

Floristic study of steppe parts of Lissar protected area (N Iran)

Received: 17.03.2012 / Accepted: 09.09.2012

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Abstract

The steppe parts of Lissar protected area is located in the North Western part of Talesh mountain range, with an area around 13,500 hectares. The area is influenced by a humid Caspian climate at the Eastern slope and a cold mountain Irano-Turanian-like climate at the Western slope causing the formation of diverse vegetation types. Based on a collection of about 1,250 specimens during 2007-08, a total number of 542 vascular plant species were identified from this area belonging to 270 genera and 64 families. The largest families in the area are *Asteraceae*, *Poaceae* and *Brassicaceae*. The most diverse genera include *Astragalus*, *Silene* and *Potentilla*. Dominant life forms include hemicryptophytes (51%), followed by therophytes and chamaephytes with 34% and 12%, respectively. Endemic species and genera of Iran and conservation class of plant species in the studied region were determined using several related Flora books and on the basis of IUCN classification and Red Data Book of Iran. The chorological study shows that the most extended chorotype with 41% is related to the Irano-Turanian floristic region.

Keywords: Floristic, Iran flora, Neor, protected area, transitional zone

بررسی فلورستیکی بخش‌های استپی منطقه حفاظت شده لیسار*

دریافت: ۱۳۹۰/۱۲/۲۷ / پذیرش: ۱۳۹۱/۶/۱۹

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خلاصه

بخش مرتعی منطقه حفاظت شده لیسار، با مساحتی در حدود ۱۳۵۰۰ هکتار، در قسمت شمال غربی رشته کوه تالش قرار دارد. نفوذ آب و هوای مرطوب خزری در شیب شرقی و آب و هوای سرد کوهستانی ایران-تورانی در شیب غربی سبب شکل‌گیری اشکال متنوعی از پوشش گیاهی شده است. براساس جمع‌آوری ۱۲۵۰ نمونه طی سالهای ۸۷-۱۳۸۶، ۵۴۲ گونه متعلق به ۶۴ تیره و ۲۷۰ جنس شناسایی گردید. تیره‌های کاسنیان، گندمیان و کلمیان و جنس‌های *Astragalus*، *Silene* و *Potentilla* دارای بیشترین غنای گونه‌ای هستند. فرم رویشی غالب گیاهان مربوط به همی کریپتوفیت‌ها (۵۱٪) و به دنبال آن به ترتیب تروفیت‌ها و کامه‌فیت‌ها (۲۱٪) و (۱۲٪) است. جنس و گونه‌های انحصاری ایران و طبقات حفاظتی برای گونه‌ها در منطقه براساس منابع فلوری و بر مبنای طبقه‌بندی IUCN مشخص گردید. بررسی کورلوژی گونه‌ها نشان می‌دهد، بیشترین عناصر به ناحیه ایران-تورانی (۴۱٪) تعلق دارند.

واژه‌های کلیدی: فلور ایران، فلورستیک، منطقه حفاظت شده، نئور، ناحیه گذار

* بخشی از پایان‌نامه کارشناسی ارشد نگارنده دوم به راهنمایی دکتر فرخ قهرمانی نژاد ارائه شده به دانشگاه خوارزمی، تهران

Introduction

Understanding the natural distribution of plants (floristic studies) is fundamental to conserving biodiversity and managing ecosystems for long-term viability and sustainability. Plant biodiversity and phytogeography are important factors which should be considered in evaluation of conservational value of an area. Due to relatively few numbers of local floristic and ecological studies in Iranian protected areas, our knowledge about flora of Iran and conservation management based on floristic structure and the state of threatened species is far from the ideal situation. This research was carried out to determine the steppe parts of Lissar protected area flora. This is based on consecutive collection years from 2007 to 2008.

One of the main reasons for studying the area is that the steppe part of Lissar protected area possesses an unusual geographic allocation as the junction between the Irano-Turanian and Euro-Siberian phytogeographic regions. Other reasons for studying of this area include:

1. There are no coherent published floristic studies in this area.
2. The study area is a protected area.
3. To determine rare and endemic plants of the research area. Since there is a severe anthropogenic effect, plants can barely survive under the unsuitable conditions.

The official survey flora and vegetation of our research area has not been studied hitherto, especially as some. But according to Flora Iranica (Rechinger 1968–2010) and Flora of Iran (Assadi 1988–2011) some botanists have visited and gathered specimens from Lissar protected area.

This research is the first regular floristic study to be performed in this area. But several investigations on the flora and vegetation ecology of the same phytogeographical zone (transitional zone) and same habitat (alpine and subalpine) have been carried out in other areas, such as: plant biodiversity of Golestan National Park (Akhani 1998), floristic survey in Fandoghlu of Ardabil province (Azimi Motem *et al.* 2011), biodiversity and phytogeography of the alpine flora of Iran (Noroozi *et al.* 2008), plants of Jahan Nama protected area (Jafari & Akhani 2008), and flora and vegetation of Golestanak (Naderi *et al.* 2012).

- Study area

The steppe part of Lissar protected area is located in the North Western parts of Talesh mountain range. This mountain, as a part of the Western Alborz mountain range, is located between Ardabil and Gilan provinces. The studied area is situated between 37° 55' and 38° 01' northern latitudes and 48° 42' and 48° 32' eastern longitudes, with an area around 13500 hectares. It covers steppe area between Neor lake (Ardabil province) and timber line of Hyrcanian forest (Gilan province) (Fig. 1). The altitude of the area ranges between 1800–3200 m and is influenced by humid Caspian climate at the Eastern slope and cold mountains of Irano-Turanian-like climate at the Western slope causing formation of diverse vegetation types including mountain steppes, grasslands and meadows, cliff and river line vegetation.

Neor lake (with an area around 240 hectares) is located in West of the protected area at an altitude of approximately 2480 m and is surrounded by mountains such as Backrodagh and Hesarbolaghi. Backrodagh is the highest altitude in this area (3200 m). It includes the most of steppe parts topographical physiognomy.

- Climate

There is no meteorological station in the Eastern part of our study area. Therefore, temperature (° C) and rainfall (mm) data were obtained from the meteorological stations in Western part (Neor Meteorological Station). The meteorological data were obtained during the years 1988 to 2006. The mean annual rainfall is 359.32 mm and the mean annual temperature is 4.42° C. The coldest month is February with a minimum temperature of -11.88° C and the hottest month is August with a maximum temperature of 21.15° C. These data show that it is dry for four months of year and the temperature chart stands above rainfall chart (Fig. 2). The Emberger precipitation-temperature coefficient (Q) for the research area is 113.58, assigning it as a highland climate. This area has a transitional condition; eastern parts have humid and relatively warm climate but the western parts have dry and high lands climate. This climatic difference has resulted in completely different vegetations types in the Eastern and Western parts.

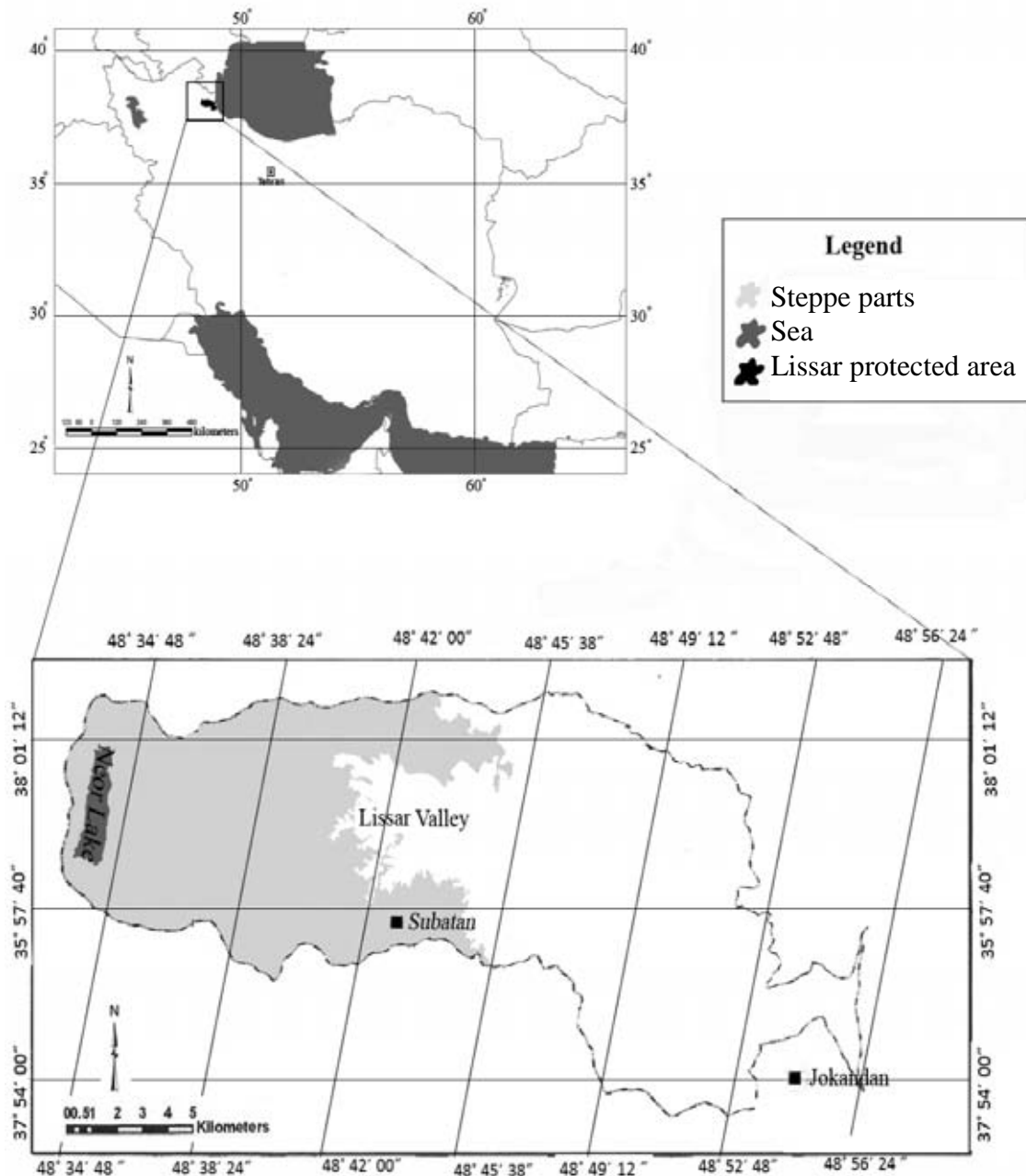


Fig. 1. Map of Lissar protected area and showing position of the area in Iran.

- Geology

Highlands of Talesh are a rich typical morphology of erosion by glacier. The occurrence time of these morphologies dates back to global climate variations of peliostosen. Of the geomorphological evidence for climatic variation in Talesh highlands is the large dispread rocks deposited from glaciers (Tahouni 2004). Examples of the circs include the circ located in Neor

lake and the one next to Lissar valley which generates a steepened surface at the top of the valley (Fig. 1). Between the circ in Neor lake in the West and the circ of Lissar valley in the East of the study area, there is a continental plain, resulted from the erosion by glaciers (Tahouni 2004). Neor fault and a fault in the West of Neor lake are the main factors involved in the formation of the lake (Madadi 2003).

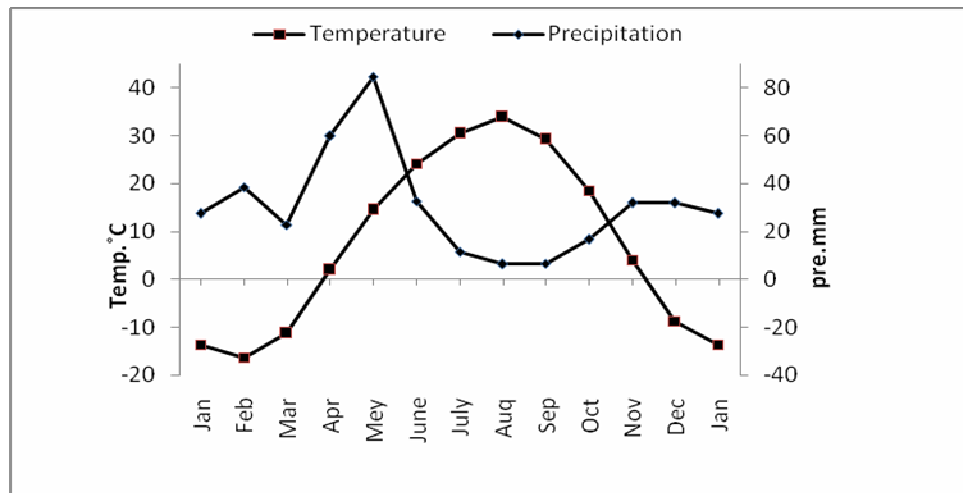


Fig. 2. Climatic diagram of Steppe parts of Lissar protected area.

Materials and Methods

In order to present the flora of steppe part of Lissar protected area, at first related information such as: meteorological statistics, topographic maps, results of other studies etc. were gathered. The specimens were collected in different seasons during the years 2007 and 2008. During this research 1250 specimens were collected. The exact location and altitude have been determined using GPS with the addition of notes on the vegetation and habitat. Each collected specimen was marked with a herbarium number and dried according to standard herbarium methods. The specimens transferred to the herbarium and identified according to the Flora of Iran (Assadi 1988–2011), Flora Iranica (Rechinger 1963–2010), Flora of Turkey (Davis 1965–1988), and Flora of Iraq (Townsend 1966–1974). The plant specimens were deposited in the Farabi Herbarium (FAR) at Kharazmi University (Tehran).

