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Accessibility in Urban Coastal Areas: Antalya-Konyaaltı Case

Kentsel Kıyı Alanlarında Erişilebilirlik: Antalya-Konyaaltı Örneği

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ABSTRACT

Coastal areas are privileged spaces within the city, possessing high potential due to the presence of water. Defining coasts as areas under public access where everyone can equally and freely benefit underscores the significance of the concepts of publicness and accessibility. Urban design practices in coastal areas aim to enhance public use and strengthen the coast-city relationship through accessibility approaches. This study identifies the factors that determine publicness and accessibility through a literature review and examines these factors in the context of the redesigned Konyaaltı urban coastal area. On-site observations and analyses were conducted to assess the current situation. The findings suggest that improving accessibility and publicness in coastal areas requires the development of urban and architectural approaches in the legal framework that extend beyond defined boundaries to include coastal interaction zones. Ensuring accessibility for everyone, particularly along coastlines, is among the significant findings derived from this study for the effective and universal use of coastal areas. Regulations based on publicness and accessibility will support the physical and social sustainability of the coast. Well-designed public spaces will positively impact the quality of life, enhance the coastal city's image, and contribute to the city's identity.

Keywords: Accessibility, universal design, publicness, public space, urban coastal design

ÖZ

Kıyılar, suyun varlığı nedeniyle kentte yüksek potansiyele sahip ayrıcalıklı alanlardır. Kıyıların, herkesin eşit ve özgürce yararlanabileceği, kamuya açık erişime sahip alanlar olarak tanımlanması, kamusallık ve erişilebilirlik kavramlarının önemini beraberinde getirmektedir. Kıyı alanlarında gerçekleştirilen kentsel tasarım uygulamaları, kamusal kullanımı artırmayı ve kıyı-kent ilişkisini erişilebilirlik yaklaşımları ile güçlendirmeyi amaçlamaktadır. Bu çalışma, literatür araştırması yoluyla kamusallık ve erişilebilirliği belirleyen faktörleri tanımlamakta ve bu faktörleri kıyı düzenlemesinin gerçekleştirildiği Konyaaltı kentsel kıyı alanı örneğinde araştırmaktadır. Araştırma kapsamında yerinde gözlemler ve analizler ile mevcut duruma ilişkin incelemeler yapılmıştır. Sonuçlar, kıyılarda erişilebilirlik ve kamusallığın geliştirilmesinde yasalarda kıyıya ilişkin tanımlı sınırların ötesinde kıyı etkileşim alanlarını kapsayacak şekilde kentsel ve mimari çevreye ilişkin yaklaşımların geliştirilmesini ortaya koymuştur. Özellikle kıyılarda herkes için erişilebilirliğin sağlanması kıyı alanlarının etkin ve evrensel kullanımı için çalışmadan elde edilen önemli sonuçlardandır. Kamusallık ve erişilebilirlik temelli düzenlemeler, kıyının fiziksel ve sosyal sürdürülebilirliğini destekleyecektir. İyi tasarlanmış kamusal alanlar, yaşam kalitesini olumlu yönde etkileyecek, kıyı kentinin imajını güçlendirecek ve kentin kimliğine katkıda bulunacaktır.

Anahtar Kelimeler: Erişilebilirlik, evrensel tasarım, kamusallık, kamusal alan, kentsel kıyı tasarımı

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Introduction

Water has been a crucial element in facilitating human life since the beginning of humanity. Beyond its functional roles in defense, trade, and transportation, water has also contributed to human life in social, cultural, and aesthetic ways, and it has played a significant role in creating attractive environments for tourism due to its micro-climatic effects. The coastal areas shaped by the water allow for various uses due to the presence of water, creating a unique and dynamic environment within the city.

In its most general definition, a coast is where land meets water (TDK, 2024). The Turkish Coast Law No. 3621 defines the coast as the area between the coastline and the shoreline. According to the regulations related to Law No. 3830, the area 100 meters landward from the shoreline is defined as the 'beach strip'. These legal definitions are based on specific distances and address administrative, legal, and jurisdictional issues (Çakır, 2016). In the literature, the coast concept is considered beyond legal definitions. The coast is described as an area where the effects of the sea can be felt, incorporating formations from both land and water, and is socio-economically closely related to the coast, visually developed as an extension of the city (Kahraman & Alkan, 2016; Kılıç, 2012; Özer, 2009). Çakır (2016) emphasized that the coast cannot be considered independently of the land and water formations. The coast or coastal area should be evaluated as a social impact and a broad field of action beyond distance-based definitions (Çakır, 2016)

While coasts are subject to different classifications, urban studies generally divide them into four categories based on land use characteristics: urban coasts, rural coasts, natural coasts, and status-based coasts. Urban coasts, which are this study's focus, encompass various economic sectors, professions, social and cultural activity areas, urban settlements, amenities, and comprehensive urban infrastructure (Çakır, 2016). Prior to the Industrial Revolution, coasts served functions such as ports and settlement areas, maintaining close spatial relationships with cities. After the Industrial Revolution, however, industrial buildings began to emerge on coasts, and the commercial use of coasts increased. With the development of technology and transportation systems, industrial areas on the coasts shifted to the urban peripheries, leading to the degradation of the coastal regions into wastelands. Following the damage to coasts, issues related to coasts emerged in the 1970s, and efforts began to restore coasts to the city and make them public and accessible. Particularly after the late 1980s, transformations in coasts aimed to turn them into significant public spaces for social, cultural, and recreational purposes within cities (Hoyle, 2000).

