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Open case-file: 2012/09
Presumed degradation of nesting beaches in Fethiye and Patara
SPAs (Türkiye)

- REPORT BY THE COMPLAINANT -

Document prepared by
Mediterranean Association to Save the Sea Turtles (MEDASSET)

UPDATE REPORT BY THE NGO

Marine Turtle Conservation in the Mediterranean

LOGGERHEAD SEA TURTLE (*CARETTA CARETTA*) CONSERVATION MONITORING IN FETHIYE AND PATARA SPAs, TÜRKİYE

1 August 2023

*Document presented by
MEDASSET - the Mediterranean Association to Save the Sea Turtles*

*for the 43rd Standing Committee Meeting of the Contracting Parties to the Convention on the
Conservation of European Wildlife and Natural Habitats (Bern Convention)*

MEDASSET hereby submits an update report to the second Bureau Meeting of the Bern Convention (September 2023) on the conservation status of sea turtle nesting beaches in Fethiye and Patara Specially Protected Areas (SPAs) in Türkiye.

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SUMMARY

MEDASSET visited Patara and Fethiye SPA in July 2023 to assess and document the conservation status of the nesting beaches. The survey was funded by Aktionsgemeinschaft Artenschutz (AGA), www.aga-artenschutz.de. The following presents the survey findings in relation to each of the measures under Recommendation No. 183 and 182 (2015).

Fethiye Specially Protected Area: Recommendation No. 183 (2015)

The loggerhead sea turtle (*Caretta caretta*) nesting beaches in Fethiye (Muğla Province, Türkiye) are among the 12 most important nesting beaches in Türkiye.¹ The nesting beaches belong to the Fethiye-Göcek Special Environmental Protection Area (SPA) established in 1988. Scientific studies have shown that nest numbers in Fethiye are declining.²

The habitat destruction due to the developments directly on or behind the nesting beaches continues. New major developments were observed in July 2023 in the Çalış B section of the beach. The first is a mesh barrier filled with large stones, lining the back of the beach between the promenade area and Apache Beach. The second is the ongoing construction of a new permanent structure: a large facility on the beach, which will likely become a cafeteria, complete with two blocks of dressing cabins, and possibly toilets and showers. Renovations in the promenade area are now complete. Of great concern are new hoses installed at all beach entrances, directly leaking onto the nesting beach. In 2022 we reported that in Yanıklar, a large enclosed construction area was observed behind Deniz İncisi. In 2023, we observed a third hotel construction inside. With this new hotel, the wetland that was once present at this section is now destroyed. (Rec.Point 1).

¹ Türkozan 2000; Margaritoulis *et al.* 2003; Canbolat 2004

² Ilgaz *et al.* 2007; Katilmis *et al.* 2013; Başkale *et al.* 2016

During our 2022 assessment, we reported certain improvements in the management and enforcement of regulations and suggested actions to resolve the many serious problems that remained. Unfortunately, we observed no improvement in most of the issues in 2023, which continue to impose serious threats to the sea turtles, necessitating immediate actions for further improvements and corrections. While wooden posts mark the nesting zone border in large sections of the SPA, in many areas the zoning is incorrect. In the pristine Yanıklar nesting beach there is no marking of the nesting zone whatsoever. Umbrellas are fixed in the sand, but there is no control on the usage and placement of personal umbrellas inside the nesting zone. A number of facilities still have vertical and horizontal walkways over the nesting beach, extending until the wet sand. (Rec Points 2, 5). The SPA was dirtier and more polluted than 2022 (Rec. Point 12). We observed AstroTurf carpets on the beach and water sports equipment placed close to the waterline at all times. There remain issues with camping, bonfires, planting on the nesting beaches, severe light pollution, lack of vehicle access control, and human presence at night (Rec. Points 2, 4-8, 11, 15). Guards were seen but not enforcing the controls in the protected area (Rec. Points 13, 14). Nests in Çalış A, Çalış B, along with those in front of Deniz İncisi and the hotels in Yanıklar, and in Akgöl were protected with prism cages, however all of the nests that could be identified in the pristine section of Yanıklar were unprotected and fully predated (Rec. Point 10, 16).