Determining the life form was done by Raunkiær's classification (Raunkiær 1934), and the chorology of species is based on Zohary (1973), Takhtajan (1986), and White & Leonard (1999). Endemic and rare species have been indicated according to IUCN threat categories as used in the Red Data Book of Iran (Jalili & Jamzad 1999) and biodiversity plant species of Iran (Ghahreman & Attar 1999).

The complete flora list is given in the appendix. In the list, the following details are provided: family and

species names and the author (s), herbarium number, IUCN categories, life forms, and the phytogeographic region element.

Result

A total of 613 taxa (542 species with 57 subspecies and 14 varieties) of vascular plants have been identified from the steppe part of the Lissar protected area belonging to 64 families and 270 genera (see appendix). The dicots with 45 families, 216 genera and 448 species are the most diverse group of vascular plants in the area, followed by the monocots with 11 families, 46 genera and 85 species, gymnosperms with two families, two genera, two species and pteridophytes with five families, five genera and five species. Four hundred seventy nine taxa were identified, as new records, in the boundaries of the protected area (based on Assadi 1988–2011, Rechinger 1963–2010, Hamzeh'ee *et al.* 2008).

The rich families of vascular plants are *Asteraceae* (73 species and 36 genera), *Poaceae* (45 species and 28 genera), *Brassicaceae* (41 species and 28 genera), *Fabaceae* (33 species and 10 genera), *Rosaceae* (31 species and 13 genera), *Caryophyllaceae* (31 species and 10 genera), *Lamiaceae* (23 species and 18 genera), *Scrophulariaceae* (23 species and nine genera), *Boraginaceae* (22 species and 11 genera), *Apiaceae* (20 species and 15 genera), and *Ranunculaceae* (14 species and eight genera) (Fig. 3).

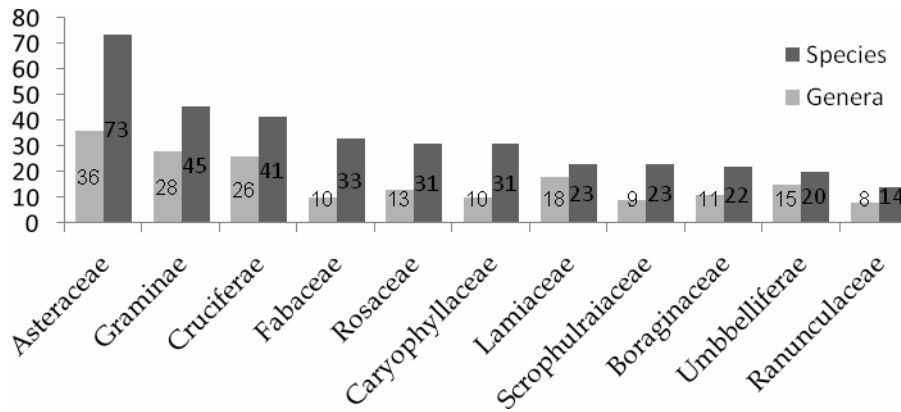


Fig. 3. List of rich families with more than 13 species in the study area.

The largest genera in terms of species number in the area are *Astragalus* L., with 16 species, *Silene* L., with 11 species, *Potentilla* L. and *Centaurea* L., each with nine species, *Geranium* L., *Veronica* Medicus, *Ranunculus* L., *Polygonum* L., *Cirsium* Miller, *Bromus*

L., each with seven species, *Sedum* L., *Papaver* L., *Myosotis* L., *Campanula* L., *Allium* L. and *Agropyron* Gaertn., each with six species, respectively. These genera are also relatively widespread throughout Iran (Hedge & Wendelbo 1978) (Fig. 4).

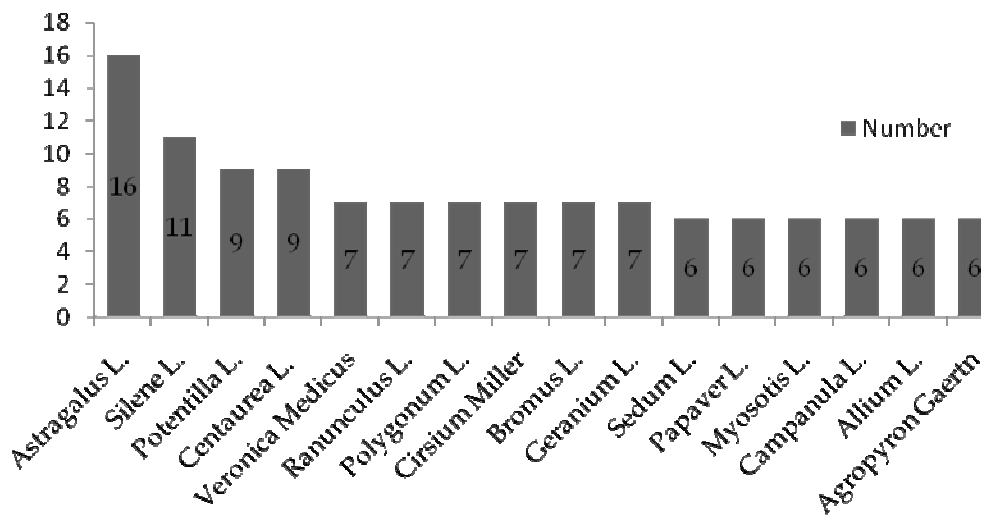


Fig. 4. Frequency species in genus with more than five species in the study area.

The steppe part of Lissar protected area is geographically located between two main phytogeographic regions including the Boreal or Euro-Siberian region (Hyrcanian province) and Irano-Turanian region (Léonard 1989, Zohary 1973). A considerable number of species (41%) belongs to Irano-Turanian region (more common than the others). The Euro-Siberian species with 15%, Irano-Turanian/Euro-Siberian species with 14.5%, pluriregional species with 8%, cosmopolitan species with 6%, Irano-Turanian/Mediterranean with 6.5%, Irano-Turanian/Mediterranean/Euro-Siberian with 7%, and Euro-Siberian/Mediterranean with 2%, compose the phytogeographic spectrum of the area. The distribution of these taxa in different floristic regions is given in Table 1.

Table 1. Comparison of the distribution of phytogeographic elements (%) in the study area and nearby regions

Region	Study area	Jahan Nama	Golestanak	Fandoghlu
Irano-Turanian	41%	37%	63.65%	29/8%
Euro-Siberian	15%	18%	6.7%	9/4%
Irano-Turanian/Euro-Siberian	14.5%	7%	14%	16/2%
Pluriregional	8%	9%	3.7%	2%
Cosmopolitan	6%	1.7%	2%	4/7%
Irano-Turanian/Mediterranean	6.5%	9%	3.7%	17/2%
Euro-Siberian/Mediterranean	2%	6.5%	2%	5.2%
Irano-Turanian/Mediterranean/ Euro-Siberian	7%	9%	4.25%	15/1

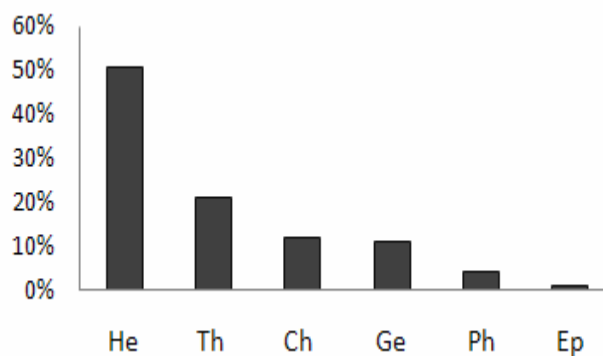


Fig. 5. Percentage of chorotypes in the study area (see text for abbreviation delimitations).

The steppe part of Lissar protected area flora is also interesting in terms of its structural complexity. Life forms of species according to the total number of species are as follows: hemicryptophytes (He) 51%, therophytes (Te) 21%, chamaephytes (Ch) 12%, geophytes (Ge) 11%, phanerophytes (Ph) 4% and epiphytes (Ep) 1% (Fig. 5).

In the study area, 71 endemic taxa were determined and the ratio of endemism is 13.1%. The endemism ratio is

very low compared with the average endemism ratio (22–25%) of the flora of Iran (Zohary 1973). A total of 24 taxa, all endemics, and 24 non-endemics were evaluated according to IUCN risk categories. A notable point is that *Dracocephalum kotschyi* Boiss. is an Endangered Endemic species at the research area. The results are summarized in Table 2.

Table 2. Risk categories of endemic and non-endemic taxa

Rank	Number	Rank	Number
Endem	47	-	-
Endem/LR	20	LR	11
Endem/R	2	R	10
Endem/DD	1	DD	9
Endem/vu	1	VU	4
Endem/EN	1	-	-

Discussion

It is concluded from the results of this study that the study area, despite having a limited surface area, is quite rich with reference to plant diversity. This conclusion is supported by the existence of 63 families, 270 genera and 542 vascular plant species occurring in its 13,500 ha. Topographical and climatic conditions produce a mosaic of habitat types in the steppe parts of Lissar protected area. There are three different vegetation zones in the study area, namely, alpine, subalpine and wetland.

The total ratio of the 11 major families is 65.8%, with the remaining families comprising 34.2%. The major family order in our study is almost concordant with the Flora Iranica (Rechinger 1963–2010). Differences in several families might be due to the dissimilarities in climates and habitats.

Asteraceae is the largest family in the flora of Iran (Ghahreman & Attar 1999). This family possesses easy dispersal ability, and some members of the family have spines for protection against potential grazers; in addition, the family has a wide ecological tolerance (Archibald 1995). Species belonging to *Poaceae* were also found in the study area in large numbers. The family *Poaceae* is mostly known as being common in steppe habitats, and the species of this family are known to be abundant in numbers around wetlands and marshy environments (Ikinci 2007). The *Brassicaceae* is the third family, because most members of this family have Irano-Turanian distributions (Zohary 1973), and the Irano-Turanian phytogeographic region occupies quite a large territory in the study area. The reason that *Fabaceae* is the fourth in order is that it is also one of the largest families of the flora of Iran with wide toleration limits, and involves large genera containing many species. In comparison with the Flora Iranica (Rechinger 1963–2010) the order of the families is approximately the same in this study. The 10 largest families according to the number of species and genera are shown in Figure 3.

Astragalus with c. 2500 species in the world (Brummitt 1992) is the richest genus in the study area.

The estimated number of species in Iran is c. 850. It is the most important and genetically diverse Iranian genera, with an endemism rate of more than 60%, and includes more than 11% of Iran's flora (Ghahremaninejad *et al.* 2012). The most important point is that *Astragalus* has adapted to the mountainous conditions. Furthermore, the study area is mostly steppe in character. Other large genera in the study area are also relatively widespread throughout Iran.

Given that the area is alpine and subalpine, and the alpine zone is commonly characterized by many species of hemicryptophytes and thorny cushions (Noroozi *et al.* 2008, Archibald 1995). Hemicryptophytes are adapted to the conditions of this area. They adapted and developed themselves to the area using different ways, such as reserving water, using ground water, reducing their water need by losing their leaves and reduction of vegetation growth.

The low percentage of cryptophytes, chamaephytes, and phanerophytes shows that they are not adapted to existing climate and edaphical situations (Nadaf *et al.* 2011). Each plant species has its special ecological area with a known tolerance to life conditions of the area. Therefore, the geographical distribution of plant species depends on life conditions of the area and adaptation of plants to the area (Asri 2003).

The study area is geographically located between two main phytogeographic regions including Euro-Siberian region (Hyrcanian province) and Irano-Turanian region. The objectives of this study are to determine the floristic composition and the comparison between the results with other studies such as: Jahan Nama protected area (Jafari & Akhane 2008), Golestanak-Alborz Mts (Naderi *et al.* 2012), and Fandoghlu-Ardabil province (Azimi Motem *et al.* 2011) that have been made in the same zone and are given in Table 1. The proportion of Irano-Turanian elements increases with increasing altitude. Such an increase is even more pronounced in high altitudes (3935 m) in Golestanak.

The endemism rate of the study area is low compared with the average endemism rate in the Flora of Iran, i.e. 22–25% (Zohary 1973). Perhaps one of the important reasons is that the area lies close to the border of Iran, and thus, shares part of its flora with the neighboring state of Azerbaijan and the Caucasus in general. However, other potential reasons for the low endemism ratio observed in this study should be further investigated.

The overgrazing leads to the destruction of the vegetation, loss of biological diversity and erosion of soil. The dominance of thorn-cushion formation is obviously one of the consequences of long-term overgrazing and land use in Iranian plateau (Noroozi *et al.* 2008). The research area is exploited by local farmers for livestock grazing. This situation threatens the endemic plants and other plant species in the study area. This heavy grazing causes the populations of plant species to decrease. Some conservation measures should be taken and grazing in the Lissar protected area should

be restricted. If this kind of overgrazing continues, some taxa, especially endemic species found in the vulnerable category, may face a very high risk of extinction in near future.

The environs of Neor lake and Subatan country are also exposed to the movement and picnicking activity of local people, especially on weekends and during holidays. Such activities bring about the destruction of flora due to the heavy usage of the area, causing environmental pollution.

Acknowledgements

This research is a part of a scientific project preformed by the first author and authorized by the Department of Environment of I. R. Iran, for which the first author is deeply grateful. We appreciate Mr. Behnam Hamzeh'ee (TARI herbarium) for his helps in determining the *Poaceae* taxa. We also thank Dr. Saeed Irian (Kharazmi University) for editing our manuscript.

