KSÜ Tarım ve Doğa Derg 28 (3), 689-711, 2025
KSU J. Agric Nat 28 (3), 689-711, 2025
https://doi.org/10.18016/ksutarimdoga.vi.1592203

Investigation of the flora, general vegetation structure, and EUNIS habitat types of some natural sites areas in Gülnar and Silifke (Mersin-Türkiye)

Ahmet Zafer TEL[1✉], İshak ORTAÇ[2], Ergün ÖZUSLU[3,4], Ahmet İLÇİM[5]
[1]Iğdır University, Faculty of Agriculture, Department of Agricultural Biotechnology, Iğdır, Türkiye, [2]Adıyaman Safvan Children's Homes Site Directorate, 02040 Adıyaman, Türkiye, [3]Iğdır University, Postgraduate Education Institute, Iğdır, Türkiye, [4]University of Gaziantep Islam, Science and Technology, Faculty of Engineering and Natural Science, Gaziantep, Türkiye, [5]Department of Biology, Faculty of Arts and Science, Hatay Mustafa Kemal University, Hatay, Türkiye.
[1]https://orcid.org/0000-0002-1204-3839, [2]https://orcid.org/0000-0002-5880-8438, [3,4]https://orcid.org/0000-0002-4480-8365, [4]https://orcid.org/0000-0001-8169-2472
✉: ahmetzafertel@yahoo.com

ABSTRACT
The aim of this study was to determine the floristic characteristics, EUNIS habitat types, and general vegetation structure of Çağlayan, Ilısu, and Yerköprü Waterfalls, Göksu Delta, Narlıkuyu, Roman Ruins, Şeytanderesi, and Cambazlı Cistern and Akdere Tahta Port natural site areas in Gülnar and Silifke districts of Mersin (Türkiye). According to the findings, 214 different taxa belonging to 65 families and 173 genera were identified. A total of 31 taxa were identified in Çağlayan Waterfall, 32 in Ilısu Waterfall, 54 in Yerköprü Waterfall, 62 in Göksu Delta, 47 in Narlıkuyu, 26 in Roman Ruins, 63 in Akdere Tahta Port, 84 in Şeytanderesi, and Cambazlı Cistern. A total of 8 (3.66%) endemic plant taxa were identified in the research areas. According to the phytogeographic regions, 77 taxa are Mediterranean (35.32%), 11 taxa are Euro-Siberian (5.04%), 7 taxa are Irano-Turanian (3.21%), 45 taxa are widely distributed (20.64%), and 76 taxa are of unknown phytogeographic region (35.77%). In this study, 9 main habitats and 22 sub-habitat types were identified. In terms of general vegetation structure, characteristic species of *Quercetea ilicis* and *Cisto-Micromerietea* syntaxonomic classes were found in all study areas. Character species of *Quercetea pubescentis* class were observed in all areas except Göksu Delta, Şeytan Creek, and Cambazlı Cistern. In Şeytanderesi and Cambazlı Cistern, and Akdere Tahta Port, character species belonging to the *Querco-Fagetea* syntaxonomy class were found differently from the others. These results contribute to the flora and vegetation literature by determining the flora of Mersin province, determining the EUNIS habitat types of natural sites in this country, and determining the general vegetation structure of the research area.

Botany

Research Article

Article History
Received : 27.11.2024
Accepted : 21.03.2025

Keywords
Biodiversity
Convertion area
Phytogeography
Thread categories
Mersin

Gülnar ve Silifke (Mersin-Türkiye) ilçelerindeki bazı doğal sit alanlarının flora, genel vejetasyon yapısı ve EUNIS habitat tiplerinin incelenmesi

ÖZET
Bu araştırma Mersin (Türkiye) ili Gülnar ve Silifke ilçelerinde bulunan Çağlayan, Ilısu ve Yerköprü Şelalesi, Göksu Deltası, Narlıkuyu, Roma Kalıntıları, Şeytanderesi ve Cambazlı Sarnıcı ile Akdere Tahta Limanı doğal sit alanlarının floristik özelliklerini, EUNIS habitat tiplerini ve genel vejetasyon yapısını belirlemek amacıyla gerçekleştirilmiştir. Araştırmada toplam 65 familya ve 173 cinse ait 214 farklı takson tespit edilmiştir. Çağlayan Şelalesi'nde 31, Ilısu Şelalesi'nde 32, Yerköprü Şelalesi'nde 54, Göksu Deltasında 62, Narlıkuyuda 47, Roma Kalıntılarında 26, Akdere Tahta Limanında 63, Şeytanderesi ve Cambazlı Sarnıcında 84 takson belirlenmiştir. Bu araştırmada toplam 8 adet (%3.66) endemik bitki taksonu tespit edilmiştir. Fitocoğrafik bölgelere göre taksonların 77 taksonun Akdeniz (%35.32), 11 taksonun Avrupa-Sibirya (%5.04), 7 taksonun İran-Turan (%3.21) elementi, 45 taksonun Geniş yayılışlı (%20.64) ve 76 taksonun fitocoğrafik bölgesi belli

Botanik

Araştırma Makalesi

Makale Tarihçesi
Geliş Tarihi : 27.11.2024
Kabul Tarihi :21.03.2025

Anahtar Kelimeler
Biyoçeşitlilik
Korunan alan
Bitki coğrafyası
Tehlike kategorisi
Mersin

olmayan (%35.77) şeklinde dağılım gösterdiği belirlenmiştir. Bu çalışmada 9 ana habitat, 22 alt habitat tipi tanımlanmıştır. Genel vejetasyon yapısı itibariyle çalışma alanlarının tamamında *Quercetea ilicis* ve *Cisto-Micromerietea* sintaksonomik sınıflarının karakter türlerine rastlanılmıştır. Göksu Deltası ile Şeytan Deresi ve Cambazlı Sarnıcı hariç diğer tüm alanlarda *Quercetea pubescentis* sınıfının karakter türleri gözlemlenmiştir. Şeytan Deresi ve Cambazlı Sarnıcı ile Akdere Tahta Limanında diğerlerinden farklı olarak *Querco-Fagetea* sintaksonomi sınıfına ait karakter türler bulunduğu belirlenmiştir. Bu sonuçlar Mersin ili florası, ülkemizdeki doğal sitlerin EUNIS habitat tiplerinin ve araştırma alanının genel vejetasyon yapısının belirlenmesi ile flora ve vejetasyon literatürüne katkı sağlamaktadır.

Atıf Şekli: Tel, A.Z., Ortaç, İ., Özuslu, E. & İlçim, A., (2025). Gülnar ve Silifke (Mersin-Türkiye) ilçelerindeki bazı doğal sit alanlarının flora, genel vejetasyon yapısı ve EUNIS habitat tiplerinin incelenmesi. *KSÜ Tarım ve Doğa Derg 28* (3), 689-711. https://doi.org/10.18016/ksutarimdoga.vi.1592203

To Cite : Tel, A.Z., Ortaç, İ., Özuslu, E. & İlçim, A., (2025). Investigation of the flora, general vegetation structure, and EUNIS habitat types of some natural sites areas in Gülnar and Silifke (Mersin-Turkey). *KSU J. Agric Nat 28* (3), 689-711. https://doi.org/10.18016/ksutarimdoga.vi.1592203

INTRODUCTION

Türkiye is one of the significant plant diversity regions in the world in terms of its plant taxa and the total number of endemic plant species it contains (Avcı,1993). Due to the diverse climatic, edaphic, and geographical features among its regions, Türkiye exhibits a rich plant diversity (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000; Davis & Hedge, 1975). In the flora of Türkiye, 3,649 taxa (31.82%) out of 11,707 are endemic (Güner et al., 2012). The significance and diversity of Turkey's flora become clearer when compared to the overall number of plant species across the entire European continent. The first studies on Turkish plants began in the early 1700s, carried out by Tournefort (Baytop, 2010). The most extensive research was conducted by Davis (1965-1985; Davis et al., 1988). Subsequently, Güner et al. (2012) published a list of the plants of Türkiye, and 6 volumes of the Illustrated Flora of Turkey have been published since 2014 (Güner & Ekim, 2014; Güner et al., 2018; 2022; 2023a; 2023b; 2024).

The study areas in this research are eight natural sites in Mersin province, in the Mediterranean region of Türkiye. The definition of a Natural site is as follows: "Areas belonging to geological epochs, possessing extraordinary features due to their rarity, located on the surface, underground, or underwater, and requiring preservation." (Anonymous, 1983). Natural sites, defined as first, second, and third-degree natural sites during the dates of the conducted research, have been redefined into three categories with the regulation published in 2022 (Anonymous, 2022). According to the redefinition in Anonymous (2022), they are now categorized as 1- Areas of Absolute Protection, 2- Areas of Qualified Natural Conservation, and 3- Areas of Sustainable Conservation and Controlled Use. Areas of Absolute Protection are land, water, and marine areas where all impacts related to use and access are restricted to ensure the preservation of resource values. In these areas, human entry may be prevented, and special measures may be taken for scientific research, education, or environmental monitoring purposes. Qualified Natural Conservation Areas are land, water, and marine areas characterized by an unchanged natural structure, minimal impact from human activities, dominance of natural processes, and the preservation of traditional ways of life based on the natural environment. These areas allow residents to utilize existing resources in line with conservation goals while safeguarding the traditional lifestyles dependent on the natural habitat. On the other hand, areas of Sustainable Conservation and Controlled Use are areas where low-intensity activities, wind and solar energy facilities, tourism, settlements, and livestock are permitted while considering the region's natural structure, ecological values, and natural landscape features.

The study areas are situated in the Mediterranean phytogeographic region of Türkiye. While the Irano-Turanian phytogeographic region spans a larger area than other regions, the Mediterranean phytogeographic region has the highest concentration of endemic plant species in Turkey, with 3,321 endemic plant locations (34.3%) (Avcı, 1993; Güner et al., 2012; Şenkul & Kaya, 2017). Despite being a rich region in terms of plant diversity and endemic plants, there are many areas in the Mediterranean region where flora and vegetation studies have not been conducted. Floristic studies carried out in the natural protected areas of this region are also scarce (Tel et al., 2022a).

Identifying the floristic characteristics of the area will enhance understanding of the floristic structure flora of Türkiye and the Mediterranean region. Floristic studies have been carried out by Gemici (1992), Tezcan (1995), Düzenli et al. (1996a), Düzenli et al. (1996b), Savran et al. (1999), Ekim et al. (2000), Zeren & İspirgil (2001), Uçar

(2002), Everest & Rauss (2004), Orcan et al. (2004), Aksay (2006), Karaömerlioğlu & Düzenli (2008), Dinç (2008), Yıldızbakan et al. (2010), Yıldıztugay & Küçüködük (2010), Şirin & Ertuğrul (2015), Şen (2019), Topal et al. (2022) in the surrounding area of the study site. In addition to these, floristic and vegetation-oriented studies have been conducted in Natural and Cultural sites by Tel (2009), Tel et al. (2010), Tel & Tak (2012), Tel & İlçim (2016), Tel & Eğilmez (2015), Anonymous (2016), Ortaç (2017), Tel & Tak (2018), Tel et al. (2018), Tel et al. (2019), Ortaç & Tel (2021), Tel et al. (2021), Tel et al. (2022a; 2022b), Tel et al. (2023), Tel et al. (2024), Tel et al. (2025).

There is no study on habitat classification in the research area. Habitat classification is known to be a very important issue for the sustainability of natural resources (Moss & Roy, 1998). The European Union has established the European Nature Information System (EUNIS) (Anonymous, 2024a; Davies et al., 2004) to utilize existing natural resources better, compare different habitat types, analyze habitats in more detail, create a common classification system, and build a database. Today, species and habitats are constantly threatened by extinction due to intensive use (Arslan et al., 2012). Therefore, the EUNIS classification system records habitat data comparably and provides a reference for the conservation of natural resources. Davies et al. (2004) ranked EUNIS habitat types hierarchically. The system is currently organized into 10 main categories and their subheadings. A: Marine habitats, B: Coastal habitats, C: Inland surface waters, D: Mires, bogs and fens, E: Grasslands and lands dominated by forbs, mosses or lichens, F: Heathland, scrub and tundra, G: Woodland, forest and other wooded land, H: Inland unvegetated or sparsely vegetated habitats, I: Regularly or recently cultivated agricultural, horticultural and domestic habitats, J: Constructed, industrial and other artificial habitats (Eunis habitat type hierarchical view (Davies et al., 2004).

The European Union has established the European Nature Information System (EUNIS) (Davies et al., 2004; Anonymous, 2025) to utilize existing natural resources better, compare different habitat types, analyze habitats in more detail, create a common classification system, and build a database. Today, species and habitats are constantly threatened by extinction due to intensive use (Arslan et al., 2012). Therefore, the EUNIS classification system records habitat data comparably and provides a reference for the conservation of natural resources. Davies et al. (2004) and Anonymous (2025) ranked EUNIS habitat types hierarchically. It is necessary to precisely determine the legally binding protected habitat types in EUNIS (Arslan et al. 2012). In Türkiye, although not at the habitat type level, some species or specific plant communities are protected on-site in areas with conservation statuses such as national parks, nature conservation areas, genetic conservation forests, research forests, etc. (Arslan et al. 2012).

Most countries have not yet fully developed the EUNIS habitat classification and generally use their own habitat classification types on a country-by-country basis. Turkey is ahead of other countries in this context and has reached the stage of determining EUNIS habitat types with the National Biodiversity Inventory and Monitoring Project (Terzioğlu et al., 2015).

In this way, one or more habitat types are preserved in these areas (Arslan, 2012). The eight areas in this study are natural sites with conservation status. Studies on habitat classification in Turkey are few and include Karaömerlioğlu (2007), Karaömerlioğlu & Düzenli (2008), Arslan & Arslantürk (2009), Arslan et al. (2014), Ulu et al. (2014), Mergen & Karacaoğlu (2015), Çiftçi (2015), (Terzioğlu et al., 2015), Erdoğan (2016), Geven et al. (2016), Şahin & Karavelioğlu (2018a), Şahin & Karavelioğlu (2018b), Tug et al. (2018), Seyfe (2019), Özen & Ürker (2020), Çakmak & Aytaç (2020), Çakmak & Aytaç (2021) and Demir et al. (2022).

This study aims to identify the floristic characteristics, EUNIS habitat types, IUCN threat categories of endemic taxa, and the general vegetation structure of the natural protected areas in the Çağlayan, Ilısu, and Yerköprü Waterfalls, Göksu Delta, Narlıkuyu, Roman Ruins, Şeytanderesi, and Cambazlı Cistern, and Akdere Tahta Port, located in the Gülnar and Silifke districts of Mersin province, Turkey. In this study, the general vegetation characteristics and Eunis habitat types of the study areas were revealed. The study areas are protected areas as they have natural protected status and provide information about the general vegetation and floristic structure of the region.

The Study Area and Its General Characteristics

The study areas in this research include eight localities located in the districts of Gülnar and Silifke within the Mersin province, situated in the Mediterranean region of Turkey. These localities include Çağlayan, Ilısu, and Yer Köprü Waterfall, Göksu Delta, Narlıkuyu, Roman Ruins, Şeytanderesi, and Cambazlı Cistern, as well as Akdere Tahta Port (Table 1). All of these areas are designated as natural sites.

