2020

DİLEK PENINSULA - GREAT MEANDER DELTA NATIONAL PARK IN THE CONTEXT OF PROTECTED AREAS

İpek Altuğ Turan  
*Ege University, ipekaltug@hotmail.com*

Emine Malkoç True  
*Ege University, eminemalkoc@hotmail.com*

Hatice Sönmez Türel  
*Ege University, Hsonmez@hotmail.com*

Follow this and additional works at: [https://academicworks.livredelyon.com/arch_sci](https://academicworks.livredelyon.com/arch_sci)

**Recommended Citation**

Altuğ Turan, İpek; Malkoç True, Emine; and Sönmez Türel, Hatice, "DİLEK PENINSULA - GREAT MEANDER DELTA NATIONAL PARK IN THE CONTEXT OF PROTECTED AREAS" (2020). *Architectural Sciences*. 34.  
[https://academicworks.livredelyon.com/arch_sci/34](https://academicworks.livredelyon.com/arch_sci/34)

This Book is brought to you for free and open access by Livre de Lyon, an international publisher specializing in academic books and journals. Browse more titles on Academic Works of Livre de Lyon, hosted on Digital Commons, an Elsevier platform. For more information, please contact livredelyon@gmail.com.
ACADEMIC STUDIES
IN
ARCHITECTURAL SCIENCES

Editor
Assoc. Prof. Dr. H. Hale Kozlu

Lyon 2020
PREFACE

Architectural sciences are the reflection of the process of designing and producing spaces necessary for vital actions. Different disciplines that directly or indirectly affect this design and production process appear as factors that enrich the process. Many different disciplines, such as engineering, sociology, history, archaeology, anthropology, psychology, support the technical, artistic and social aspects of design and production. This versatility connects architecture with a wide range of design areas, ranging from regional and urban planning to industrial products.

Aiming to emphasize the versatility of Architectural Science, this book is fictionalized as a selection representing 5 different themes. For these themes, “Design Approaches”, “Urbanism”, “Interior Design”, “Conservation of Cultural and Natural Heritage” and “Interdisciplinary Studies in the Building Sector” have been identified.

I would like to thank the authors who have contributed to the work formed by the scope of these themes with their valuable work, the valuable referees who have spent time along with their busy academic work and the staff of the ASOS Education-Consultancy and Livre de Lyon publishing house for their support in the preparation and publication phases.

Assoc. Prof. Dr. H. Hale Kozlu
Editor
CONTENTS

PREFACE......................................................................................................................I

REVIEWING COMMITTEE .........................................................................................V

Chapter I  S. Şimşek
BIOMIMICRY APPROACHES IN HIGH-RISE BUILDINGS.1

Chapter II  E. A. Haklıdır
SPATIAL ATTRIBUTES OF SUCCESSFUL INNOVATIVE ZONE DEVELOPMENTS IN CITIES........................................13

Chapter III  C. Yücel & F. Kocatürk & M. Ç. Baydoğan & F. Kiraz
URBANIZATION PROCESS OF KAYSERI IN THE 20TH CENTURY ...........................................................39

Chapter IV  D. Akyol & D. G. Özkan
MODEL PROPOSAL FOR SUSTAINABLE ENVIRONMENTAL MANAGEMENT OF THE LOCAL GOVERNMENT IN TURKEY............75

Chapter V  N. U. Karşılı & U. T. Karşılı
INTEGRATING URBAN INTERIORS WITH PUBLIC SPACE USERS.................................................................99

Chapter VI  T. Doğan & K. Giray
THE IMPACT OF POLITICAL ISSUES ON DESIGN PROCESS OF NEWS STUDIO IN THE CONTACTS OF AESTHETIC MANNERS.................................113

Chapter VII  H. H. Kozlu
THE PROTESTANT BUILDINGS IN TURKEY/ KAYSERI CENTRAL MISSION STATION IN THE 19TH CENTURY: WITHIN THE SCOPE OF AMERICAN BOARD’S MISSIONARY MOVEMENT..................123

Chapter VIII  S. A. G. Korumaz & R. M. Kilit
EVALUATION OF REUSED HISTORICAL CHURCHES AS MOSQUE: AN EXAMPLE KARAMAN FİSANDON MOSQUE.................................................................163
Chapter IX  İ. A. Turan & E. M. True & H. S.Türel