Coasts, which are in high demand for recreational, touristic, and commercial activities, are areas where protection, planning, supervision, and the development of coastal management regulations are deemed necessary (Kurt, 2015). In Türkiye, laws and regulations regarding coasts include significant decisions on the definition of the coast and related concepts, the use of the coast for public benefit, and the boundaries of interventions made to the coast. The 1992 regulation, through Law No. 3830, stipulated that the beach band allocated to the public must be at least 100 meters wide. This strip was divided into two sections: the first 50 meters landward from the shoreline was designated for recreational purposes such as walkways, promenades, and resting areas, while the second 50 meters was designated for the construction of day-use buildings and facilities, provided they were open to public use (Official Gazette, 1992).

The concept of publicness in coastal areas extends beyond the legally permitted uses. A planning approach that does not separate the coast from the city, but rather integrates them, should be legally supported, and the coast and the city should be planned together (Aköz Çevrimli, 2024b) For the coast to be considered part of the city, it involves not only a physical relationship but also the type of use it provides, its meaning for city dwellers, its urban functions, and its harmony with the natural environment(Aköz Çevrimli & Ulusoy, 2023). Therefore, the city and the coast should be evaluated with a holistic and multidimensional approach from spatial, social, and economic perspectives (Kahraman & Alkan, 2016). Consequently, the city's coast should be considered a space formed and shaped based on the relationship between the city and water, perceived as an extension of the city and integrated with the city (Kılıç, Akın, & Koç, 2014). When the interaction between the city and the coast is strengthened, the coastal area can transform from being merely a visual object into a space where life unfolds and experiences are shared.

In Türkiye, urban coastal design practices are increasingly important for perceiving coastal areas as part of the city and enhancing user experience. These practices are usually carried out in coastal areas where accessibility and public use are problematic. Various design strategies are applied to improve city-coast integration and make coastal areas more functional and comfortable for users. Through these arrangements, coastal areas are designed as public spaces that are easily accessible and usable for various purposes, aiming to provide more livable environments for city residents.

Although steps have been taken to ensure public use and accessibility of coasts, historical changes in regulations, inadequacies, poor planning decisions, and tourism activities have led to coasts becoming areas of profit, negatively impacting their public use and accessibility. This study investigates the factors affecting the public use and accessibility of coasts. These factors are examined through the example of the Konyaaltı urban coastal area, which has recently undergone a coastal redesign. The research identifies design approaches to publicness and accessibility within the sample area and offers recommendations for successful future public coastal space designs. Additionally, existing problems are identified, and solutions are developed to enhance the public nature and accessibility level of coastal spaces. This study provides a unique approach by evaluating the concepts of publicness and accessibility in coastal areas, considering environmental, urban, and architectural characteristics of the waterfront, coastal strip, and landward regions and addressing accessibility from various dimensions.

Publicness and Accessibility in Urban Coastal Areas

The term public, which forms the root of the concept of publicness, is defined by the Turkish Language Association (TDK) as encompassing various meanings such as state organs serving public interests, the entirety of a population within a country, the public, the community, and so forth. The concept of public is defined as relating to the public (TDK, 2024). Public spaces are defined as societal activity areas where ideas, actions, and discourses aimed at determining and fulfilling the community's common good are produced and developed (Keleş, 2021). Public spaces include open areas such as parks, squares, and streets, as well as buildings where public services are provided (Hasol, 2014). A defining characteristic of public spaces is their visible and audible nature or their open quality. Another important feature is commonality. In summary, areas where everyone can be 'visible and audible' are considered 'common.' Therefore, areas open to shared use are evaluated as public spaces (Yılmaz, 2018).

A public space is defined as a place that meets the daily needs of society (Moughtin, 2007), accommodates individuals from various social and cultural backgrounds, economic levels, age groups, and genders (Madanipour, 1995), and is accessible to everyone, provided by a public authority (Ercan, 2016), and serves as a social activity venue for socialization and community building (Gökgür, 2017). It is of significant importance for both cities and their residents. Every individual living in a city has the right to equally and independently benefit from public spaces.

A concept closely related to public space is accessibility, which refers to how individuals can reach activities and destinations they wish to visit (Curl, Nelson, & Anable, 2015). It also encompasses elements such as pathways, sidewalks, buildings, and urban areas that everyone can use comfortably, safely, and independently, regardless of their abilities or limitations (Andrade & Dorneles, 2012). Therefore, the concept of accessibility is closely related to the concepts of availability and usability (Acırlı & Kandemir, 2021).

