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Diversity of flora at Lake Beysehir (Turkiye) and its surroundings: an assessment in the context of ecology and tourism

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Abstract
The main purpose of this study is to determine the flora diversity of Lake Beyşehir, Turkiye's largest freshwater lake, and to list the plants present in the research region. Another aim of the research is to reveal the possible contribution of the flora diversity of the research area to regional tourism. It is also among the objectives of the study to draw attention to the need to ensure the sustainability of existing flora while using it for recreational purposes. The research area of the study is Lake Beyşehir (Turkiye) and its surroundings. In the study, a mixed-methods technique was employed with a multidisciplinary approach. A two-stage process was followed in obtaining research data. In the first phase (Study 1), field studies were carried out in the area between March and August 2023. In the second stage (Study 2), a study was conducted with a quantitative research design in order to reveal the contribution of the flora diversity of the research area to tourism. A survey form suitable for SWOT analysis was used as a data collection tool. As a result of the study, plant species widespread in the region were identified, and 178 plant specimens were investigated. It has been determined that Lake Beyşehir and the surrounding area have significant biodiversity and flora, making the area an attractive destination for flora tourism. In the conclusion of the study, suggestions were developed to protect and use the flora diversity of the region within the scope of tourism.

Keywords
plant biodiversity, vegetation, ecology, ecotourism, botanical tourism, SWOT

Introduction

Environment is defined as the biological, physical, social, economic, and cultural environment in which living things maintain their relationships and interact throughout their lives (T.R. Environmental Law, 1983). Along with the environment, natural resources, which are air, water, soil, and non-living entities found in nature, are the basic requirements for the continuation of life. Protection and development of the environment are the basic elements of the well-being of all humanity and economic development. The environment, which provides the necessary conditions for human life, is also an important resource for the tourism industry. Acting with an environmentally friendly perspective in recreational activities will serve to protect the environment, which is the most important of the basic resources of tourism. The ecological or natural environment is one of the leading attractions of a