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Appendix

Taxon (Herb. No.)	Chorotype	Life form	Coordinates	IUCN categories
Alismataceae				
<i>Alisma plantago-aquatica</i> L. (1767)	Pl.	Ge	38°01'10"N, 48°34'22"E	
Alliaceae				
<i>Allium akaka</i> Gmel. ex Roem. & Schult. (2301)	Ir.-Tur.	Ge	37°56'20"N, 48°33'15"E	
<i>A. capitellatum</i> Boiss. (2303)	Ir.-Tur.	Ge	38°00'23"N, 48°34'44"E	LR
<i>A. erubescens</i> K. Koch (2304)	Euro.-Sib.	Ge	37°58'14"N, 48°41'36"E	
<i>A. iranicum</i> (Wendelbo) Wendelbo (2305)	Ir.-Tur.	Ge	37°56'43"N, 48°32'29"E	
<i>A. kunthianum</i> Vved. (2306)	Ir.-Tur.	Ge	37°58'45"N, 48°36'58"E	R
<i>A. shelkovicovii</i> Grossh. (2307)	Ir.-Tur.	Ge	37°57'47"N, 48°36'15"E	Endem./LR
<i>A. schoenoprasum</i> L. (2308)	Pl.	Ge	37°57'12"N, 48°37'35"E	
Amaranthaceae				
<i>Amaranthus retroflexus</i> L. (2650)	Cosm.	Th	37°57'55"N, 48°40'58"E	
<i>Chenopodium album</i> L. subsp. <i>album</i> (2021)	Pl.	Th	37°57'59"N, 48°37'50"E	
<i>Ch. botrys</i> L. (2020)	Euro- Sib., Ir.-Tur.	Th	37°56'10"N, 48°31'42"E	
<i>Ch. foliosum</i> Asch. (2016)	Cosm.	Th	37°56'10"N, 48°32'42"E	
<i>Ch. vulvaria</i> L. (2015)	Ir.-Tur., Medit	Th	37°56'30"N, 48°38'11"E	
Apiaceae				
<i>Anthriscus cerefolium</i> (L.) Hoffm. (2437)	Euro.-Sib., Ir.-Tur.	Th	37°57'21"N, 48°40'33"E	
<i>A. nemorosus</i> (M. Bieb.) Spreng. (2435)	Euro.-Sib., Medit	He	37°58'58"N, 48°40'47"E	
<i>Astrodaucus orientalis</i> Drude. (2439)	Euro.-Sib., Ir.-Tur.	He	37°59'47"N, 48°34'14"E	
<i>Caucalis platycarpos</i> L. (2442)	Medit., Ir.-Tur.	Th	38°01'30"N, 48°34'17"E	
<i>Chaerophyllum aureum</i> L. (2444)	Ir.-Tur.	He	37°59'10"N, 48°39'58"E	
<i>Ch. macrospermum</i> (Spreng.) Fisch. & C.A. Mey. (2448)	Ir.-Tur.	He	38°01'30"N, 48°43'17"E	

<i>Eryngium thyrsoideum</i> Boiss. (2450)	Ir.-Tur.	He	37°57'08"N, 48°33'10"E	
<i>E. billardierei</i> Delar. (2451)	Ir.-Tur.	He	38°00'52"N, 48°32'08"E	
<i>Falcaria vulgare</i> Bernth. (2452)	Ir.-Tur., Euro.-Sib., Medit.	He	37°58'38"N, 48°32'09"E	
<i>Heracleum pastinacifolium</i> C. Koch. (2453)	Ir.-Tur.	He	38°00'23"N, 48°34'44"E	
<i>H. rechingeri</i> Manden. (2454)	Ir.-Tur.	He	37°59'54"N, 48°40'21"E	Endem.
<i>Pimpinella peucedanifolia</i> Fisch. (2632)	Ir.-Tur.	He	38°00'12"N, 48°33'30"E	DD
<i>P. tragium</i> Vill. subsp. <i>lithphila</i> (Schischk.) Tutin (2634)	Ir.-Tur.	He	37°58'01"N, 48°37'14"E	
<i>Polyophium involucratum</i> (Pall.) Boiss. (2457)	Euro.-Sib.	He	37°59'06"N, 48°39'59"E	Endem.
<i>Prangos ferulacea</i> (L.) Lindl. (2459)	Ir.-Tur.	He	37°57'09"N, 48°33'21"E	
<i>Scandix iberica</i> M. Bieb. (2461)	Ir.-Tur.	Th	37°58'23"N, 48°34'44"E	
<i>Stenotaenia nudicaulis</i> Boiss. (2464)	Ir.-Tur.	He	37°55'41"N, 48°33'20"E	Endem./LR
<i>Torilis leptophylla</i> (L.) Rech. f. (2466)	Euro.-Sib., Ir.-Tur.	Th	37°58'16"N, 48°40'33"E	
<i>Turgenia latifolia</i> (L.) Hoffm. (2468)	Euro.-Sib., Ir.-Tur., Medit.	Th	37°58'03"N, 48°32'53"E	
<i>Zosima absinthifolia</i> (Vent) Link. (2470)	Ir.-Tur.	He	38°00'23"N, 48°34'44"E	
Aquifoliaceae				
<i>Ilex spinigera</i> (Loes.) Loes. (1771)	Euro.-Sib.	Ph	37°57'42"N, 48°41'24"E	Endem.
Aspleniaceae				
<i>Asplenium trichomanes</i> L. (2083)	Pl.	Epi	37°58'45"N, 48°40'12"E	
Asteraceae				
<i>Achillea nobilis</i> L. subsp. <i>neilreichii</i> (A. Kern.) Takht. (2403)	Pl.	Ch	37°58'42"N, 48°40'19"E	
<i>A. millefolium</i> L. subsp. <i>millefolium</i> (2404)	Ir.-Tur.	He	37°58'08"N, 48°37'09"E	
<i>A. talagonica</i> Boiss. var. <i>talagonica</i> (2405)	Ir.-Tur.	Ch	37°56'43"N, 48°32'41"E	Endem./LR
<i>Arctium lappa</i> L. (2014)	Pl.	He	37°59'00"N, 48°40'37"E	
<i>Artemisia melanolepis</i> Boiss. (2510)	Ir.-Tur.	He	37°56'16"N, 48°33'08"E	Endem.
<i>A. absinthium</i> L. (2407)	Ir.-Tur.	He	37°57'25"N, 48°32'10"E	
<i>Aster alpinus</i> L. (2521)	Euro.-Sib.	Ch	37°58'09"N, 48°37'12"E	
<i>Carduus onopordioides</i> Fisch. ex M. Bieb. (2298)	Ir.-Tur.	Ch	38°01'09"N, 48°32'32"E	
<i>C. seminudus</i> M. Bieb. (2401)	Euro.-Sib.	He	37°58'43"N, 48°40'16"E	
<i>Centaurea aucheri</i> (DC.) Wagenitz	Ir.-Tur.	He	38°01'40"N, 48°33'32"E	
<i>C. hyrcanica</i> Bomm. (2601)	Euro.-Sib.	He	37°58'04"N, 48°40'35"E	Endem.
<i>C. iberica</i> Stev. ex Spreng. (2607)	Ir.-Tur., Medit.	Th	38°01'09"N, 48°32'15"E	
<i>C. leuzeoides</i> (Jaub. & Spach.) Walp. (2837)	Ir.-Tur.	He	38°01'23"N, 48°23'44"E	
<i>C. ovina</i> Pall. ex Willd. (2606)	Euro.-Sib.	Ch	38°00'24"N, 48°34'32"E	
<i>C. pulchella</i> Ledeb. (2973)	Ir.-Tur.	Th	37°57'59"N, 48°36'42"E	LR
<i>C. triumfettii</i> All. (2423)	Ir.-Tur., Medit.	He	38°01'16"N, 48°34'23"E	
<i>C. zuvandica</i> (Sosn.) Sosn. (1612)	Euro.-Sib., Ir.-Tur.	He	37°57'23"N, 48°39'37"E	Endem.
<i>C. virgata</i> Lam. (2570)	Ir.-Tur., Medit.	He	38°00'24"N, 48°34'44"E	
<i>Chondrilla juncea</i> L. (2003)	Ir.-Tur., Medit.	Th (He)	38°01'27"N, 48°38'25"E	
<i>Cichorium intybus</i> L. (2014)	Pl.	He	38°01'11"N, 48°34'18"E	
<i>Cirsium aduncum</i> Fisch. & C.A. Mey. (2293)	Ir.-Tur.	Ch	37°59'43"N, 48°35'37"E	
<i>C. arvense</i> (L.) Scop. var. <i>arvense</i> (2397)	Cosm.	He	38°01'01"N, 48°38'17"E	
<i>C. bornmuelleri</i> Sint. ex Bornm. (2297)	Euro.-Sib., Ir.-Tur.	Ch	37°58'15"N, 48°35'42"E	Endem.
<i>C. echinus</i> (M. Bieb.) Hand.-Mazz. (2296)	Ir.-Tur.	He	38°00'28"N, 48°34'49"E	
<i>C. elodes</i> M. Bieb. (2295)	Ir.-Tur.	Ch	37°56'52"N, 48°32'46"E	
<i>C. haussknechtii</i> Boiss. (2294)	Ir.-Tur.	Ch	38°01'04"N, 48°32'22"E	

<i>C. rhizocephalum</i> C.A. Mey. (2408)	Ir.-Tur.	He	38°01'20"N, 48°34'25"E	
<i>Codonocephalum peacockeanum</i> Aitch. & Hemsl. (2179)	Ir.-Tur.	Ch	37°57'28"N, 48°39'27"E	DD
<i>Cousinia pterocaulos</i> (C.A. Mey.) Rech.f. (2166)	Euro.-Sib.	He	37°58'20"N, 48°39'59"E	Endem.
<i>C. urmiensis</i> Bornm. (2300)	Ir.-Tur.	He	38°01'12"N, 48°33'22"E	Endem./LR
<i>Crepis demavendi</i> Bornm. (2511)	Ir.-Tur.	He	37°57'21"N, 48°40'33"E	Endem./LR
<i>C. elbursensis</i> Boiss. (2517)	Ir.-Tur.	He	37°57'31"N, 48°42'26"E	Endem.
<i>C. sancta</i> (L.) Babcock subsp. <i>azerbaijanica</i> Rech. f. (2513)	Euro.-Sib., Ir.-Tur.	He	38°01'03"N, 48°33'28"E	Endem.
<i>C. sancta</i> (L.) Babcock subsp. <i>iranica</i> Rech. f. (2512)	Ir.-Tur.	Th	38°00'50"N, 48°33'17"E	
<i>C. sancta</i> (L.) Babcock subsp. <i>sancta</i> (2516)	Ir.-Tur., Medit.	Th	37°57'58"N, 48°36'42"E	
<i>C. willemetiodes</i> Boiss. (2539)	Euro.-Sib.	He	37°57'40"N, 48°32'49"E	Endem.
<i>Echinops orientalis</i> Trautv. (2540)	Ir.-Tur.	He	37°56'52"N, 48°32'36"E	
<i>E. pungens</i> Trautv. (2541)	Euro.-Sib., Ir.-Tur.	He	37°58'47"N, 48°32'11"E	
<i>Erigeron acer</i> L. (2508)	Ir.-Tur.	He	37°56'04"N, 48°32'42"E	DD
<i>E. caucasicus</i> Steven subsp. <i>venustus</i> B. (Botsch.) Grierson (2506)	Euro.-Sib.	He	37°57'00"N, 48°37'08"E	
<i>Fliago arvensis</i> L. (2169)	Ir.-Tur., Medit., Euro.-sib.	Th	37°58'04"N, 48°39'48"E	
<i>Helichrysum araxinum</i> Takht. ex Kirp. (2500)	Ir.-Tur.	He	37°56'27"N, 48°34'52"E	
<i>H. oligocephalum</i> DC. (2502)	Ir.-Tur.	He	37°55'42"N, 48°33'15"E	LR
<i>H. psychrophilum</i> Boiss. (2499)	Ir.-Tur.	He	37°56'06"N, 48°33'20"E	
<i>Hieracium</i> × <i>auriculoides</i> A.F. Long. (2006)	Ir.-Tur.	He	37°57'30"N, 48°32'50"E	
<i>H.</i> × <i>maschukense</i> Litw. (2008)	Ir.-Tur.	He	38°01'10"N, 48°33'37"E	
<i>H. pannoniciforme</i> Litv. & Zahn (2172)	Ir.-Tur.	He	37°58'42"N, 48°34'15"E	
<i>Inula oculus-christi</i> L. (2178)	Ir.-Tur., Medit.	Ch	37°55'14"N, 48°32'23"E	
<i>Iranecio oligolepis</i> (Boiss.) B. Nord. (2177)	Ir.-Tur.	He	37°55'41"N, 48°33'10"E	Endem./LR
<i>UJurinella moschus</i> (Hablitz) Bobrov (2171)	Ir.-Tur.	He	37°56'53"N, 48°34'51"E	
<i>Lactuca serriola</i> L. (2176)	Euro.-Sib., Ir.-Tur., Medit.	He	37°57'08"N, 48°33'35"E	
<i>Lapsana communis</i> L. (2291)	Euro.-Sib., Ir.-Tur., Medit.	He	37°59'17"N, 48°39'57"E	
<i>Leontodon asperrimus</i> (Willd.) Boiss. (2520)	Ir.-Tur.	He	37°57'18"N, 48°39'32"E	
<i>L. hispida</i> L. (2518)	Euro.-Sib., Ir.-Tur.	He	37°58'40"N, 48°40'17"E	LR
<i>L. stenocalathius</i> Rech. f. (2519)	Euro.-Sib.	He	37°58'22"N, 48°40'41"E	Endem./DD
<i>Onopordum acanthium</i> L. (2417)	Pl.	He	38°01'08"N, 48°35'27"E	
<i>Petasites hybridus</i> (L.) P. Gaertn. (1998)	Pl.	He	37°58'04"N, 48°40'35"E	
<i>Scariola orientalis</i> (Boiss.) Soják (2010)	Ir.-Tur.	He	37°56'52"N, 48°32'42"E	
<i>Scorzonera latifolia</i> (Fisch. & C.A. Mey.) DC. (2402)	Ir.-Tur.	Ch	37°57'58"N, 48°34'37"E	
<i>S. grossheimii</i> Lipsch. & Vasslcz. (2504)	Ir.-Tur.	He	37°58'34"N, 48°40'46"E	
<i>S. ramossima</i> DC. (2505)	Ir.-Tur.	Ch	37°57'39"N, 48°33'12"E	
<i>S. pseudolanata</i> Grossh. (2503)	Ir.-Tur.	Ge	37°58'05"N, 48°37'02"E	
<i>Senecio paulsenii</i> O. Hoffm. subsp. <i>khorsanicus</i> (Rech. f. & Aellen) B. Nord. (2409)	Ir.-Tur.	Th(He)	37°55'52"N, 48°34'27"E	Endem.
<i>S. pseudo-orientalis</i> Schischk. (2416)	Ir.-Tur.	Th(He)	37°58'45"N, 48°33'10"E	
<i>S. vernalis</i> Waldest. & Kit (2523)	Euro.-Sib., Ir.-Tur.	He	37°56'48"N, 48°34'12"E	
<i>Sonchus tenerrimus</i> L. (2513)	Ir.-Tur., Medit.	Th	38°01'25"N, 48°35'12"E	
<i>Steptorrhaphus tuberosus</i> (Jacq.) Grossh. (2535)	Ir.-Tur.	He	38°01'25"N, 48°35'17"E	
<i>Tanacetum balsamita</i> L. subsp. <i>balsamita</i> . (2525)	Ir.-Tur.	He	37°55'41"N, 48°33'10"E	
<i>T. parthenium</i> (L.) Schult Bip. (2526)	Cosm.	He	38°00'27"N, 48°41'15"E	
<i>Taraxacum syriacum</i> Boiss (2414)	Ir.-Tur.	He	37°58'18"N, 48°34'41"E	