Accessibility is associated with physical, social, economic, psychological, and cultural dimensions (Şahin Körmeçli & Uslu, 2021). It is considered one of the primary elements in determining the quality of an urban space and its success as a public space (DETR, 2000; Francis, 1988; Greene, 1992; Jacobs & Appleyard, 1987; Lynch, 1984; Madden, 2021; Marcus & Francis, 1997; Rapoport, 2013). The level of accessibility plays a crucial role in the perception of quality in coastal areas, which are significant urban spaces in coastal cities. Furthermore, optimal levels of accessibility contribute to developing a sense of belonging and attachment to the space, thus strengthening the perception of the space as a place (Aköz Çevrimli, 2024a; Erdem & Terzi, 2024). Therefore, in the successful designation of coastal spaces as effective public places, it is essential to consider all dimensions of accessibility in planning and design processes and to structure legal regulations regarding coastal areas accordingly.

The publicness and accessibility of coastlines are crucial for the sustainable development of coastal areas, the quality of coastal spaces, and the image of coastal cities. Since the 1970s, the importance of coastlines has been increasingly recognized globally, and the concept of publicness has gained prominence. During this period, urban design projects in coastal areas have accelerated (Hoyle, 2000), and various applications aimed at creating successful public spaces have been implemented up to the present day. One of the primary objectives of coastal design applications is to make coastal spaces accessible. In particular, making previously abandoned, underutilized, or restricted coastal areas accessible has emerged as a fundamental design principle for successful urban design interventions (Thompson & Dalton, 2010).

Access points to the coast are as important as their spatial quality in influencing accessibility. Therefore, in addition to the quantitative aspects of access points, their qualitative perception is crucial in determining the level of accessibility (Thompson & Dalton, 2010). Furthermore, ensuring not only physical accessibility but also social accessibility is a significant issue in determining accessibility levels (Shah & Roy, 2017).

Coastal areas are an important resource for urban use and are defined as regions where public uses should be present. However, the increasing importance of coastlines and transforming coastal areas into private investment zones has emerged as a significant factor restricting public access. Large shopping centers, residential areas, and privately secured commercial spaces designed to cater to higher economic levels on the coast can restrict individuals' rights to benefit from the coast, limit public use, and reduce social interaction (Atakan & Dalgakıran Erdoğan, 2019). Special residential areas, known as gated communities, enclosed by walls, fences, and gates, can negatively impact the natural view of the coast and restrict public access, leading to social segregation (Kheyroddin & Hedayatifard, 2017a; Kheyroddin & Hedayatifard, 2017b; Nassar, El-Samaty, & Waseef, 2020; Serdaroğlu Sağ & Yıldırım, 2011). In addition to gated communities, other significant types of private development that limit access include housing estates, secondary residences, and tourism facilities closed to the public (Aykan & Kılıçaslan Deniz, 2023). All these forms of development weaken the relationship between the city and its inhabitants with water and reduce accessibility.

Another factor that hinders accessibility between the city and the coast is highways and railways. These transportation infrastructures, built in coastal areas in the past due to necessity, now create physical barriers between the city and the coast, limiting the effective public use of coastal areas (Caminiti & Minutoli, 2014). Additionally, restricted and fee-based access to beaches and the presence of beach bars occupying the coastline raises both physical and social accessibility issues (Souza Sartore, de Araújo Pereira, & de Rodrigues, 2019).

An important factor in enhancing the perception of accessibility to coastlines is meeting user needs around the coast, improving safety levels, and enhancing comfort conditions. Thompson and Dalton (2010) note that parking facilities significantly increase public access and use of coastal areas. Additionally, the quality of walking paths is a critical factor in terms of accessibility. The walkability of routes providing access to the coast plays an important role in determining the accessibility of coastal areas (Shah & Roy, 2017). Furthermore, the design of connecting pathways and coastal space arrangements according to universal design principles supports equal access to the coast for individuals with varying levels of mobility and physical conditions, thereby strengthening social sustainability (S. B. Santana-Santana, Peña-Alonso, & Espino, 2020a; Shah & Roy, 2017).

In determining the accessibility level of a coastline, the integration of the coastline with the urban area and the planning and design features are also of great importance. In this context, the connectivity of roads behind the coast and the perceivability and legibility of the coastal hinterland play a significant role in accessibility. Planning and design features include urban and architectural elements such as the occupancy-vacancy ratio in the coastal city fabric, building densities, block formation, and ground floor functions. These elements affect the physical, visual, and perceptual accessibility of the coast (Ardıçoğlu & Uslu, 2022; Qi & Feihong, 2018).

The conflict between public access demands and ecosystem protection regarding coastal access is an emerging issue. Particularly in natural coastal areas, endangered species can create tension to provide optimal access to the coast (LeDee, Nelson, & Cuthbert, 2010). Protected areas on the coast can also lead to conflicts between accessibility and environmental conservation.

Another access-limiting factor arising from the natural characteristics of the coastline is topographical features. The high slope ratio between the coast and the coastal hinterland weakens integration and requires the design of appropriate connections to provide access to the coast. These designs should involve minimal intervention in the coast's natural features and adopt ecological-sustainable approaches (Caminiti & Minutoli, 2014).

Methodology

The planning of coastal areas is generally addressed within the framework of spatial plans; however, coastal strips in the urban-coastal interface are often shaped through urban design practices. This situation necessitates the evaluation of the natural and built environment features on both the seaward and landward sides of the urban-coastal interface within the context of urban design.