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tourist destination. On the other hand, there is a chance that tourism will harm the ecosystem. These risks include changes in flora and fauna species, pollution, erosion, and the risk of depletion of natural resources due to touristic activities (Harris et al., 2002: 32). For this reason, it is important to minimize the negative impact of tourism on the environment and to generate income from tourism by ensuring the sustainability of the ecosystem. At this point, ecotourism, one of the alternative tourism types, emerges as responsible touristic travel that protects the natural environment. Ecotourism is a concept that has come to the fore as the relationship between tourism and the environment has gained importance (Kaypak, 2010: 94). As a leisure acftivity, ecotourism relates to nature and wildlife (Hvenegaard, 1994) and includes trips to relatively unspoiled and unpolluted natural areas (Wallace and Pierce, 1996) for the experience and recreational value that come from contact with the natural world (Steele, 1995). These trips are responsible activities (TIES, 1990) that protect the environment and improve the well-being of local people (Ceballos-Lascurain, 1996). A significant part of ecotourism activities (nature hiking, camping, plateau tourism, monumental tree tours, etc.) are flora-based. However, in recent years, there has been an increasing interest among people in wildlife, natural vegetation, and biodiversity in nature-based tourism destinations (Folmer et al., 2016). This trend in demand increases interest in flora tourism, which has a significant potential for the protection and development of existing vegetation diversity. The concept of flora is used to describe many plant species or vegetation in a region (Sinclair-Maragh and Gursoy, 2014). Flora tourism, on the other hand, is a type of tourism that serves tourists who want to know, discover, inspect, and photograph nature, including rare plants that stand out with their floral beauty, have medicinal properties, can be consumed as food, and even benefit from the healing opportunities offered by these plants (Yılmaz and Karahan, 2003; Irmak and Yılmaz, 2011; Külekçi and Bulut, 2016; Erken et al., 2019; Aklıbaşında et al., 2012). In the context of flora tourism, destinations with high plant biodiversity and a large number of rare and endemic plants are attraction points for tourists who want to connect with nature. When the flora of a destination is the main target for tourists who want to observe and experience the plant diversity on site with a day or overnight visit, these trips are considered within the scope of flora tourism. In other words, the main motivation of flora tourism participants is their interest in the vegetation and plant diversity of a destination. The reason for this interest may be for research purposes as well as psychological well-being and the desire to have a pleasant time in nature. Flora tourism, which is a sub-branch of ecotourism from alternative tourism types (Erken et al., 2019; Irmak and Yılmaz, 2011; Karaköse and Terzioğlu, 2019; Sari, 2019), is divided into subtypes such as forest tourism, tree tourism, botanical tourism, flower tourism, and garden tourism (Doğaner, 2019: 74). The use of flora as a touristic product causes various negative effects on the vegetation due to visitors and recreational activities. These negativities include direct effects such as the destruction of vegetation during infrastructure works or its disappearance in some regions, the trampling of plants and flowers by visitors during trips, damage caused by horse riding, bicycle tours, and off-road vehicles (Pickering and Hill, 2007), the unconscious use of endemic plants by tourists, and species loss of rare and threatened plant groups such as orchids (Kelly et al., 2003; Ballantyne and Pickering, 2012: 34). For this reason, when planning touristic activities related to flora, it is important to take into account the carrying capacity of the region and not jeopardize the sustainability of the natural environment and vegetation. The aim of this research is to determine the flora diversity of Lake Beyşehir and its surroundings, to list the existing plants in the area, to reveal the flora tourism potential of the region, and to draw attention to the need to protect and use the existing flora. In the literature, the flora of Lake Beyşehir and its surroundings has been examined in terms of wetland vegetation (Küçüködük, 1988), plant floristic structure (Sağlam et al., 2000; Demirelma and Ertuğrul, 2009), ethnobotany (Tugay et al., 2012), ecology, and tourism relationships (Dinç and Öztürk, 2013). Various studies have also been conducted investigating the general situation of tourism opportunities in the region (Güngör and Arslan, 2004; Tuncer et al., 2017), the perception of local people towards alternative tourism opportunities in the region (Ünüvar and Atalay, 2019; Karipçin and Ateş, 2022), the tourism potential of its caves (Öcal and Özcan, 2013), and the relationship between the landscape potential of the region and tourism (Güngör and Arslan, 2003). Among the existing studies, no study has been found that determines the flora diversity of the region and investigates the contribution of this diversity to tourism activities using both quantitative an tourist

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destination. On the other hand, there is a chance that tourism will harm the ecosystem. These qualitative methods. In this context, it is intended that the research results will contribute to the relevant literature

Materials and methods

Study Area

This study covers the flora and natural resources depending on flora (natural landscape values) of Lake Beysehir and its surroundings in Konya province, Turkiye. The location and boundaries of the study area are given in figure 1. Lake Beyşehir, located in the area known as the Lakes Region, is the third largest lake in Turkiye, with an altitude of 1,121.5 m and a surface area of 651 km^2. Its water is fresh, and it is also the largest freshwater lake in Turkiye. Amanas Mountains form the borders of the lake in the south and west, and Şarkikaraağaç district of Isparta province in the north. There is the Beyşehir-Şarkikaraağaç asphalt road located on the east coast. It is noteworthy that there are 26 islands of various sizes on the lake. The most important of these islands are Mada, Ortaada, İğneli, Çeçen, Aygır, and Hacı Akif. Beyşehir district is located to the south of the lake.