DİLEK PENINSULA - GREAT MEANDER DELTA NATIONAL PARK IN THE CONTEXT OF PROTECTED AREAS...............................................................179

Chapter X  G. Büyükmihçi & A. Akşehirlioğlu & S. Uçar

METHODS USED IN THE DESIGN OF NEW STRUCTURES IN ARCHAEOLOGICAL SITES......................................................199

Chapter XI  M. N. Yıldırım & A. Karaman

USE IN THE BUILDING SECTOR OF LAMINATED WOOD COMPOSITES PREPARED FROM WOODEN PALLET WITH COMPLETE SERVICE LIFE........217
REVIEWING COMMITTEE

Prof. Dr. Deniz Güner                      Dokuz Eylül University
Prof. Dr. Gonca Büyükmihçı                Erciyes University
Prof. Dr. İlkyay Maşat Özdemir            Karadeniz Technical University
Prof. Dr. Kerim Çınar                    KTO Karatay University
Assoc. Prof. Dr. Emine Dağtekin           Dicle University
Assoc. Prof. Dr. Fatih Canan              Konya Technical University
Assoc. Prof. Dr. Filiz Sönmez             Erciyes University
Assoc. Prof. Dr. Hikmet Eldek Güner       İzmir Demokrasi University
Assoc. Prof. Dr. Mustafa Korumaz          Konya Technical University
Assoc. Prof. Dr. Seden Acun Özgünler     İstanbul Technical University
Assoc. Prof. Dr. Serpil Özker             İşık University
Assoc. Prof. Dr. Umut Tuğlu Karşı         İstanbul University
Asst. Prof. Dr. Armağan Güleç Korumaz     Konya Technical University
Asst. Prof. Dr. Işıl Polat Pekmezci       İstanbul Technical University
Asst. Prof. Dr. Sencer Erkman             Erciyes University
Asst. Prof. Dr. Ceyhan Yücel              Erciyes University
Asst. Prof. Dr. Neşe Yılmaz Bakır          Erciyes University
Asst. Prof. Dr. M. Çağlar Baydoğan        Erciyes University
Asst. Prof. Dr. Özlem Sümengen           Erciyes University
Asst. Prof. Dr. Seven Gözübüyük           Erciyes University
Asst. Prof. Dr. Leyla Kaderli             Erciyes University
INTRODUCTION

Since the nineteenth century; in parallel with the developing technology, pressures on natural resources have increased as a result of industrialization, population growth, urbanization, various types of pollution, forest fires, drying of wetlands, excessive and irresponsible use of resources. Particularly in the past and present centuries, modern technology has enabled people to enjoy nature without limits (Yücel and Babuş, 2005).

The rapid consumption of natural resources, the increasing amount of pollution and environmental problems that have reached a global dimension have brought the obligation for countries to act in cooperation (Gümüş et al. 2010). In many countries around the world, sustainable use of natural, historical and cultural values has been planned and such areas have been declared as “protected areas” as a result of national and international efforts (Yücel and Babuş, 2005; Kılıç, 2018).

Protected areas are vital to the continuity of the world's natural evolution. It is also an obligation to ensure the status of endangered species and ecosystems by the effective measures as protected areas, for the conservation of biodiversity and the continuity of human life (Yıldırım and Erol, 2012).
International Union for Conservation of Nature (IUCN) (2019) defines protected area as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values”. Protected areas - national parks, wilderness areas, community conserved areas, nature reserves and so on - are a mainstay of biodiversity conservation, while also contributing to people’s livelihoods, particularly at the local level.

Protected areas are at the core of efforts towards conserving nature and the services it provides us - food, clean water supply, medicines and protection from the impacts of natural disasters. Their role in helping mitigate and adapt to climate change is also increasingly recognized; it has been estimated that the global network of protected areas stores at least 15% of terrestrial carbon (IUCN, 2019).