Eight years since the adoption of Recommendation No. 183 (2015), the implementation of the measures either have been partially or have not materialized. The destructive development occurring over the past years in complete disregard of the Bern Convention's Recommendation has severely affected the sea turtles and their habitat. Actions must be taken immediately to fully implement the recommended measures.

Patara Specially Protected Area: Recommendation No. 182 (2015)

In 2023, we observed certain improvements; however, the main unresolved conservation problems that are negatively affecting the nesting beaches remain. As a result, additional measures must be taken to provide the Patara nesting beach the appropriate protection and management.

The SPA borders have still to be confirmed and no final maps are available online. It is unclear if the entire nesting beach (North and South section), the nearshore marine areas and the entire sand dune areas are appropriately zoned and protected against any further development (Rec. Point 1).

Access to the beach at night was enforced more effectively, however human presence was still observed on the sand dunes and vehicle tracks were present in the northern part of the South Beach and several locations of the North Beach (Rec. Points 1 and 3). Prof. Eyüp Başkale from Pamukkale University, who is leading the monitoring project at the SPA this year, recently stated the problem of ATV entrance to the beach and called the authorities to establish more deterrent penalties (Rec. Point 2).

The construction of "Patara Bridge" is completed, and it now connects Xanthos and Ova district, also Seydikemer and Kaş. Its location looks far enough from the beach, but the construction work may have negatively impacted the river dynamics. There was no dune restoration as recommended. As a result there is an **alarming spatial increase in coastal erosion along the South Beach**, which we believe is related to the river dynamics and to the disturbed overall dune statics in the region as a result of the **heavy sand removal** in the past 2-3 years. **Expert view on this matter is strongly needed.**

There was also **insufficient nest monitoring in the North Beach** and protection from trampling or predation due to lack of resources. The research team monitoring the SPA must be granted sufficient funds and manpower for monitoring, especially North Beach which lacks any zoning and marking or protection of the nests. The topography and characteristics of the South beach must be considered in order to correct the erroneous zoning. (Rec. Point 4, 7, 8 and 9). Poor beach furniture management was observed at the SPA's single beach facility, which is located within the nesting hotspot (Rec. Point 2).

Construction of the 300+ summer house development in the 3rd Degree Archaeological site of the SPA, in close proximity to the dunes and the nesting beach is completed further increasing the anthropogenic pressures (Rec. Point 4).

To date, Recommendation No. 182 (2015) is only partially implemented. As we have previously indicated, improvements in the management and control for effective implementation of the Recommendation, over both sections of the beach, will allow this unique natural and heritage site to become a showcase example, similar to the much renowned nearby Dalyan SPA (İztuzu beach). It is of **high priority for authorities to take further action** and resolve the remaining unresolved conservation and management problems with no delay.

MEDASSET calls upon the Turkish authorities to:

- Urgently fully implement Recommendations No. 182 & 183 (2015) through a comprehensive and updated action plan.
- Produce SPA management plans for both sites that include zoning and that cover both the land and marine areas, including clear descriptions of permitted land uses and activities. The current law (Circular) provides general guidelines, but a management plan for each SPA is necessary to specify and localise these regulations.
- In relation to Fethiye, provide an official map of the beach and adjacent land area that are under dispute, and of the areas that have been permitted for development. As per Measure 1 of the Recommendation, declare a building moratorium to prevent any further development (hotels, jetties, etc.) on or directly behind the nesting beaches and correct the zoning errors.
- Provide the necessary resources for the effective protection of the beach (guards, vehicle barriers etc.)
- In relation to Patara, confirm Patara SPA's zoning, publicize the maps and ensure that the entire nesting beach (North and South sections), the nearshore areas and the entire sand dune areas are appropriately zoned and protected against any further development.
- Address the concerns raised in MEDASSET's complaint regarding the Patara now largely completed summer house construction project, its scale, the associated impacts, the lack of an EIA and of a carrying capacity study. Provide detailed information on the additional houses constructed outside the summer house construction project.

MEDASSET calls upon the Bern Convention Standing Committee to:

- Discuss the case file at the 43rd Meeting of the Standing Committee.
- Keep the case file open for further monitoring.
- Urge Turkish authorities to implement Recommendations No. 182 & 183 (2015) as soon as possible.
- Request Turkish authorities to produce the necessary plan and provide further information on the case, as requested in the abovementioned points.