The Çağlayan Waterfall is located in the Gülnar district and is designated as a third-degree natural site. It covers an area of 0.8 hectares. The prominent natural landscape elements in the area include the Çağlayan waterfall, which gives the region its name, and the surroundings. Within the natural site, the waterfall occupies 0.59 hectares, 0.34 hectares of forested areas, and 0.25 hectares are designated as irrigated agricultural land. The Ilısu

Waterfall is situated in the Gülnar district of Mersin. It has been classified as a third-degree natural site and spans an area of 98.2 hectares (Anonymous, 2016). Although the area in the Gülnar district exhibits natural landscape characteristics, the presence of an energy facility and associated structures has led to changes in this natural landscape. The study area has a unique geomorphology due to the waterfalls and features of prominent hills. Limestone rocks are abundant in the hills in and around the study area. The study area has an elevation ranging from 700 to 900 meters. Yerköprü Waterfall is located at the Mersin province intersection of Mut and Gülnar districts. It spans an area of 204.6 hectares and is distinguished by mainly mountainous, rocky landscapes, with some occasional flat areas. The Mediterranean climate primarily influences the study area. Geomorphologically, it is situated within a valley with a length of 2.1 km. Of the total area of Yerköprü Waterfall, 188.35 hectares consist of bare rock and debris, 26.33 hectares are covered with scrubland, 6.3 hectares include rivers and streams, 3.36 hectares are dry farming land, and 0.68 hectares are forested. The altitude of the study area is 650 meters (Anonymous, 2016).

Table 1. General characteristics, coordinates, and protection status of the research areas (Anonymous, 2016)
Çizelge 1. Araştırma alanlarının genel özellikleri, koordinatları ve koruma statüleri (Anonim, 2016)

No	Study area	Size (hectare)	Coordinates	Conservation Status
1	Çağlayan Waterfall	0.8	36º 09' 38.95" North 33º 33' 30.27" East	III. Degree Natural Site
2	Ilısu Waterfall	98.2	36º 33' 33.81" North 33º 04' 53.78" East	III. Degree Natural Site
3	Yerköprü Waterfall	204.6	36º 32' 31.41" North 33º 10' 54.10" East	Natural Site
4	Göksu Delta	5381,48	36º 19' 06.32" North 33º 53' 17.56" East	I and III. Degree Natural Site
5	Narlıkuyu	175,07	36º 26' 27.18" North 34º 06' 52.29" East	I.and III. Degree Natural Site
6	Roma Ruins	13,99	36º 22' 33.17" North 33º 55' 47.54" East	I.Degree Natural Site
7	Şeytanderesi and Cambazlı Cistern	813,19	36º 31' 26.27" North 34º 02' 58.98" East	I. Degree Natural Site
8	Akdere Tahta Port	345,91	36° 16′ 12.10″ North 33°48' 24.29" East	I and III. Degree Natural Site

The Göksu Delta lies to the south of the Silifke district in Mersin province, where the Göksu River meets the sea between Silifke and Taşucu. As a wetland, it is under protection and holds the status of Türkiye's first Ramsar site, as well as being designated as a Special Environmental Protection Area. The total area covered by Göksu Delta is 5381.48 hectares. Within this area, 118.63 hectares are comprised of lakes, 21.73 hectares are river floodplains, 1792.61 hectares are coastal dunes, 410.18 hectares are abandoned land, 19.7 hectares are designated as settlement areas, and 3018.63 hectares are used for irrigated agriculture (Anonymous, 2016). Narlıkuyu is a natural site designated as a first and second-degree area. The site covers an area of 175.07 hectares, including the coastal strip and the offshore Dana Island. Within the area, there are numerous coves and settlements of various sizes. The Narlıkuyu location has an approximate elevation of 50 meters and is composed of alluvial materials and limestone. The Roman Ruins are located in the district of Silifke. The Natural site covers an area of 13.99 hectares, including 0.82 hectares of scrubland and 13.17 hectares of dry farming land. It holds the designation of a first-degree natural site, and its altitude is 280 meters. Şeytanderesi and Cambazlı Cistern are located in the district of Silifke. The area covers a total of 813.19 hectares, comprising 677.26 hectares of bare rock and debris, 115.42 hectares of scrubland, 16.64 hectares of dry farming land, and 3.87 hectares of irrigated agricultural land. The area exhibits natural landscape characteristics, extending along a deep valley's approximately 26 km long riverbed. Cambazlı Cistern, located next to Şeytanderesi, shares similar habitat features. Akdere Tahta Port is in Silifke. The area possesses first and third-degree natural site characteristics, covering a total of 345.91 hectares. Within this area, 310.87 hectares of scrubland, 24.28 hectares are designated as forested land, and 10.76 hectares are allocated for irrigated agriculture. The site has an approximately 200-meter coastline (Anonymous, 2016).

The Climate Characteristics of Study Areas

The climate characteristics of the Silifke district

The Mediterranean climate prevails in the Silifke district. Hot and arid conditions characterize the summer season, while the winter season is mild and rainy. The climate changes as one moves inland from sea level (Anonymous, 2023c). The average annual temperature is 18.8°C, with the highest average temperature reaching 23.4°C and the lowest at 14.9°C. August is the hottest month, while January is the coldest. The yearly average precipitation totals 611.6 mm, with the dry season lasting from March to October. December, January, and February receive the most rainfall, whereas July has the least rain. The highest precipitation, with an average of 122 mm, is observed in December (Anonymous, 2023c). The Ombro-thermic climate diagram for the Silifke district is presented in Figure 1-2.

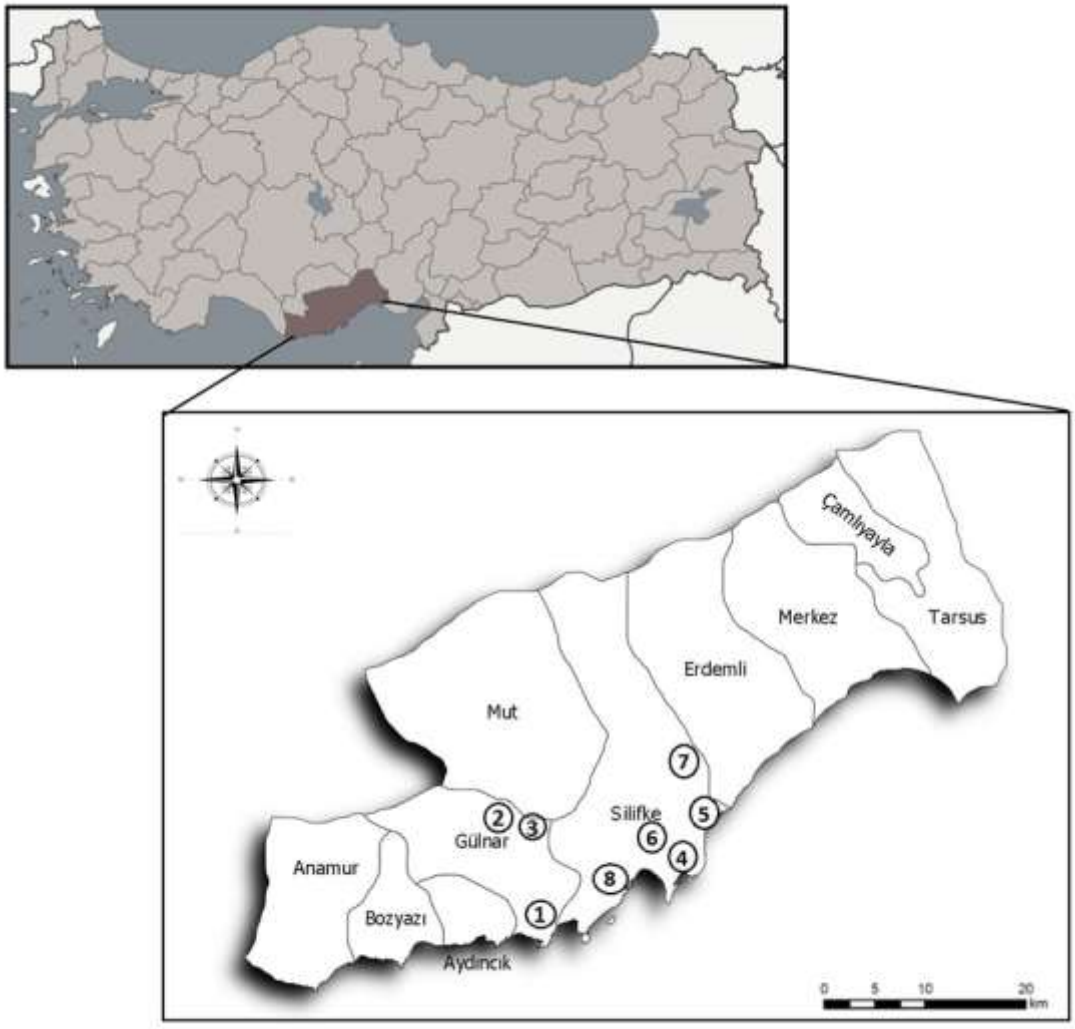

Figure 1. Study area location map 1. Çağlayan Waterfall, 2. Ilısu Waterfall, 3. Yerköprü Waterfall, 4. Göksu Delta, 5. Narlıkuyu, 6. Roma Ruins, 7. Şeytanderesi and Cambazlı Cistern, 8. Akdere Tahta Port. (Anonymous, 2023a; 2023b)

Şekil 1. Çalışma alanı konum haritası 1. Çağlayan Şelalesi, 2. Ilısu Şelalesi, 3. Yerköprü Şelalesi, 4. Göksu Deltası, 5. Narlıkuyu, 6. Roma Harabeleri, 7. Şeytanderesi ve Cambazlı Sarnıcı, 8. Akdere Tahta Limanı. (Anonim, 2023a; 2023b)

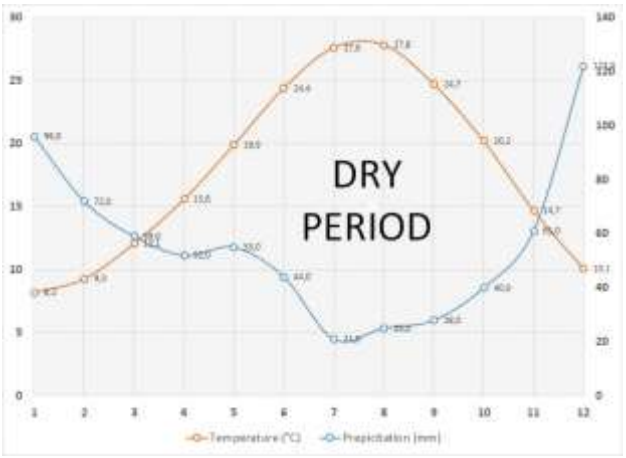

Figure 2. Ombro-thermic climate diagram of Silifke

Şekil 2. Silifke'nin ombro-termik iklim diyagramı

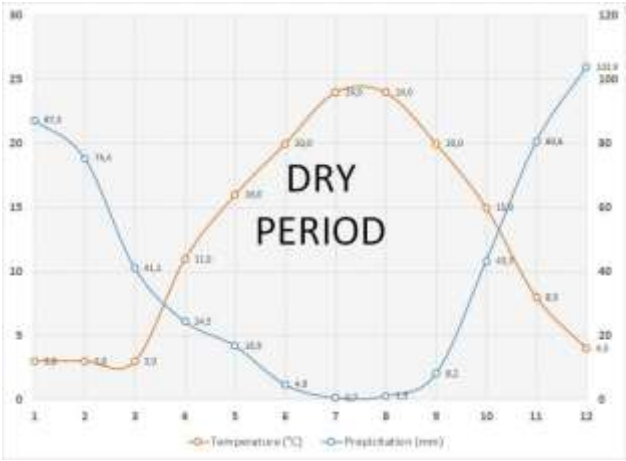

Figure 3. Ombro-thermic climate diagram of Gülnar

Şekil 3. Gülnar'ın ombro-termik iklim diyagramı

The climate characteristics of the Gülnar district

A Mediterranean climate prevails in the Gülnar district. In the higher elevations of the district, winters are cold and snowy, while summers are cool and rainy. Continental climate characteristics become more evident as we move towards the interior (Anonymous, 2023d). Throughout the year, temperatures range between -2 and 30°C, with daily average highs exceeding 26°C. The hottest month in Gülnar is July. The cold season begins at the end of November and lasts until mid-March, with January being the coldest month in Gülnar. The rainy season starts at the end of October and continues until the beginning of April (Anonymous, 2023d). The Ombro-thermic climate diagram for the Gülnar district is presented in Figure 3.

MATERIAL and METHOD

The data for this study includes plant samples gathered from the study areas between 2014 and 2016. The study areas where identified plant taxa were collected are depicted in Figure 1, and their general characteristics are provided in Table 1. Accordingly, the figures and tables refer to the following locations: (1) Çağlayan Waterfall, (2) Ilısu Waterfall, (3) Yerköprü Waterfall, (4) Göksu Delta, (5) Narlıkuyu, (6) Roman Ruins, (7) Şeytanderesi and Cambazlı Cistern, (8) Akdere Tahta Port. In the flora list (Appendix-1) and tables, the International Union for Conservation of Nature (IUCN) and the European Nature Information System (EUNIS) have been abbreviated.

Sampling Method

The study areas were in two different districts of Mersin province and were considered in the same study since their habitats and general vegetation structures were similar. The plants collected from the study area were dried, identified, and placed in the herbarium of Adıyaman University (Seçmen et al., 2000).

The Braun-Blanquet method was not used in the vegetation assessment of the study areas. As a result of the observations made and the evaluation of the plant samples collected, the general vegetation structure of the areas was determined based on observation. For Eunis habitat types, habitat types were observed in all study areas, and 1st and 2nd level habitat types were determined according to Anonymous (2024a).

Laboratory Analysis

The identification and diagnosis of the samples were based on The Flora of Turkey and the East Aegean Islands (Davis, 1965-1985; Davis et al., 1988; Güner et al., 2000; Güner & Ekim, 2014; Güner et al., 2018; 2022; 2023; 2024). Prof. Dr. Ahmet İlçim and Biologist Ergün Özuslu identified the plants that presented difficulties in diagnosis. Plant specimens are housed in the Adıyaman University Herbarium. Taxon names were assigned based on The International Plant Names Index (Anonymous, 2024b), The WFO PlantList (Anonymous, 2024c), Bizim Bitkiler (Anonymous, 2024d), and the Turkey Plant List Vascular Plants (Güner et al., 2012). The threat categories of endemic taxa were established based on Ekim et al. (2000), Güner et al. (2012), and the IUCN Red List (Anonymous, 2024e). Habitat types were determined by utilizing the EUNIS habitat type hierarchical view (Davies et al., 2004).