The identification of protected areas at the international level began in 1872 with the announcement of Yellowstone National Park in the USA. This movement was reflected in other countries and played a leading role in the establishment of protected areas. Different countries around the world have taken various measures for the sustainable and purposeful use of resources through legal processes and international conventions. In our country, this legal process started more towards the end of the 1950s and the laws, regulations, legislations and various conservation policies on this issue caused significant increases in the number of protected areas throughout the country (Kılıç, 2019).

Today; In addition to the main objective of conservation of biodiversity, the sustainable use of natural resources and conservation of ecosystems and integration with wider social development processes are taken into consideration and the areas suitable for these targets are taken under protection. The well-managed protected areas not only support the health of ecosystems and landscapes; It is stated that it provides many benefits for people with different ecosystem services such as clean water supply, food safety and climate regulation. Protection of these areas has become an important part of sustainable development strategies as it supports the local and national economy (Katırcıoğlu, 2019).

National parks which have an important place among the protected area statuses and the first type of protected area in the world; carry high natural, historical, archaeological, recreational, scientific and aesthetic values and in which wood gathering, timber cutting, mining, and hunting is prohibited (Gümüş et al. 2010).

According to IUCN, national parks are; Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which
also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities (IUCN, 2019).

Zonation within these parks include:

- Protection zone, where at least one-third of the total land is protected against all usage except for scientific research;

- Buffer zone, areas adjacent to the protection zone which can be used for touristic and/or recreational purposes (up to one-third of total land); and

- Settlement zone, areas where settlement may take place if the existence of such constructions improves the park's characteristics or, at least, do not destroy them (Gümüş et al. 2010).

In Turkey, although a draft National Parks Law was prepared in 1974, it was not accepted because of the concerned ministries’ opposition. It wasn’t to take effect until 1983, due to lack of political cooperation and the 1980 coup. In accordance with Article 63 (on the conservation of historical, cultural and natural assets) of the 1982 Constitution, the National Parks Law was accepted on 9 August 1983 and published in the 11/08/1983 dated and 18132 numbered Official Gazette. Afterwards, a new National Parks Directive published in 1986 (Koptu, 2019).

The official regulation on national parks was first published in the Official Gazette on 12 December 1986 and the regulation was revised on 18 March 2014. According to the regulation, the necessities of the places to be allocated as national park are listed below.

- Natural and cultural resource value and recreational potential should be important and special at national and international level.

- Resource values should be important to the extent that future generations will inherit and be proud to have.

- Resource values must be undamaged or can be ameliorated by technical and administrative interventions.

- The site size should be at least 1000 hectares and this area should consist entirely of protection zones.

Also, according to the related regulation, the national park long-term development plans are prepared with the positive opinions of the relevant ministries, and when necessary with the actual contributions, and approved and put into effect by the ministry (National Parks Regulations, 2019).
The Primary objective of national parks are being defined as to protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation by IUCN and their other objectives are listed as below (IUCN, 2019);

- To manage the area in order to perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources and unimpaired natural processes;

- To maintain viable and ecologically functional populations and assemblages of native species at densities sufficient to conserve ecosystem integrity and resilience in the long term;

- To contribute in particular to the conservation of wide-ranging species, regional ecological processes and migration routes;

- To manage visitor, use for inspirational, educational, cultural and recreational purposes at a level which will not cause significant biological or ecological degradation to the natural resources;

- To take into account the needs of indigenous people and local communities, including subsistence resource use, in so far as these will not adversely affect the primary management objective;

- To contribute to local economies through tourism.

Today, there are 516 protected areas in different states and 44 national parks in Turkey (General Directorate of Nature Protection and National Parks, 2019). One of the most important national park in Turkey is the “Dilek Peninsula - Great Meander Delta National Park”. This study aims to examine the National Park’s natural and cultural resource values, flora and fauna existence, recreational possibilities and in these contexts to reveal the features of the park.

**EXPERIMENTAL**

Dilek Peninsula - Great Meander Delta National Park, which is the study area of this research, is located in the province of Aydın in the Aegean Region of Turkey.

The National Park, which has a total area of 27,598 hectares, is located in the boundaries of Kuşadası, Söke and Didim districts (Kuşadası District Governorship, 2019).