Accessibility, one of the fundamental characteristics of successful public coastal spaces, is addressed in this study not only in terms of the design of coastal strips but also in relation to the interactions between the coastal hinterland and the shoreline. The study aims to analyze accessibility issues in a holistic manner across all aspects of the coastal area, rather than focusing on specific sections. The findings are expected to provide a foundational framework for urban design guidelines, zoning regulations in coastal areas, and coastal design practices. Furthermore, the study aims to serve as a guiding resource for critical points to be considered in local government regulations and design competitions.

The sample area of the study is the Konyaaltı Urban Coastal Area, a site characterized by high tourism activity and visited by both domestic and international users. This area stands out due to the coastal modifications implemented following an urban design competition and its diverse natural and built environment features. Addressing the coastal region together with its shoreline, beach, and urban fabric is crucial for evaluating accessibility features.

The analyses were conducted in the low-lying coastal region directly associated with urban areas, located between Antalya Harbor and the Free Zone in the west and the Variant in the east along Konyaaltı Beach. This coastal area is divided into sub-regions that differ based on their transformations, built environment characteristics, and design qualities. These sub-regions were identified not for comparative purposes but to assess areas with similar attributes. On-site observations determined these regions by examining elements associated with accessibility, as identified in the literature (Figure 1). The sub-regions are defined as follows:

- **Sub-coastal region 1:** This region is located where a sloped topography meets the coast and includes the Coastal Life Park, featuring commercial units and open-use areas.
- **Sub-coastal region 2:** This region contains plazas and open-use areas.
- **Sub-coastal region 3:** Located between Boğaçayı and Olbia Square, this region features a redesigned coastal promenade and shoreline characteristics from 2018.
- **Sub-coastal region 4:** Extending from Boğaçayı to the end of Konyaaltı Beach and concluding at Antalya Harbor and the Free Zone, this area underwent redesign in 2023 and differs from the others in terms of coastal design and built environment features.

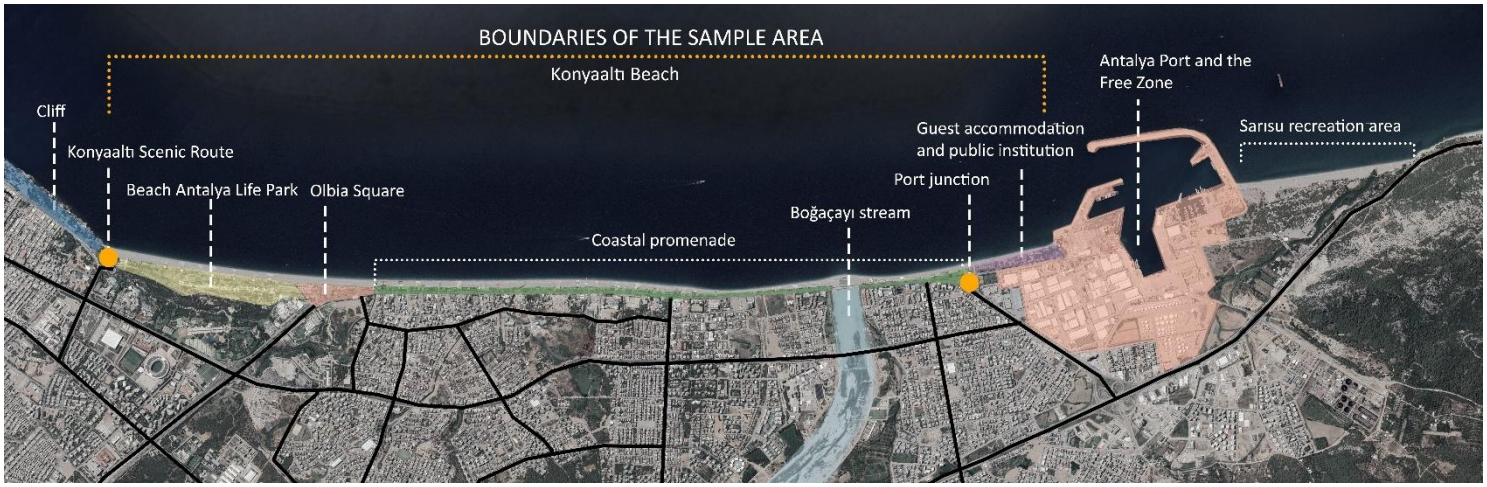

Figure 1. Boundaries of the sample area

The current state of the Konyaaltı Urban Coastal Area has been examined within the framework of factors identified through a literature review (Table 1). This study was conducted to highlight the significance of elements influencing accessibility and publicness in the coastal area and to evaluate how these elements can be reflected in design strategies. During the evaluation process, no analysis based on physical measurements or technical standards was conducted; instead, comments on accessibility and publicness were developed based on the general characteristics of the natural and built environment.

The natural and built environment elements presented in Table 1 have been addressed as follows:

- **Natural Environment Features:** Elements such as conservation areas and topographical slopes have been analyzed in terms of how they can positively affect user experiences while preserving the natural integrity of the coastal area. The focus is on developing design strategies that respect nature and emphasize a balance between conservation and utilization.
- **Built Environment Factors:** Features such as private property, barriers, coastal violations, and idle spaces create restrictive effects on publicness and accessibility in the coastal area. In this context, inclusive and accessible design strategies have been proposed as solutions to these issues.
- **Morphological Features:** Built environment characteristics such as road continuity, building density, and block forms are considered determining factors in users' perception, understanding, and visual access to the area.

