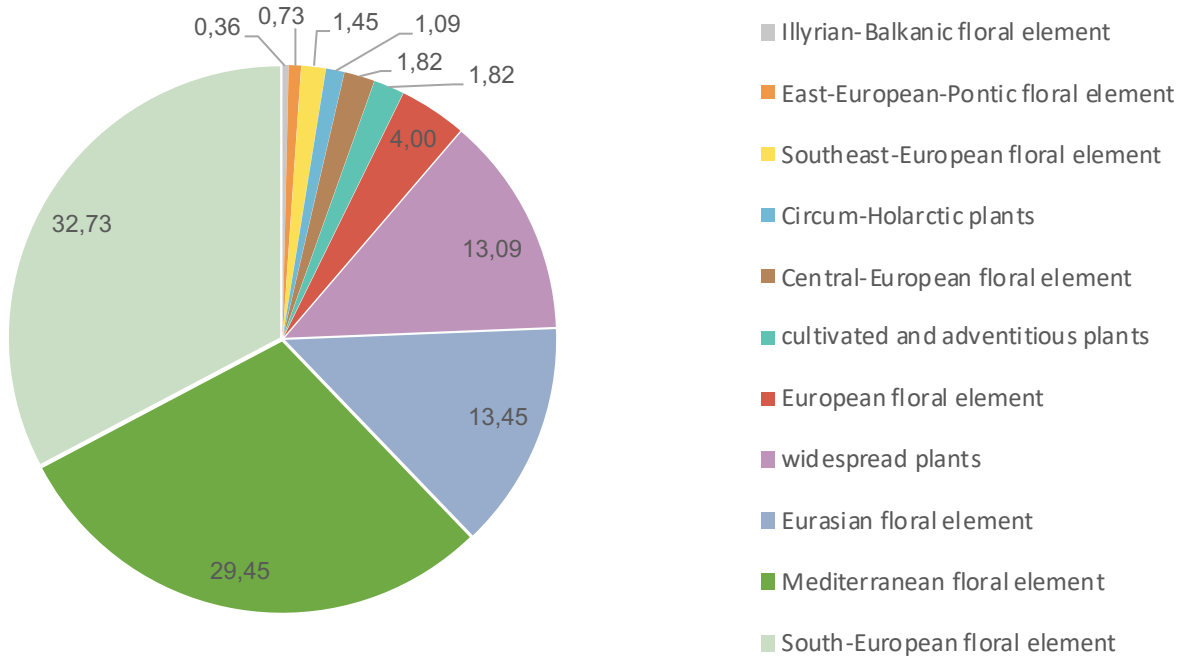

Figure 3. Chorological spectrum for the flora of the plateau at the foot of the Promina Mountain

same dominant floral elements, the share of each of them is quite lower. This is most likely due to a large diversity of habitats and microclimatic conditions present in the National Park, which support a greater diversity of plant taxa and therefore a greater diversity of floral elements as well. Due to the more continental climate, or Cfb according to Köppen, it can be expected that the flora of Svilaja has a larger share of plants belonging to the South-European floral element compared to the flora of our research area, but given its higher altitude range, there are also more plants belonging to the Eurasian floral element. Regarding the taxa of the Mediterranean floral element, floras of Šibenik surroundings and Pag grasslands have a larger share, while the flora of Svilaja Mountain and Krka National Park have a smaller share than the studied flora, which is in accordance with their phytogeographical positions and habitat diversity. Also, a higher share of cultivated and adventitious plants is present in all compared areas except on Pag grasslands, most probably because of the greater diversity of habitats and the abundance of urbanized areas. Therefore, small share of cultivated and adventitious plants (1.82%) recorded in this study reflects the uniform landscape and indicates a weak anthropogenic influence. Among five recorded cultivated and adventitious plant taxa there are two invasive alien species: *Ailanthus altissima*, which was recorded on two localities, and *Robinia pseudoacacia*, recorded at only one locality.

In the studied flora, plants of specific importance are the endemic plants of the Illyrian regions of Balkan Peninsula i.e. the plants whose centre of distribution is the eastern Adriatic and the Kvarner-Liburnian coast in the broader sense but could also be found in the western Adriatic areas of the Apennine peninsula: Illyrian-Adriatic endemic plants (distributed mainly in the area ranging from the Slovenian and Istrian-Kvarner coast in the north to Albania in the south) with 12 and Illyrian-Apennine plants (plants whose areas, apart from the Illyrian coast, also include parts of the Apennine peninsula) (Horvatić et al. 1968) with two endemic taxa. It is important to point out the presence of Illyrian-Adriatic endemic plants like: *Astragalus monspessulanus* ssp. *illyricus, Astragalus muelleri, Chaerophyllum coloratum, Dianthus ferrugineus* ssp. *liburnicus, Dianthus sylvestris* ssp. *tergestinus, Edraianthus tenuifolius, Genista sylvestris* ssp. *dalmatica* and *Tanacetum cinerariifolium*. Also, according to Nikolić et al. (2015) there is one more endemic species, *Rhamnus intermedia*, belonging to South-European-Mediterranean floral element. All the endemic taxa are strictly protected by Croatian law, but there are additional 11 non-endemic strictly protected taxa. Most of them are orchids: *Cephalanthera damasonium, Himantoglossum adriaticum, Limodorum abortivum, Ophrys apifera, O. bertolonii, O. scolopax* ssp. *cornuta* and *Orchis purpurea*; among which *H. adriaticum* is additionally protected according to the Habitats Directive as a plant species of community interest (Anonymous 2019). Presence of another strictly protected aquatic species *Damasonium polyspermum,* discovered by Boršić & Posavec-Vukelić (2012) in the Bunari pond next to the village Popovići, was confirmed and its population was assessed as stable. Given its importance for the survival of this very rare species, the pond (HR2001492 Bunari) is protected under the Habitats Directive (Anonymous 2019) and is located outside of the direct impact zone of the planned projects.