RESULTS and DISCUSSION

In the study areas, 214 distinct taxa (170 species, 29 subspecies, and 15 varieties) from 65 families and 173 genera were identified. Specifically, 31 taxa were identified at Çağlayan Waterfall, 32 at Ilısu Waterfall, 54 at Yer Köprü Waterfall, 62 at Göksu Delta, 47 at Narlıkuyu, 26 at Roman Ruins, and 63 at Akdere Tahta Port, while 84 taxa were determined at Şeytanderesi and Cambazlı Cistern. The distribution and percentages of identified taxa based on phytogeographic regions are presented in Table 2.

Table 2. Phytogeographic distributions and rates of taxa
Çizelge 2. Taksonların fitocoğrafi dağılımları ve oranları

Phytogeographic Region	Taxa Number	Rate (%)
Mediterranean	77	35.98
Euro-Siberian	11	5.14
Irano-Turanian	7	3.27
Widespread	45	21.02
Unknown	76	35.50

As a result of the separate evaluation of the study areas, a total of 31 taxa belonging to 23 families and 30 genera were identified at Çağlayan Waterfall. No taxa in the Natural Protected Area are considered as critical species (in

any endangered category). The surroundings of the waterfall have been converted into a garden, resulting in partial disruption of natural conditions. The area contains maquis and aquatic vegetation. The distribution of taxa across phytogeographic regions is as follows: 14 Mediterranean, 7 Widespread, 1 Irano-Turanian, and 9 taxa with unknown distribution. The taxa distribution across phytogeographic regions is as follows: 14 Mediterranean, 7 Widespread, 1 Irano-Turanian, and 9 taxa with an unidentified distribution. Regarding the number of taxa, the families are listed as follows: Fabaceae with 5, Asteraceae with 3, and Rosaceae with 2.

At Ilısu Waterfall, a total of 32 taxa belonging to 22 families and 31 genera were identified. The streambed surroundings consist of typical Mediterranean vegetation, comprising maquis elements and a mixture of *Pinus brutia* Ten. The waterfall, being relatively difficult to access and distant from residential areas, has preserved its natural state. The phytogeographic regions of the identified taxa include 13 Mediterranean, 7 Widespread, 1 Irano-Turanian, 1 Euro-Siberian, and 10 taxa with unknown distribution. The families are listed according to the number of species and subspecies as follows: Poaceae with 5, Lamiaceae with 3, and Brassicaceae with 2. No endemic taxa were found in the study area.

A total of 54 taxa from 37 families and 52 genera were identified at Yerköprü Waterfall. The research area and its surroundings are characterized by forested, shrubland, aquatic, and rocky habitats. The area hosts typical Mediterranean phytogeographic region plant species such as *Pinus brutia* Ten. Forest, *Quercus cocciferae* L., *Phillyrea latifolia* L., *Paliurus spina-christi* Mill., and *Asphodelus aestivus* Brot.. In the area, a limited amount of rocky and evergreen forest habitat, as well as streamside habitat, is observed. There are three endemic taxa evaluated as "critical species" in the area (Table 3). The dominant species in the area is *Pinus brutia* Ten. The phytogeographic regions of the identified taxa include 18 Mediterranean, 5 Widespread, 2 Irano-Turanian, 2 Euro-Siberian, and 28 taxa with unknown distribution. Families are listed in terms of the number of taxa as Asteraceae 7, Lamiaceae 3, and Fabaceae 3.

A total of 61 taxa from 30 families and 55 genera were identified at Göksu Delta. The phytogeographic regions of the identified taxa include 14 Mediterranean, 2 Euro-Siberian, 18 Widespread, and 27 taxa with unknown distribution. The Irano-Turanian element was not identified. The ranking of families based on the number of taxa is as follows: Asteraceae 8, Brassicaceae 8, Fabaceae 7, and Poaceae 4. No endemic taxa were found in the study area. There is a rare species, *Pancratium maritimum* L. in the area, and the IUCN danger category is Least Concern (LC) (Juan Vicedo, 2018) (Table 3).

In Narlıkuyu, there are 26 taxa belonging to 19 families and 25 genera. The plants are listed according to phytogeographic regions as 14 Mediterranean, 1 Euro-Siberian, and 11 taxa with unknown distribution. Widespread and Irano-Turanian element plants were not identified. Based on the number of taxa in the study area, the families are listed as Asteraceae 3, Asparagaceae 2, Fabaceae 2, and Lamiaceae 1. No endemic taxa were identified in the study area. There are two rare taxa in the area. These are *Dianthus polycladus* Boiss. and *Zygophyllum album* L.f. both taxa are in the Vulnerable (VU) category. (Table 3).

Table 3. Endemic and rare taxa found in the research area
Çizelge 3. Araştırma alanında bulunan endemik ve nadir taksonlar

Family	Taxa	Phytogeographic Region	IUCN Threat Category	Study Area
Asteraceae	*Centaurea chrysantha* Wagenitz	Mediterranean	End./EN	3
Boraginaceae	*Alkanna hispida* Hub.-Mor.	East Mediterranean	End./EN	5, 3
Lamiaceae	*Nepeta isaurica* Boiss. & Heldr. Ex Benth.	East Mediterranean.	End./LC	7
Lamiaceae	*Phlomis nissolii* L.	Irano-Turanian	End./LC	7
Lamiaceae	*Stachys rupestris* Montbret & Aucher ex Benth.	East Mediterranean	End./LC	7
Lamiaceae	*Stachys buttlerii* R.R. Mill	East Mediterranean	End./EN	7
Lamiaceae	*Sideritis rubriflora* Hub.-Mor.	Mediterranean	End./NT	8
Boraginaceae	*Paracaryum calycinum* Boiss. & Balansa	Irano-Turanian	End./LC	3
Caryophllaceae	*Dianthus polycladus* Boiss.	East Mediterranean	Rare/VU	5
Amaryllidaceae	*Pancratium maritimum* L.	Mediterranean	Rare/LC	4
Fabaceae	*Lathyrus variabilis* (Boiss. & Kotschy) Celak.	East Mediterranean	Rare/VU	7
Zygophyllaceae	*Zygophyllum album* L.f.	-	Rare/VU	5

End: Endemic, EN: Endangered, Vu: Vulnerable, NT: Near Threatened, LC: Least Concern.

At the Roman Ruins, there are 47 taxa belonging to 27 families and 45 genera. The phytogeographic regions of these taxa include 22 Mediterranean, 2 Irano-Turanian, 2 Euro-Siberian, 7 Widespread, and 14 taxa with unknown distribution. In terms of the number of taxa in the study area, the families are listed as Fabaceae 7, Asteraceae 6, and Asparagaceae 3. The only endemic taxon in the area is *Alkanna hispida* Hub.-Mor. (Table 3). It is categorized

as Endangered (EN) according to the IUCN threat category. Maquis vegetation was observed in the area.

At Şeytanderesi and Cambazlı Cistern, a total of 85 taxa belonging to 39 families and 75 genera were identified. The phytogeographic regions of these taxa include 39 Mediterranean, 16 Widespread, 4 Irano-Turanian, 4 Euro-Siberian, and 22 taxa with unknown distribution. Four endemic and one rare taxa were identified (Table 3). The families are organized in order of the number of taxa they contain, as follows: Asteraceae with 12, Lamiaceae with 11, and Fabaceae with 10. Maquis and rocky vegetation were observed in the area.

At Akdere Tahta Port, a total of 63 taxa belonging to 29 families and 59 genera were identified. The phytogeographic regions of these taxa include 29 Mediterranean, 11 Widespread, 2 Irano-Turanian, 2 Euro-Siberian, and 19 taxa with unknown distribution. In terms of the number of taxa in the study area, the families are listed as Fabaceae 11, Asteraceae 10, Lamiaceae 5, Brassicaceae 4, and Primulaceae 3. The endemic taxon *Sideritis rubriflora* Hub.-Mor. was identified in the area (Table 3). The area contains *Pinus brutia* Ten. and maquis vegetation. In this study, a total of 8 taxa (3.68%) of endemic plants were identified. The IUCN threat categories of endemic taxa were determined as follows: three taxa in Endangered (EN), one tax in Near Threatened (NT), and four taxa in Least Concern (LC). Additionally, four taxa that are not endemic but rare in the area were identified. One of these taxa was determined to be in the Endangered (EN) category, and three of them were determined to be in the "Vulnerable" (VU) category. This study identified eight endemic taxa and four rare taxa. The IUCN threat categories of endemic taxa according to the Türkiye Plant Red List (Ekim et al. 2000) and the areas where they were collected are provided in Table 3.

In examining the overall vegetation structure of the study areas, although this research does not include a detailed vegetation analysis, the taxa present in the field were identified as characteristic species of higher syntaxonomic units to outline the general vegetation structure of the area. This will aid in future, more detailed vegetation studies. In this context, at Çağlayan Waterfall, the *Cisto-Micromerietalia* Oberd (1954) alliance of the *Cisto-Micromerietea* Oberd (1954) class is defined by the characteristic species *Cistus creticus* L. The *Quercion ilicis* Br.-Bl. ex Molinier 1934 alliance within the *Quercetea ilicis* Br.-Bl. ex A. & O. Bolòs 1950 class is defined by the defining species *Quercus coccifera* L. and *Phillyrea latifolia* L.*,* whereas the *Olea-Ceratonion* Br.-Bl. Ex Guinochet et Drouineau 1944 and *Ceratonio-Pistacion lentisci* Zohary et Orshan 1959 (Synonym: *Ceratonio-Rhamnion oleoidis* Barbero et Quézel 1979) alliances are represented by the key species *Ceratonia siliqua* L.. The *Pistacio-Rhamnetalia* Rivas-Martinez 1974 order is represented by the characteristic species *Quercus coccifera* L., which is the characteristic species of the *Andrachno-Quercion cocciferae* Barbero et Quézel 1979 alliance. The characteristic species defining the Alneto-Ulmion Br.-Bl. et Tx. (1943) alliance of the Populetalia Albea Br.-Bl. ex Tchou 1948 order, within the *Querco-Fagetea* Quezel et al. 1980 class, is *Alnus glutinosa* subsp. *antitaurica* Yalt.. The *Quercetalia ilicis* order is represented by the characteristic species *Phillyrea latifolia* L. and *Laurus nobilis* L. while the *Cisto-Micromerietalia* order is represented by the characteristic species *Cistus creticus* L.*.* In the area, although the *Cisto-Micromerietea* class is defined by the characteristic species *Calicotome villosa* L. and the *Quercetea ilicis* class by *Smilax aspera* L., no characteristic species were identified for any order or alliance. The *Quercetea pubescentis* Quezel et al. 1978 class and the *Querco-Cedretalia libani* Barbero et al. 1974 order are represented by the characteristic species *Pinus brutia* Ten. in the area.

At Ilısu Waterfall, higher syntaxonomic units representing the general vegetation structure of the area have been identified. The *Cisto-Micromerietalia* order of the *Cisto-Micromerietea* class is shown by the characteristic species *Cistus creticus* L. of the *Cistion Orientale* alliance. The *Quercetalia ilicis* order of the *Quercetea ilicis* class is described by the characteristic species *Quercus coccifera* L. and *Phillyrea latifolia* L. of the *Quercion ilicis* alliance. Additionally, the *Pistacio-Rhamnetalia* order is described by the characteristic species *Quercus coccifera*, which is the characteristic species of the *Andrachno-Quercion Cocaterae* alliance. The *Quercetalia ilicis* order is described by the characteristic species *Phillyrea latifolia* L., the Cisto-Micromerietalia order is represented by the characteristic species *Cistus creticus*, and the *Querco-Cedretalia libani* order is described by the characteristic species *Pinus brutia* Ten. In the area, although the *Cisto-Micromerietea* class is defined by the characteristic species *Cistus creticus* L. and *Calicotome villosa* (Poir.) Link., and the *Quercetalia ilicis* class is represented by the characteristic species *Hedera helix* L., no characteristic species for any order or alliance was identified. The *Quercetea pubescentis* (Oberd, 1948), Doing Kraft, 1955 class, and the *Querco-Cedretalia libani* order are defined by the characteristic species *Pinus brutia* Ten. in the area.

At Yerköprü Waterfall, higher syntaxonomic units representing the overall plant composition of the region have been identified. The Cisto-Micromerietalia order of the *Cisto-Micromerietea* class is described by the characteristic species *Cistus creticus* L. of the Cistion Orientale alliance. The *Quercetalia ilicis* order of the *Quercetea ilicis*class is described by the characteristic species *Quercus coccifera*, *Jasminum fruticans* L., and *Phillyrea latifolia* of the *Quercion ilicis* alliance. The *Olea-Ceratinion* alliance is described by the characteristic species *Capparis spinosa* L. and *Olea europaea* L.. The Pistacio-Rhamnetalia order is defined by the characteristic species *Quercus coccifera*

L. and *Arbutus andrachne* L. of the *Andrachno-Quercion cocaterae* alliance, and the *Querco-Juniperion excelsae* Barbero and Quézel 1979 alliance is represented by the characteristic species *Punica granatum* L.. The *Populetalia albea* order of the *Querco-Fagetea* class is defined by the characteristic species *Salix alba* L. of the *Populion albae* Br.-Bl. ex Tchou 1949 alliance, and the *Querco-Cedretalia libani* order of the *Quercetea pubescentis* class is represented by the characteristic species *Ostrya carpinifolia* Scop. of the *Ostryo-Quercion* Quézel, Barbero & Akman 1978 alliance. The *Quercetalia ilicis* order is represented by the characteristic species *Phillyrea latifolia* L.. The *Pistacio-Rhamnetalia* order is represented by the characteristic species *Cercis siliquastrum* and *Laurus nobilis* L., the *Cisto-Micromerietalia* order is described by the characteristic species *Cistus creticus* L., and the *Querco-Cedretalia libani* order is defined by the characteristic species *Pinus brutia*. In the area, although the *Cisto-Micromerietea* class is represented by the characteristic species *Calicotome villosa* (Poir.) Link. *Cistus creticus*, and *Micromeria myrtifolia* Boiss. & Hohen, the *Quercetea ilicis* class is represented by the characteristic species *Hedera helix* L., and the *Quercetea ilicis* class is represented by the characteristic species *Geranium purpureum* Vill.., no characteristic species for any order or alliance was identified. The *Quercetea pubescentis* class and the *Querco-Cedretalia libani* order are described by the characteristic species *Pinus brutia* Ten. in the area.

In the Göksu Delta, the *Cisto-Micromerietea* class is described by the characteristic species *Sarcopoterium spinosum* of the *Cisto-Micromerietalia* order, and the *Quercetea ilicis* class is defined by the characteristic species *Myrtus communis* L. of the *Pistacio-Rhamnetalia* order. The Quercetalia ilicis order, represented by the Olea-Ceratinion alliance, is also represented by the characteristic species *Myrtus communis* L.