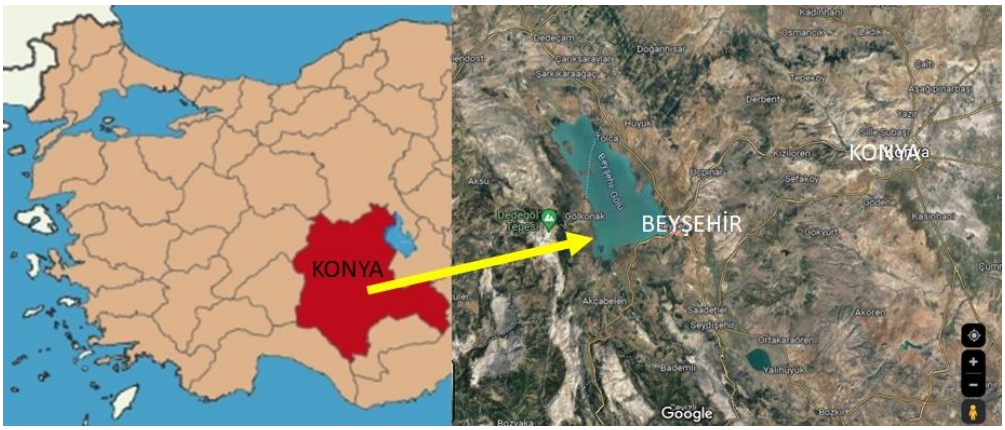

Figure 1.
Geographic border and location of the study area (https://konyakultur.gov.tr; https://www.google.com/maps)

Method

Since this study adopted an interdisciplinary approach, a mixed-methods technique was employed, and a two-stage process was followed in obtaining research data. In the first phase (Study 1), field studies were carried out in and around Lake Beyşehir between March and August 2023, with visits to the region at different periods. As a result of observational studies, plant species widespread in the region were identified. Following the identification of the current flora, a quantitative research design study was carried out in the second stage (Study 2) to investigate the potential tourism-related contribution of the flora diversity in the region. At this stage, it was aimed at ensuring integrity by combining the findings obtained through direct field investigations and observations in the first study with a quantitative method in a second study. For this purpose, a survey form suitable for SWOT analysis was preferred as the data collection tool. The statements in the survey form aim to determine the strengths and weaknesses of the region in terms of its environmental, social, cultural, and historical assets, as well as the flora characteristics of the region and the opportunities and threats it may face in the future. The survey form consists of a total of 69 statements: 33 about strengths, 13 about weaknesses, 15 about opportunities, and 8 about threats. The form was prepared on a 5-point Likert scale using studies in the literature (Sertac and Arslan, 2004; Dinç and Öztürk, 2013; Erken et al., 2019; Sari, 2019; Külekçi and Bulut, 2016; Göktuğ and Yenilmez Arpa, 2016; Ünüvar and Atalay, 2019; Küçük, 2013; Güngör and Arslan, 2004). The form was finalized by taking opinions from academics who study Beyşehir and its surroundings, as well as the observational information obtained by the researchers from their field studies in the region. The developed questionnaire was tested in a pilot study. Research data were obtained from the guided sampling group for quantitative studies. The sample group (N = 183) consists of people who are assumed to have expert opinions about the research area, such as public or-

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ganization managers or representatives, academicians who have conducted studies on the research area, local people, and ecotourism participants visiting the region. The surveys were administered during face-to-face interviews with the participants between May and August 2023. The frequency, reliability, mean, and standard deviations of the data collected through surveys were evaluated with the SPSS program, and the results were interpreted through tables.