Strictly protected *Sternbergia colchiciflora* was identified from the photographs taken in autumn by ornithologist Katarina Perković. A small population of the species was found on a burnt pasture in the area of Mratovo near Oklaj. It is a rare species in Croatian flora growing on open dry Mediterranean grasslands. In the last 50 years, its populations were confirmed on five locations along the Croatian coast, including one from Šibenik surroundings and one from Krka National Park (Vuković et al. 2017). Given the new knowledge on its distribution and habitat trends, Vuković et al. (2017) re-evaluated its Data Deficient (DD) status into Endangered (EN). Altogether, there are 19 taxa (6.91%) that have been assigned with an IUCN status. Two orchid species

(*Ophrys bertolonii, Orchis purpurea*) are assessed as vulnerable (VU), *S. colchiciflora* and *Ophris apifera* are assessed as endangered (EN), while the remaining 15 taxa are classified as near threatened (NT), least concern (LC) or data deficient (DD).

The findings of two unprotected species which are quite rare in Croatia, should also be emphasized. First is *Lonicera caerulea,* a widely distributed species growing in a temperate zone of the northern hemisphere. In Croatia it was recorded on only eight locations in the last 100 years. Most of its findings were on hills and mountains, with the southernmost record in Velika Kapela (Nikolić 2022). However, in 1904 Dragutin Hirc recorded this species in Badanj at the foot of the Promina Mountain, and the distribution of this species in Northern Dalmatia has not been confirmed until recently (Hršak et al. 2022). Another interesting species recorded in this study is *Vincetoxicum fuscatum*, a member of the Asclepiadaceae family. Croatian localities represent the westernmost records of this species in Europe (Marhold 2011), recorded so far only on twelve other localities in eu-Mediterranean and sub-Mediterranean parts of Croatia, including three recent localities on the mountain Svilaja (Nikolić 2005-onwards).

Even though the studied area is very close to the protected Krka National Park, the vast grasslands of the plateau as well as the Promina Mountain itself are floristically poorly researched. Therefore, the finding of 275 vascular plant taxa is an important contribution to the knowledge of the flora of Northern Dalmatia, and provides information on the distribution of some rare, endemic or strictly protected plant taxa. Results of the analysis of families, life-forms and floral elements were as expected and reflect the climate and phytogeographical position of the studied area as well as the history of land use. Given that the traditional grasslands are largely abandoned today, they are in danger of becoming overgrown with woody plants and of losing characteristic grassland plants.

To obtain a better insight into the diversity of sub-Mediterranean dry grassland communities, it is necessary to explore additional localities and to conduct field visits during different periods of the vegetation season (from early spring to late autumn). Also, given the mosaic nature of the habitats and vegetation structure, it is possible to further explore the flora of open grasslands and their successional stages along different climatic gradients to better understand the impact of the abandonment of traditional grassland management on plant taxa, especially on those that are rare, endemic or strictly protected. To do that, it is necessary to increase the amount of available data on the range of values of studied parameters by including additional indicators such as Grime's life strategies, ecological indicator values, plant functional traits, etc.

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Literature

Adamović, L. (1911): Biljnogeografske formacije zagorskih krajeva Dalmacije, Bosne, Hercegovine i Crne Gore. Rad Jugoslavenske akademije znanosti i umjetnosti 193: 1-104.

Adamović, L. (1913): Biljnogeografske formacije zagorskih krajeva Dalmacije, Bosne, Hercegovine i Crne gore. II. dio: Vegetacionske formacije viših brda i planina. Rad Jugoslavenske akademije znanosti i umjetnosti 195: 113-179.

Anonymous (2016): Pravilnik o izmjenama i dopunama Pravilnika o strogo zaštićenim vrstama. Official Gazette „Narodne novine" 73/16.

Anonymous (2019): Regulation on the Ecological Network and the Jurisdiction of Public Institutions for Management of Sites of Ecological Network. Official Gazette „Narodne Novine" 80/19.

Boršić, I., Posavec-Vukelić, V. (2012): New locality and threat status of *Damasonium polyspermum* Coss. (Alismataceae) in Croatia. Natura Croatica 21(2): 349-356.

