Research Article

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Nature-Compatible Landscape Design Approaches for Large-Scale Areas: The Case of Muğla

Büyük Ölçekli Alanlar için Doğayla Uyumlu Peyzaj Tasarım Yaklaşımları: Muğla Örneği

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ABSTRACT:

The interaction between humans and nature, along with the utilization of natural spaces to meet their needs, has led to the development of spatial solutions that are both functional and environmentally compatible. In this context, landscape design, which seeks to create outdoor spaces that align with ecological characteristics while fulfilling functional and aesthetic requirements, has become a vital sub-discipline within landscape architecture. The landscape design process involves translating planning decisions into optimal spatial solutions. Nature-compatible landscape designs prioritize the preservation of natural areas and prevent environmental degradation by considering the ecological and natural characteristics of the landscape. These ecological designs, particularly crucial in urban areas, are increasingly applied to large urban spaces, open areas, urban green spaces, and protected zones. Integrating large natural areas with urban spaces through landscape design significantly benefits cities and their inhabitants. Based on this premise, this study proposes an approach to landscape design for large-scale areas, identifying land uses that are environmentally sustainable and minimally invasive. As part of the research, detailed landscape design proposals, including site plans and visual representations, were developed for a selected site in Muğla province. The study presents a nature-compatible landscape design model applied to a forested area within Muğla's borders.

KEYWORDS: *Nature Area, Ecology, Muğla, Landscape Design*

ÖZ:

İnsanların doğa ile etkileşimi ve ihtiyaçları doğrultusunda doğal alanları kullanması, onları bulunduğu çevreye ve doğaya uyumlu, ihtiyaçlarını gideren mekânsal çözümlemelere yönlendirmiştir. Bu doğrultuda hem fonksiyonel hem görsel nitelikteki ihtiyaçları tamamlayan, dış mekanda ekolojik özelliklere uyumlu tasarım önerileri geliştirmeyi hedefleyen peyzaj tasarımı, peyzaj mimarlığı altında yer alan önemli bir alt disiplin olmuştur. Peyzaj tasarım süreci planlamada alınan kararların en uygun biçimde mekânsal çözümlemeler olarak ortaya çıkarılmasıdır. Özellikle doğal alanların korunmasına ve tahribatın önlenmesine önem veren doğa ile uyumlu peyzaj tasarımları, peyzaj alanlarının ekolojik ve doğal özelliklerini göz önünde bulundurarak çözümler sunmaktadır. Kentsel alanlarda ihtiyaç duyulan bu doğa ile uyumlu, ekolojik tasarımlar günümüzde kent içlerinde yer alan büyük alanlarda, açık alanlarda, kentsel yeşil alanlarda veya korunan alanlarda peyzaj tasarımları ile geliştirilmektedir. Özellikle kent ile bağlantısı bulunan doğa ile bütünleşik büyük alanların peyzaj tasarımı ile geliştirilerek kullanıma açılması birçok noktada kente ve kullanıcılara katkı sağlayacaktır. Bu noktadan yola çıkılarak ortaya çıkarılan bu çalışmada, büyük alanlarda doğa ile uyumlu peyzaj tasarımlarının nasıl olması gerektiğini ve bu alanların tasarımında hangi kullanımları belirlemek gerektiği ile ilgili öneriler sunulmuştur. Araştırmanın amacı Muğla'nın Fethiye Yanıklar bölgesinde, doğa ile uyumlu peyzaj tasarımı uygulamaları yapılmasının bölgedeki ekolojik bozulmayı azaltarak, sürdürülebilir turizm potansiyelini artıracağı yönündeki etkileri ortaya

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çıkarmaktır. Çalışmada Muğla ili sınırlarında yer alan bir ormanlık alan üzerinde doğa ile uyumlu bir peyzaj tasarım proje örneği ortaya çıkarılmıştır.