Results

Results of the Study 1. The findings of the field studies carried out in Lake Beyşehir and its surrounddings within the scope of Study 1 are shared under this heading. Beyşehir is a region that hosts different species in terms of plant diversity, as it forms a transition zone between the Mediterranean and Iran-Turan phytogeographic regions. As a result of the research, 344 taxa belonging to 74 families registered in Lake Beyşehir and its surroundings were identified (Küçüködük, 1988). In the literature, researches conducted in the study area have been reported as: flora of Dedegöl Mountains (Isparta) (Peşmen and Güner, 1976; Özçelik, 2018); flora of Yeşildağ-Kurucuova (Beyşehir) (Serin and Çetik, 1984); flora of Dökük Mountain and surroundings (Beyşehir) (Savran vd., 1988); flora of the region between Beyşehir-Üzümlü-Yeşildağ (İnan, 1996); flora of Dikenli Mountain, Karacadağ and Akdağ (Huğlu-Beyşehir-Konya) (Sağlam et al., 2000); flora of the region between Kurucaova-Gölyaka (Beyşehir) and Yenişarbademli (Isparta) (Bağcı, 2010). Based on these studies, it can be stated that there are 514 taxa of 351 genera belonging to 81 families in the Beyşehir flora. There are 36 endemic species in the area (Bağcı, 2010; Özçelik, 2018). The ratio of endemic plants to plant density is 10%. Accordingly, the region is very rich in endemic plants. Within the scope of Study 1, plants belonging to Lake Beyşehir and its surroundings were observed during visits to the region at different periods between March and August 2023, photographs were captured in a field setting, and a total of 178 plant samples were examined. As a result of the research, it was also observed that it would be more appropriate for nature photographers to visit the region, especially between March and June. In July and August, pastel colors are more dominant in the region and the flowering period of the plants is quite weak. Attractive plant samples for flora tourism and nature photography in the flora of the study area are shared with Photo 1.

Photo 1
Attractive plant samples for flora tourism and nature photography in Beyşehir flora (a. Phlomis fruticosa, b. Aubrieta canescens (Boiss.) Bornm. subsp. Canescens, c. Muscari anatolicum, d. Echinops pungens Trautv. var. pungens, e. Nymphaea alba f. Phlomis armeniaca, g. Malva neglecta, h. Anemone blanda, j. Myosotis stricta. Photo by B. Yılmaz Çıtak)

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Oak forest, rock, steppe, meadow and wetland were determined as the vegetation types in the study area. The dominant vegetation type in the region is steppe vegetation. It has also been determined that rock, meadow, oak forest and wetland vegetation are intertwined with steppe vegetation in the area. In steppe vegetation, *Verbascum glomeratum* Boiss., *Salvia bracteata* Banks & Sol., *Thymus sipyleus* Boiss. and *Phlomis armeniaca* Willd. are the most visible plants. The pleasant appearance of the plants in the rock vegetation also attracts attention. The plants in this vegetation type are located in regions where their borders intertwine with steppe vegetation. *Aubrieta canescens* (Boiss.) Bornm. subsp. *canescens*, *Phlomis fruticosa* L., *Scutellaria orientalis* L., *Myosotis sylvatica* Hoffm., and *Arabis caucasica* Willd. can be counted among the species that attract the most attention. The main plants in the meadow vegetation are *Muscari anatolicum* Cowley & Özhatay, *M. neglectum* Guss. ex Ten., and *Anemone blanda* Schott & Kotschy. These plants are among the most noticeable and fascinating species in terms of flora tourism. In wetland vegetation, *Nymphaea alba* L. and *Nuphar lutea* (L.) Sm. are two remarkable species. These plants can be observed especially during the cruises of the boats that organize trips on Lake Beyşehir. There are oak forests around the Karaburun beach, in the Kurucova location, which are within the borders of the research area, and on the islands of the Lake. *Quercus trojana* Webb., *Q. coccifera* L., *Q. cerris* L. and *O. infectoria* Oliv. are the species widespread in the area. The mentioned species form mixed forests with *Juniperus excelsa* M.Bieb., *J. foetidissima* Willd., *Abies cilicica* subsp. *isaurica* Coode & Cullen and *Pinus nigra* J.F.Arnold.

