



Park Equipment Information System the Case of Tayfun Gürsoy Park in Altınordu District, Ordu Province in Türkiye

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ARTICLE INFO

Research Article

Received : 12.07.2024

Accepted : 23.07.2024

Keywords:

Coastal Parks
Urban Furniture
Geographical Information
Park Equipment's
Türkiye

ABSTRACT

This study deals with an information system developed to effectively manage and optimize the maintenance processes of the urban furniture used in Tayfun Gürsoy Park located in Altınordu district of Ordu province. Within the framework of the study, Geographic Information System (GIS) was used to make an inventory of the equipments in the coastal parks, to determine their location and to monitor their condition. GIS was used to collect and analyze the location data of the equipments, allowing for more efficient planning of maintenance and management processes. The results of the study show that it will increase the efficiency of the maintenance and management processes of the equipments in the coastal parks and will provide savings in the use of resources.

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Introduction

Today, coastal areas have started to change due to factors such as rapid urbanization, industrialization and population growth. In particular, the coasts contribute to the system of open green spaces, which are important recreational areas of cities in terms of aesthetics and function. In addition, coastal areas are also used as important green spaces to meet the increasing recreational needs of urban residents (Uzun, 1990; Özdingiş, 2007; Yeşil & Beyli, 2018). Accordingly, urban equipments are also needed in the use of these areas.

Urban furniture are units placed in cities and urban landscape areas to meet the needs of society such as comfort, rest, protection, participation in organizations, information, and circulation (Yıldırım, 2011; Vural & Yılmaz, 2018; Aksoy & Demir, 2022).

Urban equipments provide comfort and convenience to users and add vitality to the places where they are located (Sakal, 2007). According to Yücel (2006), urban park equipments play an important role in community life and give character and identity to the places where they are located. In addition, as Susmuş (1999) states, the physical characteristics of urban park equipments reflect the identity of the environment in which they are located and include

elements such as scale, color, material, and texture (Bayraktar et al., 2008; Kurdoğlu & Çelik, 2016).

It should be considered that urban amenity elements have not only physical characteristics but also social, cultural and economic qualities. These elements should be designed together with their physical and functional characteristics in order to produce solutions for the needs of users (Celbiş, 2001). As stated by Yıldızcı (2001) and Aksu et al. (2011), urban park equipments should be designed according to the physiological and psychological structure of users. Therefore, it is important to consider functional and aesthetic elements (form, line, texture, scale, color, etc.) in the design process (Pekin & Timur, 2008).

According to Akyol (2006); the equipments should be determined according to the needs of the area where they are placed and should be placed as much as the needs of the space where they are used. In addition, these elements should support the social relations among the users (Konakoğlu & Çelik, 2023).

Urban enhancement elements increase the possibility of use by revitalizing the space where they are located. According to Yıldızcı (2001), some of the park equipments are classified as follows.

Seating units are used to satisfy actions such as resting, waiting for someone, chatting or just spending time in public spaces, creating social spaces in the city and attracting people to a desired area (Akyol, 2006).

Lighting elements allow us to recognize spaces and objects in public spaces (Işık, 2003; Konakoğlu & Çelik, 2023). The main purpose of lighting is to provide visual comfort with a certain level of illumination and lighting elements are one of the most prominent elements that determine the character of urban spaces (Haris & Dines, 1988; Ünver, 2001).

Signs and information signs refer to all elements that facilitate the communication of people in public spaces, regulate their relationships with each other and their environment, and provide information flow through signs (Alpagut, 2005). Art objects are sculptures, works of art, or plastic objects used in public spaces and are usually placed to attract attention, create a focal point, or convey a message (Booth, 1989).

Canopies are used in public spaces, parks and recreation areas to reduce the effects of sun and wind on seating and picnic areas. They are suitable for covering large areas, creating bright spaces, and adding a different image or color to spaces. They are usually designed together with seating units (Akyol, 2006).

Trash cans are used to collect garbage produced by people in public spaces. The size of these bins varies according to the frequency of emptying. In addition, they should be resistant to environmental conditions, made of fireproof material, of sufficient width, waterproof, and designed in a way that prevents garbage from scattering (Yücel, 2006; Bayraktar et al., 2008).

Today, information has become accessible thanks to the rapid development of technology. Computers and electronic communication play an important role in the presentation of information. In a rapidly changing world, there is an increasing tendency to use computer technologies to speed up the flow of information. Geographic Information Systems (GIS) are part of this trend (Durkaya and Durkaya, 2003). GIS is a set of software and hardware systems that includes many functions such as collecting, storing, managing, correcting, modifying, analyzing, developing models, and presenting new data on various spatial data in the real world (Davis, 1996). GIS has the ability to make logical connections to produce information from data (Durduran et al., 2002). Due to these features, it is used by many professional groups for various purposes.

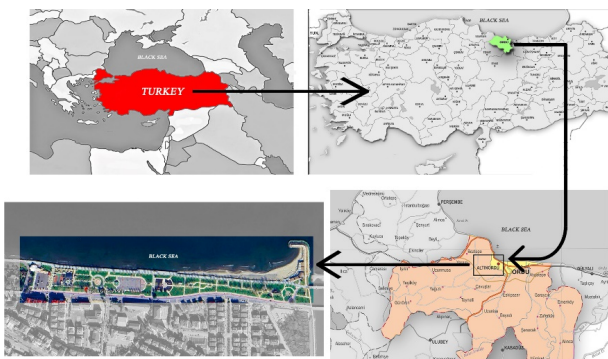


Figure 1. Tayfun Gürsoy Park in Altınordu district of Ordu province

The aim of this study is to develop an information system for the effective management and optimization of the maintenance processes of the park equipments used in Tayfun Gürsoy Park, Altınordu District, Ordu Province, and to evaluate the efficiency and resource savings provided by this system in the processes of creating an inventory of the equipments, determining their location and monitoring their status, and to create a Coastal Parks Equipments Information System (CPRIS) that can be used in all parks.