ANNEX 1: DETAILED UPDATE, BACKGROUND, MAPS & PHOTOGRAPHS

FETHIYE SPA, TÜRKİYE

DETAILED REPORT

Nesting beach description (Fig.1): The 8 km beach is split in three sections: Çalış, Yanıklar, and Akgöl. Çalış is 2.5 km long and divided into two sections: Çalış B (Koca Çalış - northern part) and Çalış A (Küçük Çalış - southern part), which is the section that is bordered by a wall and a promenade lined by tourist infrastructures. Çalış Hill marks the end of Çalış and the start of Yanıklar, which extends northward for 4.5 km, including the so-called “small beach (Karataş beach)”. Kargı Stream marks the border between Yanıklar and Akgöl (1 km, also known as Karaot beach). For a detailed description of the Fethiye SPA nesting beaches see MEDASSET 2009.

MEDASSET visited Fethiye SPA in July 2023 to assess and document the management and conservation status of the nesting beaches. The survey was funded by Aktionsgemeinschaft Artenschutz (AGA), www.aga-artenschutz.de. The following presents the survey findings in relation to each of the measures under Recommendation No. 182 (2015).

1. Stop any further development of permanent structures (buildings, roads, shipyard, jetties/docks, etc.) along the entire coast of the nesting site complex, in order not to reduce further the nesting habitat;

The promenade area, renovated in 2021-2022 was crowded and lively both during the day and at night, but no new permanent structures were seen in Çalış A. Hoses were installed at all beach entrances, directly leaking onto the beach (Fig.2).

Two major permanent structures were seen in Çalış B. The first is a mesh barrier filled with large stones, lining the back of the beach between the promenade area and Apache Beach (Fig.3a-e). All camping sites in this section have been moved behind it. Three rows of high poles were installed in the sand to the front of it, for umbrellas (Fig.4a-c). Right after this area was the ongoing construction of another permanent structure: a large facility on the beach, which will likely become a cafeteria (Fig.3b, 4c, 5a-3) complete with two blocks of dressing cabins, and possibly toilets and showers (Fig.5c-e). The facility was built on the wooden stakes erected at the same location last summer (see Fig.24 in 2022). Near the post numbered Ç104, a cage was placed in front of the changing cabins, and a motorcycle was parked near it (Fig.5d-e). Beach visitors were seen using a hose coming right out of these cabins (Fig.6). The entire area was fitted with horizontal and vertical walkways (Fig.5a-c), and an umbrella base was left unburied, with a large under it (Fig.7a-b). A cage was located right next to one of the vertical walkways (Fig.8a-b). One of the vertical walkways extends right into the sea, connecting to a scaffold-like structure (Fig.9a-b). A lifeguard tower was also installed on the beach (Fig.5b-c, Fig.10). Towards the northern border of Çalış B, some facilities began building tiny houses within their premises (Fig.11a-b), with more being built at the back of the beach in enclosed areas.

In Yanıklar, a third hotel is being constructed inside the large enclosed area observed behind Deniz İncisi in 2022 (Fig.12a-c)³. With this new hotel construction, the wetland that was once present at this section is now entirely destroyed.

2. Remove any structure (wooden paths, wooden pavilions, bars, platforms, showers, carpets, patios, etc.) from sand zones, including those to be restored, especially in areas with relatively narrow beach width and/or in tracts with narrow sandy strips; and restore the sandy areas;

5. Map the whole Fethiye coast using long-term data, maps and imagery to identify the past, current and potential most suitable zones for sea turtle nesting, and set a maximum percentage limit of sandy tracts where touristic structures are allowed on the nesting beach and define (A) coastal tracts less suitable for turtle nesting, where beach furniture is allowed at appropriate densities and

³ Video titled “20230701_YaniklarConstruction.mp4”

(B) coastal tracts adequate for turtle nesting, where beach furniture and access at night are not allowed. Enforce beach furniture removal/stacking at night along the entire nesting beach complex during the nesting/hatching season;

We hereby report on both of the above measures jointly (No.2 and No.5), as in 2021 and 2022, in order to better reflect the updated situation of nesting beaches after new arrangements in 2021.