Table 1. Environmental factors determining the level of accessibility of the coastline

Natural Environmental Factors	Topographic Features	Slope	(Caminiti & Minutoli, 2014)
	Protected Areas	Special Environmental Protection Area National Parks Natural Conservation Areas Natural Sites	(Caminiti & Minutoli, 2014; LeDee et al., 2010)
Built Environment Factors	Building Development and Private Ownership	Closed residential communities, private residential areas Commercial areas (shopping malls, factories, industrial zones, etc.) Tourism facilities closed to the public (hotels, guesthouses, etc.) Secondary residential areas Businesses (private beaches, cafes, etc.) Roads and railways Vacant, neglected and lost space	(İsmail Oğuz Atakan, 2020; Kheyroddin & Hedayatifard, 2017a; Kheyroddin & Hedayatifard, 2017b; Nassar et al., 2020; Serdaroğlu Sağ & Yıldırım, 2011)
	Regulations Lacking Equitable Use	Barriers and Obstacles Universal Design	(Caminiti & Minutoli, 2014; de Souza Sartore, de Araújo Pereira, & Rodrigues, 2019; Shah & Roy, 2017)
	Pedestrian and Vehicular Accessibility	Pedestrian Path Arrangements Parking Areas	(Sara Beatriz Santana-Santana, Peña-Alonso, & Espino, 2020b; Shah & Roy, 2017; Thompson & Dalton, 2010)
Morphological Characteristics	Roads Building Characteristics	Continuity of Connections and Roads Height and Aspect Ratios Block Forms and Visual Permeability	(Ardıçoğlu & Uslu, 2022; Qi & Feihong, 2018)

This study emphasizes the necessity of addressing the accessibility relationships between the hinterland, the coastline, and the seaward direction with a holistic perspective, rather than focusing solely on specific sections of coastal areas. This approach aims not only to understand the accessibility issues of the area but also to propose more inclusive and user-friendly design strategies.

In summary, this qualitative assessment aimed at enhancing the publicness and accessibility of coastal areas highlights key points that should be considered in coastal design practices. The findings of the study aim to provide a framework that will contribute to both urban design guidelines and local government regulations.

Results

Examinations of the current state of the coastal area have been conducted through four sub-regions. In these sub-regions, the concepts of publicness and accessibility have been analyzed in light of the coastal transformations, and existing design features, and both positive and negative conditions have been identified.

Coastal Subarea 1: The sub-area of Konyaaltı urban coastal zone, characterized by its dense green vegetation, is known as the Beach Antalya Life Park. This area was previously recognized as Beach Park. Situated where a sloping topography meets the sea, this coastal area is backed by a hotel, an aquapark, a fair and cultural center, and an amphitheater.

In 2018, the coastal urban design application led to a reorganization of this area. Prior to the redesign, the space featured amenities for tourism and socio-cultural activities. Following the redesign, the spatial quality of the area was enhanced, landscape areas were reconfigured, and a new commercial block, including cafes and restaurants, was introduced. The expansive green spaces within this sub-area, alongside sports and activity areas offering free usage and commercial facilities, provide spatial diversity that caters to users' needs with varying social, economic, and demographic backgrounds. This diversity facilitates the area's day and night usage, contributing to the vibrancy and attractiveness of the coastal sub-area (Figure 2).

Figure 2. Night view of Beach Antalya Life Park (URL-1)

The commercial building block has been integrated with green spaces and positioned parallel to the shoreline without disrupting the natural appearance of the coast. Parking areas are located behind this commercial block. This building block has been arranged with a permeable design approach to allow pedestrian access to the shoreline. It establishes connections with the parking area and the hinterland, ensuring accessibility from the inland areas to the shore (Figure 3).

Figure 3. Pedestrian access points of the Beach Antalya Life Park and Shopping Center (Çevrimli Archive, 2023)

The coastal area has no idle spaces, barriers, or obstacles. The pedestrian pathways within the coastal region have been designed with a universal design approach to ensure continuity. However, due to the elevation difference between the beach and the coastal park, access to the beach is impossible from every point. To address this issue, ramp installations have been implemented at certain locations within the coastal area to provide access to the beach. However, it has been observed that there are also accessibility issues regarding the use of these ramps (Figure 4). In the beach area, there are no arrangements in place to ensure the use of facilities such as restrooms, showers, and changing cabins by individuals with disabilities, nor to enable their comfortable movement within the coastal area.

Figure 4. Ramp application in the Beach Antalya Life Park (Çevrimli Archive, 2023)

Access to this coastal sub-area from the inland is significantly influenced by the natural environmental features and the slope resulting from the topography. The area can be accessed by vehicle via the Konyaaltı Scenic Route and Dumlupınar Boulevards. Pedestrian access is provided through existing connections for vehicle roads, as well as via a 35-meter-high panoramic elevator and stairs (Figure 5) (Aköz Çevrimli, 2024a). While pedestrian access to the area was previously limited, the recent modifications aim to improve this access based on an approach that promotes equitable use. On the other hand, the distance between this transportation point and the Beach Antalya Life Park and Shopping Center, as well as the characteristics of the connecting roads that do not comply with universal design principles, may lead to accessibility issues for individuals with differing levels of mobility.