Delforge, P. (2006): Orchids of Europe, North Africa and Middle East. 3rd ed. A&C Black Publisher Ltd., London.

Domac, R. (1994): Flora Hrvatske. Priručnik za određivanje bilja. Školska knjiga, Zagreb.

Eggenberg, S., Möhl, A. (2007): Flora Vegetativa. Ein Bestimmungsbuch für Pflanzen der Schweiz im blütenlosen Zustand. Haupt Verlag, Bern-Stuttgart-Wien.

Garnweidner, E. (1987): Florenliste der Exkursion der Bayerischen Botanischen Geselschaft 1984 nach Jugoslawien. Berichte der Bayerische Botanische Gesellschaft 58: 261–280.

Gaži-Baskova, V. (1983): Rijetke biljke u flori Dalmacije. Muzej grada Šibenika 10: 223–227.

Hirc, D. (1909): Iz bilinskog svijeta Dalmacije I, Dubrovnik i okolina. Glasnik hrvatskoga prirodoslovnog Društva 21(2): 6–28.

Horvatić, S. (1963): Vegetacijska karta otoka Paga s općim pregledom vegetacijskih jedinica hrvatskog primorja. Prirodoslovna istraživanja 33, serija Acta biologica 4: 5–181.

Horvatić, S., Ilijanić, Lj., Marković-Gospodarić, Lj. (1968): Biljni pokrov okoline Senja. Senjski zbornik: prilozi za geografiju, etnologiju, gospodarstvo, povijest i kulturu 3(1): 298-323.

Hršak, V., Šegota, V., Sedlar, Z. (2022): Vascular flora of Krka National Park. Glasnik hrvatskog botaničkog društva 10(1-2): 6-53.

Jávorka, S., Csapody, V. (1991): Iconographia florae partis Austro-orientalis Europae centralis. Akadémiai Kiadó, Budapest.

Klotz, S., Kühn, I., Durka, W. (2002): BIOLFLOR – Eine Datenbank zu biologisch-ökologischen Merkmalen der Gefäßpflanzen in Deutschland. Schriftenreihe für Vegetationskunde 38. Bonn: Bundesamt für Naturschutz.

Ljubičić, I., Britvec, M., Mioč, B., Prpić, Z., Pavić, V., Vnučec, I. (2012): Florni sastav ovčarskih pašnjaka otoka Paga. Mljekarstvo: časopis za unaprjeđenje proizvodnje i prerade mlijeka 62(4): 269–277.

Lovašen-Eberhadt, Ž., Martinis, Z. (1990): Fitocenološka rasčlanjenost i potencijalna bioproduktivnost zajednica na području NP „Krka". U: Kerovec, M. (ur.): Zbornik radova sa Simpozija „Nacionalni park Krka – stanje istraženosti i problemi zaštite ekosistema". Šibenik. Hrvatsko ekološko društvo, Zagreb. Ekološke monografije 2: 471–480.

Lovrić, A. Ž., Bedalov, M. (1987): Ekološko-geobotanički pregled primorskih i kanjonskih endema zapadnih Dinarida i jadranskih otoka. Radovi Akademije nauka i umjetnosti Bosne i Hercegovine, Posebno izdanje 14(83): 167–199.

Lovrić, A. Ž., Rac, M. (1989): Florističke osobitosti i zaštita fitocenoza u riječnim kanjonima Dalmacije (Cetina, Krka i Zrmanja). Acta Biokovica. Radovi o prirodi biokovskog područja 5: 105-120.

Lovrić, A. Ž., Rac, M., Bedalov, M., Šegulja, N. (1987): Doprinos fitogeografiji Svilaje i njena povezanost s Biokovom. Acta Biokovica. Radovi o prirodi biokovskog područja 4: 189–204.

Marhold, K. (2011): Apocynaceae. In: Euro+Med Plantbase – the information resource for Euro-Mediterranean plant diversity. http://www.europlusmed.org (accessed November 12, 2022).

Marković, Lj. (1964): Fitocenološka istraživanja ruderalne vegetacije u Hrvatskoj. Doktorska disertacija, Zagreb.

Marković, Lj., Ilijanić, Lj., Lukač, G., Hršak, V. (1990): Pregled istraživanja biljnog pokrova na području nacionalnog parka „Krka". U: Kerovec, M. (ur.): Zbornik radova sa Simpozija „Nacionalni park Krka – stanje istraženosti i problemi zaštite ekosistema". Šibenik. Hrvatsko ekološko društvo, Zagreb. Ekološke monografije 2: 449–469.

Marković, Lj., Ilijanić, Lj., Lukač, G., Hršak, V. (1993): Kvalitativni sastav flore papratnjača i sjemenjača Nacionalnog parka "Krka". Botanički zavod Prirodoslovno-matematičkog fakulteta Sveučilišta u Zagrebu, Zagreb.

Milović, M. (2001): A contribution to the knowledge of the neophytic flora of the county of Šibenik and Knin (Dalmatia, Croatia). Natura Croatica 10(4): 277-292.