Anahtar Kelimeler: *Doğal Alan, Ekoloji, Muğla, Peyzaj Tasarımı*

INTRODUCTION

It is known that throughout history, humans have interacted with their external environment and nature. This interaction has established a bridge between humans and their surroundings, defining humans as an inseparable whole from the environment they inhabit. Human existence depends on the continuity of nature, and the balance between the natural environment and humans has been equated with the balance of conservation and utilization (Emekçi, 2021). Particularly after the Industrial Revolution and the subsequent urbanization, the loss of natural areas within urban spaces and daily life caused urbanization to extend toward rural areas in the 20th century (Özgüner, 2003). The ever-increasing human population has further contributed to the destruction, degradation, and inability of the natural regions to renew themselves, resulting from interactions with nature (Aytis and Ozcam, 2010). Consequently, significant responsibilities fall upon nature- and environment-based disciplines. Among these disciplines, landscape architecture undertakes environmental planning and design efforts to protect and utilize nature appropriately. Within the sub-discipline of landscape design, ecological designs that are harmonious with nature, environmentally conscious, climate-sensitive, resilient, and sustainable have come to the forefront to raise environmental awareness.

Design is one of the activities that play a significant role in solving many existing problems today. The design approach has shown development across various disciplines. Particularly, design, which provides the ability to present possibilities to meet the requirements of a workload, implement complex thinking systems in real life, and take goal-oriented actions (Wang and Foley, 2021), is utilized in spatial and product-oriented disciplines such as architecture, urban planning, landscape architecture, interior design, industrial design, and graphic design. Landscape design, defined as a sub-discipline of landscape architecture, is a process where outdoor spaces and human environments are shaped and detailed within the framework of planning decisions. In this process, factors such as land use, size, scale, and users are considered, and uses are determined according to the needs of the area (Korkut et al., 2017). Landscape design is the final stage of landscape planning, producing user-centered functional, ecological, and visual solutions. To provide a high quality of life suitable for users in the physical environment, to improve and preserve the environment's functionality, and to manage user perceptions visually, comprehensive management of landscape design practices is essential (Kayar, 2023). Accurate and applicable spatial solutions related to the study area must be proposed to achieve solution-oriented results in landscape design.

Living in harmony with nature has shaped human activities and needs in this direction. As a result, landscape designs have come to the forefront of understanding the natural process (Makhzoumi and Pungetti, 1999). Since landscape designs are carried out in outdoor spaces, the design approach is directly influenced by nature. This highlights the necessity of considering natural conditions in landscape design. In landscape designs where natural conditions are considered, harmony with nature is also sought. In nature-focused design approaches within landscape design and planning, solutions can be produced by modeling nature and aligning with natural processes, structural features, and ecological characteristics (Yeler and Akdeniz, 2022). Especially in environmental approaches that are compatible with nature, the area to be designed must be compatible with existing local resources. As a result, adaptation to field conditions will be ensured, and low-cost practices that minimize natural resource consumption can be used to establish and maintain these areas. In this way, an ecological approach and harmony with nature are achieved in urban areas, and sustainability practices are contributed to (Birkeland, 2002; Cranz and Boland, 2003). Ecological landscape designs in urban areas affect user comfort, thermal comfort, air quality, and energy consumption in the given area. Therefore, nature-compatible and environmental design solutions must be increased in landscape design to ensure sustainability and maximize long-term efficiency from land use (Eliasson, 2000).

To achieve harmony with nature in landscape designs, parameters such as the climatic characteristics of the study area (air-humidity movement, water movement, shadow-sun movement, etc.), soil structure, site topography

(landform), structural elements, plant materials, available resources, ground coverings, and existing hydrological features are considered (Çakır, 2016; Korkut et al., 2017; Yeler and Akdeniz, 2022). These parameters ensure an area's design is compatible with its environment and nature while effectively preserving its natural uses. This also demonstrates that natural conditions directly influence the landscape design process.