<i>Tragopogon vaginatus</i> M. Ownbey & Rech.f. (2621)	Ir.-Tur.	He	38°01'20"N, 48°33'30"E	
<i>T. graminifolius</i> DC. (2173)	Ir.-Tur.	He	37°56'45"N, 48°33'38"E	
<i>Tripleurospermum disciforme</i> (C.A. Mey.) Schultz Bip. (2536)	Ir.-Tur.	He	37°56'51"N, 48°32'25"E	
<i>Tussilago farfara</i> L. (2000)	Pl.	He	37°59'04"N, 48°38'59"E	
<i>Xeranthemum squarosum</i> Boiss. (2411)	Euro.-Sib., Ir.-Tur.	Th	37°58'00"N, 48°32'45"E	
Boraginaceae				
<i>Anchusa italica</i> Retz. var. <i>italica</i> (1960)	Pl.	He	38°01'03"N, 48°33'54"E	
<i>Asperugo procumbens</i> L. (1960)	Euro.-Sib., Ir.-Tur., Medit	Th	37°59'20"N, 48°33'40"E	
<i>Bulgossoides arvensis</i> (L.) Johnston. (1964)	Euro.-Sib., Ir.-Tur.	Th	38°01'30"N, 48°40'50"E	
<i>Cerintho minor</i> L. (1968)	Euro.-Sib.	He	38°01'07"N, 48°35'35"E	
<i>Echium amoenum</i> Fisch. et Mey. (1969)	Euro.-Sib.	He	38°01'02"N, 48°40'24"E	LR
<i>Huynhia pulchra</i> (Roemer & Schultes) Greuter & Burdet. (1971)	Euro.-Sib.	He	37°57'21"N, 48°40'36"E	
<i>Myosotis sylvatica</i> Ehrh. ex Hoffm. subsp. <i>rivularis</i> Vest. (1976)	Euro.-Sib., Ir.-Tur.	He	37°58'01"N, 48°37'15"E	
<i>M. alpestris</i> Schmidt. (1975)	Ir.-Tur.	He	37°57'02"N, 48°34'37"E	
<i>M. anomala</i> Riedl. (1972)	Euro.-Sib.	He	37°58'04"N, 48°40'35"E	Endem.
<i>M. olymbica</i> Boiss. subsp. <i>domavendica</i> (1973)	Ir.-Tur.	He	37°57'02"N, 48°37'34"E	Endem.
<i>M. palustris</i> (L.) Nath. (1977)	Euro.-Sib., Ir.-Tur.	He	37°56'58"N, 48°33'27"E	
<i>M. ramosissima</i> Rochel (1974)	Euro.-Sib.	Th	37°58'42"N, 48°40'17"E	
<i>Nonnea flavescens</i> (C.A. Mey.) Fisch. & Mey. (1983)	Euro.-Sib.	Th	37°55'25"N, 48°42'30"E	
<i>N. lutea</i> (Desr.) Reichenb. ex DC. (1984)	Euro.-Sib.	Th	37°55'20"N, 48°43'35"E	
<i>N. persica</i> Boiss. (1985)	Ir.-Tur.	He	37°59'59"N, 48°35'15"E	
<i>Onosma araraticum</i> Riedl (1990)	Ir.-Tur.	He	37°59'13"N, 48°35'17"E	
<i>O. chrysocheatum</i> Steven ex DC. (1989)	Ir.-Tur.	He	37°57'03"N, 48°37'22"E	Endem./LR
<i>O. cornutum</i> Riedl. (1988)	Ir.-Tur.	He	38°01'24"N, 48°39'30"E	
<i>O. microcarpum</i> Steven ex DC. (1987)	Ir.-Tur.	He	38°00'24"N, 48°34'37"E	
<i>Rochelia disperma</i> (L.f.) Koch. (1993)	Euro.-Sib., Ir.-Tur.	Th	37°58'07"N, 48°36'15"E	
<i>R. persica</i> Bege ex Boiss. (1991)	Euro.-Sib., Ir.-Tur.	Th	38°01'06"N, 48°35'37"E	
<i>Symphytum asperum</i> Lepech. (1994)	Euro.-Sib.	He	37°58'04"N, 48°40'35"E	
Brassicaceae				
<i>Aethionema fimbriatum</i> Boiss. (2085)	Ir.-Tur.	Ch	38°01'18"N, 48°32'20"E	
<i>A. trinervium</i> (DC.) Boiss. (2140)	Ir.-Tur.	He	38°56'42"N, 48°34'50"E	LR
<i>A. elongatum</i> Boiss. (2084)	Ir.-Tur.	Ch	38°01'18"N, 48°32'20"E	
<i>A. grandiflorum</i> Boiss. & Hohen. (2086)	Ir.-Tur.	Ch	38°01'15"N, 48°35'17"E	
<i>Alyssum bracteatum</i> Boiss. & Buhse. (2087)	Ir.-Tur.	He	38°00'15"N, 48°34'50"E	Endem.
<i>A. lanigerlum</i> DC. (2088)	Ir.-Tur.	He	37°56'21"N, 48°34'17"E	Endem.
<i>A. linifolium</i> Steph. ex Willd. (2101)	Ir.-Tur., Medit.	Th	37°56'23"N, 48°33'02"E	
<i>A. marginatum</i> Steud. ex Boiss. (2089)	Ir.-Tur.	He	38°01'17"N, 48°34'29"E	
<i>A. strictum</i> Willd. (2091)	Ir.-Tur.	Th	37°57'50"N, 48°38'39"E	
<i>Arabis caucasica</i> Willd. subsp. <i>caucasica</i> (2096)	Ir.-Tur., Medit.	He	37°59'57"N, 48°33'18"E	
<i>A. rimarum</i> Rech. f. (2102)	Euro.-Sib.	He	37°56'58"N, 48°33'23"E	Endem./LR
<i>Barbarea minor</i> C. Koch. (2103)	Ir.-Tur.	He	37°57'34"N, 48°33'25"E	
<i>B. plantaginea</i> DC. (2104)	Ir.-Tur.	He	38°01'35"N, 48°36'12"E	
<i>Brassica tournefortii</i> Gouan. (2105)	Ir.-Tur., Medit.	Th	37°57'04"N, 48°32'49"E	
<i>Clastopus erubescens</i> Hausskn. (2095)	Ir.-Tur.	Ch	38°57'37"N, 48°34'43"E	Endem.
<i>Camelina hispida</i> Boiss. (2109)	Ir.-Tur.	Te	38°00'18"N, 48°34'15"E	

<i>C. rumelica</i> Velen. (2110)	Ir.-Tur.	Th	37°59'12"N, 48°33'15"E	
<i>Capsella bursa-pastoris</i> (L.) Medicus. (2121)	Cosm.	Th	37°57'32"N, 48°42'59"E	
<i>Cardamine uliginosa</i> M. Bieb. (2115)	Ir.-Tur.	He	37°59'16"N, 48°39'17"E	
<i>Cardaria draba</i> (L.) Desv. (2112)	Cosm.	He	37°56'31"N, 48°32'25"E	
<i>Chorispora iberica</i> (M. Bieb.) DC. (2117)	Ir.-Tur., Medit.	Th	37°56'40"N, 48°32'37"E	
<i>Conrigia perfoliata</i> (C.A. Mey.) Busch. (2118)	Euro.-Sib., Ir.-Tur.	He	37°57'32"N, 48°34'03"E	
<i>Descurainia sophia</i> (L.) Webb & Berth. (2122)	Pl.	He	37°56'12"N, 48°32'18"E	
<i>Draba nemorosa</i> L. (2129)	Pl.	Th	37°58'16"N, 48°40'23"E	
<i>D. stylaris</i> J. Gay. ex Koch. (2130)	Ir.-Tur., Medit.	He	38°01'15"N, 48°33'21"E	LR
<i>Drabopsis verna</i> C. Koch. (2131)	Ir.-Tur.	Te	37°56'30"N, 48°33'18"E	
<i>Erysimum caespitosum</i> DC. (2133)	Euro.-Sib., Ir.-Tur., Medit	Ch	38°01'10"N, 48°35'29"E	
<i>E. elbursense</i> Boiss. (2137)	Ir.-Tur.	Ch	38°00'37"N, 48°34'50"E	Endem.
<i>E. repandum</i> L. (2138)	Ir.-Tur., Medit., Euro.-Sib.	Th	37°56'48"N, 48°34'59"E	
<i>Euclidium syriacum</i> (L.) R. Br. (2125)	Euro.-Sib., Ir.-Tur.	Th	37°56'10"N, 48°32'18"E	
<i>Hesperis hyrcana</i> Bornm. & Gauba. (2142)	Euro.-Sib.	He	37°59'49"N, 48°40'28"E	
<i>Isatis cappadocica</i> Desv. (2143)	Ir.-Tur.	He	38°01'09"N, 48°35'27"E	
<i>Nasturtium officinale</i> (L.) R. Br. (2145)	Ir. -Tur., Medit., Euro.-Sib.	He	37°58'42"N, 48°40'30"E	
<i>Physoptychis gnaphalodes</i> (DC.) Boiss. (2150)	Ir.-Tur.	He	37°57'35"N, 48°37'12"E	
<i>Raphanus rephanistrum</i> L. subsp. <i>rostratus</i> (DC.) Thell. (2149)	Cosm.	Th	38°01'15"N, 48°33'12"E	
<i>Sameraria armena</i> (L.) Desv. (2151)	Ir.-Tur.	Th	37°58'14"N, 48°33'17"E	
<i>Sisymbrium altissimum</i> L. (2152)	Ir. -Tur., Medit.	Th	38°01'30"N, 48°34'19"E	
<i>S. officinale</i> (L.) Scop. (2153)	Pl.	Th	37°58'17"N, 48°40'25"E	
<i>Thlaspi arvense</i> L. (2154)	Pl.	Th	38°01'15"N, 48°33'18"E	
<i>T. hastulatum</i> Steven ex DC. (2156)	Euro.-Sib.	Th	37°57'18"N, 48°41'33"E	Endem.
<i>T. perfoliatum</i> L. (2159)	Ir.-Tur., Medit. (Euro.-Sib.)	Th	37°56'15"N, 48°42'27"E	
<i>T. umbellatum</i> Steven ex DC. (2160)	Euro.-Sib.	Th	37°58'12"N, 48°41'12"E	
<i>Torularia aculeolata</i> (Boiss.) O.E. Schulz. (2164)	Ir.-Tur.	He	37°57'41"N, 48°32'14"E	
Butmaceae				
<i>Butomus umbalatus</i> L. (1768)	Pl.	Ge	38°01'10"N, 48°34'22"E	
Campanulaceae				
<i>Asyenum amplexicaule</i> (Willd.) Hand.-Mzt. subsp. <i>amplexicaule</i> (2357)	Euro.-Sib.	He	37°57'23"N, 48°37'14"E	
<i>A. pulchellum</i> (Fisch. & C.A. Mey.) Bornm. (2359)	Ir.-Tur.	He	38°01'24"N, 48°35'16"E	
<i>Campanula latifolia</i> L. (2365)	Euro.-Sib.	He	38°00'18"N, 48°39'32"E	
<i>C. glomerata</i> L. (2361)	Euro.-Sib., Ir.-Tur.	He	37°58'04"N, 48°40'21"E	
<i>C. phytidocalyx</i> Boiss. & Noë. (2369)	Ir.-Tur.	He	37°57'35"N, 48°34'29"E	
<i>C. rapunculus</i> L. subsp. <i>lambertiana</i> Rech. f. (2371)	Euro.-Sib.	He	37°57'59"N, 48°39'37"E	
<i>C. trachelium</i> L. (2373)	Euro.-Sib., Ir.-Tur., Medit.	He	37°58'44"N, 48°40'37"E	
<i>C. involucrata</i> Auch. ex DC. (2372)	Ir.-Tur.	He	37°57'59"N, 48°37'10"E	
Caprifoliaceae				
<i>Lonicera iberica</i> M. Bieb. (1800)	Ir.-Tur.	Ph	37°58'40"N, 48°40'17"E	
<i>Sambucus ebulus</i> L. (1805)	Euro.-Sib., Ir.-Tur., Medit.	He	37°55'35"N, 48°44'29"E	