Figure 5. Stairs and elevator providing access to Beach Antalya Life Park (Çevrimli Archive, 2023)

Coastal Subarea 2: The coastal area defined as Olbia Square is located at a key junction where the city's main axes connect to the shoreline, serving as a public link between the coastal promenade and the Coastal Life and Shopping Center. Access to this sub-region is possible by vehicle via Dumlupınar Boulevard. Parking areas located near the coastal zone further enhance the perception of accessibility to the shoreline.

In this sub-region, there are no structures or elements behind the coast that obstruct visual connections with the shoreline. Thus, the relationship between Dumlupınar Boulevard and Olbia Square is preserved both physically and visually. This area, which was previously used as a parking lot, has been transformed following the coastal development into a space featuring a mini amphitheater for various activities, a square shaped by lighting elements, sports and activity areas, children's playgrounds, expansive green spaces, and facilities to meet basic needs such as restrooms, a market, and a café. These improvements have provided diverse uses that allow residents to spend extended periods of time in the coastal sub-region while meeting fundamental user needs, thereby enhancing the level of public usage (Figure 6).

Figure 6. Top view of Olbia Square (URL-1)

Access to this subarea is provided via Dumlupınar Boulevard by vehicle. The parking lots near the coastal area also enhance the perception of accessibility to the coast. This coastal area has been designed to advance universal design principles and is by inclusive design standards. However, the arrangements between the square and the beach appear to be inadequate in this context. Using the ramp located at the point where the coastal subarea connects with the coastal promenade is inconsistent with the principles of inclusive design, as there is a level difference at the point where the ramp reaches the shore (Figure 7).

Figure 7. Ramp design is not suitable for accessibility (Çevrimli Archive, 2024)

Coastal Subarea 3: The coastal area between Olbia Square and Boğaçayı stream was redesigned as a promenade with a coastal regulation in 2018. Previously a divided highway with four lanes, Mediterranean Boulevard was converted into a two-lane,

bidirectional coastal road after the renovation. The decommissioned two-vehicle lanes have been transformed into open green spaces along the coast, incorporating various recreational activity areas (Figure 8). The renovation transformed the previously transportation-dominated coastal area into a recreational area with enhanced public use. This area now includes children's playgrounds, sports fields, activity and entertainment areas, coastal squares, concession booths, and bicycle and pedestrian paths. Additionally, there are freely accessible grass areas, urban furniture with various seating options, and coastal amphitheaters. These modifications have enabled different user groups to actively utilize the coastal area day and night. Notably, the large grass areas have been observed to serve as important social spaces for relaxation, conversation, and meetings during nighttime.

Figure 8. View of the Konyaaltı urban coastal area before the coastal redesign (left) (URL-2) and after the coastal redesign (right) (URL-3)

This coastal sub-region is differentiated from the first and second sub-regions by the urban and architectural characteristics of the environment located behind the shoreline. In this sub-region, the level of integration along the coast varies due to the frequency of road connections and the morphological structure of the area behind the coast. Large urban blocks bordering the coastal strip obstruct direct access corridors to the shore and hinder the continuity of these corridors towards the coastline. On the other hand, the presence of public spaces within the coastal urban fabric enhances the public character of the shoreline and strengthens the relationship of accessibility between the hinterland and the coast. The presence of Konyaaltı City Square further reinforces public use along the coastline, facilitating the physical and visual integration of both areas.

The dimensions, volume, and form characteristics of buildings within large urban blocks can also restrict visual access to the shoreline (Aköz Çevrimli, 2024a) (Figure 9). Particularly, the transformation of the coast into a profitable area following the coastal project has facilitated development along the shoreline, resulting in structures that create a wall effect and are incompatible in scale with the coastal urban fabric. This situation has had a significant impact on the visual accessibility between the coast and the hinterland.

Figure 9. An example of a building that disrupts the coastal silhouette and inland connections in the Konyaaltı coastal area (Çevrimli Archive, 2023)

In the coastal urban fabric, the Konyaaltı municipal building, situated on an urban block that forms a boundary along the shoreline, stands out with its design approach that ensures both physical and visual permeability (Aköz Çevrimli, 2024a). The square arrangement located between the municipal building and the coastal strip further reinforces the perception of the municipal building as a public structure for urban residents who navigate through this space and access the shoreline via the square (Figure 10).

Prior to the coastal development, barriers located in the median of the divided high-speed high-speed highway were identified as elements limiting accessibility to the shoreline. This situation was addressed as a fundamental problem, leading to the proposal of a design that prioritizes pedestrian-focused access in coastal development. To reduce speed on the roadway, the pavement material was varied, and a semi-linear road geometry was implemented. The parking areas were designed to include accessible parking spaces for disabled vehicles. However, it has been observed that seamless access from the parking area to the shoreline is restricted at certain points due to factors such as pavement material, surface deterioration, elevation differences, and landscaping elements. Visuals related to the coastal road arrangement are presented in Figure 11.