In 2022, Fethiye SPA was fitted with wooden posts supposedly marking the upper border of the nesting zone as part of the project titled “Determining the Sea Turtle Nesting Areas and Demarcation of Their Borders” carried out by the Directorate General for Preservation of Natural Heritage under Turkish Ministry of Environment and Urbanization. The only areas lacking these zoning posts are the promenade area in Çalış A, the picnic area and the pristine section in Yanıklar Beach. However, the posts are far from defining the nesting zone in some parts of the SPA, particularly in Çalış B (Fig.13a-c) and in the southern part of Yanıklar (Fig.14a-c). They are located only a few metres away from the shoreline while the actual nesting zone is occupied by facilities and their beach equipment.

In Çalış A, the layout of sunbeds differ between 1 to 2 rows (Fig.15a-b). Sunbed stacking at night was observed only in front of Middoor, Uras Beach and Ey Cafe (Fig.15b, 16a-b), which are adjacent to each other, but were left within the nesting zone. Furniture stacking was not seen anywhere else in this section (Fig.17a-b) or the rest of the SPA. Umbrellas of the facilities in the entire section are fixed in the sand, but there seems to be no control on the random usage of personal umbrellas inside the nesting zone (Fig.18). All of the stairs connecting the promenade area to the beach were fitted with hoses to wash feet (Fig.2). Shower cabins near the stairs also drain onto the beach (Fig.19).

In Çalış B, a lot of visitors were seen using their own umbrellas directly inserted in the sand within the nesting zone (Fig.3c, Fig.20a-b), especially in front of Resul Bali Sultan Beach and Leon Beach, where there is also a volleyball court entirely surrounded by a net and a small playground for kids on the beach to the rear of zoning posts. A number of facilities still have vertical walkways extending until the wet sand (Fig.8a-b, Fig.9a, Fig.21a-b). Yücel Restaurant to the south of this section had multiple horizontal and vertical walkways connecting their rows of sunbeds, entirely covering the nesting zone (Fig.22). Surf Beach next to Surf Cafe had a wooden tent-like structure, cushions, and two large logs right by the shoreline (Fig.23a-c). All of the surfing facilities (Surf Station/Mavi Beach, Surf Beach, Jiva and Celina) still had AstroTurf carpets on the beach and their water sports equipment placed close to the waterline at all times (Fig.24a-b). A raised platform was placed inside the sea, for people to dine on (Fig.25a-b). Four rows of sunbeds were seen in front of Hanel Houses, and seven rows in front of Jiva beach (around 150 in total) were placed behind the wooden posts. Five large gazebos were seen near Jiva’s sunbeds, right adjacent to the volleyball court, and a few makeshift structures resembling pavilion frames were observed in front of the new mesh barrier to the south of this section (Fig.26). The strand in front of the new mesh barrier to the south of the new facility seemed to have the highest number (and density) of nests in the entire Çalış section (A and B combined) this year, with 6 cages close to each other (Fig.3d-e, 4b-c, 8a-b, Fig.27a-b)⁴. A few kayaks and boats were left on the beach (Fig.28a-b). There was no furniture stacking or removing at night.

In Yanıklar, Karataş Beach is the same as last year, with recreational equipment fully occupying the entire beach (Fig.29a-b). In front of Deniz İncisi, visitors seemed to be free to insert their umbrellas as they please (Fig.30), and three cages were seen towards the section’s southern end, among all these visitors and their umbrellas (Fig.31a-b). Wooden posts in this part seemed to be properly marking the nesting zone, although they were used in creative ways by the visitors (Fig.32). The beach strand in front of the new hotel construction site seems to be frequently exposed to heavy vehicle entry (Fig.12b-c). The water sports area between Liberty Fabay and TUI BLUE Sensatori Barut still has a very high number of kayaks and speed-boats on the nesting beach (Fig.33). Hotel TUI BLUE Sensatori Barut’s lifeguard tower also remains very close to the sea, with vertical and horizontal walkways leading to the quay (Fig.34a-b). Akmaz Doğa Mesire Yeri (Akmaz Natural Recreation Area) established in 2022 and run by the Fethiye Forestry Department was fully operational and overly crowded during the day, with