Milović, M. (2002): The flora of Šibenik and its surroundings. Natura Croatica 11(2): 171–223.

Milović, M. (2016): A new contribution to the knowledge of the vascular flora of the Krka National Park (North Dalmatia, Croatia). Glasnik Hrvatskog botaničkog društva 4(1): 22-29.

Milović, M., Mitić, B. (2009): A contribution to the knowledge of vascular flora of Krka National Park. Natura Croatica 18(2): 335-352.

Milović, M., Pandža, M., Jasprica, N., Tafra, D., Krpina, V. (2021): The vascular flora of Mt Svilaja (Outer Dinarides, South Croatia). Natura Croatica 30(1): 85-144.

Nikolić T., Milović M., Bogdanović S., Jasprica N. (2015): Endemi u Hrvatskoj flori. Alfa d. d., Zagreb.

Nikolić, T. (2019): Flora croatica 4: Vaskularna flora Republike Hrvatske. Alfa d. d. Zagreb.

Nikolić, T. (ed.) (2005-onwards): Flora Croatica Database. Department of Botany, Faculty of Science, University of Zagreb. http://hirc.botanic.hr/fcd (accessed November 20, 2022).

Nikolić, T., Topić, J. (2005): Crvena knjiga vaskularne flore Hrvatske. Ministarstvo kulture, Državni zavod za zaštitu prirode, Zagreb.

Perica, D., Orešić, D., Trajbar, S. (2005): Geomorfološka obilježja doline i poriječja rijeke Krke s osvrtom na dio od Knina do Bilušića buka. Geoadria 10(2): 131–156.

Pignatti, S. (1982): Flora d'Italia. I-III. Edagricole, Bologna.

Pignatti, S., Menegoni, P., Pietrosanti, S. (2005): Valori di bioindicazione delle piante vascolari della Flora d'Italia. Bioindicator values of vascular plants of the Flora of Italy. Braun-Blanquetia 39: 3-95.

Rothmaler, W., Jäger, E. J. (2007): Exkursionsflora von Deutschland. Band 3 – Gefäßpflanzen: Atlasband. Elsevier Spektrum Akademischer Verlag, Heidelberg-Berlin.

Sedlar, Z., Hršak, V., Šegota, V. (2010): New records of vascular plants for the new part of the Krka National Park. Natura Croatica 19(2): 433-443.

Šegota, T., Filipčić, A. (2003): Köppenova podjela klima i hrvatsko nazivlje. Geoadria 8(1): 17-37.

Šegulja, N. (1990): Komparativna analiza vegetacije na širem području Nacionalnog parka Krka. U: Kerovec, M. (ur.): Zbornik radova sa Simpozija „Nacionalni park Krka – stanje istraženosti i problemi zaštite ekosistema". Šibenik. Hrvatsko ekološko društvo, Zagreb. Ekološke monografije 2: 481–490.

Trinajstić, I. (1979): Još jedno novo nalazište taksona *Bidens bipinnata* L. u Hrvatskoj. Fragmenta Herbologica Jugoslavica 8: 126-135.

Visiani, R. (1826): Stirpium dalmaticarum specimen. Typis Crescinianis, Patavii.

Visiani, R. (1842–1852): Flora Dalmatica Vol. I-III (sive enumeratio stirpium vascularium quas hactenus in Dalmatia lectas et sibi observatas). Lipsiae.

Visiani, R. (1872): Florae Dalmaticae Supplementum; Pars prima. Memor. del R. Istituto 16(1), Venetis.

Vuković, N., Šegota, V., Brana, S. (2017): Data deficient *Sternbergia colchiciflora* Waldst. & Kit. (Amaryllidaceae) in Croatian flora – removing the veil of mist. Natura Croatica 26(2): 261-269.

Zaninović, K., Gajić-Čapka, M., Perčec Tadić, M. et al. (2008): Klimatski atlas Hrvatske / Climate atlas of Croatia 1961.-1990., 1971.-2000. Državni hidrometeorološki zavod, Zagreb.

Appendix 1. The list of vascular plant taxa recorded on the plateau at the foot of the Promina Mountain (abbreviations are explained in the section Materials and Methods)

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Aceraceae	*Acer monspessulanum* L.					P	3
Alismataceae	*Damasonium polyspermum* Cosson	DD	+			Hy	1
Amaryllidaceae	*Allium amethystinum* Tausch					G	1
Amaryllidaceae	*Allium oleraceum* L.					G	8
Amaryllidaceae	*Allium pallens* L. ssp. *tenuiflorum* (Ten.) Stearn					G	3
Amaryllidaceae	*Allium sphaerocephalon* L.					G	3
Amaryllidaceae	*Sternbergia colchiciflora* Waldst. et Kit.	EN	+			G	1
Anacardiaceae	*Cotinus coggygria* Scop.					P	3
Anacardiaceae	*Pistacia terebinthus* L.					P	1
Apiaceae	*Bupleurum praealtum* L.					T	3
Apiaceae	*Bupleurum veronense* Turra					T	1
Apiaceae	*Chaerophyllum coloratum* L.	NT	+	+		T	1
Apiaceae	*Eryngium amethystinum* L.					H	1
Apiaceae	*Eryngium campestre* L.					H	3
Apiaceae	*Orlaya grandiflora* (L.) Hoffm.					T	3
Apiaceae	*Peucedanum cervaria* (L.) Lapeyr.					H	3
Apiaceae	*Seseli pallasii* Besser					H	3
Apiaceae	*Seseli tortuosum* L.					H	3
Apiaceae	*Tordylium apulum* L.					T	1
Apiaceae	*Torilis arvensis* (Huds.) Link					T	3
Araliaceae	*Hedera helix* L.					P	7