Figure 10. Konyaaltı Municipality Building(left) and Square(right) (Çevrimli Archive, 2023)

Figure 11. Pedestrian-Prioritized Design of the Coastal Road Area and parking arrangements in the Konyaaltı coastal area (Çevrimli Archive, 2023)

One of the major issues in the coastal area is the transformation of uniform concession stands, designed in accordance with the scale of the coast under the coastal project, into commercial spaces over time, along with the expansions made to these areas. This situation has led to the encroachment of public spaces along the coast and has negatively impacted the overall appearance of the coastline (Figure 12).

Figure 12. Expansion of concession stands along the coastal strip and encroachment on open green spaces (Çevrimli Archive, 2023)

The concession stands located in the coastal area have expanded along the coastal strip and caused encroachments into the beach area (Figure 13). The areas allocated for paid use along the beach often extend to the water's edge, obstructing the beach's continuity. Additionally, the seating arrangements, such as tables and chairs in these areas, not only impede physical access to the beach but also restrict the use of certain sections of the coastline, significantly limiting the extent of beach space available for free public use.

Figure 13. Coastal encroachments on Konyaaltı Beach (Çevrimli Archive, 2024)

In the coastal promenade, where the elevation difference between the shore and the coastline approaches each other, strong physical and visual connections are established between the coastline and the beach. However, adequate solutions to provide barrier-free access from the coastline to the beach have not been implemented in areas with a significant elevation difference. Although ramps are present in some locations for beach access, there are no solutions to facilitate movement on the sandy area or address basic needs (Figure 14).

Figure 14. Barrier-free design solutions between the coastal strip and the beach (Çevrimli Archive, 2023)

Coastal Subarea 4: This coastal sub-region encompasses Antalya Port, the Free Zone, and Boğaçayı stream. While part of this coastal area has been arranged for public use, another remains closed to public access. In the area with restricted public access, the Maritime Enterprises Training and Recreation Facilities, the T.C. Ministry of Transport, Maritime and Communications VI. Regional Directorate, and the Ministry of Transport and Infrastructure's Education and Social Facilities are located. Due to private uses and government institutions in this coastal area, it is enclosed by garden walls and fences, restricting public access to the shoreline from behind the coast (Figure 15).

Figure 15. Coastal area restricted from public access (Çevrimli Archive, 2024)

The coastal area between the restricted-access zone and Boğaçayı stream was predominantly used for transportation until the coastal reorganization was conducted in 2023. This coastal area, characterized by extensive hard surfaces and inadequate for recreational use, was given a new appearance and function following the 2023 reorganization. Prior to the restructuring, a dual carriageway and barriers on the median only permitted pedestrian access to the shoreline through specific crosswalks. However, the reorganization transformed the area into a coastal zone prioritizing pedestrian access (Figure 16).

Figure 16. The old appearance of the coastal area (left) (Çevrimli Archive, 2022) and its new appearance (right) (Çevrimli Archive, 2024)

A grid-like road network is observed upon examining the morphological configuration of the urban fabric behind the coastline. The larger size of the building blocks adjacent to the coastline, compared to those further inland, results in interruptions in the roads connecting to the coast at certain points. This situation impedes direct pedestrian access to the sea (Aköz Çevrimli, 2024a). Additionally, the gated community concept and the dimensions and volumes of the coastal building blocks' buildings restrict physical and visual access to the coastline (Figure 17).

In this coastal sub-region, the cafés between the shoreline and the beach obstruct pedestrian access physically and visually. Physical barriers surrounding these commercial establishments weaken the perception of the coastline's public accessibility (Figure 18).

In this coastal area, ramp applications facilitating access from the shoreline to the beach have been observed (Figure 19). However, it is noted that no provisions are made to assist individuals with permanent or temporary disabilities in navigating the beach area, such as access to facilities like showers, restrooms, and other amenities.

Figure 17. Architecture buildings in the coastal area (Çevrimli Archive, 2024)

Figure 18. A view of the cafe located in the coastal area (Çevrimli Archive, 2024)

Figure 19. Ramp application between the shoreline and the beach (Çevrimli Archive, 2024)

Discussion

This study examines the interventions implemented in the Antalya Konyaaltı urban coastal area, which has transformed to enhance publicness and accessibility. Through an analysis of the concepts of publicness and accessibility, the spatial characteristics of the coastal, land, and water areas have been considered and evaluated as an integrated whole. Additionally, the spatial attributes of the relationship between the coastal strip, urban fabric, and beach have been investigated within the scope of the study. The prominent interventions identified to increase the level of publicness include:

- Creating diverse coastal sub-regions with varying design and usage characteristics to ensure variety, vitality, and appeal.
- Providing opportunities for various recreational activities to cater to individuals of all ages.
- Including basic services (e.g., markets, restrooms, kiosks) within the coastal areas to meet user needs.
- Implementing functional proposals that ensure the coastal area remains active day and night beyond tourism-oriented usage.