⁴ Video titled “20230630_CalisB_NewFacility.mp4”

no zoning posts and a lot of visitors with their umbrellas randomly inserted in the sand (Fig.35a-c)⁵. The zoning posts are also absent in the pristine section and start in front of Lykia Botanika, at only 5 metres from the shoreline, almost within the semi-wet zone (Fig.14a). The entire nesting zone in front of this facility is covered with a layer of artificial grass, with beach furniture placed on top (Fig.36a-b) and a volleyball net right next to it (Fig.14a, Fig.36a). Most facilities in this section prefer single piece shaders instead of umbrellas and beach bars are usually very close to the nesting zone (Fig.37). Club Tuana's watersports rails extend all the way into the sea (Fig.38). Yonca Lodge still has the volleyball net and the showers inside the nesting zone (Fig.39). Towards the end of this section, the beach is almost entirely covered with beach furniture or boats (Fig.40a-c).

In Akgöl, the beach strand between the section's southern end and Hayal Café (former Karaot Buffet) was heavily used⁶ and some visitors were using their private umbrellas (Fig.41a-b). Even though the furniture was removed from the so-called nesting zone at night, the wooden posts in this section fail to demarcate the zone correctly (Fig.42). Hayal Café did not have too many sunbeds and their pavilions were outside the nesting zone (Fig.43a-b). The core nesting area at the northern end was also exposed to heavy beach usage, and a lot of visitors had their personal umbrellas inserted in the sand (Fig.44). However, almost everyone left at sunset (Fig.45). One of the old pavilions at the rocky end was missing (Fig.46a-b).

3. Stop sand extraction and ensure the application of deterrent penalties for these illegal activities;

Three small piles of sand mixed with pebbles were observed at the mouth of main channel outlet near Çalış Hill (Fig.47a-b). Piles of sand were also observed at the southern end of Akgöl Beach, near the Municipality's facility (Fig.41a, 20230701_Akgol_Morning.mp4), indicating the possibility of new landscape arrangements that may be observed next year.

4. Remove planted vegetation, acacia in particular, with a view to restore the remaining sandy beach;

Planted vegetation in the SPA fully remains and keeps expanding. Newly planted ones are expected in the following years near the Tiny Houses and the new facility in Çalış B, and definitely the new hotel in Yanıklar.

6. Prohibit the use of beach furniture and other structures or facilities on the sandy zones of Akgöl beach, regulate use of the core nesting area in the sandy northern end of the beach, and carry-out the necessary controls to check enforcement;

At the time of our survey, the section was heavily used with personal beach equipment, including umbrellas inserted into the sand (Fig.44). At the northernmost point, one of the old pavilions was missing, but the remaining seven were used by visitors, and someone was making barbecue in one (Fig.46a-b).

A total of 16 prism cages were observed in the core nesting area (Fig.48a-c), with 12 at the southern side and 4 at the northern end, in front of the pavilions⁷. Due to heavy crowd, the underside of prism cages could not be checked.

7. Reduce light pollution to a minimum along the whole coast during the nesting/hatching season: (i) remove all lights not strictly necessary, (ii) reduce the number of lights allowed for each business company, (iii) all lights considered as strictly necessary should be reduced in power and (iv)

⁵ Video titled "20230701_Akmaz_MorningCrowd.mp4"

⁶ Video titled "20230701_Akgol_Morning.mp4"

⁷ Video titled "20230701_Akgol_CoreArea.mp4"

be red or orange-yellow, (v) all lights should be shaded in the direction of the beach. Further reduce lights after a certain time in the night, for not less than 50% of the dark time. Where possible, reduce height of lights, use motion sensors and native bushes/plants as light buffers on roads and properties. Prohibit light show equipment use;

In Çalış A, even though the light from the promenade area do not reach the beach, visitors were freely using the beach, using lights (Fig.17a-b, Fig.49)⁸.

The majority of facilities in Çalış B were fitted with orange lights, but the lights of some were very close to the sea, particularly the orange hanging lights of Surf Beach (Fig.50). Lights on top of the dressing cabinets near the new facility were brightly illuminating the surrounding sections (Fig.51a-b). Wedding events⁹ in five different locations (Bahar, Ays, Petunya, Zentara and Surf Cafe) caused considerable light pollution on the beach (Fig.13c, Fig.52a-c). A brief search on social media also reveals such events ongoing since June¹⁰. Terrace Café at the southern end of this section also had bright colourful lights (Fig.53). The northernmost part of Çalış B, from the old platform remains until Çalış Hill was filled tents and caravans, with a lot of groups engaged in night picnics with bonfires, barbecue fires, and lamps, causing severe light pollution (Fig.54). There was also a raised platform right on the shoreline, where a group was seen dining (Fig.25b). Particularly of interest, was the presence of 2 cages in the narrow area between Yücel Restaurant and Wonder Terrace at the southernmost part of Çalış B (Fig.26), where the facility behind it was closed for renovation –and thus, entirely dark at night- at the time of our survey.