Caryophyllaceae

<i>Arenaria dianthoides</i> Sm. (2226)	Ir.-Tur.	He	38°00'37"N, 48°34'50"E	
<i>A. gypsophiloides</i> L. var. <i>glabra</i> Fenzl. (2227)	Cosm.	He	37°55'43"N, 48°33'15"E	
<i>A. gypsophiloides</i> L. var. <i>gypsophiloides</i> (2228)	Cosm.	He	38°00'23"N, 48°34'45"E	
<i>A. leptoclados</i> (Riechenb) Guss. (2228)	Euro- Sib., Ir.-Tur.	Th	37°57'18"N, 48°39'32"E	
<i>A. serpyllifolia</i> L. var. <i>serpyllifolia</i> (2276)	Cosm.	Th	37°57'30"N, 48°33'28"E	
<i>A. zargariana</i> Parsa (2279)	Ir.-Tur.	He	37°57'28"N, 48°38'25"E	Endem./LR
<i>Cerastium dichotomum</i> L. (2278)	Ir.-Tur., Medit.	Th	38°00'35"N, 48°34'31"E	
<i>C. microspermum</i> C.A. Mey. (2233)	Ir.-Tur.	Th	37°57'28"N, 48°39'04"E	
<i>C. holosteoides</i> Fr.	Euro- Sib.	He	-	
<i>Dianthus cretaceus</i> Adams (2234)	Ir.-Tur.	He	37°57'02"N, 48°37'34"E	
<i>D. orientalis</i> Adams. (2283)	Ir.-Tur.	He	37°58'13"N, 48°41'15"E	
<i>Lepyrodiclis stellarioides</i> Schrenk ex Fisch. & C.A. Mey. (2238)	Ir.-Tur.	Th	37°58'42"N, 48°37'34"E	
<i>Minuartia juniperina</i> (L.) Maire & Petitm. (2284)	Ir.-Tur., Medit.	He	38°01'04"N, 48°32'23"E	
<i>M. aizoides</i> (Boiss.) Bornm. (2275)	Euro- Sib., Ir.-Tur.	He	38°01'17"N, 48°34'24"E	VU
<i>M. recurva</i> (All.) Schinz & Thellung subsp. <i>oriana</i> (Mattf.) McNeill (2235)	Ir.-Tur.	He	37°56'35"N, 48°34'45"E	
<i>Saponaria cerastoides</i> Fisch. ex C.A. Mey. (2242)	Euro.-Sib.	Th	37°57'40"N, 48°32'49"E	
<i>S. orientalis</i> L. (2239)	Ir.-Tur.	Th	37°58'41"N, 48°35'17"E	
<i>Scleranthus orientalis</i> Rössler. (2243)	Ir.-Tur.	He	37°57'10"N, 48°42'57"E	
<i>Silene chlorifolia</i> Sm. (2253)	Ir.-Tur.	He	38°01'12"N, 48°32'40"E	
<i>S. noctiflora</i> L. (2254)	Euro.-Sib., Medit.	He	37°56'22"N, 48°32'14"E	Endem.
<i>S. tenella</i> C.A. Mey. (2261)	Euro.- Sib	He	37°58'07"N, 48°37'12"E	
<i>S. vulgaris</i> (Moench) Garcke. subsp. <i>vulgaris</i> (2260)	Euro.-Sib., Medit.	He	37°58'54"N, 48°40'21"E	
<i>S. odontopetala</i> Fenzl subsp. <i>odontopetala</i> (2266)	Euro- Sib., Ir.-Tur.	He	37°58'32"N, 48°41'48"E	Endem.
<i>S. schafta</i> Gmel. (2256)	Euro.- Sib	Th	37°58'57"N, 48°41'30"E	Endem.
<i>S. aucheriana</i> Boiss. (2267)	Euro- Sib., Ir.-Tur.	He	37°59'41"N, 48°33'15"E	
<i>S. cappadocica</i> Boiss. & Heldr. (2249)	Ir.-Tur.	He	37°56'36"N, 48°33'50"E	DD
<i>S. commelinifolia</i> Boiss. (2259)	Cosm.	He	37°59'42"N, 48°40'50"E	
<i>S. latifolia</i> Poir. subsp. <i>persica</i> (Boiss. & Buhse) Melzh. (2251)	Euro- Sib., Ir.-Tur.	He	37°56'35"N, 48°41'19"E	
<i>S. spergulifolia</i> (Willd.) M. Bieb. (2258)	Ir.-Tur.	He	37°58'34"N, 48°31'35"E	
<i>Stellaria graminea</i> L. (2268)	Pl.	He	37°57'32"N, 48°32'29"E	
<i>S. holostea</i> L. (2267)	Euro- Sib., Ir.-Tur.(Medit.)	He	37°58'33"N, 48°41'46"E	
<i>S. media</i> (L.) Vill. (2273)	Cosm.	He	38°01'15"N, 48°33'32"E	
<i>Vaccaria grandiflora</i> (Fisch. & DC.) Jaub. & Spach. (2274)	Ir.-Tur.	He	38°01'17"N, 48°36'12"E	

Celastraceae

Evonymus latifolia (L.) Mill. (1026) Euro.-Sib. Ph 37°58'44"N, 48°41'21"E

Cistaceae

Helianthemum nummularium Mill. (2223) Medit., Euro.- Sib Ch 37°57'40"N, 48°32'50"E

Clusiaceae

Hypericum perforatum L. (1757) Pl. He 37°58'40"N, 48°42'51"E

H. linarioides Bosse. (1755) Euro.-Sib., Ir.-Tur. He 37°57'18"N, 48°39'32"E

H. elongatum Ledeb. subsp. *apiculatum*
N. Robson (1758) Ir.-Tur. He 37°57'21"N, 48°40'23"E

H. scabrum L. (1759) Ir.-Tur. Ch 37°58'21"N, 48°41'30"E

Colchicaceae

Colchicum kotschy Boiss. (2319) Ir.-Tur. Ge 37°56'27"N, 48°40'39"E

C. soboliferum (Fisch. & C.A. Mey.) Stefanov
(2649) Ir.-Tur., Medit. Ge 38°00'17"N, 48°34'28"E

C. speciosum Steven. (2318) Euro.-Sib. Ge 38°01'17"N, 48°34'28"E

Convulvulaceae

Convolvulus arvensis L. (1790) Cosm. Ge 38°02'12"N, 48°33'25"E

Cuscuta brevistyla A.C.H. Braun ex
A. Rich. (2552) Ir.-Tur., Medit. Th 37°58'04"N, 48°40'35"E

C. epithymum Murr. (2553) Cosm. Th 37°58'03"N, 48°32'44"E

Crassulaceae

Rosularia sempervivum (DC.) Stapf (2902) Ir.-Tur. He 37°59'06"N, 48°39'59"E R

Sedum hispanicum L. (2903) Euro.-Sib., Ir.-Tur. Th 38°01'15"N, 48°45'30"E

S. annuum L. (2901) Euro.-Sib.(hir) Th 38°26'15"N, 48°45'30"E

S. lenkoranicum Grossh. (1656) Euro.-Sib.(hir) He 37°56'50"N, 48°47'16"E

S. pallidum M. Beib. (1657) Euro.-Sib.(hir) Th 37°12'15"N, 48°31'12"E

S. spurium M. Beib. (1654) Euro.-Sib.(hir) He 37°59'06"N, 48°39'59"E

S. subulatum (C.A. Mey.) Boiss. (1655) Euro.-Sib.(hir), Ir.-Tur. He 37°56'59"N, 48°32'43"E

Sempervivum atropatanum J. Parn. (2364) Ir.-Tur. He 37°58'04"N, 48°40'35"E Endem.

S. iranica Bornm. & Gauba (1653) Euro.-Sib.(hir) He 37°58'24"N, 48°36'42"E Endem.

Cupressaceae

Juniperus communis L. (1808) Euro.-Sib., Ir.-Tur. Ph 37°58'20"N, 48°42'21"E

Cyperaceae

Carex riparia Curt. (1635) Euro.-Sib., Ir.-Tur. Ge 37°20'12"N, 48°33'30"E

C. divisa Huds. (1636) Euro.-Sib., Ir.-Tur., Medit. He 37°20'10"N, 48°33'35"E

C. divulsa Stokes. (1634) Euro.-Sib., Ir.-Tur., Medit. He 37°58'05"N, 48°40'30"E

C. orbicularis Boott (1638) Euro.-Sib., Ir.-Tur. Ge 38°01'16"N, 48°34'35"E

C. songarica Kar. & Kir. (1633) Ir.-Tur., Euro.-Sib. Ge 38°01'16"N, 48°34'23"E

Eleocharis palustris (L.) Roemer & Schultes.
subsp. *iranica* Kukkonen (1630) Ir.-Tur. Ge 37°58'34"N, 48°40'46"E

Dennstaedtiaceae

Pteridium aquilinum (L.) Kuhn. (2075) Cosm. He 37°59'35"N, 48°40'48"E

Dipsacaceae

<i>Cephalaria microcephala</i> Boiss. (1791)	Ir.-Tur.	He	37°56'40"N, 48°35'54"E	
<i>Dipsacus strigosus</i> Willd. ex Reomer & Schultes (2180)	Euro.-Sib.	He	37°59'06"N, 48°39'58"E	
<i>Pteroccephalus canus</i> Coulter ex DC. (1888)	Ir.-Tur.	He	37°59'06"N, 48°39'59"E	
<i>Scabiosa crinita</i> Kotschy & Boiss. (1893)	Ir.-Tur.	He	37°58'50"N, 48°42'30"E	
<i>S. hyrcanica</i> Stev. (1896)	Euro.-Sib.	He	38°01'18"N, 48°34'15"E	
<i>S. macrochaete</i> Boiss. & Hausskn. (1892)	Ir.-Tur.	Th	37°59'12"N, 48°35'18"E	
<i>S. persica</i> Boiss. (1894)	Ir.-Tur.	Th	38°00'31"N, 48°38'40"E	R, VU

Dryopteridaceae

<i>Dryopteris pallida</i> (Broy) Fomin (2080)	Euro.-Sib., Ir.-Tur., Medit.	He	37°59'34"N, 48°41'18"E	
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Ephedraceae

<i>Ephedra intermedia</i> Schrenk & C.A. Mey. (1778)	Ir.-Tur.	Ph	38°00'23"N, 48°34'44"E	
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Equisetaceae

<i>Equisetum arvense</i> L. (1823)	Cosm.	Ge	37°56'35"N, 48°33'23"E	
<i>E. plaustre</i> L. (1825)	Pl.	Ge	37°58'20"N, 48°33'25"E	

Euphorbiaceae

<i>Euphorbia cheiradenia</i> Boiss. & Hohen. (2426)	Ir.-Tur.	Th	37°56'06"N, 48°33'16"E	Endem.
<i>E. heteradenia</i> Jaub. & Sp. (2431)	Ir.-Tur.	He	37°59'56"N, 48°32'21"E	
<i>E. microscadia</i> Boiss. (2427)	Ir.-Tur.	Th	37°56'52"N, 48°34'47"E	
<i>E. myrsinites</i> L. (2429)	Ir.-Tur., Medit	He	38°01'04"N, 48°32'12"E	
<i>E. seguierriana</i> Neck. (2428)	Euro.-Sib., Ir.-Tur.	Th	37°56'26"N, 48°33'38"E	

Fabaceae

<i>Astragalus pinetorum</i> Boiss. (1619)	Ir.-Tur.	He	37°58'34"N, 48°37'10"E	VU
<i>A. (Sect. onobrychoides) sp.</i> (1927)	---	He	37°57'12"N, 48°33'25"E	
<i>A. (Sect. onobrychoides) sp.</i> (1912)	---	He	38°01'15"N, 48°33'17"E	
<i>A. aegobromus</i> Boiss. & Hohen. (1897)	Ir.-Tur.	He	37°59'59"N, 48°35'15"E	
<i>A. angustiflorus</i> C.Koch. subsp. <i>angustiflorus</i> (1910)	Ir.-Tur.	He	37°58'34"N, 48°37'08"E	
<i>A. aureus</i> Willd. (1922)	Ir.-Tur.	He	38°01'18"N, 48°32'10"E	
<i>A. caragana</i> Fischer & C.A. Mey. (1900)	Ir.-Tur.	He	37°56'37"N, 48°32'10"E	
<i>A. curvirostris</i> Boiss. (1913)	Ir.-Tur.	He	37°56'20"N, 48°34'31"E	
<i>A. lineatus</i> Lam. (1908)	Ir.-Tur.	He	38°00'18"N, 48°37'30"E	
<i>A. macrourus</i> Fisch. & C.A. Mey. (1906)	Ir.-Tur.	He	37°55'38"N, 48°33'18"E	
<i>A. pauperiflorus</i> Bornm. (1907)	Ir.-Tur.	He	38°00'18"N, 48°37'12"E	Endem.
<i>A. polyacanthus</i> Royle ex Benth. (1899)	Ir.-Tur.	He	38°01'50"N, 48°38'40"E	Endem.
<i>A. recognitus</i> Fischer. (1911)	Ir.-Tur.	He	37°57'21"N, 48°34'29"E	Endem.
<i>A. refractus</i> C.A. Mey. (1909)	Ir.-Tur.	He	37°56'54"N, 48°32'43"E	
<i>A. seidabadensis</i> Bunge (1903)	Ir.-Tur.	He	38°00'34"N, 48°36'44"E	Endem.