Material and Method

The province of Ordu, where the study was conducted, is located in the eastern Black Sea region. It is located between 41°08' - 40°20' north latitude and 36°40' - 38°06' east longitude. Ordu is bordered by the Black Sea in the north, Tokat and Sivas in the south, Giresun in the east and Samsun in the west, in Türkiye. Its geographical location is between 40°-41' north parallels and 37°-38' east meridians. The population of Ordu province in 2023 is 775,600. The area of Ordu is 5,952 km² and there are 130 people per square kilometer (Anonymous, 2024).

The provincial center of Ordu is located on the alluvial plain formed by the Melet Valley, at the foot of Boztepe at an altitude of 500 meters. A temperate climate prevails throughout the province, with mild winters and relatively cool summers. Ordu receives seasonal rainfall throughout the year. Ordu has a rich network of rivers and streams in all the ravines. Among the most important rivers are Melet River, Bolaman Stream, Elekçi River and Turna Water.

Tayfun Gürsoy Park, which was selected as the study area, is located in the Altınordu district. Altınordu district has an area of 303.6 km² and consists of 40 neighborhoods in total. There are 22 neighborhoods in the center of the district with a total area of 2,091 km². Within these 22 central neighborhoods, there are 78 parks with a total surface area of 416,575 m² (Yeşil & Beyli, 2018).

Tayfun Gürsoy Park is located on the shoreline of Bahçelievler neighborhood in Ordu. This urban park has a total area of 85,000 m² and a length of 1290 meters. The park has many functions such as a bicycle path, jogging path, fitness areas, children's playgrounds, cafes, parking area, fairground, sports fields and beach uses (Figure 1).

In this study, field studies, data collection, analysis and synthesis steps of landscape research methods were used (Kaya, 1993; Eymirli, 1994; Yılmaz, 1994; Bulut et al. 2008; Bayramoğlu & Özdemir 2012). Within the framework of the study, information on equipments was collected and field work was conducted to determine the type, function and damage status of the existing equipments in the campus. For the classification of the urban equipments, attribute information of each element and Geographical Information System (GIS) were used. The locations of the classified equipments were determined in the field between 20.04.2024 and 27.04.2024. During the field studies, identifying photographs of the urban equipments were taken and identification cards were created and attached to the photographs. Information such as the number, coordinates, type, physical characteristics (material, color, shape), and damage status of the urban equipments were recorded on the identification card. Çelik's (2015) study was used in the preparation of the ID cards (Figure 2).

TAYFUN GÜRSOY PARK EQUIPMENT IDENTIFICATION CARD			
PHOTOGRAPH	NUMBER	QUANTITY	
GPS COORDINATES			
X		Y	
PHYSICAL PROPERTIES			
MATERIAL			
COLOR			
FORM			
DAMAGED STATUS			
NOT DAMAGED		DAMAGED	
LITTLE DAMAGED		VERY DAMAGED	
TYPE OF REINFORCEMENT			
LIGHTING ELEMENTS		STOPS	
SIGN AND INFORMATION BOARD		BILLBOARD	
SEATING UNIT		FOUNTAIN	
ART OBJECT		CAMERA	
TOP COVER ELEMENT		DUSTBIN AND CONTAINER	

Figure 2. Example of Tayfun Gürsoy Park Equipment Identification Card

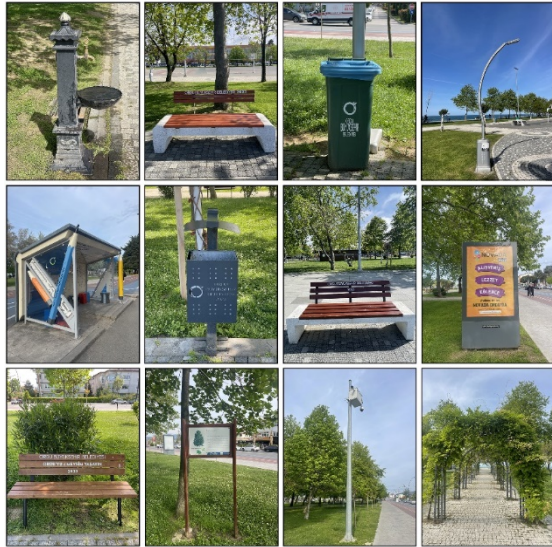


Figure 3. Images of Some Equipments in Tayfun Gürsoy Park

TAYFUN GÜRSOY PARK EQUIPMENT IDENTIFICATION CARD			
PHOTOGRAPH	NUMBER	QUANTITY	
GPS COORDINATES			
X	40°59'3.09"N	Y	37°53'33.41"E
PHYSICAL PROPERTIES			
MATERIAL	ALUMINUM DIE CASTING		
COLOR	GRAY		
FORM	FORMAL		
DAMAGED STATUS			
NOT DAMAGED		<input checked="" type="checkbox"/>	DAMAGED
LITTLE DAMAGED			VERY DAMAGED
TYPE OF REINFORCEMENT			
LIGHTING ELEMENTS		STOPS	
SIGN AND INFORMATION BOARD		BILLBOARD	
SEATING UNIT		FOUNTAIN	<input checked="" type="checkbox"/>
ART OBJECT		CAMERA	
TOP COVER ELEMENT		DUSTBIN AND CONTAINER	