In Yanıklar, Karataş Beach was making light shows in blue and green at nights, constantly illuminating the entire SPA with additional aerial light shows¹¹. Deniz İncisi and the facility next to it had dim lights, which did not reach the nesting zone at all. The new hotel construction was visible from the entire SPA at night -even from Çalış A and Akgöl Beach, as the heavy machines kept operating all day long, causing severe light pollution with overly bright white spotlights (Fig.55a-c). Liberty Fabay, despite fitting its pavilions with dim orange lights, created extreme noise pollution with its beach bar and disco, which also illuminated the nesting beach with aerial light shows (Fig.56a-b). The quay between two hotels had blue lights that were dimmer this year (Fig.55b-c). Hotel TUI BLUE Sensatori Barut, like in the previous years, did not create any significant light or noise pollution at night. However, the security lights between the two hotels continue to be a problem, brightly illuminating the nesting zone. Only a few campers and fishermen were seen in the pristine section using lights at night (Fig.57). All facilities to the north of the pristine section had dim orange lights (Fig.58). The very bright security light between Okalıptüs and Tuana, next to the water sports area continues to be a powerful source of light pollution (Fig.59). Except for this facility, even the quay of Lykia Botanika was dimly lit this year (Fig.60a-b).

In Akgöl, a few caravans were using white lights, while the rest largely preferred dim orange lights or LED strings (Fig.61a-b). The lights of Hayal Café and the Municipality's facility were also orange and dim (Fig.42, Fig.62), with very little to no music.

8. Build permanent barriers (not ditches) on the roads to prevent vehicles from accessing the beach, designate parking spaces and official picnic areas away from the beach;

Permanent barriers that prevent vehicle access to the beach have increased in number. This year, a new permanent barrier was seen in Çalış B, made of a mesh scaffold filled with large stones, lining the front of several large camping sites mid-section, (Fig.3a-e, 4a-b). However, a motorcycle was still seen on the beach in this section, way too close to a cage (Fig.5d-e). The barrier also seems to be effective

⁸ Video titled "20230630_CalisA_Night.mp4"

⁹ Video titled "20230630_CalisB_Night_SurfCafe.mp4"

¹⁰ Lotus Beach – wedding in June 2022: <https://bit.ly/3S9ic9w>

Lotus Beach – graduation in June 2022: <https://bit.ly/3Q1gPrL>

Petunya - wedding in June 2022: <https://bit.ly/3Brz7yi>

Bahar Beach – wedding in July 2022: <https://bit.ly/3vpoXdj> & <https://bit.ly/3vldiwz>

¹¹ Video titled "20230701_KaratasBeach_NightLightShow.mp4"

at screening the lights behind. GPS coordinates of its approximate starting point -near Apache Beach and the newly built facility- is provided in Table-1 and it extends all the way until the promenade area in Çalış A. In front of the renovation site, where tiny houses were being constructed on the beach, vehicle tracks were observed within the nesting zone (Fig.11a). The northernmost part of Çalış B, close to Çalış Hill is used a caravan area, where people can park their vehicles very close to the water line and have picnics and barbecues on the beach (Fig.54a-b, Fig.63). Zirkon Beach's caravan area is also another spot, where vehicles can approach the water line too much (Fig.64).

In Yanıklar Beach, all facilities (Karataş Beach, Deniz İncisi, and the hotels) control vehicle entrance, although some tracks were observed on the beach between Deniz İncisi and the new hotel's construction site (Fig.12b-c). Akmaz picnic area has permanent barriers to control vehicle entrance, but the picnic area itself is right on the nesting beach (Fig.35a-b-c), even though it is mostly empty at night. Vehicle tracks were observed in the pristine section of Yanıklar (Fig.65a-c), especially around the uncontrolled vehicle entrance point in mid-section, where a 4x4 was also seen passing by. A tractor was seen directly on the beach during our survey (Fig.66a-b). This sections ends with an open entrance point at the north, where the beach is not suitable for sea turtle nesting (Fig.67a-b).