The National Park area consists of two parts. The first part belongs to the Dilek Peninsula, which was declared as a national park in 1966 and
has a surface area of 10,908 hectares. The second part consists of the Great Meander Delta adjacent to the south of the peninsula. Great Meander Delta was included in the National Park in 1994 and has 16,690 hectares surface area. The Dilek Peninsula Great Meander Delta has great importance not only nationally but also internationally (Kuşadası District Governorship, 2019; Bekdemir and Sezer, 2009) and due to this fact that it is protected by the International Ramsar, Bern and Rio Conventions and Barcelona Convention (Kuşadası District Governorship, 2019).

The Dilek Peninsula; as having the best examples of maquis flora in Turkey is also hosting the species of Black Sea flora on its northern slopes. The Delta is one of the most important habitats for migratory birds in the Aegean Region. It is also an egg-laying area for marine fish. In summer, the peninsula becomes a center where local people benefit from the sea (General Directorate of Nature Protection and National Parks, 2019).

The research method was mainly carried out in three stages:

In the first phase which is called as Conceptual Framework; previous scientific studies were examined within the scope of the research subject and general information has been provided about the concept of national parks and protected areas and also the context and amount of the national parks in Turkey.

In the second phase of the study, which is the “Data Collection” phase; Dilek Peninsula - Meander Delta National Park, which is determined as a research area, has been examined under three main headings. These headings are specified to include the following information;

**Natural and Cultural Resource Values**
- Geological and geomorphological structure
- Ecosystem diversity
- Historical and archaeological features

**Flora and Fauna Wealth**
- Flora wealth
- Fauna wealth

**Recreational Facilities**
- Active and passive recreational facilities
- Important sub-spaces in the park
Also according to the data gained by previous researches and observation studies, a SWOT analysis for the study area was done.

In the “Conclusion” section, which is the third and the last stage of the study, the importance of protected areas and national parks in the context of Dilek Peninsula Büyük Menderes Delta National Park was mentioned and various suggestions were made for transferring the park to the next generations on the basis of protection - use relationship.

RESULTS AND DISCUSSION

GENERAL CHARACTERISTICS OF THE AREA

Natural and Cultural Resource Values

Geological and Geomorphological Structure

The National Park consists of two different geographical formations: Dilek Peninsula and Great Meander Delta (Bingöl, 2011). Dilek Peninsula is extending an average of 20 km. of Samsun Mountain from the coast towards the Aegean Sea (Doga, 2019). There are many hills, canyons and coves within the morphological structure of this part (Bekdemir and Sezer, 2009). Due to its steep mountainous structure, it has the best preserved specimens of Mediterranean vegetation.

Although the coastal structure is generally rocky, there are several pebbly beaches throughout the peninsula (Doga, 2019). The other part of the National Park consists of the coastal area of the Great Meander Delta, which includes marshes, lagoons, coastal arrows and cords, broken meander shapes and small ponds (Bekdemir and Sezer, 2009).

Great Meander Delta is home to different formations such as the sea, freshwater and mountains due to its geological evolution. The variety of climatic conditions of the watershed brings with its rich biodiversity and provides the possibility of life for restricted and endemic species (Büke et al. -).

Ecosystem Diversity

Distinguishing the National Park with its natural and cultural resource values and creating the main source of its richness there are 9 main ecosystems namely marine areas, lagoons, salty lands, fresh and brackish waters, fields areas and olive groves, maquis, forests, village settlements and hill groups (Figure 1).
Marine areas: The National Park is surrounded by marine areas and consists of the sea, coasts, coastal dunes and coastal rocks. The dunes in the National Park are important breeding areas for waterfowl. Close to the coastal dunes, there are also about 50 fishing shelters built of reeds and wood (Deniz et al. 2018).

Lagoons: It covers all lagoons of various sizes in the Meander Delta. Shallow water lagoons, which are constantly expanding, are an important part of the delta system with their water mechanisms and unstructured natural characteristics depending on the water level that changes according to the seasons (Göktuğ, 2011). There are many lagoons in the Great Meander Delta. The most important of these; the lagoon lakes such as Karine lake (Dil lake), Arapça Dalyan, Tuzla Lake, Mavi Lake, Kokar Lake, Koca Lake and Bölme Lake. These lagoon lakes were formed as a result of the accumulation of alluvial deposits brought by the Great Meander River and the coastal arrows and cords formed by waves blocking the sea (Bingöl, 2011).