Humans have been using wild plants as food since prehistoric times. The plants used in agriculture today originate from wild plants used as a result of breeding studies, and Anatolia is the gene center of most wild plants. Turkiye's flora is also rich in terms of containing the first natural ancestral forms of fruits and vegetables. In this direction, the flora of Lake Beyşehir and its surroundings is rich in naturally growing fruits, vegetables, and wild plant species. These species are: *Rhus coriaria* L., *Echinops* pungens Trautv. var. *pungens*, *Berberis crataegina* DC., *Rosa canina* L., *Rubus discolor* Weihe & Nees, Urtica dioica L., *Polygonum cognatum* Meissn., *Crataegus monogyna* Sacq. subsp. *monogyna*, *Prunus divaricata* Ledeb. subsp. ursina (Kotschy) Browicz, *Pyrus Thymus zygioides* Griseb. var. *lycaonicus* (Celak.) Ronniger, *Mentha spicata* L. subsp. *tomentosa* (Briq.) Harley. As a result of the observational studies carried out within the scope of Study 1, many of the mentioned species were observed in widespread and large populations in various locations in the study area.

Results of the Study 2. Within the scope of Study 2, it was aimed to reveal the contribution of the flora diversity existing in the research area to regional tourism. For this purpose, a survey form suitable for SWOT analysis was prepared in order to reveal the strengths, weaknesses, opportunities, and threats of the region in terms of flora tourism. The demographic characteristics of the sample group of the research (N=183) are shared in Table 1. When the table is examined, it is seen that the majority of the participants are men (65.6%), married people (68.9%) are predominant and the majority of the participants are 51 years old and over. It is also ob-served that among the participants, the proportion with a bachelor degree (49,2%) and the proportion of individuals working in the public sector (50,8%) are high.

Table 1. *Findings regarding demographic characteristics*

Total N=183		**n**	**%**
Gender	Male	120	65,6
	Female	63	34,4
Marital status	Married	126	68,9
	Single	57	31,1
Age	20 years and under	20	10,9
	21-30 years old	27	14,8
	31-40 years old	36	19,7
	41-50 years old	41	22,4
	51 years and above	59	32,2
Educational Status	Primary-High School	39	21,3
	Associate Degree	18	9,8
	Bachelor degree	90	49,2
	Postgraduate	36	19,7
Working Status	Private sector	32	17,5
	Public sector	93	50,8
	Retired	25	13,7
	Other (Housewife, Student etc.)	33	18,0

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In Likert-type scales, reliability and validity are often examined with Cronbach's alpha coefficient. If the data obtained is less than 0.40, it is considered unreliable; between 0.41 and 0.60, it is considered low reliability; between 0.61 and 0.80, it is considered medium reliable; and if it is 0.81 and above, it is considered high reliability (Kılıç, 2016: 48). Table 2 shows the reliability of the research data. Since all of the data have a ratio above 0.90, it is understood that the scale is highly reliable.

Table 2. *Reliability analysis of the research scale*

	n	Items	Cronbach's Alpha
Strengths	183	33	0,979
Weaknesses	183	13	0,929
Opportunities	183	15	0,944
Threats	183	8	0,911