In Narlıkuyu, the *Cisto-Micromerietea* class is represented by the characteristic species *Sarcopoterium spinosum* of the *Cisto-Micromerietalia* order. The *Querceta ilicis* class is described by *Pistacia terebinthus* L. and *Quercus coccifera* of the Pistacio-Rhamnetalia order. The *Querco-Cedretalia libani* order, belonging to the *Quercetea pubescentis* class, is defined by *Pinus brutia*. The Cisto-Micromerietea class is described by *Calicotome villosa* L., while the *Quercetae ilicis* class is represented by the key species *Quercus coccifera, Asparagus acutifolius, Pistacia terebinthus* L., *Olea europaea* L., and *Smilax aspera* L.. The *Quercion ilicis* alliance, representing the *Quercetalia ilicis* order of the *Quercetea ilicis* class, is characterized by species such as *Phillyrea latifolia* L., *Quercus coccifera* L., *Asparagus acutifolius* L., and *Pistacia terebinthus* L.. The *Olea-Ceratinion* alliance is described by species such as *Ceratonia siliqua* L., *Capparis spinosa* L., and *Olea europaea* L.. The *Quercion calliprini* (Zohary 1962) Quézel, Barbéro and Akman 1978 alliance is defined by the key species *Pistacia terebinthus,* belonging to the same *Quercetea ilicis* class. The *Querco-Fagetea* class is represented by the key species *Smilax excelsa* L., belonging to the *Castaneo sativae Carpinion orientalis* Quézel, Barbéro and Akman 1980 alliance of the *Rhododentro-Fagetalia orientalis* Quézel, Barbéro and Akman 1980 order.

In the Roman ruins, the *Cisto-Micromerietalia* order of the *Cisto-Micromerietea* class is defined by the character species *Cistus creticus* belonging to the *Cistion Orientale* alliance. The *Quercetalia ilicis* order of the *Quercetea ilicis* class is defined by the character species *Laurus nobilis*. The *Pistacio-Rhamnetalia* order is represented by the character species *Pistacia terebinthus* and *Clematis cirrhosa* L. The *Querco-Cedretalia libani* order of the *Quercetea pubescentis* class is represented by the character species *Quercus cerris* L. The *Cisto-Micromerietea* class is represented by the key species *Micromeria myrtifolia*. The *Quercetea ilicis* class is represented by the character species *Laurus nobilis*, *Quercus coccifera*, *Asparagus acutifolius*, *Pistacia terebinthus*, *Jasminum fruticans*, and *Olea europaea*. The *Quercion ilicis* alliance, belonging to the *Quercetalia ilicis* order of the *Quercetea ilicis* class, is represented by the character species *Quercus coccifera*, *Asparagus acutifolius*, and *Pistacia terebinthus*. The *Olea-Ceratinion* alliance is represented by the character species *Ceratonia siliqua*, *Clematis cirrhosa*, and *Olea europaea*. The *Quercion Calliprini* alliance is represented by the character species *Pistacia terebinthus.* The Pistacio-Rhamnetalia order, within the *Andrachno-Quercion Cocaterae* alliance, is represented by the character species *Quercus coccifera*. It has been established that the Querco-Cedretalia Libani order, which belongs to the *Quercetea pubescentis* class, is characterized by the defining species *Quercus cerris*, also serving as the characteristic species of both the *Ostryyo-Quercion* Quézel, Barbéro and Akman 1978 and *Geranio-Cedrion* Barbéro and Akman 1978 alliances. Furthermore, it has been determined that the *Querco cerridis-Carpinetalia orientalis* Quézel, Barbéro and Akman 1980 order is represented by Quercus cerris, the defining species, which also serves as the characteristic species of the *Quercion frainetto* Horvat 1954 alliance.

In Şeytanderesi and Cambazlı Cistern, the character species representing the *Cisto-Micromerietea* class are *Micromeria myrtifolia* and *Calicotome villosa* (Poir.) Link. It has been determined that the *Cisto-Micromerietalia* order of the *Cisto-Micromerietea* class is described by the key species *Cistus creticus* L. and *Sarcopoterium spinosum* (L..) Spach.. The *Querco-Cedretalia libani* order, belonging to the *Quercetea pubescentis* class, is represented by the character species *Pinus brutia* Ten.. The Quercetalia ilicis order of the *Quercetea ilicis* class is represented by the character species *Laurus nobilis* L. and *Phillyrea latifolia* L.. The *Pistacio-Rhamnetalia* order is represented by the character species *Pistacia terebinthus* and *Myrtus communis* L. It has been determined that the *Cisto-Micromerietalia* order of the *Cisto-Micromerietea* class is represented by the character species *Cistus*

creticus L.. The *Quercetea ilicis* class is represented by the character species *Jasminum fruticans* L., *Laurus nobilis* L., *Quercus coccifera* L., *Arbutus unedo* L., *Pistacia terebinthus* L., *Olea europaea* L., and *Smilax aspera* L.. It has been observed that the *Quercetalia ilicis* order of the *Quercetea ilicis* class is represented by the character species *Arbutus unedo* L., *Quercus coccifera* L., *Phillyrea latifolia* L., and *Pistacia terebinthus* L., which are the character species of the *Quercion ilicis* alliance. The Quercion Calliprini alliance is defined by the character species *Pistacia terebinthus* L.. The *Olea-Ceratinion* alliance is represented by the character species *Olea europaea* L., *Myrtus communis* L., *Capparis spinosa* L., and *Ceratonia siliqua* L.. The *Pistacio-Rhamnetalia* order of the *Quercetea ilicis* class, within the *Andrachno-Quercion Cocaterae* alliance, is represented by the character species *Quercus coccifera* and *Arbutus andrachne*. It has been determined that the *Populetalia Albea* order of the *Querco-Fagetea* class is represented by the character species *Salix alba* L. of the Populion albea alliance.

In Akdere Tahta Port, it has been determined that the *Cisto-Micromerietalia* Oberd (1954) order of the *Cisto-Micromerietea* Oberd (1954) class is represented by the character species *Cistus creticus* L. and *Sarcopoterium spinosum* L.. Additionally, it is represented by *Pinus brutia* Ten, which belongs to the *Querco-Cedretalia libani* order of the *Quercetea pubescentis* class. The *Cisto-Micromerietalia* order of the *Cisto-Micromerietea* class is represented by the character species *Cistus creticus L.*, which belongs to the *Cistion Orientale* alliance. The Cisto-Micromerietea class is described by the character species *Cistus creticus* L., *Calicotome villosa* L., and *Micromeria myrtifolia* L.. The *Quercetea ilicis* Br.-Bl. ex A. & O. Bolòs 1950 class is represented by the character species *Phillyrea latifolia* L., *Pistacia terebinthus* L., and *Olea europaea* L.. The *Querceta pubescentis* (Oberd, 1948), Doing Kraft, 1955 class is represented by the character species *Securigera varia*(L.) Lassen *(syn. Coronilla varia* L.*)*. Lastly, the *Querco-Fagetea* class is represented by the character species *Hedera helix*. The *Quercion ilicis* Br.-Bl. ex Molinier 1934 em. Rivas-Martínez 1975 alliance of the *Quercetalia ilicis* Br.-Bl. ex Molinier 1934 em. Rivas-Martínez 1975 order, belonging to the *Quercetea ilicis* class, is represented by the character species *Phillyrea latifolia* L. and *Pistacia terebinthus* L.. The *Quercion calliprini* alliance is represented by the character species *Pistacia terebinthus* L. and *Cyclamen persicum* Mill. The *Olea-Ceratinion* alliance is represented by the character species *Olea europaea* L., *Ceratonia siliqua* L., and *Capparis spinosa* L.. Additionally, the *Ceratonio-Rhamnion Oleoides* alliance is represented by the character species *Ceratonia siliqua* L.. It has been determined that the Quercetalia ilicis order of the Quercetea ilicis class is represented by the character species *Phillyrea latifolia* L.. The *Pistacio-Rhamnetalia* order is represented by the character species *Pistacia terebinthus* L. and *Capparis spinosa* L.. The *Quercetea pubescentis* class is defined by *Coronilla varia* in the *Querco Cerridis-Carpinetalia Orientalis* order and the *Quercion anatolicae* Akman, Barbéro and Quézel 1979 alliance. Additionally, *Securigera varia* (L.) Lassen *(syn. Coronilla varia* L.*)* is represented in the *Ostriyo-Quercion* alliance of the *Querco-Cedretalia libani* order and in the *Quercus cerris* character species of the same order. Furthermore, the *Quercion frainetto* alliance of the *Querco Cerridis-Carpinetalia orientalis* order is represented by the character species *Quercus cerris* L..

When the study areas were compared among themselves in terms of syntaxonomic superunits and character species; Cistion orientale, Quercion ilicis and Querco-Cedretalia libani are similar in these three areas, and the syntaxonomic superunits in Çağlayan, Ilısu and Yerköprü waterfalls are similar to each other, It was determined that the syntaxonomic superunits of Şeytanderesi and Cambazlı Cistern, and Akdere Tahta Port were similar, and that Cistion orientale, Quercion ilicis, Olea-Ceratinion, Quercion Calliprini and Andrachno-Quercion Cocaterae were found in the study areas.

It was observed that the vegetation structure and syntaxonomic superunits of Göksu Delta, Narlıkuyu, and Roman Ruins are different. It is thought that this is due to the differences in habitat, distance between the study areas, geographical structure and altitude.

As a result of the comparison of Narlıkuyu and Roman Ruins, it was observed that these two areas were similar to each other and the common upper units in both areas were Cistion orientale, Olea-Ceratinion, and Quercion Calliprini. It is thought that this situation may be due to the same geographical structure, habitat, and climate characteristics of both study areas.

Göksu Delta, on the other hand, showed a different vegetation structure from the other areas due to its wetland characteristics.

Due to the detailed study of the vegetation structure of this study areas not being conducted with the Braun-Blanquet method (Braun-Blanquet, 1932), plant communities have not been established. Therefore, there is no opportunity for comparison with similar vegetation studies in the nearby surroundings.

As a result of the work carried out on EUNIS in Türkiye between 2011-2020, a total of 140 EUNIS habitat types were identified in the 3rd Level. In addition, it has been determined that there are 26 new habitat types that are not defined in EUNIS, without any level restrictions (Çakmak & Aytaç, 2021). Tak & Tel (2024) identified 37 habitat types belonging to the European Nature Information System (EUNIS) in Akdağ (Malatya).

Within the scope of the National Biodiversity Inventory and Monitoring Project, 10 basic habitat types were identified across the provinces where the project was completed, and a total of 257 habitat records were given from 46 different habitat types across 25 provinces (Terzioğlu et al., 2015).

The study conducted by Çakmak & Aytaç (2021) in Türkiye, it was determined that out of the 326 third-level habitat types in the EUNIS habitat classification, 138 are found in Turkey. In this study, 22 habitat types at Level 2 were identified related to 9 habitat types at Level 1 (Çakmak & Aytaç, 2021). Turkey is a country with high biological and habitat diversity (Kanca et al., 2019). Therefore, in the future, data obtained from determining all habitat types in Turkey and establishing geographic information systems can be utilized by various disciplines. Many countries have completed the EUNIS habitat classification and EUNIS habitat types of nearly 30 provinces in Turkey have been determined (Terzioğlu et al., 2015; Kanca et al., 2019). All of these provinces have inland water habitats, grasslands and non-grass herbaceous habitats, forests, agricultural areas and man-made habitats (Terzioğlu et al., 2015). This situation will ensure that Turkey's habitat richness is known, utilized properly and EUNIS habitat types are obtained for the whole of Turkey. When the literature studies are examined, it is seen that marine habitats, marshes and peatland habitats are represented at very low levels, while heathland, scrubland and tundra are highly represented (Terzioglu et al., 2015; Kanca et al., 2019; Çakmak & Aytaç, 2021). It is thought that this is due to the fact that most of the studies were conducted in terrestrial areas and the data on heathland, shrubland and tundra are high. Since terrestrial habitats are mostly in this study, the habitat types of the study are similar to the study of Terzioğlu et al. (2015).

According to Terzioglu et al. (2015), the habitats found in all study provinces in Turkey are C (Inland water habitats), E (Grasslands and non-grass herbaceous habitats), G (Forests), I (Agricultural areas) and J (Man-made habitats). Of these habitats, J (Man-made habitats) and G (Forests) are the most densely populated habitats. The same results were obtaıned in thıs study.When analyzing the EUNIS habitat types in the study area, the classification of habitat types in the research areas based on the EUNIS habitat categorization system (Davies et al., 2004; Anonymous, 2024a) revealed the presence of 22 habitat types at level 2 across 9 habitat types at level 1 (Table 4). When individually evaluated in the study areas: At Çağlayan Waterfall, 6 habitat types at level 1 and 11 habitat types at level 2. Ilısu Waterfall exhibited 5 habitat types at level 1 and 10 habitat types at level 2 Yerköprü Waterfall demonstrated 5 habitat types at level 1 and 9 habitat types at level 2. Göksu Delta displayed 7 habitat types at level 1 and 16 habitat types at level 2. Narlıkuyu showcased 5 habitat types at level 1 and 9 habitat types at level 2. Roman Ruins presented 2 habitat types at level 1 and 4 habitat types at level 2. Şeytanderesi and Cambazlı Cistern featured 4 habitat types at level 1 and 9 habitat types at level 2 Akdere Tahta Port revealed 5 habitat types at level 1 and 13 habitat types at level 2 These identifications were based on classification according to the EUNIS habitat classification system.

A total of 214 taxa (170 species, 29 subspecies and 15 varieties) from 65 families and 173 genera have been identified in this study. The phytogeographic regions are distributed as follows; 11 taxa are of the Euro-Siberian region (5.14%), 7 taxa belong to the Irano-Turanian region (3.27%), 45 taxa are of the Widespread (21.02%), 76 taxa have an unknown phytogeographic region (35.50%), and 77 taxa represent the Mediterranean element (35.98%). The prevalence of species from the Mediterranean phytogeographic region is due to the fact that the study areas are situated within the Mediterranean region. In the study areas, Asteraceae is the largest family by the number of taxa, particularly in Yerköprü Waterfall, Göksu Delta, Narlıkuyu, and Şeytanderesi and Cambazlı Cistern; Fabaceae in Çağlayan Waterfall, Roman Ruins, and Akdere Tahta Port; and Poaceae in Ilısu Waterfall. In the Flora of Turkey, Poaceae is the family with the greatest number of taxa (Davis, 1965-1985; Davis et al., 1988). Nevertheless, it has been noted that in the study areas, Asteraceae, Fabaceae, and Lamiaceae are the families with the greatest number of taxa. This result is anticipated given the study area's location in the Mediterranean region.

Eight endemic taxa were identified in the research area. The endemism rate is 3.68%. Compared to studies conducted in neighboring regions, the highest endemism rate was reported by Tel et al. (2018) with 18.60%, while the lowest endemism rate was found in the floristic study of Tel et al. (2022a) with 1.30%. The high endemism rate reported in the studies by Tel et al. (2018) can be explained by the region's distinct microclimate characteristics, elevation, and habitat diversity. On the other hand, the lowest endemism rate in the study by Tel et al. (2022a) can be attributed to the presence of wetland habitats in the area, as well as the vegetation structure consisting of dune and halophyte plants (Table 5).