Salty lands: It covers the areas between the lagoons in the delta and the agricultural areas. In these areas, which have been under fresh water for a long period as a result of periodic floods, the effect of salt water starts to show itself after flood. The absence of floods nowadays increases the saline...
character of these areas and makes it possible to grow only saline plants (Deniz et al. 2018).

- **Fresh and brackish waters:** It covers the tributaries of the Old Meander River, drainage channels, temporary freshwater ponds, freshwater reeds, brackish springs and reeds and marshes. Although the most important determinant element of the wetland system is the Great Meander River, many fresh and brackish resources originating from the foot of the Samsun Mountains constitute a natural habitat in the system. In dry years, these resources have been very effective in maintaining the sustainability of the ecosystem. In addition, temporary streams formed by precipitation are very important for water storage of wetlands. Freshwater reeds are the rare habitat species in the region (Göktuğ, 2011).

- **Fields and olive groves:** The fields are widespread in the delta area formed by the desalination of old saline soils north and south of the main drainage channel. The coastal salty vegetation has been destroyed and cotton is generally cultivated in these fields. The olive groves are spread around the settlement of the New Doğanbey Village (Bingöl, 2011).

- **Maquis:** The National Park area hosts the healthiest specimens of all plant species belonging to the Mediterranean maquis flora, and where the soil and climatic conditions are suitable, *Quercus ilex*, *Santalum album* and *Arbutus unedo* in the maquis formation are found to be 10 meters long (Bingöl, 2011).

- **Forests:** It consists of *Pinus brutia* and quercus communities mixed with maquis, *Pinus nigra* communities, and rocky slopes spreading over 1000 meters. *Pinus brutia* and mixed forest texture have been exposed to fire from time to time, but renewed itself over time (Göktuğ, 2011).

- **Village settlement:** This village, formerly called Domatia, is an ancient Greek settlement. This village, which features Greek and Turkish architecture, is like an open air museum. For this reason, the urban protected area was declared and taken under protection. The Turks, who came to the Old Doğanbey Village in 1924 by population exchange, were settled, but they moved to the place of the new Doğanbey Village in 1985 due to limited infrastructure and expansion opportunities. Many buildings here have been devastated and destroyed. Today, those who came from outside the settlement started to restore the ruined buildings they purchased. Although not all have been restored to their original, the resulting outdoor spaces reflect the old characteristic texture (Dilek Peninsula Great Meander Delta National Park, 2019).

- **Hill Groups:** Karakol Hill (Lade), which was once an island, is a chain of hills on the land plain which is now surrounded by alluvial deposits. Vegetation is reduced due to fire and overgrazing. Fire prevented
regeneration of heaths, and also eliminated many species with poor regeneration ability. Grazing caused the emergence of *Gundelia tournefortii* in the area. The ground is stony due to severe erosion on the slopes (Göktuğ, 2011).

**Historical and Archaeological Features**

In the National Park which is 1st degree archaeological site, there is Panionion the holy gathering center of 12 Ionian cities in BC 9th century, Thebai (Thebes) Ancient City, Ayayorgi Monastery, Hagios Antonios Monastery and Zeus Cave (Başar, 2007). Dilek Hill (Mykale) and Lade Island (Karakol Hill) are among its other historical and archaeological values (Bekdemir, 2010). In addition, the Old Doğanbey Village, which is an old Greek village, and Karina, where customs houses are located, are under protection as an urban protected area (Göktuğ, 2011) (Figure 2).

![Historical and archaeological features](URL 4, URL 5, URL 6).