Landscape designs proceed with nature-based solutions in mind. The discipline of landscape architecture, especially considering future scenarios that account for the increasing potential of human populations, develops design strategies in the form of solutions compatible with nature and addressing climate change. In this sense, it is evident that this discipline has the potential to produce solutions for such issues (IFLA, 2022; Acar and Yavuz, 2023). Landscape design applications, particularly in urban areas and other environments, sometimes positively and sometimes negatively contribute to interactions with nature. When these contributions result from nature-compatible approaches in landscape design, they positively impact the environment and humanity. Especially in urban areas, it is essential to use natural landscape elements and surfaces to reduce the impact of air temperature and urban heat islands. (Croce and Vettorato, 2021). In this context, nature-compatible landscape approaches play a critical role in environmental design approaches, meeting the environment's and humanity's needs.

This study presents sample landscape designs with a nature-compatible landscape design approach and suitable uses on a large-scale area, explicitly focusing on Yanıklar Sığla Forest in Fethiye, Muğla. The study aims to realize nature-compatible landscape designs to open large areas within nature for use. This study hypothesizes that landscape design practices in harmony with nature in the Fethiye Yanıklar region of Muğla will increase the sustainable tourism potential by reducing ecological degradation in the region. Accordingly, the sample design solutions developed in the study emphasize the use of appropriate structural materials in spatial analyses of the area, the creation of circulation systems and road networks compatible with the design of large regions and landforms, and the development of design proposals that do not cause damage to the natural environment and existing vegetation.

2. MATERIAL AND METHOD

2.1. Landscape design in large-scale areas: Muğla/Fethiye Yanıklar Area

In studies on large natural areas requiring comprehensive research in landscape design projects, parameters such as landform, vegetation, existing uses, usage needs, accessibility, and pedestrian circulation are essential. Accordingly, the intended use areas to be highlighted should be compatible with spatial characteristics and harmonious with nature. This study focuses on developing and emphasizing these ideas and proposes a landscape design project for a large area in Yanıklar, Fethiye, Muğla. The current terrain conditions and vegetation of the area were prioritized. The Sweetgum tree (Liquidambar orientalis), part of the area's natural vegetation, is emphasized. Considering the widespread uses of the Sweetgum tree, especially for medicinal purposes, the aim is to design a nature-compatible landscape project to highlight the importance of these trees to visitors and the local community and enable them to benefit from the advantages they provide.

- The following criteria were considered for the selected sample area in line with this project:
- The proximity of hotels for accommodation,
- It's close to Fethiye, a tourism center, and the airport,
- Its location bordering the sea,
- Adequate size of the area,
- Partial exposure to anthropogenic effects,
- The presence of a natural water source and its flow through the forest via a soil channel.

2.2. Description of study area

In landscape designs made in large areas, it is essential to analyze the current location of the selected area, its environmental effects, and the contributions it can provide to the user. In line with the analysis made for the existing

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area, suitable usage areas and design suggestions for landscape design can be developed. Parameters such as climatic data, land topography or form, hydrological structure, soil structure, and vegetation cover of the selected project areas are considered to realize a landscape design compatible with nature. In this direction, while determining the targeted study area, as a result of expert evaluations, the most suitable area that will contribute to and reflect the existing vegetation protection, promotion, and sustainability was tried to be determined. It aimed to realize a landscape design in this natural and large area to create a landscape design compatible with nature, introduce the existing vegetation to the local people and visitors, and emphasize its importance. The determined study area is a forested area comprising approximately 200 decares, mostly with sweet gum trees on the coast, water surfaces that need protection, and different natural vegetation covers and soil structures (Figure 1). This situation shows that the project to be designed in the area should be a work that is compatible with nature, does not harm the plants, and consists of natural materials.

Figure 1. Study Area

2.3. Field studies and area analysis

It is known that it is essential to protect natural areas located in rural or urban areas, host many living things, and pass them on to future generations. This study aimed to develop a correct planning and design strategy by performing existing analyses of the natural area. Investigations were carried out within the scope of the study in this project area, which has already suffered a lot of damage and is in danger of deterioration of the natural ecosystem. The research started from the route from the Yanıklar location of the study area to the coast. The area was determined to have uncontrolled entrances, and animal grazing and damage were caused. It was observed that the water surfaces, seashore, and roads passing around the study area were unprotected and open to damage that would disrupt the natural ecosystem. It was observed that the presence of vegetation specific to the region increased the ecological value of the area (Figure 2). The presence of settlements, such as hotels, etc., in the close vicinity of the study area also contributes to having an idea about the area in terms of usage intensity. In line with all this information, a general SWOT analysis of the area was carried out (Table 1).