The data obtained with the survey form prepared in accordance with the SWOT analysis was evaluated with the SPSS program. The means and standard deviations of all statements in the form were calculated. The results were evaluated by preparing a table and are shared in Table 3 below. While preparing the relevant table, only statements regarding the flora and ecotourism potential of the region were included. Accordingly, the flora tourism potential of Lake Beyşehir and its surroundings is revealed with a total of 30 statements: 9 statements in terms of strengths, 9 statements in terms of weaknesses, 6 statements in terms of opportunities, and 6 statements in terms of threats. Expressions are listed from largest to smallest according to their average values. Standard deviation values were also examined in order to express to what extent the data in the table varied around the arithmetic mean. The data obtained with the survey form prepared in accordance with the SWOT analysis was evaluated with the SPSS program. The means and standard deviations of all statements in the form were calculated. The results were evaluated by preparing a table and are shared in Table 3 below. While preparing the relevant table, only statements regarding the flora and ecotourism potential of the region were included. Accordingly, the flora tourism potential of Lake Beyşehir and its surroundings is revealed with a total of 30 statements: 9 statements in terms of strengths, 9 statements in terms of aweaknesses, 6 statements in terms of opportunities, and 6 statements in terms of threats. Expressions re listed from largest to smallest according to their average values. Standard deviation values were also examined in order to express to what extent the data in the table varied around the arithmetic mean. When Table 3 is examined, it can be seen that the strongest aspect of the region is *"nature photography opportunities"* ($\bar{x}$=4.443). The standard deviation associated with this expression also has the smallest value. This result shows that the opinions of the participants in the research regarding the relevant statement are quite close to each other. Additionally, the expression *"flora and fauna biodiversity of the region"* in Table 3 has the highest standard deviation value (σ=1.361). This can be interpreted as participants having different ideas about flora and fauna. Participants also consider the statement *"incomplete lake landscaping"* ($\bar{x}$=4.322) as the weakest aspect of the region. When the standard deviation values are examined, the fact that this expression has the lowest value can be interpreted as the participants having similar opinions on this issue. Participants consider the statement that *"the research area is located in the Lakes Region Ecotourism Development Zone"* ($\bar{x}$=4.087) as the most important opportunity for flora tourism. *"Endemic plant diversity"* ($\bar{x}$=3.918) of the region is considered the second important opportunity. When the standard deviation values of both expressions are examined, it is understood that the participants' opinions about these expressions are close to each other. When the standard deviations of the statements about opportunities are examined, it is seen that the participants have the biggest disagreement on the statement "increasing demand for activities such as hiking, biking, and photo safari " (σ=1.413). According to Table 3, the statement *"decrease in the water level in the lake due to global warming and unconscious use"* ($\bar{x}$=4.514) is considered by the participants as the most important threat to the region.

Conclusion and Discussion

This study was carried out with a multidisciplinary approach to determine the flora diversity of Lake Beyşehir and its surroundings, to reveal the possible contribution of the existing flora diversity to regional tourism, and to draw attention to the necessity of protecting and using the flora of the research area. For this purpose, in addition to field studies, the

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Table 3. *Flora tourism potential SWOT analysis of Lake Beyşehir and its surroundings*

Strengths	$\bar{x}$	(σ)	**Weaknesses**	$\bar{x}$	(σ)
Nature photography opportunities	4,443	1,062	Incomplete lake landscaping	4,322	1,109
Having suitable trails for activities such as hiking, biking and photo safari	4,350	1,143	Promotional and marketing problems	4,175	1,135
Lake Beyşehir and Kızıldağ National Park	4,224	1,249	The area is far from the airport and high-speed train station	4,115	1,264
Existence of water lily (Nymphaea alba L.) and yellow water lily (Nuphar lutea (L.) Sm.) among ornamental plants	4,016	1,264	Infrastructure deficiencies in rural areas	4,082	1,226
Endemic flora structure of the region	3,945	1,270	Insufficient number and quality of accommodation facilities	4,077	1,229
Flora and fauna biodiversity of the region	3,896	1,361	Lack of infrastructure in historical and touristic places	3,984	1,202
Widespread presence of Sage (Salvia), one of the aromatic and medicinal plants	3,863	1,270	Lack of caravan and camping areas	3,945	1,295
Endemic and aromatic plant tour route opportunities	3,852	1,277	Insufficient number and quality of food and beverage establishments	3,798	1,350
Presence of Mint Family, one of the aromatic and medicinal plants	3,743	1,324	Water Lily (Nymphaea alba L.) and Yellow Water Lily (Nuphar lutea (L.) Sm.) bloom only in May.	3,628	1,285
Opportunities	$\bar{x}$	(σ)	**Threats**	$\bar{x}$	(σ)
The research area is located in the "Lakes Region Ecotourism Development Zone"	4,087	1,164	Decreasing water level in the lake due to global warming and unconscious use	4,514	1,138
Endemic plant diversity	3,918	1,279	Increasing pollution in the lake and its surroundings	4,470	1,083
Climatic conditions suitable for water sports such as canoeing, boating and windsurfing	3,727	1,359	Taking excessive amounts of agricultural irrigation water from the lake	4,415	1,125
Tourism potential of large and small islands in the lake	3,694	1,344	Increase in illegal and unconscious hunting in the lake and its surroundings	4,317	1,204
Agro tourism potential of the region	3,623	1,377	Discharging sewage water into the lake	4,197	1,251
Increasing demand for activities such as hiking, biking and photo safari	3,530	1,413	Construction of touristic facilities in coastal protected areas	3,858	1,426