<i>A. tricholobus</i> DC. subsp. <i>tricholobus</i> (1902)	Ir.-Tur.	He	37°56'30"N, 48°36'41"E	Endem.
<i>Coronilla orientalis</i> Mill. (2558)	Ir.-Tur.	He	37°58'26"N, 48°40'42"E	LR
<i>C. varia</i> L. subsp. <i>hirta</i> (Bunge ex Boiss.) Rech. f. (1942)	Euro.-Sib.(hir)	He	37°57'59"N, 48°42'41"E	Endem.
<i>Lathyrus pratensis</i> L. (1932)	Euro.-Sib., Ir.-Tur.	He	37°58'04"N, 48°40'35"E	
<i>Lotus corniculata</i> L. (1944)	Pl.	He	37°56'30"N, 48°39'59"E	
<i>Medicago lupulina</i> L. (1935)	Pl.	He	37°57'23"N, 48°39'34"E	
<i>M. sativa</i> L. (1939)	Cosm.	He	38°01'16"N, 48°32'17"E	
<i>Melilotus officinalis</i> (L.) Pall. (1941)	Euro.-Sib., Medit., Ir.-Tur.	He	37°56'54"N, 48°32'43"E	
<i>Onobrychis bungei</i> Boiss. (2556)	Euro.-Sib., Ir.-Tur.	Ch	37°58'54"N, 48°40'21"E	
<i>O. cornuta</i> (L.) Desv. (1931)	Pl.	Ch	37°56'10"N, 48°33'12"E	
<i>Ononis spinosa</i> L. subsp. <i>lieosperma</i> (Boiss.) Širj. (1940)	Ir.-Tur., Medit	Ch	37°57'12"N, 48°33'18"E	
<i>Trifolium arvense</i> L. var. <i>arvense</i> . (1945)	Ir.-Tur., Euro- Sib.	Th	37°56'15"N, 48°41'16"E	
<i>T. pratense</i> L. var. <i>pretense</i> (1948)	Cosm.	He	38°00'27"N, 48°34'44"E	
<i>T. repens</i> L. (1949)	Euro.-Sib., Medit., Ir.-Tur.	He	38°01'10"N, 48°33'35"E	
<i>T. striatum</i> L. (1951)	Ir.-Tur., Euro- Sib.	Th	37°58'45"N, 48°41'40"E	
<i>T. tumens</i> Steven ex M. Bieb. (1952)	Ero.- Sib.	He	38°00'27"N, 48°34'44"E	
<i>Vicia cracca</i> L. (1955)	Ir.-Tur., Euro- Sib.	He	37°59'06"N, 48°39'54"E	
<i>V. sativa</i> L. (1958)	Cosm.	He	37°57'50"N, 48°41'16"E	
Fagaceae				
<i>Fagus orientalis</i> Lipsky. (2557)	Euro.-Sib., Medit.	Ph	37°57'21"N, 48°42'51"E	
<i>Quercus macranthera</i> Fisch. & C.A. Mey. (2910)	Euro.-Sib.	Ph	37°57'20"N, 48°42'10"E	
Gentianaceae				
<i>Centaurium erythraea</i> Rafn (1781)	Ir.-Tur. Medit., Euro.-Sib.	He	37°57'02"N, 48°38'34"E	
<i>Gentiana aquatica</i> L. (1780)	Ir.-Tur.	Th	37°56'20"N, 48°33'10"E	R
<i>G. septemfida</i> Pallas (1783)	Euro.-Sib.	He	37°55'41"N, 48°33'10"E	
Geraniaceae				
<i>Erodium cicutarium</i> L Hér. ex Aiton Hort. (2336)	Euro.-Sib., Ir.-Tur., Medit.	He	37°58'43"N, 48°41'37"E	
<i>Geranium collinum</i> Steph. ex Willd. (2341)	Euro.-Sib., Ir.-Tur.	He	37°56'42"N, 48°42'12"E	
<i>G. dissectum</i> L. (3421)	Euro.-Sib., Ir.-Tur.	Th	37°56'42"N, 48°42'21"E	
<i>G. molle</i> L. (2342)	Euro.-Sib., Ir.-Tur.	He	37°57'56"N, 48°42'51"E	
<i>G. montanum</i> Habal. ex Pall. (2345)	Euro.-Sib.(hir)	He	37°58'04"N, 48°40'35"E	VU
<i>G. persicum</i> Schönbeck (2347)	Ir.-Tur.	Ge	38°00'23"N, 48°34'44"E	
<i>G. platypetalum</i> Fisch. & C.A. Mey. (2349)	Euro.-Sib., Ir.-Tur.	Th	37°58'38"N, 48°40'36"E	LR
<i>G. pyrenaicum</i> Burm. (2351)	Euro.-Sib., Ir.-Tur.	He	37°59'59"N, 48°41'28"E	

Grossulariaceae

Ribes biebersteinii Berl. (1770) Euro.-Sib. Ph 37°52'42"N, 48°40'17"E

Hippuridaceae

Hippuris vulgaris L. Pl. He 37°57'59"N, 48°33'24"E

Iridaceae

Crocus speciosus M. Bieb. Besch. subsp. *speciosus* (1793) Euro.-Sib., Ir.-Tur. Ge 37°57'31"N, 48°42'26"E

Gladiolus atroviolaceus Boiss. (1795) Euro.-Sib., Ir.-Tur. He 37°59'45"N, 48°31'40"E Endem./LR

G. halophilus Boiss. & Heldr. (1796) Ir.-Tur. He 37°59'40"N, 48°31'20"E

Iris acutiloba C.A. Mey. subsp. *Lineolata* (Trautv.) B. Mathew & Wendelbo (1798) Ir.-Tur. He 38°01'07"N, 48°35'35"E

I. reticulata M. Bieb. var. *reticulata* (1797) Ir.-Tur. Ge 37°56'20"N, 48°33'33"E

Juncaceae

Juncus articulatus L. (1650) Euro.-Sib., Ir.-Tur. He 37°56'59"N, 48°32'43"E Endem./LR

J. inflexus L. (1648) Pl. He 38°00'39"N, 48°34'38"E

J. gerardii Loisel. subsp. *persicus* (Boiss.) Snogerup (1649) Ir.-Tur. He 37°57'00"N, 48°33'23"E

Juncaginaceae

Triglochin maritima L. (1775) Pl. Ge 37°57'00"N, 48°33'23"E

Lamiaceae

Ajuga comata Stapf. (2027) Euro.-Sib., Ir.-Tur., Medit. Ch 37°59'42"N, 48°34'17"E

Dracocephalum kotschyi Boiss. (2028) Ir.-Tur. Ch 37°56'18"N, 48°34'34"E Endem./EN

Lallemantia peltata (L.) Fisch. & C.A. Mey. (2029) Euro.-Sib., Ir.-Tur. Th 37°57'18"N, 48°35'43"E

Lamium album L. subsp. *crinitum* (Montbret & Aucher ex Benth.) Mennema (2033) Ir.-Tur. He 37°59'45"N, 48°38'42"E

L. amplexicaule L. (2036) Euro.-Sib., Ir.-Tur., Medit. Th 37°58'01"N, 48°37'15"E

Marrubium astracanicum Jacq. (2037) Ir.-Tur. Ch 38°01'35"N, 48°34'12"E

Mentha longifolia Huds. var. *chlorodictya* Rech. f. (2039) Euro.-Sib., Ir.-Tur. Ge 37°57'14"N, 48°34'45"E

Nepeta haussknechtii Bornm. (2041) Ir.-Tur. Ch 37°57'31"N, 48°32'12"E Endem.

Origanum vulgare L. subsp. *gracile* (K. Koch) Ietsw. (2044) Euro.-Sib., Ir.-Tur. He 37°57'59"N, 48°40'50"E

O. vulgare L. subsp. *viride* (Boiss.) Hayek (2046) Euro.-Sib., Ir.-Tur., Medit. He 37°57'29"N, 48°38'28"E

Phlomis olivieri Benth. (2048) Ir.-Tur. He 37°56'31"N, 48°34'14"E Endem.

Prunella vulgaris L. (2054) Euro.-Sib., Ir.-Tur., Medit. He 37°58'12"N, 48°42'30"E

Salvia pocolata Náb. (2051) Ir.-Tur. He 37°56'54"N, 48°32'43"E DD

Satureja isophylla Rech.f. (2043) Euro.-Sib. Ch 37°59'40"N, 48°38'13"E Endem./VU

Scutellaria pinnatifida A. Ham. subsp. *mucida* (Stapf) Rech. f. (2052) Ir.-Tur. Ch 37°57'50"N, 48°38'39"E Endem.

Sideritis montana L. (2055) Euro.-Sib., Ir.-Tur., Medit. Th 38°01'15"N, 48°31'18"E

Stachys lavandulifolia Vahl (2056) Ir.-Tur. He 37°57'45"N, 48°36'55"E

S. byzantia C. Koch. (2058) Euro.-Sib. He 37°58'59"N, 48°40'45"E

S. pubescens Ten. (2059) Euro.-Sib., Ir.-Tur. Ch 37°57'32"N, 48°41'03"E

Teucrium chamaedrys L. subsp. *sinuatum* (Celak.) Rech. f. (2062) Ir.-Tur. Ch 37°57'18"N, 48°39'32"E

<i>T. hyrcanicum</i> L. (2064)	Euro.-Sib.	He	37°56'30"N, 48°42'40"E	
<i>Thymus daënenensis</i> Čelak. subsp. <i>daënenensis</i> (2066)	Ir.-Tur.	Ch	37°57'40"N, 48°38'20"E	Endem./LR
<i>T. migricus</i> Klokov & Desj.-Shost. (2067)	Ir.-Tur.	Ch	37°58'43"N, 48°40'10"E	
<i>Ziziphora clinopodioides</i> Lam. subsp. <i>rigida</i> (Boiss.) Rech. f. (2068)	Ir.-Tur.	He	37°59'40"N, 48°38'13"E	Endem.
Liliaceae				
<i>Fritillaria gibosa</i> Boiss. (2580)	Ir.-Tur.	Ge	38°01'01"N, 48°35'17"E	
<i>F. kotschyana</i> Herb. subsp. <i>kotschyana</i> (2647)	Euro.-Sib.	Ge	37°57'17"N, 48°41'10"E	
<i>Gagea circumplaxa</i> Vved. (2312)	Ir.-Tur.	Ge	37°58'27"N, 48°40'23"E	
<i>G. confusa</i> A. Terr. (2314)	Euro.-Sib., Ir.-Tur.	Ge	38°01'07"N, 48°34'29"E	
<i>G. dubia</i> A.Terr. (2313)	Ir.-Tur.	Ge	37°57'22"N, 48°41'30"E	
<i>Muscari inconsticum</i> Rech.f. (2356)	Ir.-Tur.	Ge	38°01'07"N, 48°35'35"E	
<i>M. caucasica</i> (Griseb.) Baker (2322)	Ir.-Tur.	Ge	37°56'20"N, 48°33'33"E	
<i>M. neglectum</i> Guss. (2581)	Ir.-Tur., Medit.	Ge	37°58'34"N, 48°40'46"E	LR, R
<i>Ornithogalum arcuatum</i> Stev. (2328)	Ir.-Tur.	Ge	38°01'09"N, 48°34'15"E	
<i>O. blansae</i> Boiss. (2329)	Ir.-Tur.	Ge	37°58'23"N, 48°36'58"E	R
<i>O. oligophyllum</i> E.D. Clarke (2330)	Ir.-Tur., Medit.	Ge	37°56'18"N, 48°24'29"E	
<i>O. sintenisii</i> Freyn. (2326)	Euro.-Sib.	Ge	37°56'18"N, 48°42'29"E	
<i>Puschkinia scilloides</i> Adams (2332)	Ir.-Tur.	Ge	37°59'59"N, 48°35'15"E	
Malvaceae				
<i>Alcea sulphurea</i> (Boiss. & Hohen.) Alef. (1814)	Ir.-Tur.	He	37°58'30"N, 48°33'40"E	Endem.
<i>Malva armeniaca</i> Ilin (1815)	Euro.-Sib.	He	37°59'42"N, 48°39'17"E	
Onagraceae				
<i>Epilobium montanum</i> L. (1828)	Euro.-Sib., Ir.-Tur.	He	37°55'41"N, 48°33'10"E	
<i>E. minutifolium</i> Hausskn. (1830)	Ir.-Tur.	He	37°57'59"N, 48°42'00"E	
<i>E. rechingeri</i> Raven. (2181)	Euro.-Sib., Ir.-Tur.	He	37°58'04"N, 48°40'35"E	
<i>E. roseum</i> Schreb. subsp. <i>sudsessile</i> (Boiss.) Reven. (1828)	Euro.-Sib., Ir.-Tur.	He	37°58'54"N, 48°39'25"E	
Orchidaceae				
<i>Dactylorhiza umbrosa</i> (Kar. & Kir.) Nevski (1792)	Euro.-Sib., Ir.-Tur.	Ge	37°56'06"N, 48°33'19"E	
Orobanchaceae				
<i>Orobanche cernua</i> Löfl. (2289)	Ir.-Tur., Euro.-Sib.	He	37°57'14"N, 48°41'47"E	
<i>O. multeli</i> F. Schultz (2290)	Ir.-Tur., Medit.	He	37°56'45"N, 48°42'29"E	
Oxalidaceae				
<i>Oxalis corniculata</i> L. (1769)	Ir.-Tur., Medit.	Th	37°58'10"N, 48°41'24"E	
Papaveraceae				
<i>Corydalis hyrcana</i> Wendelbo (1835)	Euro.-Sib.	Ge	37°58'30"N, 48°37'12"E	Endem./LR