TAYFUN GÜRSOY PARK EQUIPMENT IDENTIFICATION CARD			
PHOTOGRAPH	NUMBER	QUANTITY	
GPS COORDINATES			
X	40°59'3.20"N	Y	37°53'40.60"E
PHYSICAL PROPERTIES			
MATERIAL	CONCRETE AND WOOD		
COLOR	BROWN / GRAY		
FORM	FORMAL		
DAMAGED STATUS			
NOT DAMAGED		<input checked="" type="checkbox"/>	DAMAGED
LITTLE DAMAGED			VERY DAMAGED
TYPE OF REINFORCEMENT			
LIGHTING ELEMENTS		STOPS	
SIGN AND INFORMATION BOARD		BILLBOARD	
SEATING UNIT	<input checked="" type="checkbox"/>	FOUNTAIN	
ART OBJECT		CAMERA	
TOP COVER ELEMENT		DUSTBIN AND CONTAINER	

Figure 4. Examples of Identity Cards Created for Each Equipments in Tayfun Gürsoy Park

The attribute data and locations of the identified urban equipments in the identification cards were transferred to the digital environment using Geographical Information Systems (GIS). Thus, a “Coastal Park Equipment System” was created in the GIS environment. With the information transferred to the digital environment, the location of each equipments was marked in the GIS environment and bases were created according to the types of equipments. In the last stage, the results were discussed and suggestions were made.

Results

During the field studies, a total of 447 equipments of 10 different types were identified in Tayfun Gürsoy Park, including 219 lighting elements, 63 seating units, 74 trash cans and containers, 36 signs and information boards, 10 cameras, 12 billboards, 21 artistic objects, 4 fountains, 4 stops and 4 covers.

For each equipment, a total of 447 equipment ID cards were created, including its type (lighting element, information sign, seating unit, artistic object, overlay element, trash bin and container, bus stop, billboard, fountain camera), coordinates (X, Y), physical characteristics (material, color, shape/form), damage status (undamaged, damaged, slightly damaged, heavily damaged), number, number and photo. Examples of ID cards created for each equipments are shown in Figure 4.

In Tayfun Gürsoy Park in Altınordu district of Ordu province, it was found that 219 lighting elements were of 7 different types, 63 seating units were of 4 different types, 74 trash cans and containers were of 4 different types, 36 signs and information boards were of 7 different types, 10 cameras were of 2 different types, 12 billboards were of 3 different types, 21 artistic objects were of 5 different types, 4 fountains were of 2 different types, 4 stops were of 4 different types, and 4 cover elements were of a single type. While creating identity cards for each reinforcing element, they were also classified and numbered according to their types, and their characteristics are given in Table 1.

The attribute data of 447 equipments in Tayfun Gürsoy Park in Altınordu district of Ordu province were processed in a GIS environment (Figure 5). After the data input, separate maps were created for each equipments (Figure 7, Figure 9, Figure 11, Figure 13, Figure 15, Figure 17, Figure 19, Figure 21, Figure 23 and Figure 25).

Lighting Elements

219 lighting elements were identified within the study area. These lighting elements are 36 vehicular roads, 43 coastal roads, 114 pedestrian paths, 16 grounds, 7 sports and children’s playgrounds, and 3 parking lots. There are 7 different types of lighting elements (Figure 6).

When analyzing the damage status of the lighting elements, it was found that 203 of them were not damaged and 16 of them were severely damaged. The distribution map of lighting elements within the study boundaries is shown in Figure 7.

Seating Units

Within the study area, 63 seating units were identified. During the study, it was observed that there were 3 different types of seating units (Figure 8).

Table 1. Characteristics and numbers of different types of equipments in Tayfun Gürsoy Park, Altınordu District, Ordu Province

Type of Equipment's	Type	Type Specification	Number
Lighting Elements (Total 219 units)	A-Type 1	Lighting is rectangular and single-armed at medium height	114
	A-Type 2	Rectangular body shaped and double-armed high tall lighting place	43
	A-Type 3	The lighting is square and double-armed with high height	36
	A-Type 4	Lighting place round floor-mounted spot lighting	16
	A-Type 5	Rectangular single arm double illuminated high height lighting	6
	A-Type 6	Rectangular single-armed and tall lighting	3
	A-Type 7	Lighting place round single arm high height	1
Seating Unit (Total 63 units)	B-Type 1	Wooden bench with 3 rows of spaced metal legs	39
	B-Type 2	4 rows of spaced rectangular concrete pedestal bench	19
	B-Type 3	6 rows of concrete bench with oval concrete legs	5
Dustbin and Container (Total 74 units)	C-Type 1	Rectangular shaped metal bucket with gray color cap	45
	C-Type 2	Green color plastic container with lid	22
	C-Type 3	Rectangular shaped gray metal bucket ashtray	6
	C-Type 4	Rectangular form with concrete sides and wooden bucket lid	1
Sign and Information Board (Total 36 units)	T-Type 1	Signboard with the name of the site on a rectangular marble wall	2
	T-Type 2	5 colorful directional signs on a rectangular pole	1
	T-Type 3	2 rectangular informative signs on wooden legs	10
	T-Type 4	2 square-shaped informative signs on wood	3
	T-Type 5	Roadside signs	18
	T-Type 6	Wooden construction	1
	T-Type 7	Black color directional sign on rectangular pole	1
Camera (Total 10 units)	K-Type 1	High height with 3 cameras	6
	K-Type 2	Mid-height single camera	4
Billboard (Total 12 units)	R-Type 1	Brown framed glass panel	1
	R-Type 2	Glass panel with gray frame	7
	R-Type 3	Tall glass panel with gray frame	3
	R-Type 4	Glass panel with gray framed digital display	1
Art Object (Total 21 units)	H-Type 1	Airplane	1
	H-Type 2	Human figure sculpture	1
	H-Type 3	Nasrettin Hodja plastic object	1
	H-Type 4	Fish figured object	1
	H-Type 5	Sculptures on marble base	17
Fountain (Total 4 units)	F-Type 1	Single faucet	2
	F-Type 2	Double faucet	2
Stops (Total 4 units)	D-Type 1	Bus stop with math figures	1
	D-Type 2	Bicycle stop	1
	D-Type 3	Disabled vehicle charging station	1
	D-Type 4	One side and covered bus stop	1
Top Cover Element	U-Type 1	Metal stands for ivy flowers (Total 4 units)	4