1= I strongly disagree; ….. 5= Absolutely I agree

flora tourism potential of the area was examined using the SWOT analysis method. As a result of the research, it is possible to say that the findings obtained from the field studies and the findings obtained from the SWOT analysis support each other. Accordingly, it has been concluded that the region is rich in terms of flora diversity and that this creates an important potential for flora tourism activities that can be carried out in the region. Various studies in the literature have stated that the region has important opportunities in terms of biodiversity (Dinç and Öztürk, 2013; Karakayacı et al., 2022) and ecotourism (Güngör and Arslan, 2003; Tuncer et al., 2017; Küçük, 2013; Dinç and Öztürk, 2013; Karakayacı et al., 2023). In this regard, it can be said that the research results are in parallel with the literature. The flora tourism potential of the research area was determined by SWOT analysis (Table 3). According to those involved in the research and assumed to have expert opinions about the research area, nature photography opportunities have been determined to be the strongest aspect of the region. Within the scope of the study, the weaknesses of the research area in terms of flora and ecotourism were also identified. Accordingly, the fact that the lake landscaping was not completed was expressed as the weakest aspect by the participants. While the fact that the research area is located in the "Lakes Region Ecotourism Development Zone" has emerged as the most important opportunity, the

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decrease in the water level of the lake was determined to be the most important threat. As stated before, nature photography opportunities came to the fore among the strengths of the research area in terms of flora tourism. In parallel, among the approximately 200 plant samples examined during the field studies, the ones that attracted attention with their showy and beautiful appearance (Figure 2) were identified. These species are generally around the lake and can contribute to flora tourism activities. Similarly, Ulusan and Batman (2010) emphasized that Lake Beyşehir constitutes an important resource for nature photography with its flora diversity. There is also a high possibility of recording the long flowering periods of plants at different altitudes in the region. This provides an advantage for nature tourists who are passionate about photography and also contribute to flora tourism. With the field studies carried out, the flora diversity of the research area, which forms a transition zone between the Mediterranean and Central Anatolia Regions, was determined. There are 36 endemic species in Lake Beyşehir and its surroundings, and the ratio of endemic species to plant density is 10%. With this quality, the region is in a very advantageous situation in terms of flora tourism. Karakayacı et al. (2023) also stated in their study that the region is rich in endemic species. In addition, among the strengths determined by the SWOT analysis, the endemic flora structure of the region was also expressed as a significant strength ($\bar{x}$ = 3.945) by the research participants. Similarly, Güngör and Arslan (2004) emphasized in their study that the endemic flora of the Beyşehir region is a strong aspect in terms of tourism. Wild species consumed, especially as spices, and used for healing purposes were identified in the research area. Ethnobotanical tours to the regions where these plants are found can be an interesting flora tourism activity. These plants are also an attraction for people interested in gastronomy and health tourism. Today, when traditional and complementary medicine, organic and natural nutrition are in demand, tours to be organized in different periods on the determined routes accompanied by trained nature guides have great potential for tourism activities that can be organized in the region. With this quality, the study area is an important attraction point for nature lovers, people interested in botany, and tourists interested in this subject. As a matter of fact, among the strengths determined by the SWOT analysis, the widespread presence of sage (*Salvia*) ($\bar{x}$ = 3,863) among aromatic and medicinal plants, the presence of the mint family ($\bar{x}$ = 3,743) and the region's endemic and aromatic plant tour route opportunities ($\bar{x}$ = 3,852) were expressed as significant strengths. Water Lily (Nymphaea alba L.) and Yellow Water Lily (Nuphar lutea (L.) Sm.), which can be observed on the lake during the cruises of the boats organizing tours in Lake Beyşehir, are two remarkable species in terms of flora tourism. Tourists who want to observe and photograph these plants can enrich their visit experience by participating in boat tours during their travels. The presence of these plants in the research area was also expressed by the participants as a significant strength ($\bar{x}$ = 4.016). It is among the objectives of the study to draw attention to the need to protect and use the flora of the study area. Suggestions developed for this purpose and in light of the results obtained from the study are listed below: It is very important to ensure the continuity of the widely distributed species in Lake Beyşehir, which has significant potential with its plant diversity and endemic flora, and to take the appropriate action to protect these species. Moreover, it is a necessity to eliminate the threat of destruction caused by flora tourism visitors to endemic species that are narrowly distributed in the region. In this context, it is important to train the personnel working in the national parks and to provide the necessary information to ecotourism participants through short seminars. It is also essential to adhere to certain rules and include expert guides, especially when planning activities such as endemic plant tours and ethnobotanical tours. When tourists visit the area, it is essential for environmental sustainability that they follow the rules and laws in places like national parks and natural protected areas; stay on designated travel routes; behave in a way that minimizes harm to the local flora and fauna; and refrain from leaving waste in the environment. In order to preserve and use the existing flora in the research area, the seeds of rare endemic species with weak populations should be collected at a time and protected using freezing techniques. The generations of these species will be protected by applying specific propagation techniques using seeds or pollen grains. These plants can be grown ex-situ in a botanical garden that can be established within Lake Beyşehir National Parks