<i>C. persica</i> Cham. & Schldl. (1834)	Ir.-Tur.	Ge	37°58'20"N, 48°37'10"E	LR
<i>Fumaria vaillantii</i> Loisl. (1832)	Ir.-Tur.	Th	37°58'57"N, 48°32'41"E	
<i>Hypocoum pendulum</i> L. (1754)	Ir.-Tur., Medit.	Th	37°57'54"N, 48°32'19"E	
<i>Papaver armeniacum</i> Lam. subsp. <i>microstigmum</i> (Boiss.) Kadereit (1719)	Ir.-Tur.	He	37°58'42"N, 48°40'17"E	
<i>P. chelidoniifolium</i> Boiss. & Buhse (1744)	Euro.-Sib.	Th	37°56'38"N, 48°40'29"E	Endem.
<i>P. dubium</i> L. (1764)	Pl.	Th	38°01'04"N, 48°34'17"E	
<i>P. fugax</i> Poir (1750)	Ir.-Tur.	Th	37°56'54"N, 48°32'43"E	
<i>P. macrostomum</i> Boiss. & Huet ex Boiss. (1747)	Ir.-Tur.	Th	38°01'15"N, 48°40'17"E	
<i>P. orientale</i> L. (2634)	Euro.-Sib., Ir.-Tur., Medit.	He	37°58'41"N, 48°38'24"E	
<i>Roemeria refracta</i> DC. (2416)	Ir.-Tur.	Th	37°57'54"N, 48°32'43"E	
Plantaginaceae				
<i>Plantago atrata</i> Hoppe. (1643)	Euro.-Sib., Ir.-Tur.	He	38°01'20"N, 48°34'28"E	
<i>P. lagopus</i> L. (1645)	Ir.-Tur., Medit.	He	37°57'23"N, 48°39'37"E	
<i>P. lanceolata</i> L. (1642)	Euro.-Sib., Ir.-Tur., Medit.	He	37°55'25"N, 48°22'19"E	
<i>P. major</i> L. (1640)	Cosm.	He	37°58'42"N, 48°40'17"E	
Poaceae				
<i>Aegilops crassa</i> Boiss. var. <i>crassa</i> (1706)	Medit., Euro.-Sib.	Th	37°56'54"N, 48°32'43"E	
<i>Agropyron imbricatum</i> (M. Bieb.) Roemer & Schult. (1722)	Ir.-Tur.	He	37°56'54"N, 48°32'43"E	
<i>A. leptourum</i> (Nevski) Grossh. (1703)	Ir.-Tur.	He	37°55'16"N, 48°33'20"E	
<i>A. panormitanum</i> Pari. (1719)	Medit., Ir.-Tur.	He	37°57'59"N, 48°42'51"E	
<i>A. pectiniforme</i> Roemer & Schultes. (1722)	Ir.-Tur., Medit.	He	37°59'21"N, 48°43'31"E	
<i>A. podperae</i> Náb. (1720)	Ir.-Tur.	He	37°55'43"N, 48°33'30"E	
<i>A. repens</i> (L.) P. Beauv. (1710)	Pl.	He	38°00'16"N, 48°57'31"E	
<i>Agrostis canina</i> L.(1733)	Pl.	He	38°01'17"N, 48°34'50"E	
<i>Alopecurus pratensis</i> L. (2573)	Medit., Ir.-Tur.	He	38°56'50"N, 48°39'59"E	
<i>A. textilis</i> Boiss. (2577)	Ir.-Tur.	He	38°59'06"N, 48°34'55"E	
<i>Briza media</i> L. (1708)	Euro.-Sib., Ir.-Tur.	He	37°58'16"N, 48°40'32"E	
<i>Bromus japonicus</i> Thunb. (2566)	Pl.	Th	37°58'25"N, 48°39'50"E	
<i>B. briziformis</i> Fisch. & C.A. Mey. (1995)	Euro.-Sib., Ir.-Tur.	Th	38°01'20"N, 48°33'15"E	
<i>B. cappadocicus</i> Boiss. & Bal. (1731)	Ir.-Tur., Medit.	He	38°01'17"N, 48°43'20"E	
<i>B. danthoniae</i> Trin. (1700)	Ir.-Tur.	Th	38°01'16"N, 48°34'34"E	
<i>B. madritensis</i> L. (1701)	Ir.-Tur.	Th	37°58'39"N, 48°40'46"E	
<i>B. scoparius</i> L. (1735)	Euro.-Sib., Ir.-Tur., Medit.	Th	38°01'16"N, 48°34'50"E	
<i>B. tectorum</i> L. var. <i>tectorum</i> (1698)	Pl.	Th	38°01'20"N, 48°34'54"E	
<i>Calamagrostis epigejos</i> (L.) Roth. (1738)	Euro.-Sib., Ir.-Tur., Medit.	Ge	37°56'12"N, 48°34'25"E	

<i>C. pseudophragmites</i> (Hall. F) Koel. (1714)	Euro.-Sib., Ir.-Tur., Medit.	Ge	37°54'43"N, 48°34'29"E	
<i>Colpodium parviflorum</i> Boiss & Buhse (1713)	Ir.-Tur.	He	37°59'14"N, 48°40'15"E	LR
<i>Cynosurus echinatus</i> L. (1724)	Ir.-Tur., Medit.	Th	37°58'16"N, 48°40'33"E	
<i>Dactylis glomerata</i> L. subsp. <i>glomerata</i> (1995)	Cosm.	He	37°56'20"N, 48°33'15"E	
<i>Deschampsia caespitosa</i> (L.) P. Beauv. (1736)	Pl.	He	37°55'10"N, 48°33'23"E	
<i>Elymus pertenuis</i> (C.A. Mey.) Assadi (1704)	Ir.-Tur.	He	37°58'00"N, 48°37'08"E	
<i>Eremopoa persica</i> (Trin.) Roshev. var. <i>songarica</i> (Schrenk) Bor. (1727)	Ir.-Tur., Medit.	He	38°01'16"N, 48°34'34"E	
<i>Festuca rubra</i> L. (1723)	Cosm.	He	37°58'16"N, 48°40'33"E	
<i>Glyceria plicata</i> Fr. (1686)	Cosm.	He	38°01'04"N, 48° 39'59"E	
<i>Heterantherium piliferum</i> Hochst. ex Jaub. & Spach (1683)	Ir.-Tur.	Th	37°57'21"N, 48° 40'23"E	R
<i>Hordeum brevisubulatum</i> Link subsp. <i>violaceum</i> (Boiss. & Huet) Tzvelev (1631)	Ir.-Tur.	He	37°55'41"N, 48°33'10"E	
<i>H. bulbosom</i> L. (1612)	Ir.-Tur.	Ge	37°57'59"N, 48°42'42"E	
<i>Koeleria cristata</i> (L.) Pers. (1730)	Pl.	He	37°57'00"N, 48°33'34"E	
<i>Oryzopsis pubiflora</i> Hack. (2571)	Ir.-Tur.	Th	37°57'40"N, 48°32'49"E	
<i>Phleum phleoides</i> H. Karst. (1682)	Pl.	He	37°56'50"N, 48° 41'16"E	
<i>Poa pratensis</i> L. (1677)	Cosm.	He	37° 30'50"N, 48° 30' 40"E	
<i>P. annua</i> L. (1675)	Cosm.	Th	38° 01'18"N, 48° 12' 15"E	
<i>P. bulbosa</i> L. (1670)	Pl.	Ge	38° 01' 12"N, 48°34' 54"E	
<i>P. nemoralis</i> L. (1672)	Ir.-Tur., Medit., Euro.-Sib.	He	37° 55' 42"N, 48°40' 17"E	
<i>P. trivialis</i> L. (1680)	Cosm.	Ge	37° 57'40"N, 48° 32'49"E	DD
<i>Sclerochloa dura</i> (L.) P. Beauv. (1709)	Pl.	Th	37°57'31"N, 48°42'26"E	
<i>Stipa hohenackeriana</i> Trin. & Rupr. (1725)	Ir.-Tur.	He	38°01'16"N, 48°34'34"E	
<i>Trisetum flavescens</i> (L.) P. Beauv. (1741)	Pl.	Th	37°57'41"N, 48°32'11"E	R
<i>Triticum aestivum</i> L. (1707)	Cosm.	Th	37°57'22"N, 48°38'27"E	
<i>Ventenata dubia</i> (Leers) F. Schultz. (1610)	Euro.-Sib., Medit.	He	37°58'43"N, 48°42'21"E	
<i>Zingeria trichopoda</i> (Boiss.) P.A. Smirn. (1687)	Ir.-Tur.	Th	37°59'16"N, 48° 37'20"E	
<i>Polumbaginaceae</i>				
<i>Acantholimon gilliatii</i> Turrill (1818)	Ir.-Tur.	Ch	37°56'10"N, 48°33'22"E	Endem./LR
<i>A. hohenackeri</i> (Jaub. & Spach) Boiss. (1817)	Ir.-Tur.	Ch	38°01'04"N, 48°32'22"E	
<i>Polygalaceae</i>				
<i>Polygala anatolica</i> Boiss. & Heldr. (1772)	Euro.-Sib., Ir.-Tur.	Ch	37°59'50"N, 48°40'31"E	
<i>Polygonaceae</i>				
<i>Polygonum polycnemoides</i> Jaub. & Spach (2385)	Ir.-Tur.	Th	38°00'03"N, 48°34'38"E	
<i>P. alpestre</i> C.A. Mey. (2379)	Ir.-Tur.	He	37°58'05"N, 48°32'44"E	
<i>P. amphibium</i> L. (2378)	Pl.	He	38°01'07"N, 48°32'25"E	

<i>P. aviculare</i> L. (2380)	Cosm.	Th	38°01'12"N, 48°34'22"E	
<i>P. bistorta</i> L. (2382)	Pl.	He	37°57'08"N, 48°37'37"E	
<i>P. convolvulus</i> L. (2381)	Pl.	He	38°01'42"N, 48°40'27"E	
<i>P. hyrcanicum</i> Rech. f. (2384)	Euro.-Sib.	He	37°57'10"N, 48°41'24"E	Endem./LR
<i>Rumex obtusifolius</i> L. (2390)	Euro- Sib., Ir.-Tur.	He	38°01'07"N, 48°32'35"E	
<i>R. scutatus</i> L. (2392)	Ir.-Tur., Medit.	He	37°58'17"N, 48°37'00"E	
<i>R. tuberosus</i> L. subsp. <i>horizontalis</i> (C. Koch.) Rech. f. (2393)	Euro- Sib., Ir.-Tur.	Ge	37°57'21"N, 48°40'33"E	
Polypodiaceae				
<i>Polypodium vulgare</i> L. (2072)	Cosm.	Epi	37°59'48"N, 48°39'47"E	
Primulaceae				
<i>Androsace maxima</i> L. (2025)	Euro.-Sib., Ir.-Tur., Medit.	Th	37°58'26"N, 48°40'03"E	
<i>Primula auriculata</i> Lam. (1811)	Ir.-Tur.	Ch	37°57'05"N, 48°32'32"E	
<i>P. heterochroma</i> Stapf (1813)	Euro.-Sib.	Ch	37°55'21"N, 48°43'31"E	
<i>P. macrocalyx</i> Bge. (1810)	Euro.-Sib.	Ch	37°57'59"N, 48°39'51"E	
Ranunculaceae				
<i>Adonis aestivalis</i> L. (1844)	Ir.-Tur., Medit.	Th	37°56'12"N, 48°32'12"E	
<i>Anemone caucasica</i> Willd. ex Rupr. (1747)	Euro.-Sib.	He	37°55'31"N, 48°40'29"E	
<i>Ceratocephalus testiculata</i> (Crantz) Roth. (1853)	Ir.-Tur., Medit.	Th	37°42'16"N, 48°56'50"E	
<i>Delphinium tuberosum</i> Aucher ex Boiss. (1846)	Ir.-Tur.	Ge	37°00'23"N, 48°34'44"E	Endem./LR
<i>Ficaria kochii</i> (Ledeb.) Iranshahr & Rech.f. (1845)	Euro- Sib., Ir.-Tur.	He	38°01'25"N, 48°33'20"E	
<i>Pulsatilla albana</i> (Stev.) Bercht. & Presl (1837)	Euro.-Sib.	He	37°56'30"N, 48°36'11"E	
<i>Ranunculus amblyolobus</i> Boiss & Hohen. (1850)	Ir.-Tur.	He	37°58'07"N, 48°38'08"E	Endem.
<i>Ranunculus cicutarius</i> Schlechtend (2286)	Euro.-Sib.	He	37°57'32"N, 48°41'03"E	
<i>R. constantinopolitanus</i> (DC.) d' Urv. (2285)	Ir.-Tur.	He	37°59'50"N, 48°39'57"E	
<i>R. elbursensis</i> Boiss. (1848)	Euro.-Sib.	He	37°01'12"N, 48°37'15"E	Endem./LR
<i>R. kotschyi</i> Boiss. (1849)	Ir.-Tur.	He	38°01'16"N, 48°34'24"E	Endem./LR
<i>R. repens</i> L. (2287)	Euro- Sib., Ir.-Tur.	He	38°01'09"N, 48°33'14"E	
<i>R. sahendicus</i> Boiss. & Buhse (2288)	Ir.-Tur.	He	38°01'08"N, 48°34'15"E	Endem./LR
<i>Thalictrum minus</i> L. (1841)	Pl.	He	37°58'42"N, 48°40'17"E	
Resedaceae				
<i>Reseda lutea</i> L. (1773)	Euro.-Sib., Ir.-Tur., Medit.	He	37°56'54"N, 48°32'10"E	
Rosaceae				
<i>Agrimonia eupatoria</i> L. (2189)	Euro.-Sib., Ir.-Tur.	He	37°58'16"N, 48°40'20"E	
<i>Alchemilla hyrcana</i> (Buser) Juz. (2183)	Euro.-Sib.	He	37°58'18"N, 48°40'30"E	
<i>A. persica</i> Rothm. (2184)	Euro.-Sib., Ir.-Tur.	He	37°56'34"N, 48°39'14"E	
<i>A. plicatissima</i> Fröhner (2185)	Euro.-Sib.	He	37°57'12"N, 48°38'34"E	Endem.
<i>A. pseudo-cartalinica</i> Juz. (2186)	Ir.-Tur.	He	37°59'30"N, 48°40'42"E	