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Asclepiadaceae	*Vincetoxicum fuscatum* (Hornem.) Rchb. f.					P	5
Asclepiadaceae	*Vincetoxicum hirundinaria* Medik. ssp. *adriaticum* (Beck) Markgr.	LC	+	+		H	1
Asparagaceae	*Anthericum ramosum* L.					G	6
Asparagaceae	*Asparagus acutifolius* L.					P	1
Asparagaceae	*Asparagus tenuifolius* Lam.	NT				G	3
Asparagaceae	*Muscari comosum* (L.) Mill.					G	3
Asparagaceae	*Ornithogalum pyramidale* L.					G	3
Asparagaceae	*Ornithogalum refractum* Kit. ex Schltr.					G	3
Asparagaceae	*Ruscus aculeatus* L.	LC				Ch	1
Aspleniaceae	*Asplenium ceterach* L.					H	3
Asteraceae	*Achillea millefolium* L.					H	10
Asteraceae	*Anthemis arvensis* L.					T	10
Asteraceae	*Bombycilaena erecta* (L.) Smoljan.					T	3
Asteraceae	*Buphthalmum salicifolium* L.					H	6
Asteraceae	*Carduus micropterus* (Borbás) Teyber ssp. *micropterus*		+	+		H	1
Asteraceae	*Carduus nutans* L.					H	1
Asteraceae	*Carduus pycnocephalus* L.					H	1
Asteraceae	*Carthamus lanatus* L.					T	1
Asteraceae	*Centaurea rupestris* L.					H	1
Asteraceae	*Centaurea scabiosa* L.					H	8
Asteraceae	*Centaurea solstitialis* L.					H	3
Asteraceae	*Centaurea spinosociliata* Seenus	NT	+	+		H	1

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Asteraceae	*Helichrysum italicum* (Roth) G. Don					Ch	1
Asteraceae	*Inula hirta* L.					H	3
Asteraceae	*Inula oculus-christi* L.					H	3
Asteraceae	*Inula spiraeifolia* L.					H	3
Asteraceae	*Inula verbascifolia* (Willd.) Hausskn.					Ch	1
Asteraceae	*Onopordum illyricum* L.					H	1
Asteraceae	*Picnomon acarna* (L.) Cass.					H	1
Asteraceae	*Senecio jacobaea* L.					H	8
Asteraceae	*Tanacetum cinerariifolium* (Trevis.) Sch. Bip.			+		H	1
Asteraceae	*Xeranthemum inapertum* (L.) Mill.					T	3
Boraginaceae	*Echium italicum* L.					H	1
Boraginaceae	*Echium vulgare* L.					H	7
Boraginaceae	*Myosotis ramosissima* Rochel					T	8
Boraginaceae	*Onosma echioides* (L.) L. ssp. *dalmatica* (Scheele) Peruzzi et N. G. Passal.			+		Ch	1
Brassicaceae	*Aethionema saxatile* (L.) W. T. Aiton					Ch	3
Brassicaceae	*Alyssum montanum* L.					Ch	3
Brassicaceae	*Arabis hirsuta* (L.) Scop.					H	10
Brassicaceae	*Arabis turrita* L.					H	3
Brassicaceae	*Capsella rubella* Reut.					T	1
Brassicaceae	*Isatis tinctoria* L.					H	8
Brassicaceae	*Rorippa sylvestris* (L.) Besser					H	8
Cactaceae	*Opuntia vulgaris* Miller					Ch	11
Campanulaceae	*Campanula rapunculus* L.					H	8