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Figure 2. Study area existing trees.

Table 1. SWOT Analysis of the area.

STRENGTH	• The region has rich biodiversity, with a particularly high ecological value due to the presence of Liquidambar (Sweetgum) trees. • Presence of preserved natural landscapes. • Potential for ecotourism and nature-based sustainable tourism. • It is an area that will increase the quality of the region as a nature conservation area with its richness of biodiversity, flora and fauna of worldwide importance.
WEAKNESS	• Uncontrolled access and unregulated human activities that harm the area. • Damage to the natural balance due to animal grazing and other human-induced factors. • Insufficient protection of natural areas and lack of proper environmental regulations. • Lack of protection for coastal areas and water surfaces.
OPPORTUNITIES	• Since the region has Mediterranean climate characteristics, it is an area that can host visitors at any time of the year. • The fact that the area is home to many species and has an ecosystem is of great importance for the region's development. • The dense presence of sweetgum trees, a unique plant species in the region, makes the ecological structure of the area special.
THREATS	• Negative impacts of increasing human activities and tourism pressure on the ecosystem. • Risk of environmental degradation due to unplanned construction and infrastructure deficiencies. • Adverse effects of global climate change on the region's water resources and ecosystem. • In terms of wildlife, unconscious poaching threatens bird species in the area and damages trees.

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3. FINDINGS

The study area, which is located in the Special Environmental Protection Area and has unique ecological values and vegetation, has already suffered much damage and is facing the danger of deterioration of the natural ecosystem. The area should be used more appropriately to protect the damaged area more effectively in future processes. It is suggested that a landscape design arrangement be compatible with nature in the area. In this context, a landscape design approach has been developed with sustainable materials compatible with nature and wooden structures with minimum dimensions (only for mandatory needs) to protect the natural environment, promote the area to make it a tourism destination center, and inform the people living in the region and visiting the region under the scope of nature and health tourism with the name of Therapy Forest. In this direction, a site plan was created based on the analysis and examinations made for the study area first (Figure 3).

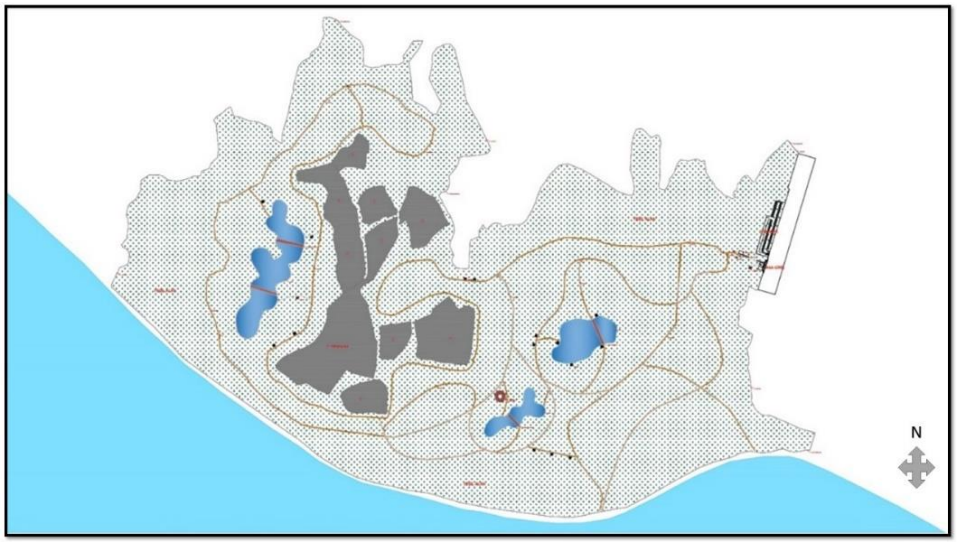

Figure 3. Proposed Site Plan for the Project Approach

As a result of the analyses and examinations conducted in the study area, the site's current conditions were considered, and a list of needs and uses was determined. Based on this, site plans and technical drawings were created, and the work was finalized with detailed visual presentations of landscape design. The identified list of needs includes:

- Entrance Gate
- Welcome Center / Information Area
- Security
- Parking Area
- Snack Bar & Restrooms
- Pavilions and Pergolas
- Bicycle / Electric Vehicle Rental Point
- Pedestrian / Bicycle / Electric Vehicle Pathways
- Site Boundary / Enclosure
- Surveillance Cameras
- Tree Observation Tower
- Directional, Informative, and Warning Signs

In the proposed approach for the study area, the region was secured by establishing an enclosure starting from the eastern side of the area and covering all parts down to the shoreline, including the coastal boundary. The lack of protection for the area exposes it to damage that could disrupt the natural ecosystem. Therefore, surveillance

cameras along the boundary ensure the area is monitored 24/7. In addition to securing the region with an enclosure wall, a security cabin at the gate and parking entrance in the northeastern area were included in the design.
A single entrance gate and its model are located in the northeastern section of the site. The gate was designed as a single-entry point for the entire area, featuring a unique design reflecting the therapeutic forest concept. It was constructed using nature-friendly materials such as wood and natural stones. A parking area with controlled access was planned next to the entrance. The parking location was chosen to cover a part of the site with the fewest trees, minimizing damage to the existing vegetation.

Immediately after the entrance, a Welcome Center was positioned to avoid creating structural impact or dominance within the area. Slightly further ahead but still close to the entrance, one snack bar and one restroom were planned. Adjacent to these, wooden platforms for electric vehicles and bicycle rental points were proposed. All structures within the area were designed using natural wood, ensuring environmental harmony and minimal interference with the natural landscape.

The site includes a Tree Observation Tower to highlight and promote the existing vegetation. Additionally, pavilions and informational, directional, and warning signs were strategically placed throughout the area. To enhance harmony with nature, wooden bridges, designed to align with the natural environment, were constructed over water surfaces integrated into the site.

Entrance Gate

A defining and introductory entrance gate design has been considered at the top of the list of needs for the study area. In line with this need, a nature-compatible entrance gate with a landscape design has been designed at the area entrance. Natural stone and wood building materials were used for the gate. The vertical water features on both the right and left sides of the entrance gate evoke a natural living environment, both because they are nature-based and due to the calming effect of the water (Figure 4).

Figure 4. Model images designed for the Entrance Gate

Welcome Center / Information Area

The Welcome Center, one of the essential structures in the list of needs for the study area, has been designed to introduce the area and inform visitors. Inside the Welcome Center is a reception desk providing information about the area, a display to introduce the local vegetation and unique souvenirs for visitors. Additional facilities have been included to complement the needs within the center, such as informational brochures, panels, and signs. A model of a Tree Observation Tower, the area's natural vegetation, has also been placed inside to allow visitors to closely touch and observe the tree.

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The structural elements of the Welcome Center, the materials used, and the interior design have been selected based on materials that harmonize with nature without disturbing the natural integrity of the site. In the interior of the Welcome Center, wood materials have been used for both vertical and horizontal elements and in the choice of furnishings. Additionally, an interior that aligns with nature has been created by placing a model of the Liquidamber tree inside (Figure 5).

Figure 5. Welcome Center Images

Security

A parking area and a security hut are next to the entrance gate. In the selection of the locations of these structures, care was taken not to damage the existing vegetation. Like other structural elements designed in the area, the structures were created with materials compatible with nature and integrated into the area in this way (Figure 6). The security hut is planned so that at least two people can control the movement inside. At the same time, a small area has been created inside for eating and drinking needs. All the materials used on the exterior are preferred in a way that does not disturb the nature of the existing workspace.