When the studies conducted on the natural sites in the research area and its surroundings are compared based on the phytogeographic regions of taxa, it is observed that, except Ortaç & Tel (2021), all other areas exhibit a higher presence of Mediterranean phytogeographic region elements (Aksay, 2006; Yıldıztugay & Küçüködük, 2010; Tezcan, 1995; Tel et al., 2018; Tel et al., 2019; Tel et al., 2021; Tel et al., 2022a; 2022b; Tel et al., 2023). This result is an expected outcome due to the research areas being in the Mediterranean area (Table 5).

Table 4. EUNIS Habitat classification types and codes in the study areas
Çizelge 4. Çalışma alanlarındaki EUNIS Habitat sınıflandırma tipleri ve kodları

Study area	EUNIS Classification Code	Habitat Name	EUNIS sub-classification code and description
Çağlayan Waterfall	C	Inland surface waters	C2: Surface running waters (Running waters, including springs, streams and temporary water courses)
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	G	Woodland, forest and other wooded land	G3.75: Pinus brutia forests
	H	Inland areas with minimal or absent vegetation	H3: Inland cliffs, rock pavements and outcrops H3.4: Wet inland cliffs
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2: Mixed farming of market gardens and horticultural crops
	J	Constructed, industrial and other artificial habitats	J1.2: Housing structures in villages and urban outskirts
Ilısu Waterfall	C	Inland surface waters	C2: Surface running waters (Running waters, including springs, streams and temporary water courses)
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	G	Woodland, forest and other wooded land	G3.75: Pinus brutia forests
	H	Inland areas with minimal or absent vegetation	H3: Inland cliffs, rock pavements and outcrops H3.4: Wet inland cliffs
	J	Constructed, industrial and other artificial habitats	J1.2: Residential buildings of villages and urban peripheries
Yerköprü Waterfall	C	Inland surface waters	C2: Surface running waters (Running waters, including springs, streams and temporary water courses)
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	G	Woodland, forest and other wooded land	G3.75: Pinus brutia forests
	H	Inland areas with minimal or absent vegetation	H3: Inland cliffs, rock pavements and outcrops H3.4: Wet inland cliffs
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2: Mixed crops of market gardens and horticulture
Göksu Delta	B	Coastal habitats	B1.2: Sand beaches above the driftline B1.3: Shifting coastal dunes B1.5: Coastal dune heaths
	C	Inland surface waters	C1 Surface standing waters C2: Surface running waters C2.4: Tidal rivers, upstream from the estuary C3.1: Diverse helophyte communities
	D	Mires, bogs and fens	D2: Valley mires, poor fens and transition mires
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	G	Forests, woodlands, and other wooded areas	G3.75: Pinus brutia forests
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2: Mixed crops of market gardens and horticulture
	J	Constructed, industrial and other artificial habitats	J1.2: Residential buildings of villages and urban peripheries
Narlıkuyu	B	Coastal habitats	B1.2:Sand beaches above the driftline B1.3: Shifting coastal dunes B1.5: Coastal dune heaths

	A	Marine habitats	A1.1: High energy littoral rock
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub
	G	Woodland, forest and other wooded land	G3.75: Pinus brutia forests
	J	Constructed, industrial and other artificial habitats	J1.2: Residential buildings of villages and urban peripheries
Roma Ruins	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2:Mixed crops of market gardens and horticulture
Şeytanderesi and Cambazlı Cistern	C	Inland surface waters	C2: Flowing surface waters (including springs, streams, and seasonal waterways)
	H	Inland areas with minimal or absent vegetation	H3: Inland cliffs, rock pavements and outcrops H3.5: Almost bare rock pavements, including limestone pavements
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2: Mixed crops of market gardens and horticulture
Akdere Tahta Port	B	Coastal habitats	B1.2: Sand beaches above the driftline B1.3: Shifting coastal dunes B1.5: Coastal dune heaths B2.1: Shingle beach driftlines
	F	Heathland, scrub and tundra	F5: Maquis, arborescent matorral and thermo-Mediterranean brushes F5.2: Maquis; F5.5: Thermo-Mediterranean scrub F6.21: Eastern Quercus coccifera garrigues F9.1: Riverine scrub
	G	Forests, woodlands, and other wooded areas	G3.75: Pinus brutia forests
	H	Inland areas with minimal or absent vegetation	H3: Inland cliffs, rock pavements and outcrops H3.5: Almost bare rock pavements, including limestone pavements H3.4: Wet inland cliffs
	I	Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2: Mixed crops of market gardens and horticulture

Table 5. Distribution rates of taxa determined in studies in and around the research area according to phytogeographic regions (%)

Çizelge 5. Araştırma alanı ve çevresinde yapılan çalışmalarda tespit edilen taksonların fitocoğrafik bölgelere göre dağılım oranları (%)

Studies	Mediterranean Element	Euro-Siberian Element	Irano-Turanian Element	Widespread and Unknown	Endemism Rate
Research Area	35.98	5.14	3.27	56.52	3.68
Tezcan (1995)	40.60	2.00	3.50	54.13	7.01
Aksay (2006)	26.48	7.33	13.90	52.31	5.29
Yıldıztugay & Küçüködük (2010)	35.10	3.10	4.90	56.90	3.70
Tel et al (2018)	23.20	6.90	10.50	59.30	18.60
Tel et al. (2019)	38.40	6.10	4.30	51.20	9.10
Tel et al. (2021)	36.80	3.90	4.50	54.80	4.50
Ortaç & Tel (2021)	14.50	6.10	29.60	49.80	4.04
Tel et al. (2022b)	48.69	1.73	6.08	43.47	2.60
Tel et al. (2022a)	34.60	4.50	5.00	55.90	1.30
Tel et al. (2023)	56.07	0.00	0.00	43.93	1.51
Tel et al. (2024)	29.32	0.00	7.01	63.15	14.03

Comparing research studies conducted in the study area and surrounding regions based on the families with the highest number of taxa, it is observed that in the works of Yıldıztugay & Küçüködük (2010), Ortaç & Tel (2021), Tel et al. (2018; 2022a) and Tezcan (1995) Asteraceae family is in the first place. In contrast, this study, as well as the works of Aksay (2006), Tel et al. (2019), Tel et al. (2021; 2022b), and Tel et al. (2023), indicated that Fabaceae

family holds the first place. It is thought to result from the fact that the Asteraceae and Fabaceae families, which contain the most taxa, also have a high ranking in terms of the total number of taxa in the Flora of Turkey.(Davis, 1965-1985; Davis et al. 1988). This is attributed to their strong generative reproductive capacity (Table 6).

Table 6. Families containing the most taxa in studies in the study area and nearby areas
Çizelge 6. Çalışma alanı ve yakın bölgelerdeki çalışmalarda en fazla takson içeren familyalar

Studies	Fabaceae	Lamiaceae	Asteraceae
Research area	26	16	28
Tezcan (1995)	25	20	39
Aksay (2006)	18	17	17
Yıldıztugay & Küçüködük (2010)	35	15	40
Tel et al (2018)	5	4	13
Tel et al. (2019)	26	13	13
Tel et al. (2021)	22	15	13
Ortaç & Tel (2021)	27	27	43
Tel et al. (2022b)	32	12	4
Tel et al. (2022a)	15	10	33
Tel et al. (2023)	12	6	9
Tel et al. (2024)	7	10	5

When the research areas were compared among themselves, it was seen that the highest number of endemic taxa was found in Şeytanderesi and Cambazlı Cistern, while there were no endemic taxa in Çağlayan Waterfall, Ilısu Waterfall, Göksu Delta and Narlıkuyu. This may be due to the different climate, altitude, soil structure and habitat of Şeytanderesi and Cambazlı Cistern. When the identified taxa in the study areas are compared according to phytogeographic regions, it is observed that elements from the Mediterranean phytogeographic area are common in all areas. This can be attributed to the fact that the study areas are situated within the Mediterranean phytogeographic region.

Regarding the general vegetation structure of the area, plant communities have not been established, as the vegetation structure of the study areas was not analyzed in detail using the Braun-Blanquet method. When compared with some phytosociological studies conducted in nearby and distant regions, it was observed that the study area is similar to the *Quercetea ilicis, Quercetea pubescentis* Doing-Kraft ex Scamoni et Passarge 1959 classes, and *Quercetalia ilicis* order in Tel et al. (2010)'s study, but no similarity was found in lower syntaxonomic units (Tel et al., 2010; Tel & Tak, 2012; Tel & Eğilmez, 2015). The vegetation structure of the study area has been determined to show similarities with the *Quercetea ilicis*, *Quercetea pubescentis* classes, *Quercetalia ilicis*, and *Querco-Cedretalia libani* Barbero et al. 1974 orders as identified in the study by Uçar (2002). When compared with the study by Aksay (2006), it was observed that the vegetation structure of the study area shows similarity with the *Quercetea ilicis* class, but no similarity was found in lower syntaxonomic units. Additionally, in the study by Tel & Tak (2021), while there is similarity with the *Quercetea pubescentis* class, no similarity was found in the lower subunits. The reason for this could be the differences in phytogeographic regions, climate, elevation, and soil structure of the study areas. The evaluation indicates similarity at the class level but differences at the order and alliance levels. This is thought to be due to the diversity of habitat types.

As a result of human activities, plant and animal species can often be adversely affected. This situation can frequently conflict with biodiversity conservation efforts. Therefore, it is essential to preserve habitat diversity, which is one of the key factors enhancing biological diversity (Arslan et al., 2012). This can only be achieved through the establishment of a habitat classification system and databases that ensure the efficient utilization of resources. The study conducted by Çakmak & Aytaç (2020) in Türkiye, it was determined that out of the 326 third-level habitat types in the EUNIS habitat classification, 138 are found in Turkey. In this study, 22 habitat types at level 2 were identified related to 9 habitat types at level 1. Turkey is a country with high biological and habitat diversity (Kanca et al., 2019). Therefore, in the future, data obtained from determining all habitat types in Turkey and establishing geographic information systems can be utilized by various disciplines.

CONCLUSION

In conclusion, 214 taxa (170 species, 29 subspecies and 15 varieties) belonging to 65 families and 173 genera were identified in this study conducted to determine the floristic and general vegetation structure of the study areas in the Mediterranean region. When the distribution of taxa according to phytogeographic regions was analyzed, it was seen that the Mediterranean phytogeographic region elements ranked first with a rate of 35.98%. 170 species, 29 subspecies and 15 varieties) In this study, 22 level 2 habitat types were identified related to 9 level 1 habitats. As a result of the classification of habitat types in the research areas according to the EUNIS habitat classification

types when individually evaluated in the study areas: At Çağlayan Waterfall, 6 level 1 habitats and 11 level 2 habitat types were identified. Ilısu Waterfall exhibited 5 level 1 habitats and 10 level 2 habitat types. Yerköprü Waterfall demonstrated 5 level 1 habitats and 9 level 2 habitat types. Göksu Delta displayed 7 level 1 habitats and 16 level 2 habitat types. Narlıkuyu showcased 5 level 1 habitats and 9 level 2 habitat types. Roman Ruins presented 2 level 1 habitats and 4 level 2habitat types. Şeytanderesi and Cambazlı Cistern featured 4 level 1 habitats and 9 level 2 habitat types. Akdere Tahta Port revealed 5 level 1 habitats and 13 level 2habitat types.

Although this study does not offer an in-depth vegetation analysis, the taxa observed in the field were recognized as characteristic species of higher syntaxonomic units to outline the general vegetation structure of the area. Accordingly, at Çağlayan Waterfall, the *Cisto-Micromerietalia* alliance of the *Cisto-Micromerietea* class is defined by the characteristic species *Cistus creticus*. The *Quercion ilicis* alliance of the *Quercetea ilicis* class is represented by the characteristic species *Quercus coccifera* and *Phillyrea latifolia*, while the *Olea-Ceratonion* and *Ceratonio-Rhamnion Oleoides* alliances are represented by the characteristic species *Ceratonia siliqua.* The *Pistacio-Rhamnetalia* order is represented by the characteristic species *Quercus coccifera*, which is the characteristic species of the *Andrachno-Quercion Cocciferae* alliance.The *Alneto-Ulmion* alliance of the *Populetalia Albea* order, belonging to the *Querco-Fagetea* class, is represented by the characteristic species *Alnus glutinosa* subsp. *antitaurica*. The *Quercetalia ilicis* order is represented by the characteristic species *Phillyrea latifolia* and *Laurus nobilis* while the *Cisto-Micromerietalia* order is represented by the characteristic species *Cistus creticus.* In the area, although the *Cisto-Micromerietea* class is represented by the characteristic species *Calicotome villosa*, and the *Quercetea ilicis* class is described by the characteristic species *Smilax aspera*, no characteristic species for any order or alliance was identified. The *Quercetea pubescentis* class and the *Querco-Cedretalia Libani* order are defined by the characteristic species *Pinus brutia* in the area.

ACKNOWLEDGMENTS

A part of this product was prepared from the final reports of İshak ORTAÇ's master's thesis, BAP project numbered FEFYL-2016-0010 of Adıyaman University and Ecological Based Scientific Research Project numbered 2014/151078 of the Ministry of Environment and Urbanization of the Republic of Turkey. We would like to thank the two institutions that provided financial support.

Contribution Rate Statement Summary of Researchers

The authors declare that they have contributed equally to the article.

Conflict of Interest

The authors declare that there is no conflict of interest between them.

REFERENCES

Aksay, C. S. (2006). *Pusat Dağı flora ve vejetasyonu (Silifke-Mersin-Türkiye) (Tez no 180747).* [Yüksek Lisans Tezi, Ankara Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Anonymous, (1983). *Law on the protection of cultural and natural assets.* Official Newspaper. 23.07.1983, Issue: 18113.

Anonymous, (2016). *Final Report of the Ecological Based Scientific Research Project of Natural Protected Areas of Adana, Hatay, Mersin, Kahramanmaraş, Osmaniye, Gaziantep, and Kilis Provinces*. T.R. Ministry of Environment and Urbanization Publication, Ankara.

Anonymus, (2022). *Regulation on procedures and principles for identification, registration and approval of protected Areas*. Official Newspaper. 19.07.2012, Issue: 28358.

Anonymous, (2023a, November 6). *Mersin Province Map.* https://tr.wikipedia.org/wiki/Mersin#/media/Dosya:LatransTurkey_location_Mersin.svg

Anonymous, (2023b, November 6). *Silifke district location map.* https://paintmaps.com/tr/bos-haritalar/58c/ornekler

Anonymous, (2023c, November 6). *Silifke district temperature and precipitation data*. https://tr.climate-data.org/asya/tuerkiye/mersin/silifke-18655/#climate-table

Anonymous, (2023d, November 6). *Gülnar district temperature and precipitation data.* https://tr.weatherspark.com/y/97710/G%C3%BClnar-T%C3%BCrkiye-Ortalama-Hava-Durumu-Y%C4%B1l-Boyunca

Anonymous, (2024a, November 19). *Eunis habitat type hierarchical view.* https://eunis.eea.europa.eu

Anonymous, (2024b, November 19). *Bitki isimleri kontrol.* https://www.ipni.org

Anonymous, (2024c, November 19). *Bitki isimleri kontrol.* https://wfoplantlist.org/

Anonymous, (2024d, November 19). *Bitki isimleri kontrol.* www.bizimbitkiler.org

Anonymous, (2024e, November 19). *Tehlike kategorileri*. https://www.iucnredlist.org

Arslan, M. & Arslantürk, N. (2009). Avrupa doğa bilgi sistemi (EUNIS) habitat sınıflandırması. *Orman Mühendisliği, 46*(1-2-3), 48-51.