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Campanulaceae	*Edraianthus tenuifolius* (Waldst. et Kit.) A. DC.		+	+		Ch	1
Caprifoliaceae	*Lonicera caerulea* L.					P	9
Caprifoliaceae	*Lonicera etrusca* Santi					P	1
Caryophyllaceae	*Cerastium pumilum* Curtis ssp. *glutinosum* (Fr.) Jalas					T	10
Caryophyllaceae	*Dianthus carthusianorum* L.		+			H	6
Caryophyllaceae	*Dianthus ferrugineus* Mill. ssp. *liburnicus* (Bartl.) Tutin		+	+		H	1
Caryophyllaceae	*Dianthus sylvestris* Wulfen in Jacq. ssp. *tergestinus* (Rchb.) Hayek		+	+		H	1
Caryophyllaceae	*Herniaria hirsuta* L.					T	8
Caryophyllaceae	*Petrorhagia prolifera* (L.) P. W. Ball et Heywood					T	8
Caryophyllaceae	*Petrorhagia saxifraga* (L.) Link					H	3
Caryophyllaceae	*Silene latifolia* Poir. ssp. *alba* (Mill.) Greuter et Bourdet					H	8
Caryophyllaceae	*Silene otites* (L.) Wibel					H	3
Caryophyllaceae	*Silene paradoxa* L.					H	3
Caryophyllaceae	*Silene vulgaris* (Moench) Garcke					H	8
Cichoriaceae	*Chondrilla juncea* L.					H	8
Cichoriaceae	*Hieracium hoppeanum* Schult.					H	3
Cichoriaceae	*Hieracium pilosella* L.					H	8
Cichoriaceae	*Hieracium praealtum* Vill. ex Gochnat ssp. *bauhinii* (Besser) Petunn.					H	8
Cichoriaceae	*Leontodon crispus* Vill.					H	3
Cichoriaceae	*Picris hieracioides* L.					H	8

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Cichoriaceae	*Reichardia picroides* (L.) Roth					H	1
Cichoriaceae	*Scorzonera purpurea* L. ssp. *rosea* (Waldst. et Kit.) Nyman	DD				H	5
Cichoriaceae	*Scorzonera villosa* Scop.					G	1
Cichoriaceae	*Tragopogon dubius* Scop.					H	3
Cichoriaceae	*Tragopogon pratensis* L.					H	8
Cistaceae	*Fumana procumbens* (Dunal) Gren. et Godr.					Ch	3
Cistaceae	*Helianthemum nummularium* (L.) Mill. ssp. *obscurum* (Čelak.) Holub					Ch	3
Clusiaceae	*Hypericum perforatum* L.					H	10
Convolvulaceae	*Convolvulus arvensis* L.					G	10
Convolvulaceae	*Convolvulus cantabrica L.*					H	3
Cornaceae	*Cornus mas* L.					P	3
Corylaceae	*Carpinus orientalis* Mill.					P	1
Crassulaceae	*Sedum ochroleucum* Chaix					Ch	3
Crassulaceae	*Sedum sexangulare* L.					Ch	7
Cupressaceae	*Juniperus oxycedrus* L.					P	1
Cyperaceae	*Carex caryophyllea* Latourr.					G	8
Cyperaceae	*Carex divulsa* Stokes					H	10
Cyperaceae	*Carex halleriana* Asso					H	3
Cyperaceae	*Eleocharis palustris* (L.) R. Br.					G	10
Dioscoreaceae	*Tamus communis* L.					G	3
Dipsacaceae	*Cephalaria leucantha* (L.) Roem. et Schult.					H	1
Dipsacaceae	*Knautia arvensis* (L.) Coult.					H	8

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Dipsacaceae	*Knautia dinarica* (Murb.) Borbás					H	5
Dipsacaceae	*Knautia illyrica* Beck	DD	+	+		H	1
Dipsacaceae	*Lomelosia brachiata* (Sm.) Greuter et Burdet					T	1
Euphorbiaceae	*Euphorbia falcata* L.					T	3
Euphorbiaceae	*Euphorbia fragifera* Jan					Ch	1
Euphorbiaceae	*Euphorbia spinosa* L.					Ch	1
Fabaceae	*Anthyllis vulneraria* L. ssp. *praepropera* (A. Kern.) Bornm.					T	1
Fabaceae	*Argyrolobium zanonii* (Turra) P. W. Ball					Ch	1
Fabaceae	*Astragalus monspessulanus* L. ssp. *illyricus* (Bernh.) Chater		+	+		H	1
Fabaceae	*Astragalus muelleri* Steud. et Hochst.	NT	+	+		H	1
Fabaceae	*Colutea arborescens* L.					P	1
Fabaceae	*Coronilla emerus* L. ssp. *emeroides* Boiss. et Spruner					P	1
Fabaceae	*Coronilla scorpioides* (L.) W. D. J. Koch					T	1
Fabaceae	*Coronilla varia* L.					H	7
Fabaceae	*Dorycnium germanicum* (Gremli) Rikli					Ch	3
Fabaceae	*Dorycnium herbaceum* Vill.					Ch	3
Fabaceae	*Dorycnium hirsutum* (L.) Ser.					Ch	1
Fabaceae	*Genista sylvestris* Scop. ssp. *dalmatica* (Bartl.) H. Lindb.		+	+		Ch	1
Fabaceae	*Hippocrepis comosa* L.					H	3
Fabaceae	*Lathyrus aphaca* L.					T	3