<i>Cerasus avium</i> (L.) Moench (2197)	Euro.-Sib.	Ph	37°58'04"N, 48°40'35"E	
<i>Cotoneaster integerrimus</i> Medcus (2194)	Ir.-Tur.	Ph	38°00'24"N, 48°35'16"E	
<i>C. kotschyi</i> Klotz. (2192)	Ir.-Tur.	Ch	38°01'15"N, 48°34'21"E	Endem.
<i>C. nummularioides</i> Pojark. (2190)	Ir.-Tur.	Ph	37°58'41"N, 48°36'15"E	
<i>Crataegus meyeri</i> Pojark. (2418)	Euro.-Sib., Ir.-Tur.	Ph	37°59'29"N, 48°40'45"E	
<i>C. microphylla</i> C. Koch. (2419)	Euro.-Sib.	Ph	37°58'42"N, 48°40'17"E	
<i>Fragaria vesca</i> L. (2195)	Euro.-Sib.	Ch	37°58'16"N, 48°40'33"E	
<i>Geum urbanum</i> L. (2196)	Euro.-Sib., Ir.-Tur.	He	38°01'25"N, 48°42'25"E	
<i>Mespilus germanica</i> L. (2198)	Euro.-Sib.	Ph	37°59'28"N, 48°40'36"E	
<i>Potentilla mallota</i> Boiss. (2202)	Ir.-Tur.	He	37°55'35"N, 48°33'10"E	Endem.
<i>P. adscharica</i> Sommier & Levier ex Keller (2212)	Euro.-Sib.	He	37°57'42"N, 48°32'49"E	
<i>P. anserina</i> L. (2204)	Pl.	He	38°01'23"N, 48°33'12"E	
<i>P. argaea</i> Boiss. & Bal. (2639)	Ir.-Tur.	He	37°57'35"N, 48°34'24"E	
<i>P. argentea</i> L. (2205)	Euro.-Sib., Ir.-Tur.	He	37°59'06"N, 48°39'58"E	
<i>P. bifurca</i> L. (2206)	Ir.-Tur.	He	37°57'18"N, 48°39'31"E	
<i>P. gelida</i> C.A. Mey. (2640)	Ir.-Tur.	He	37°57'54"N, 48°40'37"E	
<i>P. reptans</i> L. (2101)	Euro.-Sib., Ir.-Tur.	He	38°18'11"N, 48°34'18"E	
<i>P. supina</i> L. (2210)	Ir.-Tur.	Th	38°01'23"N, 48°33'13"E	
<i>Prunus divaricata</i> Ledeb. (2200)	Euro.-Sib.	Ph	37°58'28"N, 48°40'28"E	Endem.
<i>Rosa boissieri</i> Crépin (2218)	Euro.-Sib., Ir.-Tur.	Ph	37°56'48"N, 48°44'40"E	
<i>R. canina</i> L. (2220)	Ir.-Tur.	Ph	38°00'23"N, 48°34'38"E	
<i>R. hemisphaerica</i> J. Herrmann (2219)	Ir.-Tur.	Ph	37°58'41"N, 48°37'35"E	
<i>Sanguisorba minor</i> Scop. subsp. <i>muricata</i> (Bonnier & Layens) Briq. (2213)	Euro.-Sib.	He	38°01'07"N, 48°35'35"E	
<i>S. minor</i> Scop. subsp. <i>lasiocarpa</i> (Boiss. & Hausskn.) Nordborg (2565)	Euro.-Sib., Ir.-Tur.	He	38°01'07"N, 48°35'35"E	
<i>Sorbus aucuparia</i> L. (2217)	Euro.-Sib.	Ph	37°59'48"N, 48°40'24"E	
<i>S. graeca</i> (Spach) Loddiges ex Schaur. (2214)	Ir.-Tur.	Ph	37°58'04"N, 48°40'37"E	
<i>S. torminalis</i> (L.) Crantz. (2215)	Euro.-Sib.	Ph	37°58'04"N, 48°40'37"E	
Rubiaceae				
<i>Asperula setosa</i> Jaub. & Spach. (2471)	Ir.-Tur.	Th	38°00'27"N, 48°35'18"E	
<i>Callipeltis cucullaria</i> (L.) DC. (2473)	Ir.-Tur.	Th	37°58'02"N, 48°32'45"E	
<i>Crucianella exasperate</i> Fisch. & C.A. Mey. (2474)	Ir.-Tur.	Th	38°01'02"N, 48°35'11"E	
<i>C. gilanica</i> Trin. subsp. <i>gilanica</i> (2475)	Euro.-Sib., Ir.-Tur.	He	37°57'28"N, 48°39'38"E	
<i>C. gilanica</i> Trin. subsp. <i>kotschyi</i> (Ehrend.) Ehrend. (2476)	Ir.-Tur.	He	37°57'37"N, 48°40'32"E	
<i>Cruciata laevipes</i> Opiz. (2477)	Euro.-Sib.	He	38°00'27"N, 48°34'39"E	
<i>C. taurica</i> (Pall.) Ehrend. subsp. <i>armeniaca</i> (Mikheev) Ehrend. (2481)	Ir.-Tur.	He	37°58'10"N, 48°37'23"E	Endem.

<i>C. taurica</i> (Pall.) Ehrend. subsp. <i>persica</i> (DC.) Ehrend. (2482)	Ir.-Tur.	Ch	37°57'24"N, 48°39'36"E	
<i>Galium aparine</i> L. (2483)	Pl.	Th	37°57'42"N, 48°32'49"E	
<i>G. elbursense</i> Bornm. & Gauba ex Bornm. (2488)	Euro.-Sib.	He	37°56'33"N, 48°33'36"E	Endem.
<i>G. ghilanicum</i> Stapf. (2494)	Ir.-Tur.	Th	37°58'54"N, 48°41'58"E	
<i>G. humifusum</i> M. Bieb. (2484)	Ir.-Tur. Medit.	He	38°00'13"N, 48°34'43"E	
<i>G. verum</i> L. subsp. <i>verum</i> f. <i>verum</i> (2486)	Euro.-Sib., Ir.-Tur.	He	37°56'27"N, 48°34'48"E	
<i>Phoupsis stylosa</i> (Trin.) Hook. f. (2495)	Euro.-Sib.	He	37°57'34"N, 48°42'27"E	
Salicaceae				
<i>Salix aegyptica</i> L. (1777)	Ir.-Tur.	Ph	37°58'42"N, 48°40'17"E	
Sapindaceae				
<i>Acer hyrcanicum</i> Fisch. & C.A. Mey. (1855)	Medit., Euro.-Sib.	Ph	37°59'34"N, 48°30'46"E	
<i>A. platanoides</i> L. (1854)	Euro.-Sib.	Ph	37°59'34"N, 48°40'40"E	
Saxifragaceae				
<i>Saxifraga sibirica</i> L. (1803)	Euro.-Sib., Ir.-Tur.	He	37°58'42"N, 48°40'17"E	R
<i>S. cymbalaria</i> L. (1804)	Euro.-Sib., Ir.-Tur.	Th	37°58'54"N, 48°40'21"E	
<i>S. paniculata</i> Mill. (1803)	Euro.-Sib.	He	37°58'42"N, 48°40'17"E	LR
Scrophulariaceae				
<i>Bunaea trifida</i> (Vahl) C.A. Mey. (1857)	Ir.-Tur.	Ch	37°56'12"N, 48°34'08"E	
<i>Digitalis nervosa</i> Steud. & Hochst. (1856)	Euro.-Sib.	Ch	37°55'35"N, 48°45'12"E	
<i>Euphrasia pectinata</i> Ten. (1854)	Ir.-Tur., Medit.	Th	37°85'18"N, 48°33'48"E	
<i>E. sevanensis</i> Juz. (1855)	Ir.-Tur.	Th	37°56'40"N, 48°34'20"E	R
<i>Linaria genistifolia</i> (L.) Miller (2421)	Euro.-Sib.	Th	37°58'16"N, 48°40'33"E	
<i>L. khalkhalensis</i> Hamdi (2423)	Ir.-Tur.	Th	37°56'32"N, 48°33'14"E	Endem./LR
<i>Parentucellia latifolia</i> (L.) Caruel. subsp. <i>latifolia</i> (2420)	Ir.-Tur.	Ch	37°58'20"N, 48°40'37"E	
<i>Pedicularis sibthorpii</i> Boiss. (1858)	Ir.-Tur.	Ge	37°57'40"N, 48°32'37"E	
<i>P. wilhelmsiana</i> Fisch. ex M. Bieb. (1860)	Ir.-Tur.	Ge	37°58'10"N, 48°33'20"E	DD
<i>Scrophularia amplexicaulis</i> Benth. (1882)	Ir.-Tur.	He	37°58'05"N, 48°37'09"E	
<i>S. nervosa</i> Benth. subsp. <i>nervosa</i> (1884)	Ir.-Tur.	Ch	37°00'23"N, 48°34'44"E	Endem.
<i>S. scopolii</i> Hoppe ex Pers. subsp. <i>adenocalyx</i> (Sommier & Levier) Grau (1885)	Euro.-Sib.	Ch	37°58'16"N, 48°40'33"E	
<i>S. variegata</i> M. Bieb. subsp. <i>variegata</i> (1879)	Cosm.	Ch	37°59'28"N, 48°38'55"E	
<i>Verbascum stachydiforme</i> Boiss. & Buhse (2647)	Euro.-Sib.	He	37°59'28"N, 48°38'55"E	Endem.
<i>V. gossypinum</i> M. Bieb. (2446)	Euro.-Sib.	He	37°58'23"N, 48°40'55"E	
<i>V. speciosum</i> Schrad. (2645)	Ir.-Tur.	Ch	37°56'40"N, 48°34'25"E	
<i>Veronica anagallis-aquatica</i> L. subsp. <i>oxycarpa</i> (Boiss.) A. Jelen (1876)	Ir.-Tur.	He	38°01'15"N, 48°34'23"E	
<i>V. beccabungula</i> L. subsp. <i>abscondita</i> M.A. Fisch. (1873)	Ir.-Tur.	He	37°57'30"N, 48°37'08"E	
<i>V. cappillipes</i> Nevski (1872)	Ir.-Tur.	Th	37°56'06"N, 48°33'19"E	
<i>V. gentianoides</i> Vahl (1866)	Euro.-Sib., Ir.-Tur.	He	38°02'03"N, 48°35'21"E	

<i>V. multifida</i> L. (1870)	Euro.-Sib., Ir.-Tur.	He	37°55'40"N, 48°33'10"E	
<i>V. orientalis</i> Miller (2548)	Ir.-Tur.	He	37°56'09"N, 48°34'15"E	
<i>V. persica</i> Poir. (1871)	Cosm.	He	37°59'06"N, 48°39'39"E	
<i>Solanaceae</i>				
<i>Hyoscyamus kurdicus</i> Bornm. (1819)	Ir.-Tur.	He	37°57'15"N, 48°33'23"E	
<i>H. niger</i> L. (1820)	Pl.	Ch	37°56'30"N, 48°34'23"E	
<i>Urticaceae</i>				
<i>Urtica dioica</i> L. subsp. <i>dioica</i> (1780)	Cosm.	He	37°58'00"N, 48°37'08"E	
<i>Valerianaceae</i>				
<i>Valeriana alliarifolia</i> Adams (1763)	Euro.-Sib., Ir.-Tur., Medit.	He	37°58'42"N, 48°40'18"E	DD
<i>V. leucophaea</i> DC. (1765)	Ir.-Tur.	Ge	37°57'01"N, 48°34'35"E	DD
<i>V. phu</i> L. (1806)	Ir.-Tur.	He	38°57'41"N, 48°40'17"E	
<i>V. sisymbriifolia</i> Vahl (1762)	Euro.-Sib., Ir.-Tur., Medit.	He	38°01'30"N, 48°34'17"E	
<i>Valerianella tuberculata</i> Boiss. (1766)	Ir.-Tur.	Th	38°01'01"N, 48°35'11"E	
<i>V. uncinata</i> (M. Bieb.) Duf. (1827)	Euro.-Sib., Ir.-Tur., Medit.	Th	37°59'06"N, 39°39'59"E	
<i>Violaceae</i>				
<i>Viola arvensis</i> Murray (1786)	Euro.-Sib., Ir.-Tur.	Th	37°57'31"N, 48°41'39"E	
<i>V. sieheana</i> W. Becker (1787)	Euro.-Sib.	He	37°55'30"N, 48°42'40"E	
<i>V. tricolora</i> L. (1784)	Euro.-Sib.	Th	37°58'16"N, 48°40'33"E	
<i>Woodsiaceae</i>				
<i>Cystopteris fragilis</i> (L.) Bernh. (2077)	Euro.-Sib., Ir.-Tur., Medit.	He	37°59'40"N, 48°40'38"E	

The abbreviations are used follows: Cosm: Cosmopolitan, Pl.: Pluriregional, Ir.-Tur.: Irano-Turanian, Euro-Sib.: Euro-Siberian, Medit.: Mediterranean, S.-S.: Sahara-Sindian, Endm.: Endemic, var.: variety, subsp.: subspecies, LR.: Lower Risk, R.: Rare, VU.: Vulnerable, DD.: Data Deficient, EN.: Endangered