Figure 6. Security Images

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Parking Area

To the right of the entrance gate, a security checkpoint is located, and for the arriving guests, there is a parking area measuring 2.5 m * 5 m, with space for 200 vehicles and six accessible parking spots. Guests who enter through security and park their cars can directly access the area from the parking lot. A sufficient area was considered for the parking lot without considering a large hard ground area. In this way, the destruction of the existing green area was prevented, and the vegetation was preserved. The parking area has been designed in an appropriate location without damaging the existing vegetation (Figure 7).

Figure 7. Parking Area Images

Snack Bar & Restrooms

A 12 m² Snack Bar has been designed near the entrance area. The building material for the snack bar is treated as raw pine wood, which ensures natural harmony within the study area. Additionally, a restroom with an area of 25 m² has been designed close to the entrance and the snack bar. The building material for the restroom is also wood, ensuring natural harmony with the area, just like the snack bar. Inside the restroom are separate sections for two males, two females, and one disabled user. The snack bar and restroom structures have been designed to match the area's natural environment regarding structural integrity, material, and size (Figure 8).

Figure 8. Snack Bar & Restrooms Images

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Pavilions and Pergolas

A total of 40 gazebos have been placed along the walking paths in the area. Two different types of gazebos have been used. The first gazebo is built on a 25 m² concrete floor and consists of 7 seven wooden profiles arranged in a 10x10 layout. The second gazebo, measuring 9 m², is made of iron profiles with wood. Both gazebos are supported by vines creating, which create a canopy. Supported by green cover, pergolas and pergolas both aesthetically display an image integrated with nature and functionally benefit users by creating a shaded area. At the same time, natural solid wood material was used in the seating units and tables used in these pergolas in harmony with the exterior facade and floor material. In this way, a holistic design approach was focused on entirely natural materials. Thanks to this design approach, the use of green areas has also been reduced. Both gazebos' materials and plant elements contribute to the design's harmony with nature (Figure 9).

Figure 9. Pavilions and Pergolas Images

Bicycle / Electric Vehicle Rental Point

The circulation system for the entire area, starting from the entrance, is provided by a wooden path. The designed path is 3 meters wide and is intended to be a multipurpose route. Users can access and explore the area on foot, while the path allows for cycling and electric vehicle use. For this reason, both bicycle and electric vehicle rental stations have been placed at the area entrance. When considering these points, the scale of the existing area was taken into account, and in line with the need, vast areas were not preferred, and hard ground and structural elements were saved. At the same time, structurally costly and artificial materials were avoided. The electric vehicles used were also selected from models that would not harm the environment, and paths for bicycles were designed so as not to destroy the vegetation and the existing area. The structural elements and furnishings designed for these stations have been selected and created harmoniously with the area and nature (Figure 10).

Figure 10. Bicycle / Electric Vehicle Rental Point Images

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Pedestrian / Bicycle / Electric Vehicle Pathways

1.70-meter-wide wooden paths provide circulation throughout the entire area; the wooden path is 3.40 meters wide at the entrance. In the Therapy Forest, due to the trees' extensive and spreading roots, the area's circulation line has been designed as one way to avoid damaging the tree roots. To ensure compatibility with the natural environment and prevent pressure on the roots, "Treated Wood" has been used as the material. As a result, the circulation paths, which do not cover the entire area, have been designed in harmony with nature and natural materials (Figure 11).

Figure 11. Pedestrian / Bicycle / Electric Vehicle Pathways Images

Site Boundary / Enclosure

A boundary element created with enclosures has been considered to prevent entry and exit from surrounding parcels at the outer boundaries of the area. In this regard, an iron panel fence has been used to define the area's boundary. A rope fence supported by wooden posts has been used around all the wooden paths, providing circulation within the region (Figure 12).

Figure 12. Site Boundary / Enclosure Images

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Surveillance Cameras

360-degree rotating security cameras, which can be monitored from a security booth 24/7, have been placed within the area to ensure the area's security. These security cameras are positioned on the iron boundary enclosures surrounding the area and on poles at specific points within the area.