Arslan, M., Bingöl, M. Ü., & Erdoğan, N. (2012). Avrupa doğa bilgi sistemi (EUNIS) habitat sınıflandırması ve Türkiye batı Öksin alanındaki Doğu Kayını (Fagus orientalis Lipsky) ormanları örneği. *Artvin Çoruh Üniversitesi Orman Fakültesi Dergisi, 13*(2), 278-290.

Avcı, M. (1993). Türkiye'nin Flora bölgeleri ve Anadolu Diagonali'ne coğrafi bir yaklaşım. *Türk Coğrafya Dergisi*, *28*, 225-248.

Baytop, A. (2010). Plant collectors in Anatolia (Turkey). *Phytologia Balcanica, 16*(2), 187-213.

Braun-Blanquet, J. (1932). Plant Sociology, Mc Graw-Hill, New York and London.

Çakmak, M. H. & Aytaç, Z. (2020). Determination and mapping of EUNIS habitat types of Mamak District (Ankara) Turkey. *Acta Bıologıca Turcıca 33*(4), 227-236.

Çakmak, M. H. & Aytaç, Z. (2021). EUNIS Habitat sınıflandırmasının Türkiye durum değerlendirmesi. Bilge International *Journal of Science and Technology Research. 5* (2), 157-163. https://doi.org/10.30516/ bilgesci.888297

Çiftçi, D. (2015). Sündiken Dağları Staphylinine (Coleoptera: Staphylinidae) grubunun tür çeşitliliği ve EUNIS habitatları ile İlişkisi (Tez no 395753). [Doktora Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Davies, C. E., Moss, D., & Hill, M.O. (2004). EUNIS Habitat classification revised 2004. http://Eunis.Eea.Eu.İnt/Upload/Eunıs_2004_Report.Pdf. (Alınma Tarihi: 19.05.2024).

Davis, P. H. (Editor) (1965-1985). *Flora of Turkey and the east Aegean islands Vol. 1-9*. Edinburgh Univ. Press, Edinburgh.

Davis P. H. & Hedge I. C. (1975). *Flora of Turkey past, present and future*. Candollea, Edinburgh.

Davis, P. H., Mill, R. R., & Tan, K. (Editörler). (1988). *Flora of Turkey and the East Aegean Islands Vol. 10.* Edinburgh Univ. Press, Edinburgh.

Demir, O., Kızılırmak, A., Bozdag, C. M., & Cabi, E. (2022). Determination of terrestrial EUNIS habitat types of Mount Ganos (Işıklar), Tekirdağ, Türkiye. *Frontiers in Life Sciences and Related Technologies, 3*(2), 69-74.

Dinç, M. (2008). The flora of Cocakdere valley (Aslanköy-Mersin). *Ot Sistematik Botanik Dergisi*, *15*(2), 87-114.

Düzenli, A., Çakan, H., Türkmen, N., Uygur, F.N., & Orel, E. 1996a. Göksu deltasının (Silifke-İçel) florası*. Turkish Journal of Botany 20*, 173-191.

Düzenli, A., Çakan, H., & Türkmen, N. 1996b. New floristic records for squares C4 and C5 from the Gösku Delta (Silifke - Içel, Turkey). *Turkish Journal of Botany 20*(4), 391-394.

Ekim, T., Koyuncu, M., Vural, M., Duman, H., Aytaç, Z., & Adıgüzel, N., 2000: *Türkiye bitkileri kırmızı kitabı (Eğrelti ve Tohumlu Bitkiler)*. Türkiye Tabiatını Koruma Derneği ve Van Yüzüncü Yıl Üniversitesi Yayınları, Ankara.

Erdoğan, İ. (2016). *Coğrafi bilgi sistemleri ve uzaktan algılama ile Aşağı Kelkit Havzası EUNIS habitat tiplerinin tanımlanması ve potansiyel ürün yetiştirme alanlarının tespiti (Tez no 446385).* [Yüksek Lisans Tezi, Gaziosmanpaşa Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Everest A. & Rauss, T. (2004). Investigations flora in Mersin: Kozlar highplateau south Turkey. *Pakistan Journal of Biological Sciences*, *7*(5), 802-811.

Gemici, Y., 1992. *Bolkar dağlarının (Orta Toroslar) flora ve vejetasyonu*. Ege Üniversitesi Araştırma Fonu, Proje Raporu, İzmir.

Geven, F., Özdeniz, E., Kurt, L., Bölükbaşı, A., Özbey, B.G., Özcan, A.U., & Turan, Ü. (2016). Habitat classification and evaluation of the Köyceğiz-Dalyan Special Protected Area (Muğla/Turkey). Rendiconti Lincei. *Scienze Fisiche e Naturali, 27,* 509-519. https://doi.org/10.1007/s12210-016-0510-1

Güner, A., Aslan, S., Ekim, T., Vural, M. & Babaç, M. T. (Eds). (2012). *Türkiye bitkileri listesi (Damarlı Bitkiler).* Nezahat Gökyiğit Botanik Bahçesi ve Flora Araştırmaları Derneği Yayını, İstanbul.

Güner, A. & Ekim, T. (Eds) (2014). *Resimli Türkiye Florası 1.* Flora Araştırmaları Derneği ve Türkiye İş Bankası Kültür Yayınları, İstanbul.

Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Ekşi, G., Güner, I. & Çimen, A. O. (Eds) (2018). *Resimli Türkiye Florası cilt 2*. ANG Vakfı Nezahat Gokyiğit Botanik Bahcesi Yayınları, İstanbul.

Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Çimen, A. Ö., Güner, I., Ekşi, G. & Şen, F. (Eds) (2022). *Resimli Türkiye Florası cilt 3a.* ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları, İstanbul.

Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Çimen, A.Ö., Güner, I., Bona, G.E. ve Gökmen, F.Ş. (edlr.) (2023a). *Resimli Türkiye Florası,* Cilt 3b. ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları. İstanbul.

Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Çimen, A.Ö., Güner, I., Bona, G.E. ve Gökmen, F.Ş. (Edlr.) (2023b). *Resimli Türkiye Florası,* Cilt 4b. ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları. İstanbul.

Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Çimen, A.Ö., Güner, I., Bona, G.E. ve Gökmen, F.Ş. (Eds) (2024). *Resimli Türkiye Florası,* Cilt 4a. ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları, İstanbul.

Güner A., Özhatay N., Ekim T. & Başer K. H. C. (2000). *Flora of Turkey and the east Aegean islands Vol. 11.* Edinburgh Univ. Press, Edinburgh.

Juan Vicedo, J. (2018). *Pancratium maritimum*. The IUCN Red List of Threatened Species 2018: e.T18990540A57467022. http://dx.doi.org/10.2305/IUCN.UK.2018-

Kanca, H., Terzioğlu, E., Adıgüzel, U., Erbaş, S., & Erdoğan, E. (2019). *Türkiye'nin biyolojik çeşitliliği*. T.C. Tarım ve Orman Bakanlığı Doğa Koruma ve Milli Parklar Genel Müdürlüğü, Ankara.

Karaömerlioğlu, D. (2007). Göksu deltasındaki (silifke) doğal ekosistemlerin bitki ekolojisi yönünden araştırılması, (Tez no 212532). [Doktora Tezi, Çukurova Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Karaömerlioğlu, D. & Düzenli, A. (2008). Göksu deltası (silifke) doğal alanlarında ana habitat tiplerinin araştırılması. *Çukurova Üniversitesi Fen Bilimleri Enstitüsü Dergisi, 17*(2), 2.

Mergen, O., & Karacaoğlu, C. (2015). Tuz Lake Special Environment Protection Area, Central Anatolia, Turkey: The EUNIS habitat classification and habitat change detection between 1987 and 2007. *Ekoloji, 24*(95), 1-9. https://doi.org/10.5053/ekoloji.2015.06

Moss, D. & Roy, D. (1998). *Towards a European habitat classification*. European Environment Agency, Copenhagen.

Orcan, N., Binzet, R. & Yaylalıoğlu, E. (2004). The flora of Fındıkpınarı (Mersin-Turkey) Plataeu. *Flora Mediterranea*, *14*, 309-345.

Ortaç, İ. (2017). *Doğu Akdeniz Bölgesinde Bulunan Bazı Doğal ve Kültürel Sit Alanlarının Bitki Örtüsü Üzerine Araştırmalar (Tez no 457718).* [Yüksek Lisans Tezi, Adıyaman Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Anabilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Ortaç, Z. & Tel, A. Z. (2021). Gazihan Dede mesire alanı (Adıyaman, Türkiye) florası. *Türler ve Habitatlar, 2*(1), 33-53.

Özen, A. & Ürker, O. (2020). Avrupa doğa bilgi sistemi (EUNIS) habitat sınıflandırmasını kullanarak Işıklı Gölü ve Gökgöl Sulak Alanlarında habitat değişimlerinin belirlenmesi. *Erzincan Üniversitesi Fen Bilimleri Enstitüsü Dergisi, 13*(2), 518-531, https://doi.org/10.18185/erzifbed.646077

Savran, A., Dural, H., & Bağcı, Y. (1999). New floristic records for the C5 square in the flora of Turkey. Ot Sistematik Botanik Dergisi *6*(1): 67-74.

Seçmen, Ö., Gemici, Y., Görk, G., Bekat, L., Leblebici, E. (2000). *Tohumlu bitkiler sistematiği.* Ege Üniversitesi Fen Fakültesi Yayınları, No: 116, İzmir.

Seyfe, M. (2019). *Kazan tepeleri (Kahramankazan/Ankara) sürüngen türlerinin EUNIS habitat tiplerine göre tercih ve dağılışları (Tez no 598674).* [Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Şahin, Ü., Çiftçi, D. & Hasbenli, A. (2016). Species diversity of Coleoptera, Diptera and Lepidoptera of various forest EUNIS habitats in Bursa province (Turkey). The Abstract Book of Ecology, pp. 96-97, Adnan Aldemir Symposium, Kars, Türkiye.

Şahin, B. & Karavelioğulları, F. A. (2018a). Erzincan ili EUNIS Habitat Tipleri ve Haritalandırılması (Poster). 1st International Congress on Plant Biology, Konya, Türkiye 10-12 Mayıs 2018, ss. 440.

Şahin, B. & Karavelioğulları, F. A. (2018b). EUNIS Habitat Types and Mapping of Bayburt (Poster). International Ecology 2018 Symposium, Kastamonu, Türkiye, 19-23 Haziran 2023, ss. 1081.

Şen, A. N. (2019). *Anamur (Mersin) ve yaylalarının florası (Tez no 610053).* [Doktora Tezi, Selçuk Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Anabilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Şenkul, Ç. & Kaya, S. (2017). Türkiye endemik bitkilerinin coğrafi dağılışı. *Türk Coğrafya Dergisi*, *69*, 109-120.

Şirin, E. & Ertuğrul, K. (2015). Büyükeğri dağı (mut, içel) ve çevresinin endemik bitkileri. *Selçuk Üniversitesi Fen Fakültesi Dergisi, 40*, 50-58.

Tak, M. & Tel, A.Z. (2024). Determınatıon of Akdağ (Adıyaman/Malatya) Habitat Diversity According to EUNIS Habitat Classification System (Editors: Mehmet Hakkı Alma & Sefa Altıkat). Internatıonal Congress of High Value Added Agrıcultural Products, 01-03 December 2024, Iğdır, Türkiye. ISBN: 978-625-378-039-5.

Tel, A. Z. (2009). Contributions to the flora of Nemrut Mountain (Adıyaman/Turkey). *BioDiCon, 2*(1), 36-60.

Tel, A. Z. & Eğilmez, Ç. (2015). Gölbaşı gölleri (Adıyaman/Türkiye) havzası vejetasyon tiplerinin floristik kompozisyonu ve ekolojik özellikleri üzerine bir araştırma, *ADYUTAYAM Dergisi, 3*(1), 1-28.

Tel, A. Z. & İlçim, A. (2016). Doğu Akdeniz bölgesinde bulunan bazı doğal ve kültürel sit alanlarındaki bazı endemik ve nadir bitkiler. *ADYÜTAYAM Dergisi, 4*(2), 1-7.

Tel, A. Z. & Tak, M. (2012). Perre (Pirin) Antik Şehri (Adıyaman) Vejetasyonu. *Biyoloji Bilimleri Araştırma Dergisi, 5*(2), 45-62.

Tel, A. Z. & Tak, M. (2018). Karagöl (Sülüklü Göl) havzası (Gerger/Adıyaman) florası üzerine bir araştırma. *ADYUTAYAM Dergisi, 6*(1), 40-53.

Tel, A. Z., Ortaç, İ., & İlçim, A. (2018). Kahramanmaraş ilinin bazı doğal ve kültürel sit alanları florası üzerine bir çalışma. *Commagene Journal of Biology, 2*(2), 43-47.

Tel, A. Z., Ortaç, İ, & İlçim, A. (2019). Karatepe-Aslantaş milli parkı ve bazı doğal/kültürel koruma alanları üzerine floristik bir araştırma (Osmaniye, Türkiye). *Commagene Journal of Biology, 3*(2), 103-109.

Tel, A. Z., Ortaç, İ, & İlçim, A. (2021). Hatay ilinin bazı doğal ve kültürel sit alanları florası üzerine bir çalışma. *Artvin Çoruh Üniversitesi Orman Fakültesi Dergisi, 22*(1), 9-18.

Tel, A. Z., Ortaç, İ, & Özuslu, E. (2022a). Adana ilinin bazı doğal ve kültürel sit alanları üzerine floristik bir çalışma. *Anatolian Journal of Botany 6*(2): 92-103. https://doi.org/10.30616/ajb.1152708

Tel, A. Z., Ortaç, İ, & Özuslu, E. (2022b). Bazı mağara ve obrukların (Mersin/Türkiye) flora ve genel vejetasyon yapıları üzerine bir araştırma. *Biological Diversity and Conservation, 15*(3), 356-368. https://doi.org/10.46309/biodicon.2022.1180111

Tel, A. Z., Ortaç, İ., İlçim, A., & Özuslu, E. (2023). Mersin ilindeki (Türkiye) bazı doğal ve kültürel sit alanlarının floristik yapısı üzerine bir çalışma. *KSÜ Tarım ve Doğa Dergisi,* 26(5), 1056-1065. https://doi.org/ 10.18016/ksutarimdoga.vi.1196119

Tel, A. Z., Tatlı, A., & Varol, Ö. (2010). Phytosociological structure of Nemrut Mountain (Adıyaman/Turkey) *Turkish Journal of Botany, 34*, 417-434. https://doi.org/10.3906/bot-0906-43

Tel, A. Z., Ortaç, İ., Özuslu, E., & İlçim, A. (2024). Contributions of floristic and general vegetation characteristics of the Mavga Castle (Mut/Mersin, Türkiye). *Biharean Biologist*, *18*(1), 1 – 11.