**Flora and Fauna Wealth**

**Flora Wealth**

Dilek Peninsula - Great Meander Delta National Park is one of the richest national parks in Turkey in terms of natural vegetation cover.
The natural vegetation of the park can vary greatly even in short distances depending on the soil, water retention capacity, plant nutrient elements content, altitude and the view and shows a high diversity on the areas where the conditions are favourable. The fact that the research area has a highly variable topographic structure, and includes many ecosystems and geographical structures plays an important role in the diversity of vegetation (Göktuğ, 2011). The National Park has a speciality as a natural museum where the plant species existing all over Anatolia from the Mediterranean to the Black Sea are naturally seen together (Sürück, 2019). The climatic asymmetry on the southern and northern slopes of the Dilek Peninsula, the variation of the climatic characteristics at a short distance due to the geomorphological structure and the fact that the natural vegetation has been protected from being destroyed due to its long-term national park status are the most important reasons for this vegetation wealth (Bașar, 2007). Because of this unique biodiversity, the Dilek Peninsula has been recognized by the European Council as the “Biogenetic Reserve” which is an international conservation area for the protection of species or communities that are extinct or whose genetic diversity is diminishing in terms of vegetation. The rich variety of plants of the National Park can be seen more closely by visitors who are interested in botanical tours (Sürück, 2019).

Within the borders of the National Park; 804 taxa were determined at the level of species, subspecies and variety belonging to 95 families. Elemental content of taxa are Mediterranean Element 163, Eastern Mediterranean Element 159, Euro-Siberian Element 33, Iran-Turanian Element 12 and Endemic Species 30 (General Directorate of Nature Protection and National Parks, 2019). Six of these plants are seen only here in the world. It also includes the 30 plant species found only in Turkey in the world. The liveliest and healthy examples of almost all plant species of Mediterranean maquis flora are located on the peninsula (Sürück, 2019).

The forest-coastal ecosystem of the park consists of Mediterranean maquis flora dominated by plants such as Pinus brutia, Arbutus andrachne, Arbutus unedo, Pinus nigra, Platanus sp., Quercus sp. are dominant on the forest-mountain ecosystem of it (Bașar, 2007). In the valleys and canyons of Dilek Peninsula, the vegetation is dominated by species such as Tilia rubra caucasica, Tilia argentea, Acer sempervirens, Sorbus terminalis, Castanea sativa, Populus tremula, Fraxinus ornus, Viburnum lantana and Quercus cerris. Furthermore, the Quercus ilex, which is although showing a wide distribution in the western Mediterranean, showing a local and limited distribution in Turkey, shows a dense spread in the National Park. This species spread in the valley, canyon and bottomlands, coexists with the species as Ceratonia siliqua, Olea europea, Laurus nobilis, Arbutus
andrachne, Spartium junceum, Phillyrea latifolia. Also, the species as Cupressus sempervirens and Juniperus phoenicea which have a very limited distribution in Turkey, exist in this region. Another speciality of the Dilek Peninsula is that many maquis species have become trees due to protection. Campanula tomentosa, Silene splendes, Verbascum meandri, Malope anatolica, Helsichyrsyum heywoodium, Centaurea acicularis spp. davisiana are the endemic plants in the park (Özel, 1996).

Fauna Wealth

The fauna of the Dilek Peninsula - Great Meander Delta National Park is as rich as its flora and contains many animal species from insects to mammals. There are 28 mammals, 48 reptiles, 250 bird species and many marine animals in the National Park (Başar, 2007).

The Mediterranean Monk Seal (Monachus monachus), one of the world’s 10 rarest marine mammals, also lives on the shores of the National Park. Wild boar (Sus scrofa), Caracal cat (Caracal caracal), Eurasian lynx (Lynx lynx), golden jackal (Canis aureus), striped hyena (Hyaena hyaena), wild cattle and horses and many animal species are the animals found in the park. The National Park is the last point where the Anatolian leopard (Panthera pardus tulliana), which is extinct or about to be extinct, lives in the west (Sürrücü, 2019).