The interventions aimed at improving accessibility are as follows:

- Enhancing access connections to the coast by providing elevator and stair support in areas with steep gradients or where pedestrian access is difficult facilitates easier access.
- Designing vehicular pathways between the urban fabric and the coast to be pedestrian-oriented, thereby simplifying transitions between the coastal strip and the beach.
- Developing strategies to reduce vehicle speed on roads passing through coastal areas.
- Providing parking facilities close to the coast and behind it, without compromising the appearance and functionality of the coastal area, for those accessing the coast by car.
- Ensuring direct and barrier-free access from the coastal hinterland and parking areas to the coast.
- Incorporating optimal integration of road connections from the coastal hinterland into land-use plans to facilitate seamless connectivity with the coastal strip.
- Designing roads leading from urban settlements to the coastal strip to improve user comfort and align with pedestrian access needs.
- Developing solutions with an accessible design approach to bridge the gap between the coastal strip and the beach.
- Prohibiting areas reserved for exclusive commercial use that obstruct pedestrian circulation and public access on the coastal strip and beach.
- Designing architectural buildings in coastal urban fabrics to maintain visual and physical permeability without obstructing the visual connection with the coastal strip.
- Developing architectural solutions that allow passage from the coastal hinterland, as opposed to creating security buildings that block access on the building blocks forming the boundary of the coastal strip.

The findings of the study demonstrate that improving the accessibility of coastal areas requires addressing not only legal aspects but also spatial, ecological, social, and psychological dimensions as an integrated whole. The literature highlights the significance of evaluating coastal areas through a multidimensional approach (Aköz Çevrimli, 2024b; Aykan & Kılıçaslan Deniz, 2023; Gedikli, 2011; Shah & Roy, 2017). As particularly noted by (Aköz Çevrimli, 2024b) legal regulations that support public access to coastal areas enhance their public character. This study reveals that such a holistic approach also plays a critical role in terms of accessibility. It emphasizes that accessibility should not be limited to the coastline but should also consider the relationships between landward and seaward directions. Within this framework, the development of solutions that support the integration between the city and the coast is highlighted as highly significant.

The study also draws attention to the importance of the morphological integrity of the hinterland, alongside the natural and built environmental characteristics. These three factors and the parameters they encompass play a crucial role in determining the accessibility of coastal areas.

From the perspective of natural environment features, ensuring a balance between conservation and use is identified as one of the fundamental factors. Moreover, in the context of achieving city-coast integration, the study underscores the importance of pedestrian accessibility strategies developed for areas with steep slopes.

The significance of the built environment characteristics and morphological structure in the coastal hinterland for coastal accessibility is also prominently emphasized in this study. In particular, the design of structures within the coastal interaction zone to ensure physical and visual permeability has been identified as a critical factor for achieving optimal integration

between the coastal urban fabric and the coastal space. This finding aligns with perspectives in the literature suggesting that coastal areas should possess urban and architectural qualities that support urban continuity (Ardıçoğlu & Uslu, 2022; Aykan & Kılıçaslan Deniz, 2023; Kheyroddin & Hedayatifard, 2017a; Kheyroddin & Hedayatifard, 2017b; Nassar et al., 2020; Qi & Feihong, 2018).

Considering these aspects in zoning regulations and spatial planning for coastal areas is expected to contribute to improving their accessibility. Furthermore, the need for arrangements adhering to universal design principles, ensuring that coastal areas are accessible to all, including individuals with disabilities, is particularly emphasized. This necessity is also supported by S. B. Santana-Santana et al. (2020a) and Yıldırım and Ortaçeşme (2021).

Additionally, urban corridors opening from the city to the coast and connecting with the coastline provide enhanced visual and physical accessibility. Ensuring these urban corridors are walkable and visually appealing is a highly significant factor in achieving city-coast integration for the successful design of coastal spaces.

Conclusion

Urban coastal areas, with the presence of water, hold significant potential and stand out as privileged public spaces in coastal cities due to their spatial richness and interaction-meeting points. These areas play an important role in the formation of urban identity with their physical, social, economic, and cultural characteristics. Coasts are defined in laws and regulations as public places under the jurisdiction and disposal of the state, where everyone can benefit equally and freely. In this context, the concepts of publicness and accessibility are of critical importance for coastal areas.

Especially, coastal areas that were previously idle, insufficient in terms of public use, limited in activity opportunities, and with low accessibility levels have become increasingly important to improve through urban design practices. Such regulations aim to create successful public spaces in coastal cities and enhance city-coast integration, encouraging urban residents to use coastal areas more actively.

In terms of accessibility to coastal areas, making arrangements in accordance with the principles of universal design is of great importance. Addressing the universal design approach in coastal areas within a broader framework can significantly contribute to ensuring pedestrian comfort and safety conditions. Future research should focus on developing comprehensive solutions to enhance accessibility in coastal areas, integrating these proposals into coastal planning, which will strengthen the potential of coastal areas to become inclusive public spaces for everyone. Additionally, in areas with protected zones, access to the coasts should be provided in a way that balances conservation and use, ensuring no harm to the environment. Solutions should be developed to strengthen pedestrian access in areas where integration between the coast and the city is weak due to challenges arising from the natural environment.

In conclusion, it is important to address the coastal areas and the impact zone behind the coast together, incorporating arrangements that include holistic planning and design features in the laws, in order to increase the publicness and accessibility of coastal areas. Coastal areas should be made accessible for everyone in an equal and fair manner. These arrangements, based on publicness and accessibility, will support the physical and social sustainability of the coasts, contributing positively to the quality of human life. These approaches will strengthen the image of the coastal city and contribute to the urban identity.

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