Tel, A. Z., Ortaç, İ., Özuslu, E., & İlçim, A. (2025). Akdeniz, Tarsus ve Erdemli (Mersin-Türkiye) ilçelerindeki bazı doğal sit alanlarının flora, genel vejetasyon yapısı ve EUNIS habitat tiplerinin incelenmesi, *KSÜ Tarım ve Doğa Dergisi, 28*(2), 403-422. https://doi.org/10.18016/ksutarimdoga.vi.1592127

Terzioğlu, E., Güvendiren, A. D., Erdoğan, E., Erdoğan, N. M. & Ekmen Nural, İ. (2015). *Biyolojik Çeşitliliği İzleme ve Değerlendirme Raporu 2013-2014*. T.C. Orman ve Su İşleri Bakanlığı, Doğa Koruma ve Milli Parklar Genel Müdürlüğü, Ankara.

Tezcan, F. (1995). *Ekşiler Köyü'nün (Silifke) florası (Tez no 38338).* [Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Topal, A., Palabaş Uzun, S. & Uzun, A. (2022). Mersin ili geofit bitki zenginliği. *Turkish Journal of Forest Science*, *6*(1), 229-254.

Tug, G. N., Yaprak, A. E., Körüklü, S. T., Bingöl, U. (2018). Flora and habitat diversity of Kavuncu Saltmarsh. *Communications Faculty of Sciences University of Ankara Series C, 27*(2), 55-68. https://doi.org/10.1501/commuc_0000000198

Ulu Agır, S., Kutbay, H.G., Karaer, F., & Surmen, B. (2014). The Classification of coastal dune vegetation in Central Black Sea Region of Turkey by numerical methods and EU habitat types. Rendiconti Lincei. Scienze Fisiche e Naturali*, 25,* 453–460. https://doi.org/10.1007/s12210-014-0328-7.

Uçar, A. H. (2002). *Balandız Yaylasının Florası ve Genel Vejetasyon Yapısı (Tez no 128988).* [Yüksek Lisans Tezi, Mersin Üniversitesi Fen Bilimleri Enstitüsü Biyoloji Ana Bilim Dalı]. Yükseköğretim Kurulu Ulusal Tez Merkezi.

Yıldızbakan, A., Gündoğdu, E., Fakir, H., Akgün, C. & Ulusoy, H. (2010). *Cehennemdere yaban hayatı geliştirme sahasında Yaban Keçisi Capra aegagrus Erxleben 1777'nin yayılışı ve habitat kullanımı*. Çevre ve Orman Bakanlığı Yayını, Ankara.

Yıldıztugay, E. & Küçüködük, M. (2010). The flora of Anamur antique city and its surroundings (Mersin-Turkey). *Biological Diversity and Conservation*, *3*(3), 46-63.

Zeren, O. & İspirgil, Y. (2001). Mersin Üniversitesi kampüs alanı florasının tespiti. *Ekoloji, 10*(40), 12-16.

Appendix 1. Taxa list in the study area
Ek 1. Çalışma alanındaki takson listesi

No	Family Name	Taxa	Phytogeographic Region	Threat Category	Study area	Plant Collection Date	Collecting Number
1	Amaranthaceae	*Chenopodium album* subsp. *album* var. *album*	-	-	4	08.05.2016	Ortaç 1144
2	Amaranthaceae	*Halimione portulacoides*	-	-	4	08.05.2016	Ortaç 1145
3	Amaranthaceae	*Salicornia europaea*	-	-	4	08.05.2016	Ortaç 1148
4	Amaranthaceae	*Salsola kali*	-	-	4	03.04.2016	Ortaç 1149
5	Amaranthaceae	*Salsola soda*	-	-	4	07.04.2016	Ortaç 1151
6	Amaryllidaceae	*Allium ampeloprasum*	Med. Elm.	-	6	23.07.2016	Ortaç 1438
7	Amaryllidaceae	*Allium neapolitanum*	Med. Elm.		8	03.04.2016	Ortaç 1439
8	Amaryllidaceae	*Pancratium maritimum*	Med. Elm.	Rare/LC	4	22.07.2016	Ortaç 1424
9	Anacardiaceae	*Pistacia terebinthus*	E. Med. Elm.	-	5,6,7,8	07.04.2016	Ortaç 1017
10	Anacardiaceae	*Pistacia palaestina*	E. Med. Elm.	-	1,3	07.04.2016	Ortaç 1017
11	Apiaceae	*Eryngium maritimum*	-	-	4	07.04.2016	Ortaç 1023
12	Apiaceae	*Turgenia latifolia*	Wide.	-	6	07.04.2016	Ortaç 1025
13	Apocynaceae	*Nerium oleander*	Med. Elm..	-	1,2,3,4	08.05.2016	Ortaç 1026
14	Apocynaceae	*Vincetoxicum canescens* subsp. *canescens*	-	-	3	22.07.2016	Ortaç 1032
15	Araceae	*Arum dioscoridis* var.*dioscoridis*	E. Med. Elm.	-	2,7,8	03.04.2016	Ortaç 1425
16	Araliaceae	*Hedera helix*	-	-	2,3,8	03.04.2016	Ortaç 1028
17	Asparagaceae	*Asparagus acutifolius*	Med. Elm.	-	4,5	24.10.2016	Ortaç 1441
18	Asparagaceae	*Drimia maritima*	-	-	3,4,5,6,7,8	23.10.2016	Ortaç 1456
19	Asparagaceae	*Prospero autumnale*	Med. Elm.	-	6,7	22.07.2016	Ortaç 1453
20	Aspleniaceae	*Asplenium ceterach*	-	-	7	03.04.2016	Ortaç 1001
21	Asteraceae	*Asteriscus spinosus*	Med. Elm.	-	1,6,8	04.05.2016	Ortaç 1065
22	Asteraceae	*Carduus pycnocephalus* subsp. *albidus*	Wide..		3,4,7,8	22.07.2016	Ortaç 1037
23	Asteraceae	*Carthamus lanatus*	Wide.	-	6,7	07.05.2016	Ortaç 1038
24	Asteraceae	*Centaurea iberica*	Wide.		4	08.05.2016	Ortaç 1040
25	Asteraceae	*Cichorium intybus*	Wide.	-	7,8	03.04.2016	Ortaç 1046
26	Asteraceae	*Centaurea chrysantha*	-	End/EN	3	22.07.2016	Ortaç 1039
27	Asteraceae	*Cota tinctoria* var. *tinctoria*	-	-	3	22.07.2016	Ortaç 1033
28	Asteraceae	*Conyza canadensis*	-	-	7	04.04.2016	Ortaç 1047
29	Asteraceae	*Crepis sancta*	Wide.		4,8	04.05.2016	Ortaç 1049
30	Asteraceae	*Crupina crupinastrum*	Wide.		8	04.05.2016	Ortaç 1050
31	Asteraceae	*Hirtellina lobelii*	E. Med. Elm.	-	7	07.05.2016	Ortaç 1075
32	Asteraceae	*Inula crithmoides*	-	-	4,8	08.05.2016	Ortaç 1055
33	Asteraceae	*Inula graveolens*	Med. Elm.	-	4	22.03.2016	Ortaç 1056
34	Asteraceae	*Inula heterolepis*	E. Med. Elm.	-	3	22.07.2016	Ortaç 1057
35	Asteraceae	*Inula viscosa*	Med. Elm.		4,5,1,2	07.04.2016	Ortaç 1058
36	Asteraceae	*Lactuca saligna*	-	-	4	05.04.2016	Ortaç 1059
37	Asteraceae	*Notobasis syriaca*	Med. Elm.	-	7	07.05.2016	Ortaç 1063
38	Asteraceae	*Phagnalon graecum*	E. Med. Elm.	-	5,6,7,8,3	22.07.2016	Ortaç 1066
39	Asteraceae	*Picnomon acarna*	Med. Elm.	-	5,6,7,8,1,3	22.07.2016	Ortaç 1067
40	Asteraceae	*Ptilostemon diacantha*	E. Med. Elm.	-	7	04.04.2016	Ortaç 1068
41	Asteraceae	*Rhagadiolus stellatus*	Med. Elm.	-	6	04.04.2016	Ortaç 1069
42	Asteraceae	*Senecio vernalis*	Wide.	-	7,8	07.04.2016	Ortaç 1070
43	Asteraceae	*Senecio vulgaris*	-	-	6	04.04.2016	Ortaç 1071
44	Asteraceae	*Sonchus oleraceus*	-	-	4	07.04.2016	Ortaç 1074
45	Asteraceae	*Tussilago farfara*	Eu.-Sib. Elm.		8	04.05.2016	Ortaç 1077
46	Asteraceae	*Xanthium orientale* subsp. *italicum*	Wide.	-	7	07.04.2016	Ortaç 1079
47	Asteraceae	*Xeranthemum annuum*	Wide..	-	7	04.04.2016	Ortaç 1080
48	Betulaceae	*Alnus glutinosa* subsp. *antitaurica*	E. Med. Elm.	-	1	07.05.2016	Ortaç 1083
49	Betulaceae	*Ostrya carpinifolia*	Med. Elm.	-	3	03.04.2016	Ortaç 1163
50	Boraginaceae	*Alkanna hispida*	E. Med. Elm.	End./EN	3,6	22.07.2016	Ortaç 1084
51	Boraginaceae	*Cynoglossum creticum*	-	-	8,1	08.05.2016	Ortaç 1090
52	Boraginaceae	*Cynoglossum montanum*	Av.-Sib. Elm.	-	7	04.04.2016	Ortaç 1091
53	Boraginaceae	*Echium parviflorum*	Akd. Elm.	-	4	07.04.2016	Ortaç 1093
54	Boraginaceae	*Onosma rascheyana*	Ir.-Tur. Elm.	-	7	03.04.2016	Ortaç 1097
55	Boraginaceae	*Paracaryum calycinum*	Ir.-Tur. Elm.	End./LC	3	22.07.2016	Ortaç 1098
56	Brassicaceae	*Arabis alpina subsp. brevifolia*	E. Med. Elm.	-	7	03.04.2016	Ortaç 1101
57	Brassicaceae	*Arabis verna*	Med. Elm.	-	7,8	04.05.2016	Ortaç 1102
58	Brassicaceae	*Biscutella didyma*	-		8	04.05.2016	Ortaç 1104
59	Brassicaceae	*Cakile maritima*	-	-	4,5	08.05.2016	Ortaç 1105

60	Brassicaceae	*Capsella bursa- pastoris*	Wide.	-	4	08.05.2016	Ortaç 1106
61	Brassicaceae	*Cardaria draba*	Wide.	-	4	05.04.2016	Ortaç 1107
62	Brassicaceae	*Conringia clavata*	Wide.		8	04.05.2016	Ortaç 1108
63	Brassicaceae	*Draba verna*	-	-	2	06.04.2016	Ortaç 1110
64	Brassicaceae	*Diplotaxis tenuifolia*	-	-	1	03.04.2016	Ortaç 1109
65	Brassicaceae	*Nasturtium officinale*	Wide.	-	1,2	08.05.2016	Ortaç 1115
66	Brassicaceae	*Raphanus raphanistrum*	Wide.	-	4,8	08.05.2016	Ortaç 1117
67	Brassicaceae	*Sinapis alba*	-	-	4	05.04.2016	Ortaç 1118
68	Brassicaceae	*Sinapis arvensis*	Wide.	-	4,7	03.04.2016	Ortaç 1119
69	Brassicaceae	*Thlaspi perfoliatum*	Wide.	-	4	05.04.2016	Ortaç 1121
70	Campanulaceae	*Campanula strigosa*	E. Med. Elm.		8	04.05.2016	Ortaç 1125
71	Campanulaceae	*Michauxia campanuloides*	E. Med. Elm.	-	3	03.04.2016	Ortaç 1127
72	Capparaceae	*Capparis spinosa*	-	-	5,7,8,3	08.05.2016	Ortaç 1129
73	Caprifoliaceae	*Valeriana dioscoridis*	E. Med. Elm..	-	3	23.10.2016	Ortaç 1416
74	Caryophyllaceae	*Dianthus polycladus*	E. Med. Elm.	*Rare/VU*	5	08.05.2016	Ortaç 1132
75	Caryophyllaceae	*Silene aegyptiaca* subsp. *aegyptiaca*	-	-	7	04.04.2016	Ortaç 1136
76	Caryophyllaceae	*Silene colorata*	-	-	5,6	08.05.2016	Ortaç 1138
77	Caryophyllaceae	*Spergularia marina*	Wide.	-	4	05.04.2016	Ortaç 1141
78	Cistaceae	*Cistus creticus*	Med. Elm.	-	6,7,8,1,2,3	08.05.2016	Ortaç 1152
79	Colchicaceae	*Colchicum cilicicum*	E. Med. Elm.	-	6,7	26.10.2016	Ortaç 1444
80	Convolvulaceae	*Calystegia sepium* subsp. *sepium*	Wide.	-	4,6,1	08.05.2016	Ortaç 1157
81	Crassulaceae	*Sedum album*	Wide.	-	7,8	03.04.2016	Ortaç 1164
82	Crassulaceae	*Umbilicus luteus*	-	-	7,3	03.04.2016	Ortaç 1165
83	Cupressaceae	*Cupressus sempervirens*	-	-	8,2,3	03.04.2016	Ortaç 1004
84	Cupressaceae	*Juniperus oxycedrus* subsp. *oxycedrus*	Wide.	-	7,2	03.04.2016	Ortaç 1007
85	Equisetaceae	*Equisetum hyemale*	-	-	2	06.04.2016	Ortaç 1002
86	Ephedraceae	*Ephedra foeminea*	-	-	7	03.04.2016	Ortaç 1008
87	Ericaceae	*Arbutus andrachne*	-	-	7,3	22.07.2016	Ortaç 1171
88	Ericaceae	*Arbutus unedo*	-	-	7	22.03.2016	Ortaç 1172
89	Euphorbiaceae	*Euphorbia helioscopia*	Wide	-	7	08.05.2016	Ortaç 1175
90	Euphorbiaceae	*Euphorbia peplus* var. *peplus*	Wide.	-	4	08.05.2016	Ortaç 1178
91	Euphorbiaceae	*Mercurialis ovata*	Eu.-Sib. Elm.	-	3	22.07.2016	Ortaç 1179
92	Fabaceae	*Anagyris foetida*	Med. Elm.	-	6,7,8	04.05.2016	Ortaç 1183
93	Fabaceae	*Anthyllis vulneraria subsp. boissieri*	Wide		8,3	22.07.2016	Ortaç 1184
94	Fabaceae	*Astragalus hamosus*	-	-	7,8	04.05.2016	Ortaç 1187
95	Fabaceae	*Calicotome villosa*	Med. Elm.	-	5,7,8,1,2,3	22.07.2016	Ortaç 1189
96	Fabaceae	*Ceratonia silique*	Med. Elm.	-	5,6,7,8,1	04.05.2016	Ortaç 1190
97	Fabaceae	*Cercis siliquastrum* subsp. *Hebecarpa*	-	-	3	22.07.2016	Ortaç 1191
98	Fabaceae	*Securigera varia (syn: Coronilla varia)*	Wide.		8	04.05.2016	Ortaç 1197
99	Fabaceae	*Hippocrepis emerus* subsp. *Emeroides*	-	-	6	03.04.2016	Ortaç 1195
100	Fabaceae	*Lathyrus annuus*	Med. Elm.	-	7	04.04.2016	Ortaç 1207
101	Fabaceae	*Lathyrus aphaca* var. *Modestus*	Med. Elm.	-	6,7	04.04.2016	Ortaç 1209
102	Fabaceae	*Lathyrus variabilis*	E. Med. Elm.	Rare/VU	7	07.05.2016	Ortaç 1210
103	Fabaceae	*Lathyrus vinealis*	Ir.-Tur. Elm.	-	6,8	04.05.2016	Ortaç 1211
104	Fabaceae	*Lotus corniculatus* var. *corniculatus*	Wide.	-	4	08.05.2016	Ortaç 1212
105	Fabaceae	*Medicago marina*	-	-	4	08.05.2016	Ortaç 1217
106	Fabaceae	*Melilotus officinalis*	Wide.	-	4	03.04.2016	Ortaç 1221
107	Fabaceae	*Ononis viscosa* subsp. *breviflora*	-	-	4	22.07.2016	Ortaç 1226
108	Fabaceae	*Pisum sativum* subsp.*elatius*	Med. Elm.	-	6	04.04.2016	Ortaç 1227
109	Fabaceae	*Onobrychis caput-galli*	Med. Elm.	-	2	06.04.2016	Ortaç 1222
110	Fabaceae	*Trifolium campestre*	Wide.	-	4	22.07.2016	Ortaç 1232
111	Fabaceae	*Trifolium purpureum* var. *Purpureum*	E. Med. Elm.	-	1	08.05.2016	Ortaç 1233
112	Fabaceae	*Trifolium repens* var. *Giganteum*	-	-	8	04.05.2016	Ortaç 1234
113	Fabaceae	*Trifolium stellatum var. Stellatum*	-	-	8,1	04.05.2016	Ortaç 1236
114	Fabaceae	*Trigonella spicata*	E. Med. Elm.	-	4	22.07.2016	Ortaç 1237
115	Fabaceae	*Vicia hybrida*	Wide.	-	6,7,8	04.05.2016	Ortaç 1241
116	Fabaceae	*Vicia sativa* subsp. *sativa*	-	-	4,7,8	22.07.2016	Ortaç 1242
117	Fabaceae	*Vicia villosa* subsp. *villosa*	Wide.	-	7,1	26.10.2016	Ortaç 1243