Dilek Peninsula - Great Meander Delta National Park has about 250 bird species and 70 of them breed here. The pygmy cormorant (Microcarbo pygmaeus) which is the threatened species in world scale, the Dalmatian pelican (Pelecanus crispus) which has a total estimated number of 3,000 couples all over the world, the little egret (Egretta garzetta), the Kentish plover (Charadrius alexandrinus) and the white - tailed sea - eagle (Haliaeetus albicilla) are some of the important bird species which breed in the delta. Because of its location, which is on the migration routes of the migratory birds, the delta hosts about 30,000 birds each year. The marine ecosystem around the Dilek Peninsula includes many fish species and a small number of other marine organisms. The main fish species found in the National Park shore are determined as; Sparus aurata (Gilthead seabream), Moronidae sp. (perch), Trachurus trachurus (Atlantic horse mackerel), Epinephelus guaza (orfoz) ve Psetta maxima (turbot). Due to its biodiversity, the National Park is protected with the Ramsar, the Bern (Convention on the Conservation of European Wildlife and Natural Habitats) and the Barcelona Convention (The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, originally the Convention for Protection of the Mediterranean Sea against Pollution) and the Convention on Biological Diversity (Aydın Governorship, 2019) (Figure 3).
Recreational Facilities

Active and Passive Recreational Facilities

Access to the Dilek Peninsula section of the National Park can be done from a single point through Kuşadası and the entrances and exits are under control at this point. There is a motorway from this entrance gate to Kavaklıburun Bay and it is open to visitors. From the Kavaklıburun Bay to the north, the western part of the Dilek Peninsula is closed to visitors for security reasons and no recreational activities are allowed in this area. There is no roadway for the connection of Dilek Peninsula to Great Meander Delta and access to this site is provided through the Oluklu Canyon trekking route (Öztürk and Kalaycı, 2018). Due to its close location to an important tourism area such as Kuşadası and ease of transportation, the area is heavily influenced by visitors especially in summer months (Cevreonline, 2019).

Around 700,000 local and foreign guests visit the Dilek Peninsula - Great Meander Delta National Park annually. Visitors can do daily sea sports in organized areas as well as hiking, cycling, photo safari, landscape watching, angling, cultural walks, bird watching, botanical tour activities etc. within the framework of eco-tourism rules (Kuşadası District Governorship, 2019). It is seen that the area can allow many ecotourism
activities. Natural formations such as caves, hills and potholes; it has the potential to satisfy local and foreign tourists with features such as having various wildlife elements and different ecosystems together (Öztürk and Kalaycı, 2018).

**Important Sub - Spaces in The Park**

*Botanic tours* are organized on the 2 km. course between Kavaklıburun - Karasu Bays and *nature walks* and botanic tours are organized between Canyon - the Old Doğanbey Village (General Directorate of Nature Protection and National Parks, 2019).

The National Park is an area suitable for *hiking* with its waterfalls, streams, pools, unique vegetation and wonderful views. There is a map of the Dilek Peninsula - Great Meander National Park that shows bike routes, trekking and botanical tour routes and lengths. According to this map data, there are two hiking trails in the area. The starting point of both of these trails is Olukdere Canyon and the endpoint is the Publicity and Visitor Center in the Old Doğanbey Village. Between these two points, there are two alternative routes of 16.4 km and 17.8 km. On the way, there is the possibility of encountering different wild animals (especially wild boar). Another alternative course is a 30 km. long trekking line from Panionion to Old Doğanbey Village, which is home to several antique buildings, close to the entrance of the National Park, which can also be used with bicycles. An alternative course is a long course, starting from the OluKu Canyon and the distance from the Patrol Pass to Panionion is 37 km. There are trails for *cycling* in the area. These are Aydınlık Bay route that is 5 km. long and Samos Island route that is 1.5 km. long are suitable for cycling tours. Also in the field; there are long-distances cycling trails of 30 km. between Panionion – the Old Doğanbey Village, 15 km. between Oluklu Canyon - the Old Doğanbey Village and 37 km. between Oluklu Canyon - Karakol Gediği - Panionion (Öztürk and Kalaycı, 2018).

In the Great Meander Delta, *sporting angling* and *bird watching* can be performed on the evacuation channel and Great Meander river. *Cultural tours* can be done to the Panionion, Zeus Cave, the Old Doğanbey Village, the Old Winery location, Thebai (Thebes) Ancient City that are within the borders of the National Park. Also, ancient cities of Priene and Miletus are located near the National Park and important among these cultural tours (General Directorate of Nature Protection and National Parks, 2019).

The National Park is preferred by domestic / foreign tourists for *photo safari* for its unique resource values and landscape quality such as Dilek Hill, Olukdere Canyon, existing bays etc.