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Fabaceae	*Lathyrus latifolius* L.					H	3
Fabaceae	*Lathyrus niger* (L.) Bernh.					G	7
Fabaceae	*Lathyrus venetus* (Mill.) Wohlf.					G	4
Fabaceae	*Lotus corniculatus* L. ssp. *corniculatus*					H	10
Fabaceae	*Lotus corniculatus* L. ssp. *hirsutus* Rothm.					H	3
Fabaceae	*Medicago falcata* L.					H	8
Fabaceae	*Medicago minima* (L.) Bartal.					T	10
Fabaceae	*Medicago orbicularis* (L.) Bartal.					T	1
Fabaceae	*Medicago polymorpha* L.					T	3
Fabaceae	*Medicago prostrata* Jacq.					H	3
Fabaceae	*Ononis antiquorum* (L.) Arcang.					Ch	7
Fabaceae	*Ononis pusilla* L.					H	3
Fabaceae	*Ononis reclinata* L.					T	1
Fabaceae	*Robinia pseudoacacia* L.				+	P	11
Fabaceae	*Trifolium alpestre* L.					H	3
Fabaceae	*Trifolium angustifolium* L.					T	1
Fabaceae	*Trifolium arvense* L.					T	8
Fabaceae	*Trifolium campestre* Schreb.					T	10
Fabaceae	*Trifolium ochroleucon* Huds.					H	3
Fabaceae	*Trifolium pratense* L.					H	8
Fabaceae	*Trifolium rubens* L.					H	3
Fabaceae	*Trifolium scabrum* L.					T	1
Fabaceae	*Trifolium stellatum* L.					T	1

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Fabaceae	*Trifolium striatum* L.					T	8
Fabaceae	*Vicia cracca* L.					H	8
Fabaceae	*Vicia grandiflora* Scop.					H	4
Fabaceae	*Vicia sativa* L.					T	10
Fagaceae	*Quercus pubescens* Willd.					P	3
Gentianaceae	*Centaurium erythraea* Rafn					H	10
Geraniaceae	*Geranium columbinum* L.					T	8
Geraniaceae	*Geranium dissectum* L.					T	10
Geraniaceae	*Geranium purpureum* Vill.					T	3
Geraniaceae	*Geranium robertianum* L.					T	10
Iridaceae	*Gladiolus illyricus* W. D. J. Koch		+			G	3
Iridaceae	*Iris adriatica* Trinajstić ex Mitić	NT	+	+		G	1
Lamiaceae	*Acinos arvensis* (Lam.) Dandy					T	7
Lamiaceae	*Betonica officinalis* L.					H	7
Lamiaceae	*Marrubium incanum* Desr.					H	1
Lamiaceae	*Mentha pulegium* L.					H	8
Lamiaceae	*Prunella laciniata* (L.) L.					H	3
Lamiaceae	*Rosmarinus officinalis* L.					P	1
Lamiaceae	*Salvia pratensis* L.					H	7
Lamiaceae	*Satureja montana* L.					Ch	3
Lamiaceae	*Stachys subcrenata* Vis.					H	3
Lamiaceae	*Stachys thirkei* K. Koch					H	1
Lamiaceae	*Teucrium chamaedrys* L.					Ch	3
Lamiaceae	*Teucrium montanum* L.					Ch	3

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Lamiaceae	*Teucrium polium* L.					Ch	1
Lamiaceae	*Thymus longicaulis* C. Presl					Ch	1
Liliaceae	*Fritillaria montana* Hoppe ex W. D. J. Koch					G	3
Linaceae	*Linum narbonense* L.					H	1
Linaceae	*Linum nodiflorum* L.					T	1
Linaceae	*Linum tenuifolium* L.					H	3
Linaceae	*Linum trigynum* L.					T	3
Malvaceae	*Althaea hirsuta* L.					T	3
Malvaceae	*Malva sylvestris* L.					H	10
Moraceae	*Ficus carica* L.					P	11
Oleaceae	*Fraxinus ornus* L.					P	3
Orchidaceae	*Cephalanthera damasonium* (Mill.) Druce	NT	+			G	3
Orchidaceae	*Himantoglossum adriaticum* H. Baumann	NT	+			G	3
Orchidaceae	*Limodorum abortivum* (L.) Sw.		+			G	3
Orchidaceae	*Ophrys apifera* Huds.	EN	+			G	3
Orchidaceae	*Ophrys bertolonii* Moretti	VU	+			G	2
Orchidaceae	*Ophrys scolopax* Cav. ssp. *cornuta* (Steven) E. G. Camus		+			G	1
Orchidaceae	*Orchis purpurea* Huds.	VU	+			G	8
Orobanchaceae	*Orobanche gracilis* Sm.					G	3
Papaveraceae	*Papaver rhoeas* L.					T	10
Pinaceae	*Pinus halepensis* Mill.					P	1
Pinaceae	*Pinus nigra* J. F. Arnold					P	3