Figure 13. Surveillance Cameras Images

Tree Observation Tower

A watchtower has been designed with sparse vegetation within the area to highlight and promote natural vegetation. This 30-meter tall, five-layer observation tower allows for a bird's-eye view of the trees and the area. The structural materials used in the tower's construction are made of wood, which is in harmony with all the other structural elements in the area. The tower's five-layer spiral form represents nature and is designed to blend with the natural structure of the area. This watchtower is a focal point for visitors while providing a space for them to take photographs (Figure 14).

Figure 14. Tree Observation Tower Images

Directional, Informative, and Warning Signs

Due to the size of the 200-decare working area, directional and informative signs have been placed to provide users with proper access. In this regard, signs directing visitors to key areas and warning signs have been positioned throughout the region. These signs are placed appropriately within the existing ecosystem. Formally, they are designed in a way that does not harm the wildlife in the area and are shaped to prevent damage to living creatures such as birds. At the same time, the presence of signs introducing the area contributed to creating an efficient landscape area by providing easy circulation and user accessibility—80 directional signs and area maps across the working area (Figure 15).

Figure 15. Directional, Informative, and Warning Signs Images

CONCLUSION

The development of landscape projects in harmony with nature offers excellent benefits for the protection and sustainability of ecosystems. These projects support the maintenance of natural habitats and biodiversity, helping to protect local flora and fauna species. It also ensures environmental balance by reducing soil erosion and protecting water resources (Elliason,2000). Increasing green spaces improves air quality and reduces the heat island effect in cities. Landscaping in harmony with nature allows people to interact more with nature, positively affecting mental and physical health. They also offer aesthetic and recreational values, improve the quality of life of communities, and promote environmental awareness. Landscape projects harmonizing with nature are essential to support environmental and social sustainability.

The Yanıklar region was studied in the Fethiye district of Muğla, home to many liquidamber trees and other flora species in an extensive 200-hectare working area. Based on all the inspections, research, and analyses conducted, it was observed that the region has been subjected to significant degradation over time. To protect, improve, and promote this area, which hosts many ecological elements, a landscape design project has been developed in alignment with the principles of nature conservation and sustainable use, aiming to transform the area into a nature and health tourism center recognized nationally and internationally.

The project approach initially focuses on areas within the site that have been impacted by human pressure and various environmental factors, leading to degradation. A few small, elevated, demountable wooden structures have been proposed where the ground primarily comprises hard surfaces and barren land with little vegetation. These structures, which will not harm the area, include an entrance section, parking lot, and wooden walkways to facilitate circulation within the forest based on on-site measurements and the suggested pedestrian path routes.

A welcome center has been designed for visitors to the area, but no access points other than the designated pedestrian paths have been included to maintain the natural integrity of the site. Along the pathways, seating pavilions made entirely of wood have been placed. Additionally, a wooden observation tower has been designed to provide visitors with an overhead view of the Sığla trees without causing ground disturbance.

In conclusion, the project's primary goal is to protect the area, take measures against further degradation, and promote the Sığla tree, which has been scientifically proven to have significant health benefits and contribute to its introduction into tourism. Landscape arrangements that are compatible with nature have been suggested for the site. It is believed that urgent intervention is required to preserve the region and ensure its transfer to future generations.

Additionally, this project provides significant insights not only in terms of ecological conservation but also in environmental policies and community participation. To ensure sustainable protection of the region, strong collaboration must be established among local governments, non-governmental organizations, and academic circles. Environmental policies should not only focus on conservation but also adopt an inclusive approach that actively involves the community in the process. In this context, raising awareness among local residents and visitors is of great importance. Awareness of the region's ecological values can be increased through educational programs, nature walks, ecological tours, and workshops.

To encourage community participation, volunteer initiatives, sustainable tourism practices, and eco-friendly economic models should be developed, ensuring the active involvement of local communities in the project. In this way, the region will not only be preserved but also evaluated in a socially and economically sustainable manner. Such approaches will provide long-term and lasting solutions in line with nature conservation and sustainable development goals.

ETHICAL STANDARDS:

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