There are many bird species within the boundaries of the area and some of them breed in here. The National Park, which has the status of
Special Bird Areas (IBA) with this feature, allows bird watching including some endangered species. At certain times, these observations can be made as planned by the park’s administration (Öztürk and Kalaycı, 2018).

There are natural and culturally formed areas in the National Park which are very suitable for landscape track. Samos Island, Great Meander Delta, Güzelçamlı and Davutlar beaches are easily watched from Dilek and other hills. Also, paragliding is possible in the National Park, since 2007 with the contribution of the Municipality of Güzelçamlı from the Kaplan Rock that is 950 m. high (Dilek Peninsula Great Meander Delta National Park, 2019).

Diving activities is possible in the parts of the National Park that are not planned as a recreational area but can be reached by footpaths. Also, jeep and horse safari recreational activities are organized in the area (General Directorate of Nature Protection and National Parks, 2019).

It is not possible to stay in a hotel in Dilek Peninsula and Great Meander Delta National Park. However, there are many holiday villages, hotels and pensions in Güzelçamlı, Davutlar, Kuşadası, Didim and Söke that are adjacent to the National Park (Cevreonline, 2019). On the other hand, it is possible to stay in caravan, tent or bungalows in some part of the National Park (Figure 4).

![Recreational facilities](URL 11, URL 12, URL 13).
SWOT Analysis of the Research Area

The SWOT analysis of the study area is given in Table 1.

Table 1: SWOT analysis (Adapted from Aydın Governorship, 2019)

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Location of the area</td>
<td>▪ International recognition</td>
</tr>
<tr>
<td>▪ Being protected by many international conventions.</td>
<td>▪ Having a revised long - term development plan</td>
</tr>
<tr>
<td>▪ Being one of the most famous parks in the world</td>
<td>▪ Willingness of public institutions and NGOs to make investment on the area</td>
</tr>
<tr>
<td>▪ Flora and fauna wealth</td>
<td>▪ Being supported by ministries</td>
</tr>
<tr>
<td>▪ Presence of endemic species</td>
<td>▪ Having strong public awareness</td>
</tr>
<tr>
<td>▪ Having a potential in terms of nature tourism</td>
<td>▪ Being attractive for resaerchers and scientific studies</td>
</tr>
<tr>
<td>▪ Low settlement pressure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Lack of fire action plan</td>
<td>▪ Forest fires</td>
</tr>
<tr>
<td>▪ High demand over its carrying capacity</td>
<td>▪ Presence of privately - owned lands</td>
</tr>
<tr>
<td>▪ Having an unplanned road network</td>
<td>▪ Illegal cutting of trees</td>
</tr>
<tr>
<td>▪ Pollution in the delta and its nearby</td>
<td>▪ High user expectancy over the area</td>
</tr>
<tr>
<td></td>
<td>▪ Disproportional demands for tourism investment</td>
</tr>
</tbody>
</table>

CONCLUSION

Dilek Peninsula Great Meander Delta National Park which is protected due to its unique natural, cultural, historical, archaeological and so on specialities and also which is planned as a recreation area offered to the benefit of public, has an increase in visitor density each passing day and with this situation some deteriorations come over on its natural and cultural resource values. However, the main purpose of registering an area as a national park is to transfer its unique resource values to future generations by considering the balance of protection and use. In addition to the problems experienced due to the intensive use, the problems such as; the forest fires and absence of fire action plans, pollution in the delta and its nearby, flora and fauna habitat fragmentation which is caused by the infrastructure works carried out without considering the natural dynamics of the area and the insufficiency of these implementations, illegal cutting of trees, presence of privately - owned lands in the research area etc. damage the National Park irreversibly. “The Dilek Peninsula - Great Meander Delta National Park Long -Term Development Plan” which was
prepared and put into force by the General Directorate of Nature Conservation and National Parks in 1997, has tried to balance the protection and use functions of the peninsula by considering the characteristics of the national park, and aimed to establish, develop and operate the peninsula. It has been determined that this plan does not meet the needs of today, and within this scope, preparations for a revised long-term development plan that will meet the current needs of the National Park in terms of legal, scientific and social aspects have been started. The revised plan is expected to be approved and put into effect in 2020.
LITERATURE