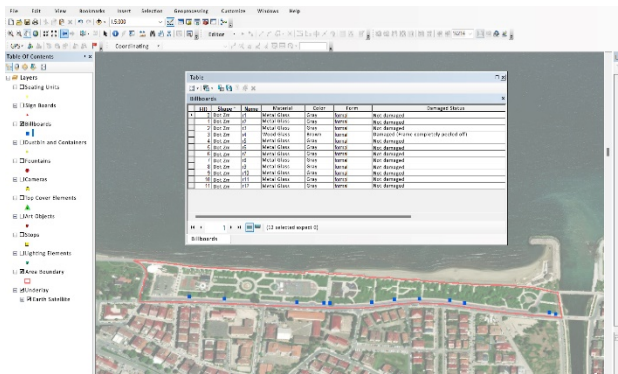


Figure 5. GIS Data Entry

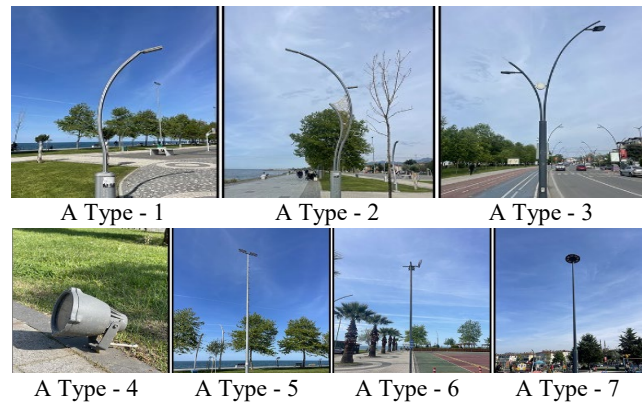


Figure 6. Types of lighting elements

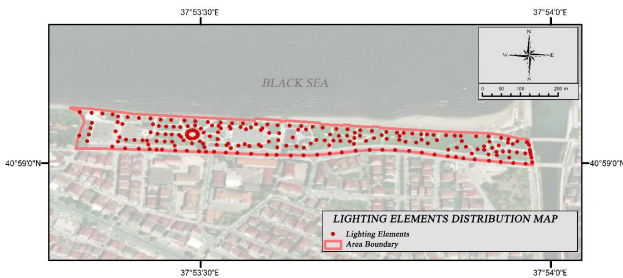
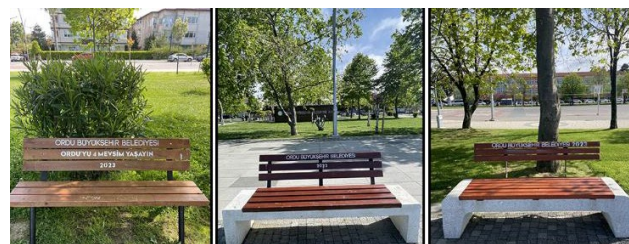


Figure 7. Distribution map of lighting elements in the study area



B Type - 1 B Type - 2 B Type - 3

Figure 8. Types of seating units

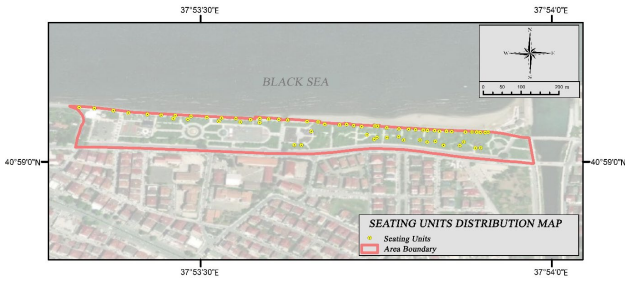


Figure 9. Distribution map of seating units in the study area

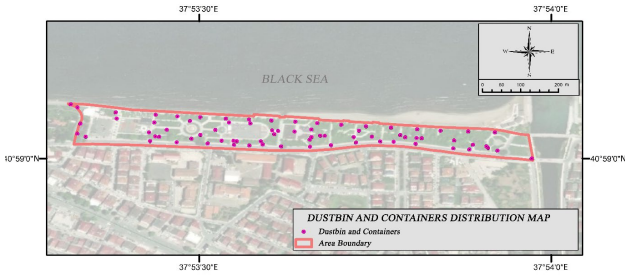


Figure 11. Distribution map of dustbin and containers in the study area

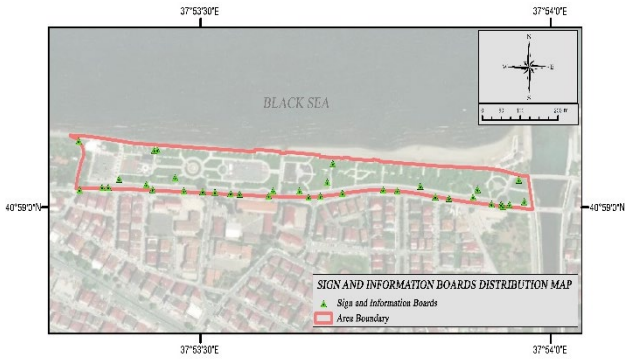


Figure 13. Distribution map of signs and information boards in the study area

When the damage status of the seating units was analyzed, it was found that 63 of them were not damaged. The distribution map of the seating units within the study area is shown in Figure 9.