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and made available to people. Botanical gardens should be arranged in a remarkable way in terms of naturalness, adventure, discovery, and visuality. When promoting these areas, informative brochures, illustrated signs, or information notes should be prepared, taking into account the vegetative or generative periods of the plants. As a result of the SWOT analysis, the factors that threaten the flora diversity and tourism potential of Lake Beyşehir and its surroundings have been determined as follows: (a) decrease in the water level in the lake due to global warming and unconscious use; (b) excessive amount of agricultural irrigation water being taken; (c) discharge of sewage water into the lake; (d) increase in illegal and unconscious hunting, (e) the increase in pollution around the lake; and (f) the construction of touristic facilities in coastal protection areas. Accordingly, it is important to monitor the water level in the lake and take appropriate precautions to keep it at a sustainable level. For irrigation of agricultural lands in the region, more efficient irrigation techniques that will support the sustainable use of water resources should be preferred, and local people should be made aware of this issue. It is also necessary to prevent sewage water from flowing into the lake and to increase infrastructure investments, such as water treatment facilities. Besides, hunting seasons should be regularly inspected to prevent poaching in the region. In order to prevent pollution in the lake and its surroundings, measures such as solid waste management, control of industrial waste, and increasing environmental awareness should be taken. It is crucial to limit construction and control building permit processes, especially in sensitive areas such as coastal protected areas. In order to increase environmental awareness and raise awareness about the ecotourism potential of the region, local people, local governments, non-governmental organizations, academics, and tourism businesses can come together and organize training programs, seminars, and campaigns. In addition to the measures listed above, it is possible to organize environmentally friendly, sustainable, and responsible tourist activities such as ecotourism and flora tourism in the region, thus offering environmentally friendly experiences to tourists. Planned and controlled activities organized with this awareness will also contribute to preserving the flora diversity of the area. In light of the results of the study, it is possible to develop a few suggestions for future research. Accordingly, in the field studies, it was observed that the diversity of existing plants and the mobility of insects visiting these plants were quite high in the region. In this regard, it can be said that the region is very suitable for future pollination biology studies, especially regarding the limited distribution areas of endemic plants. The sample group of the study consists of academics who work in the research area, public organization managers or representatives, local people, and ecotourism participants visiting the region. In future studies, while determining the strengths, weaknesses, opportunities, and threats of Lake Beyşehir, it may be crucial to obtain the opinions of the managers of the area's tourism-related firms to get the viewpoint of the suppliers.

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Data Availability. The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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