118	Fagaceae	*Quercus cerris*	Med. Elm.	-	6,8	04.04.2016	Ortaç 1245
119	Fagaceae	*Quercus coccifera*	Med. Elm.	-	5,6,7,1,2,3	22.07.2016	Ortaç 1246
120	Geraniaceae	*Erodium malacoides*	Med. Elm.	-	6,7,8	08.05.2016	Ortaç 1251
121	Geraniaceae	*Erodium moschatum*	Med. Elm.	-	7	07.05.2016	Ortaç 1252
122	Geraniaceae	*Geranium dissectum*	-	-	4	08.05.2016	Ortaç 1253
123	Geraniaceae	*Geranium molle*	-	-	3	22.07.2016	Ortaç 1256
124	Geraniaceae	*Geranium purpureum*	-	-	3	22.07.2016	Ortaç 1257
125	Hypericaceae	*Hypericum hircinum*	-	-	3	22.07.2016	Ortaç 1258
126	Hypericaceae	*Hypericum origanifolium*	-	-	7,3	22.07.2016	Ortaç 1259
127	Hypericaceae	*Hypericum perfoliatum*	Med. Elm.	-	2	06.04.2016	Ortaç 1260
128	Illecebraceae	*Paronoychia argentea* var. *argentea*	Med. Elm.	-	4	22.07.2016	Ortaç 1262
129	Iridaceae	*Iris albicans*	Wide.	-	7	07.05.2016	Ortaç 1430
130	Juglandaceae	*Juglans regia*	Wide.	-	1	07.05.2016	Ortaç 1263
131	Juncaceae	*Juncus inflexus*	Wide.	-	4	22.07.2016	Ortaç 1435
132	Juncaceae	*Juncus maritimus*	-	-	4	22.07.2016	Ortaç 1436
133	Lamiaceae	*Ajuga chamaepitys* subsp. *chia*	-	-	7	22.03.2016	Ortaç 1264
134	Lamiaceae	*Ballota saxatilis* subsp. *saxatilis*	E. Med. Elm.	-	5,7	23.07.2016	Ortaç 1267
135	Lamiaceae	*Lamium amplexicaule*	Eu.-Sib. Elm.	-	7	27.10.2016	Ortaç 1268
136	Lamiaceae	*Micromeria myrtifolia*	E. Med. Elm.	-	3,6,7,8	22.07.2016	Ortaç 1277
137	Lamiaceae	*Nepeta isaurica*	E. Med. Elm.	End./LC	7	23.07.2016	Ortaç 1278
138	Lamiaceae	*Nepeta nuda* subsp. *albiflora*	Wide.	-	7	23.07.2016	Ortaç 1279
139	Lamiaceae	*Origanum onites*	E. Med. Elm.		8,2,3	22.07.2016	Ortaç 1281
140	Lamiaceae	*Phlomis nissolii*	İr.-Tur. Elm.	End./LC	7	23.07.2016	Ortaç 1285
141	Lamiaceae	*Phlomis viscosa*	E. Med. Elm.	-	7,8,2	04.05.2016	Ortaç 1286
142	Lamiaceae	*Salvia viridis*	Med. Elm.	-	7,8	07.04.2016	Ortaç 1297
143	Lamiaceae	*Sideritis rubriflora*	Med. Elm.	End./ NT	8	04.05.2016	Ortaç 1300
144	Lamiaceae	*Stachys butlerii*	E. Med. Elm.	End./EN	7	23.07.2016	Ortaç 1303
145	Lamiaceae	*Stachys rupestris*	E. Med. Elm.	End./LC	7	27.10.2016	Ortaç 1307
146	Lamiaceae	*Mentha longifolia* subsp. *typhoides*	Wide.	-	1,2,3,4	22.07.2016	Ortaç 1276
147	Lauraceae	*Laurus nobilis*	Med. Elm.	-	6,7,1,3	23.10.2016	Ortaç 1312
148	Lythraceae	*Punica granatum*	-	-	3	22.07.2016	Ortaç 1323
149	Malvaceae	*Alcea digitata*	Ir.-Tur. Elm.	-	6,7	23.07.2016	Ortaç 1315
150	Malvaceae	*Malva sylvestris*	-	-	4,6	22.07.2016	Ortaç 1316
151	Moraceae	*Ficus carica* subsp. *carica*	Med. Elm.	-	1	27.10.2016	Ortaç 1317
152	Moraceae	*Ficus carica* subsp. *rupestris*	Ir.-Tur. Elm.	-	2,3	23.10.2016	Ortaç 1318
153	Myrtaceae	*Myrtus communis* subsp. *communis*	-	-	4,7	07.04.2016	Ortaç 1322
154	Oleaceae	*Jasminum fruticans*	Med. Elm.	-	6,7,3	27.10.2016	Ortaç 1327
155	Oleaceae	*Olea europaea*	-	-	5,6,7,8,3	23.10.2016	Ortaç 1329
156	Oleaceae	*Phillyrea latifolia*	Med. Elm.	-	5,7,8,1,2,3	22.07.2016	Ortaç 1330
157	Onagraceae	*Epilobium angustifolium*	-	-	2	24.07.2016	Ortaç 1331
158	Papaveraceae	*Fumaria asepala*	Ir.-Tur. Elm.	-	7,8,1	04.05.2016	Ortaç 1333
159	Papaveraceae	*Papaver rhoeas*	Wide.	-	6,7	26.10.2016	Ortaç 1336
160	Papaveraceae	*Papaver syriacum*	-	-	1	23.07.2016	Ortaç 1337
161	Pinaceae	*Pinus brutia*	E. Med. Elm.	-	5,7,8,1,2,3	07.04.2016	Ortaç 1011
162	Plantaginaceae	*Linaria chalepensis* var. *chalepensis*	E. Med. Elm.	-	6,7,8,3	23.10.2016	Ortaç 1394
163	Plantaginaceae	*Plantago coronopus* subsp. *coronopus*	Eu.-Sib. Elm.	-	4	25.10.2016	Ortaç 1339
164	Plantaginaceae	*Plantago lanceolata*	Wide.	-	7	23.07.2016	Ortaç 1340
165	Plantaginaceae	*Plantago maritima*	-	-	4	08.05.2016	Ortaç 1342
166	Plantaginaceae	*Veronica cymbalaria*	Med. Elm.	-	7,8	27.10.2016	Ortaç 1401
167	Platanaceae	*Platanus orientalis*	Wide.	-	1,2,3	27.10.2016	Ortaç 1343
168	Plumbaginaceae	*Limonium angustifolium*	Med. Elm.	-	4,8	22.07.2016	Ortaç 1344
169	Poaceae	*Arundo donax*	-	-	8,1	26.10.2016	Ortaç 1462
170	Poaceae	*Avena sterilis* subsp. *ludoviciana*	-	-	6	23.07.2016	Ortaç 1463
171	Poaceae	*Cynodon dactylon* var. *dactylon*	-	-	4,2	25.10.2016	Ortaç 1466
172	Poaceae	*Dactylis glomerata subsp. glomerata*	Eu.-Sib. Elm.	-	2	24.07.2016	Ortaç 1467
173	Poaceae	*Hordeum bulbosum*	Wide.	-	2	24.07.2016	Ortaç 1469
174	Poaceae	*Hordeum murinum* subsp. *glaucum*	-	-	4,2	25.10.2022	Ortaç 1470
175	Poaceae	*Lolium rigidum* var. *Rottbollioides*	E. Med. Elm.	-	4,2	25.10.2016	Ortaç 1471
176	Poaceae	*Phragmites australis*	Eu.-Sib. Elm.	-	4,8	08.05.2016	Ortaç 1474
177	Poaceae	*Poa bulbosa*	Wide.	-	3	23.10.2016	Ortaç 1476

178	Polygonaceae	*Polygonum maritimum*	-	-	5	22.07.2016	Ortaç 1346
179	Pteridaceae	*Adiantum capillus-veneris*	-	-	2,3	08.05.2016	Ortaç 1000
180	Primulaceae	*Anagallis arvensis* L. var. *arvensis*	-	-	4,6,7,8	22.07.2016	Ortaç 1351
181	Primulaceae	*Cyclamen persicum*	E. Med. Elm.	-	8	24.10.2016	Ortaç 1355
182	Primulaceae	*Cyclamen cilicium*	-	-	8	24.10.2016	Ortaç 1353
183	Ranunculaceae	*Adonis aestivalis* subsp. *aestivalis*	Wide.	-	6	26.10.2016	Ortaç 1356
184	Ranunculaceae	*Adonis annua*	Med. Elm.	-	7	23.07.2016	Ortaç 1357
185	Ranunculaceae	*Clematis cirrhosa*	Med. Elm.	-	6	26.10.2016	Ortaç 1361
186	Ranunculaceae	*Delphinium peregrinum*	Med. Elm.	-	7	23.07.2016	Ortaç 1362
187	Ranunculaceae	*Staphisagria macrosperma*	Med. Elm.	-	7	23.07.2016	Ortaç 1363
188	Rhamnaceae	*Paliurus spina- christi*	-	-	4,5,6,7,2,3	22.07.2016	Ortaç 1369
189	Rhamnaceae	*Rhamnus lycioides* subsp. *oleoides*	-	-	6,7	08.05.2016	Ortaç 1371
190	Rhamnaceae	*Ziziphus jujuba*	-	-	4	25.10.2016	Ortaç 1372
191	Rosaceae	*Prunus spinosa*	Eu.-Sib. Elm.	-	6,3	23.10.2016	Ortaç 1378
192	Rosaceae	*Rosa canina*	-	-	8,2	24.10.2016	Ortaç 1380
193	Rosaceae	*Rubus sanctus*	Wide.	-	1,2,3	08.05.2016	Ortaç 1381
194	Rosaceae	*Sanguisorba minor*	-	-	6,1	27.10.2016	Ortaç 1382
195	Rosaceae	*Sarcopoterium spinosum*	E. Med. Elm.	-	4,5,7,8	22.07.2016	Ortaç 1383
196	Rutaceae	*Ruta chalepensis*	-	-	6,7	24.10.2016	Ortaç 1386
197	Salicaceae	*Salix alba*	Eu.-Sib. Elm.	-	7,3	22.07.2016	Ortaç 1390
198	Scrophulariaceae	*Scrophularia rimarum*	-	-	7	26.10.2016	Ortaç 1396
199	Scrophulariaceae	*Verbascum sinuatum* subsp. *sinuatum* var. *sinuatum*	Med. Elm.	-	4	22.07.2016	Ortaç 1399
200	Scrophulariaceae	*Veronica anagallis-aguatica*	Wide.	-	4	25.10.2016	Ortaç 1400
201	Scrophulariaceae	*Scrophularia xanthoglossa*	-	-	1	23.07.2016	Ortaç 1398
202	Smilacaceae	*Smilax aspera*	-	-	5,7,1	22.07.2016	Ortaç 1454
203	Smilacaceae	*Smilax excelsa*	Eu.-Sib. Elm.	-	2	26.10.2016	Ortaç 1455
204	Styracaceae	*Styrax officinalis*	-	-	6,8,3	27.10.2016	Ortaç 1406
205	Tamaricaceae	*Tamarix smyrnensis*	-	-	4,5	22.07.2016	Ortaç 1407
206	Thymelaeaceae	*Daphne oleoides* subsp. *oleoides*	-	-	5,8	24.10.2016	Ortaç 1409
207	Thymelaeaceae	*Daphne sericea*	E. Med. Elm.		7,8,3	22.07.2016	Ortaç 1410
208	Thymelaeaceae	*Thymelaea hirsuta*	Med. Elm.	-	4	08.05.2016	Ortaç 1411
209	Urticaceae	*Parietaria judaica*	Wide.	-	4,6,3	22.07.2016	Ortaç 1414
210	Urticaceae	*Urtica dioica*	Eu.-Sib. Elm.	-	6,7,3	23.10.2016	Ortaç 1415
211	Vitaceae	*Ampelopsis orientalis*	E. Med. Elm.	-	2,3	23.10.2016	Ortaç 1420
212	Verbenaceae	*Vitex agnus-castus*	Med. Elm.	-	4,5,8	08.05.2016	Ortaç 1419
213	Xanthorrhoeaceae	*Asphodelus aestivus*	Med. Elm.	-	4,8,1,3	22.07.2016	Ortaç 1443
214	Zygophyllaceae	*Zygophyllum album*	-	Rare/VU	5	08.05.2016	Ortaç 1423