Dustbin and Containers

Within the study area, 74 dustbin and containers were identified. During the surveys, it was observed that there were 3 different types of dustbin and one type of container (Figure 10).

When the damage status of the dustbin cans was analyzed, it was found that 55 of them were not damaged and 19 of them were damaged. The distribution map of bins and containers within the study area is shown in Figure 11.

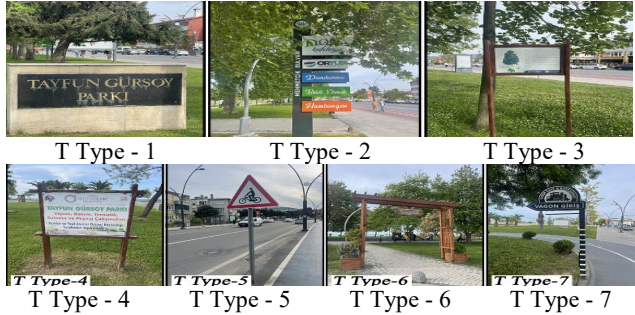
Sign and Information Boards

Within the study area, 36 signs and information boards of 7 different types were identified (Figure 12). Of these signs and information boards, 18 are information boards and 18 are sign boards.

When the damage status of the signs and information boards was analyzed, it was found that 36 of them were not damaged. The distribution map of signs and information boards within the study area is shown in Figure 13.



C Type - 1 C Type - 2 C Type - 3 C Type - 4
Figure 10. Types of dustbin and containers



T Type - 1 T Type - 2 T Type - 3
T Type - 4 T Type - 5 T Type - 6 T Type - 7
Figure 12. Types of signs and information boards



K Type - 1 K Type - 2
Figure 14. Types of cameras

Cameras

A total of 10 cameras were identified within the study area. Of these, 4 cameras monitored the parking lot and 6 cameras monitored the interior of the area. During the surveys, 2 different types of cameras were identified (Figure 14).

The distribution map of cameras within the study boundaries is shown in Figure 15.

Billboards

There were 12 billboards identified within the study area. During the surveys, 4 different types of billboards were identified (Figure 16).

When analyzing the damage status of the billboards, it was found that 11 were not damaged and 1 was damaged. The distribution map of billboards within the study area is shown in Figure 17.

Art Objects

21 art objects were identified within the study area. The analysis revealed 5 different types of art objects (Figure 18).

When analysing the damage status of the art objects, it was found that 21 of them were not damaged. The distribution map of art objects within the study area is shown in Figure 19.

Fountains

Within the study area, 4 fountains were identified. The investigations revealed 2 different types of fountains (Figure 20).

When the damage conditions of the fountains were analyzed, it was found that 3 of them were not damaged and 1 of them was severely damaged. The distribution map of the wells within the study area is shown in Figure 21.

Stops

Within the study area, 4 stops were identified. All 4 stops are of different types (Figure 22).

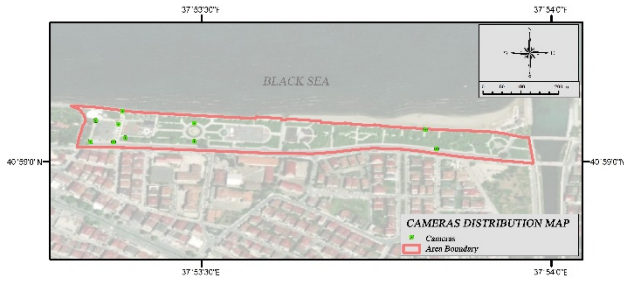


Figure 15. Distribution map of cameras in the study area

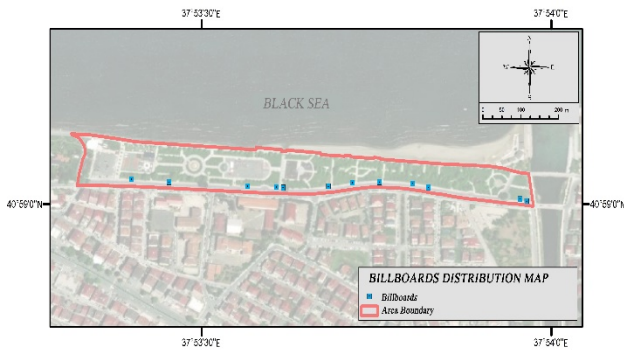


Figure 17. Distribution map of billboards in the study area

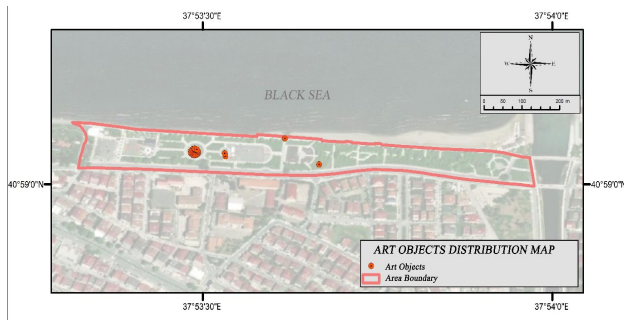


Figure 19. Distribution map of art objects in the study area



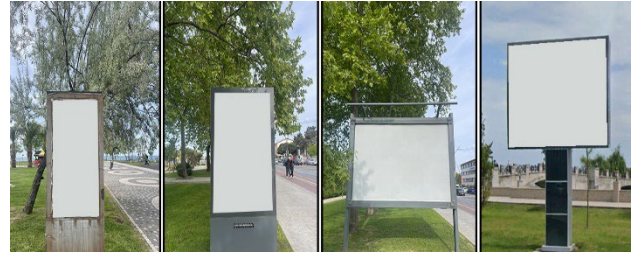
Figure 21. Distribution map of fountains in the study area

When analyzing the damage status of the stops, it was determined that 4 of them were not damaged. The distribution map of stops within the study boundaries is shown in Figure 23.