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Plantaginaceae	*Plantago argentea* Chaix					H	3
Plantaginaceae	*Plantago holosteum* Scop.	LC				H	3
Plantaginaceae	*Plantago lanceolata* L.					H	10
Poaceae	*Aegilops geniculata* Roth					T	1
Poaceae	*Anthoxanthum odoratum* L.					H	8
Poaceae	*Arrhenatherum elatius* (L.) J. Presl et C. Presl					H	7
Poaceae	*Avena barbata* Link					T	10
Poaceae	*Avena sterilis* L.					T	3
Poaceae	*Brachypodium distachyon* (L.) P. Beauv.					T	1
Poaceae	*Brachypodium pinnatum* (L.) P. Beauv.					H	10
Poaceae	*Bromus erectus* Huds.					H	10
Poaceae	*Bromus hordeaceus* L.					T	10
Poaceae	*Bromus madritensis* L.					T	1
Poaceae	*Bromus squarrosus* L.					T	3
Poaceae	*Chrysopogon gryllus* (L.) Trin.					H	1
Poaceae	*Dactylis glomerata* L.					H	8
Poaceae	*Dasypyrum villosum* (L.) P. Candargy					T	1
Poaceae	*Desmazeria rigida* (L.) Tutin					T	1
Poaceae	*Elymus hispidus* (Opiz) Melderis					G	3
Poaceae	*Elymus repens* (L.) Gould					G	10
Poaceae	*Festuca rupicola* Heuff.					H	5
Poaceae	*Helictotrichon convolutum* (C. Presl) Henrard					H	1

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Poaceae	*Hordeum murinum* L. ssp. *leporinum* (Link) Arcang.					T	1
Poaceae	*Koeleria pyramidata* (Lam.) P. Beauv.					H	6
Poaceae	*Koeleria splendens* C. Presl					H	3
Poaceae	*Melica ciliata* L.					H	8
Poaceae	*Phleum pratense* L.					H	9
Poaceae	*Phleum subulatum* (Savi) Asch. et Graebn.					T	1
Poaceae	*Phragmites australis* (Cav.) Steud.					G	10
Poaceae	*Poa annua* L.	LC				T	10
Poaceae	*Poa bulbosa* L.					H	8
Poaceae	*Poa compressa* L.					H	10
Poaceae	*Stipa pennata* L.					H	3
Polygalaceae	*Polygala nicaeensis* Risso ex W. D. J. Koch					H	1
Polygonaceae	*Polygonum aviculare* L.					T	10
Polygonaceae	*Rumex conglomeratus* Murray					H	10
Polygonaceae	*Rumex pulcher* L.					H	3
Ranunculaceae	*Clematis flammula* L.					P	1
Ranunculaceae	*Clematis vitalba* L.					P	7
Ranunculaceae	*Nigella damascena* L.					T	1
Ranunculaceae	*Ranunculus sardous* Crantz					T	10
Resedaceae	*Reseda lutea* L.					H	10
Resedaceae	*Reseda phyteuma* L.					T	3
Rhamnaceae	*Frangula alnus* Mill.					P	6

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Rhamnaceae	*Frangula rupestris* (Scop.) Schur					P	1
Rhamnaceae	*Paliurus spina-christi* Mill.					P	1
Rhamnaceae	*Rhamnus intermedia* Steud. et Hochst.	NT	+	+		P	3
Rosaceae	*Agrimonia eupatoria* L.					H	9
Rosaceae	*Crataegus monogyna* Jacq.					P	8
Rosaceae	*Filipendula vulgaris* Moench					H	8
Rosaceae	*Fragaria vesca* L.					H	10
Rosaceae	*Geum urbanum* L.					H	10
Rosaceae	*Potentilla australis* Krašan					H	1
Rosaceae	*Potentilla erecta* (L.) Raeusch.					H	8
Rosaceae	*Potentilla hirta* L.					H	3
Rosaceae	*Prunus mahaleb* L.					P	3
Rosaceae	*Prunus spinosa* L.					P	8
Rosaceae	*Pyrus amygdaliformis* Vill.					P	3
Rosaceae	*Rosa canina* L.					P	10
Rosaceae	*Rubus ulmifolius* Schott					P	1
Rosaceae	*Sanguisorba minor* Scop.					H	8
Rosaceae	*Sorbus domestica* L.					P	11
Rubiaceae	*Galium aparine* L.					T	10
Rubiaceae	*Galium lucidum* All.					H	3
Rutaceae	*Dictamnus albus* L.					H	8
Santalaceae	*Thesium divaricatum* Mert. et W. D. J. Koch					H	1
Scrophulariaceae	*Odontites luteus* (L.) Clairv.					T	3

Family	Taxon	IUCN category	Strictly protected	Endemic	Invasive	Life-form	Chorotype
Scrophulariaceae	*Scrophularia canina* L.					H	3
Scrophulariaceae	*Verbascum orientale* (L.) All.					H	1
Scrophulariaceae	*Verbascum phoeniceum* L.					H	3
Scrophulariaceae	*Verbascum pulverulentum* Vill.					H	3
Scrophulariaceae	*Verbascum sinuatum* L.					H	1
Simaroubaceae	*Ailanthus altissima* (Mill.) Swingle				+	P	11
Ulmaceae	*Celtis australis* L.					P	3
Ulmaceae	*Ulmus minor* Mill.					P	10
Valerianaceae	*Valeriana tuberosa* L.					H	3
Violaceae	*Viola hirta* L.					H	8
Vitaceae	*Vitis vinifera* L.					P	10