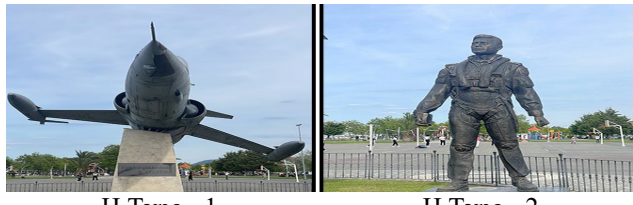
Top Cover Elements

Within the study area, 4 overcovers were identified. All 4 of these covers are in the form of living plant wraps on metal structures (Figure 24).

When the damage status of the top covers was analyzed, it was determined that there was no damage to 4 of them. The distribution map of the top cover within the study area is shown in Figure 25.



R Type - 1 R Type - 2 R Type - 3 R Type - 4
Figure 16. Types of billboards



H Type - 1 H Type - 2



H Type - 3 H Type - 4 H Type - 5

Figure 18. Types of art objects



F Type - 1 F Type - 2

Figure 20. Types of fountains



D Type - 1 D Type - 2 D Type - 3 D Type - 4

Figure 22. Types of stops

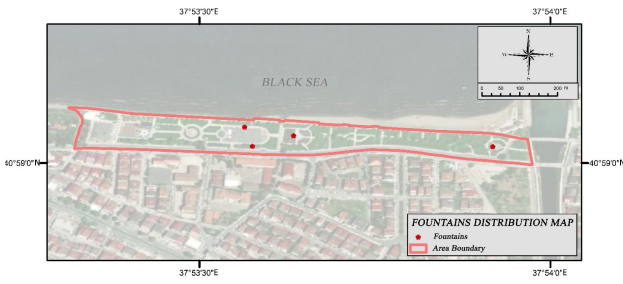
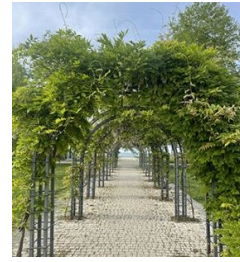


Figure 23. Distribution map of stops in the study area



U Type - 1
Figure 24. Top cover

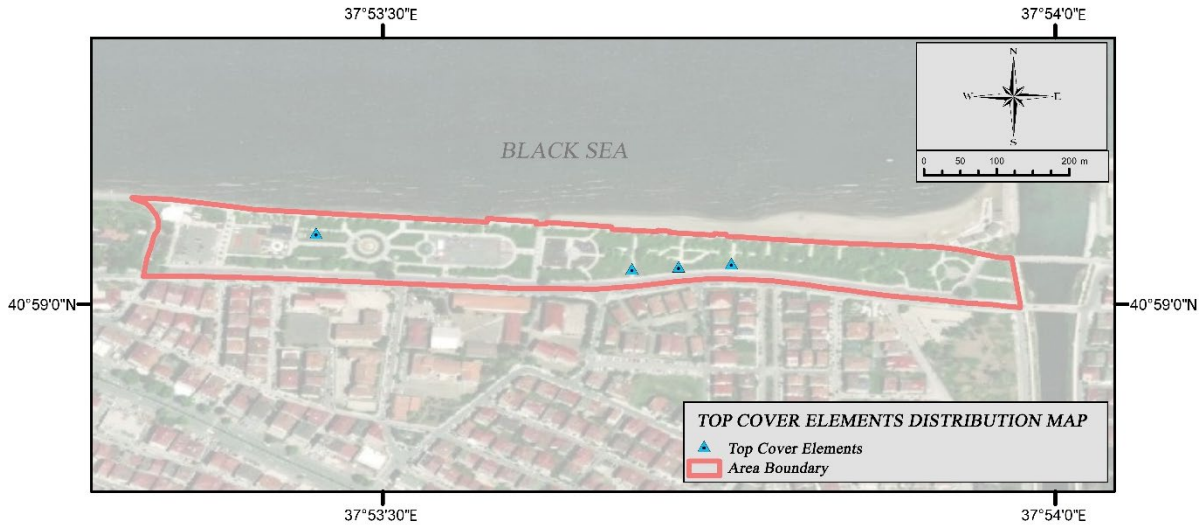


Figure 25. Distribution map of top cover in study area

Discussion and Conclusion

The main starting point of this study is to consider sustainability criteria while evaluating the design process of equipments used in coastal parks that serve different user groups and where social and cultural activities take place. By focusing on the equipment of coastal parks, it is predicted that designing in a way that meets the needs of all people, with and without disabilities, will increase the universality of a sustainable coastal park and provide guidance in all applications to be made for the park.

As a result of the field studies conducted in Tayfun Gürsoy Park, 447 equipments were identified. These elements were inventoried and their locations were determined using a Geographic Information System (GIS). In this way, a detailed database of the equipments of the park was created. In this study, GIS was used as an effective tool to collect and analyze the location data of the equipments. This system will provide the park management and maintenance teams with immediate information on the condition of the equipments and plan maintenance processes by analyzing this information. The GIS-based management system will enable more efficient maintenance and management processes, which will save resources and improve the overall functioning of the park. In addition, it will increase the efficiency of the maintenance and management processes of the strengthening elements in the coastal parks, ensure the longevity of the strengthening elements, and maintain the overall appearance and functionality of the park.

In this study, the urban equipments in Tayfun Gürsoy Park in Ordu province were classified according to Yıldızcı (2001), Çelik (2015) and Aksoy (2021). In this direction, the data of all types of equipment in Tayfun Gürsoy Park, a coastal park in Ordu province, were stored in a GIS environment. In addition, equipment identification cards of urban furniture, which contain a lot of information that can help research, have been created. For the analysis, a spatial GIS-based Coastal Park Furniture Information System (KPDBIS) was created, and identification cards for the location, material, coordinates, type, physical characteristics (material, color, shape) and a descriptive image of the urban furniture elements were created. In future projects or plans to be made in coastal parks, new products can be created based on the data of this study. By transforming this data into an application, users can submit their requests for equipment to the system at the moment they are in the area, and while the relevant units speed up the fulfillment of the need, it may also be possible to remove unused or obsolete equipment from the area.

In this study, which was conducted to investigate the type, physical characteristics and damage status of the equipments in Tayfun Gürsoy Park in Ordu Province, a total of 447 equipments of 10 different types were identified, including 219 lighting elements, 63 seating units, 74 trash cans, 36 signs and information boards, 10 cameras, 12 billboards, 21 artistic objects, 4 fountains, 4 stops and 4 covers. Of the 447 equipments identified within the study area, 4 were found to be slightly damaged, 20 were found to be damaged, 17 were found to be very damaged and 406 were found to be undamaged.

During the field studies in Tayfun Gürsoy Park;

- 219 lighting units of 7 different types were placed in sufficient numbers and homogeneously distributed throughout the entire area, including vehicle roadsides, walking paths along the coast and within the area, sports areas, and children's playgrounds.
- 63 seating units of 3 different types were located regularly and in sufficient numbers along the beach, but were insufficient in number and not homogeneously distributed throughout the area (Figure 26).
- 74 trash cans of 4 different types were found to be placed in a homogeneous distribution in sufficient number within the area, and only the eastern and western parts of the area were found to be lacking in number compared to the inner parts (Figure 27).
- 36 signs and information boards of 7 different types have been placed in sufficient number and homogeneous distribution for the whole area, including vehicle road sides and within the area.
- 10 cameras of 2 different types were installed in sufficient number and homogeneous distribution for the whole area, including parking lots, inside the area, on the seafront and on the road.
- 12 billboards of 4 different types have been placed in sufficient number and homogeneous distribution on the roadsides and at the borders of the area.
- 21 artistic objects of 5 different types have been placed at prominent points of the area in accordance with their design and purpose.
- 4 fountains of 2 different types are insufficient in both number and need (Figure 28).
- 4 bus stops of 4 different types are placed at appropriate distances and in sufficient numbers along the vehicle path.
- The single type of cover element placed at 4 different points is descriptive of the area, in harmony with its surroundings and in accordance with the design of the area. Since there are many tall trees in the area, there is no lack of cover elements.

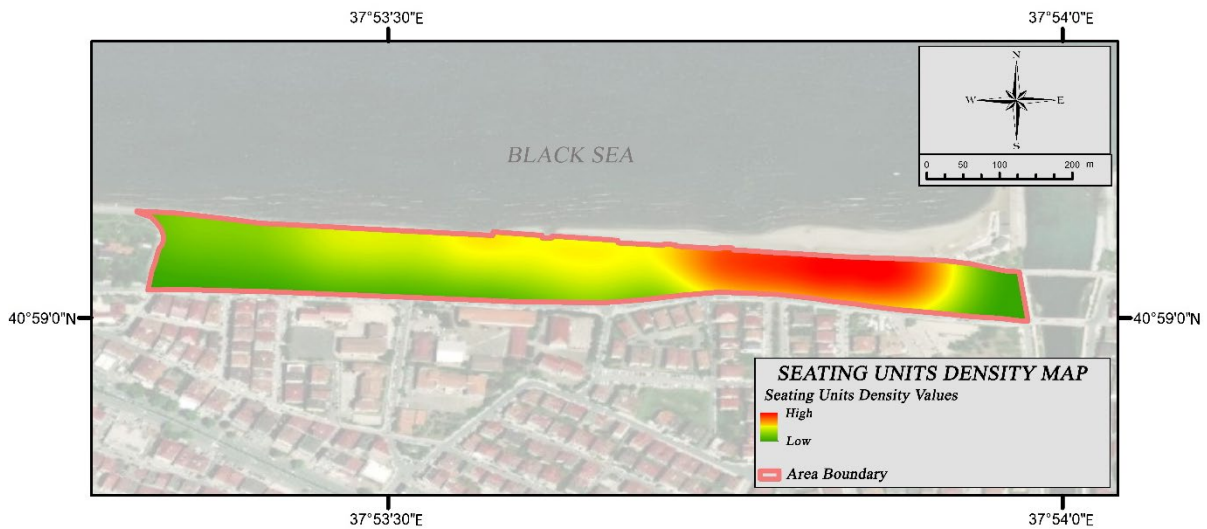


Figure 26. Seating units density map in the study area

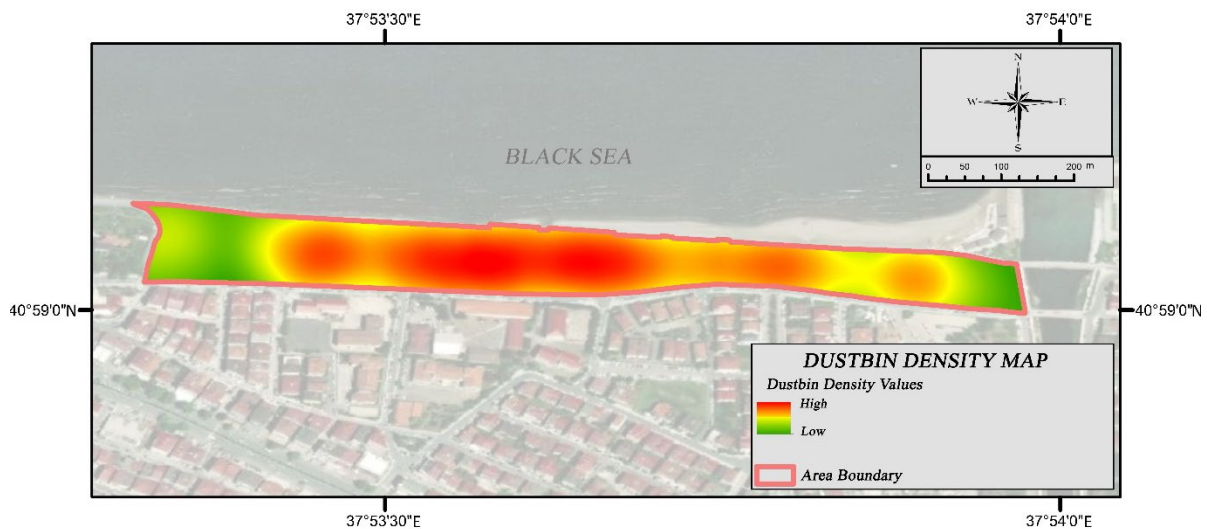


Figure 27. Dustbin density map in the study area

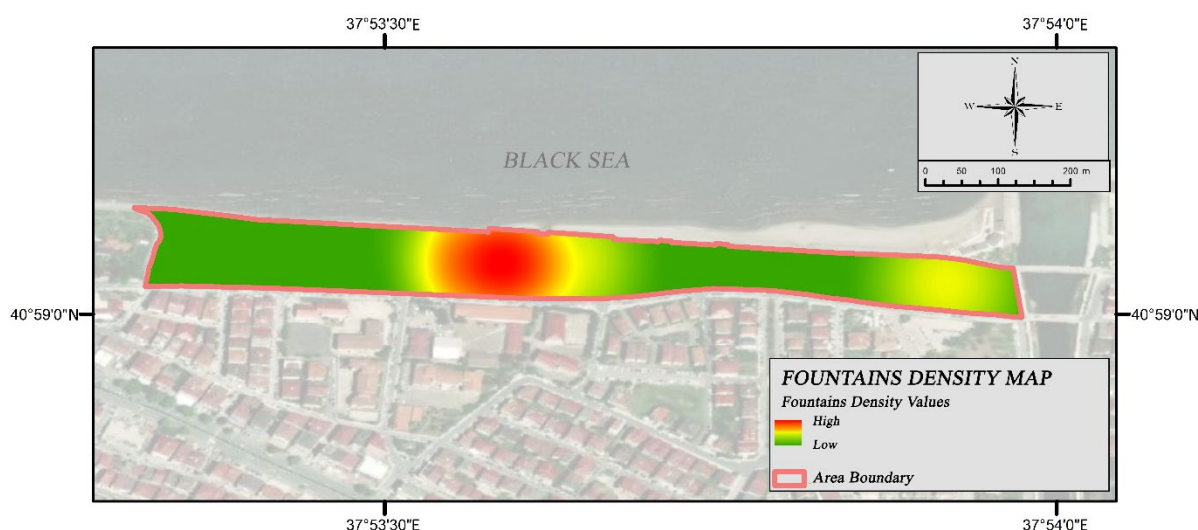


Figure 28. Fountains density map in the study area

In the light of the results of the study and the studies of the cover elements in the literature, the following suggestions can be made to improve the deficiencies of the cover elements of Tayfun Gürsoy Park in Ordu Province:

- Considering the size of the park and the number of users, the number of seats, trash cans and drinking fountains should be increased,
- The number of children's playgrounds and sports fields should be increased, as well as the number of seats and fountains,
- Emphasize designs such as water features in the common areas of the park,
- Considering the capacity of the park, vending units should be opened according to the needs,
- Floor coverings that do not pose a risk of tripping and slipping should be preferred for all persons in the park,
- Damaged equipments identified in the park should be repaired and their quality improved,
- The perception of space should be created by placing the facilities located in the park together and in harmony,
- In order to create the identity of the park, both functional and aesthetic equipment preferences should be made in accordance with its design.
- It is recommended that the use of GIS should not be limited to Tayfun Gürsoy Park, but should also be applied to other parks and green areas. In addition, the system should be constantly updated and new features should be added. Regular GIS training should be provided to the park management and maintenance teams. This training will ensure the effective use of the system and the adoption of best practices in the management of amenities.

Regular inspections of equipments and maintenance schedules should be based on GIS data. This will ensure that potential failures are identified in advance and intervention can take place in a timely manner.

A system should be established for park users to provide feedback on the equipments. This feedback can provide valuable information on the condition of the elements and help to better plan maintenance processes.

Local authorities should promote sustainability and environmentally friendly practices. This could include the use of energy efficient lighting, the use of bins and containers made from recycled materials, etc.

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