Despite the lack of actual permanent barriers in Akgöl, vehicles mostly do not enter the nesting zone. Most of the cars and caravans were parked behind the zoning posts (Fig.48b, Fig.61a-b), but one drove all the way to the shoreline, through among 5 cages in its direction (Fig.48a, Fig.68a-b)¹². Another vehicle was seen driving on the nesting beach and it later parked at the back of zoning posts (Fig.69a-b). One family was spotted making barbecue on one of the pavilions at the northernmost end of the section (Fig.46b), and some caravans were seen doing the same right at the back of the nesting beach (Fig.70).

9. Regulate maritime traffic during the nesting/hatching season, by prohibiting any motorised traffic at appropriate distances near the coast, by setting speed limits and foreseeing marked corridors from the beach to open waters;

Fishing boats, speed boats and cruise yachts were seen at various sections in the SPA (Fig.12d-e, Fig.15a, Fig.16b, Fig.18, Fig.23a-b, Fig.25b, Fig.33, Fig.34a-b, Fig.38, Fig.40c, Fig.63, Fig.67b, Fig.71a-h). Their traffic during the entire sea turtle nesting/hatching season is regulated by a number of laws, but information on actual and strict enforcement remains vague. Open water borders were marked with floating ropes in all sections.

There was also considerable maritime traffic by the small island right across the pristine section in Yanıklar, where over 20 touristic boats were seen near the shore (Fig.72a-b).

10. Set up long-term research and conservation programs conducted by a permanent team recruited on a long-term perspective. This team should have adequate manpower to monitor the entire beach and protect all nests if necessary during the entire nesting/hatching season. The team should also assess across the years and using the same comparable methods: (i) the disorienting effects of photo-pollution on hatchlings, (ii) disturbance of nesting females, and (iii) predation of nests (or attempts);

The SPA is still protected on a seasonal basis, by DEKAMER almost every year. However, the efficacy of the monitoring team seems questionable, in terms of numbers and the quality of work. A single volunteer was seen patrolling the beach in Çalış early in the morning, alone, and half asleep (Fig.73). She had no interaction with the beach users.

The pristine section of Yanıklar gave the impression of being monitored irregularly instead of a daily basis, as no proper markings or protective cages were seen, and all observed nests were predated (Fig.74a-c). In comparison to 2022, the monitoring efforts this year looked very poor.

¹² Video titled "20230701_Akgol_CampingVehicleEntrance.mp4"

11. Prohibit camping and bonfires and set appropriate time limits for the operation of beach bars at night during the nesting and hatching season;

Campers were seen in all sections, with either tents or caravans. Besides the already designated camping areas and facilities, sporadic tents were seen at the northern end of Çalış A (Fig.18, Fig.19, Fig.75a); in front of the newly built permanent barrier (Fig.75b-c), towards Çalış Hill (Fig.75d) and even on the remains of the concrete platform (Fig.75e) in Çalış B; near Deniz İncisi (Fig.f-g), as well as the immediate back of the beach in Akmaz (Fig.75h-i) and in the pristine section (Fig.57, Fig.66a) in Yanıklar; and a few in the core nesting area at the northernmost end of Akgöl (Fig.46a).

Bonfire remains were also observed in all sections (Fig.76a-b), except Çalış A and the strand between Karataş and Akmaz Beach. Barbecue fires and bonfires were directly observed in several sections at night (Fig.54b, Fig.57, Fig.70). Campers in Yonca Lodge were actively making barbecue right by the sea at night.

The operation of most beach bars and other facilities continued until at least 00.00.

12. Take measures to clean the beach and empty appropriately located bins on a daily basis, and ensure sewage is not discharged into the sea;

Fethiye SPA in general was more polluted than it was in 2022. Çalış A was relatively clean, possibly because of cafés and bars instead of camping sites, plus sufficient number of bins that are emptied on a regular basis. Still, it was possible to see random litter, especially around spots used at night (Fig.15a-b)

Bins in Çalış B were overfilled with garbage, most of them spilling on the roads. The beach was also polluted, with litter left either directly on the beach or in plastic bags, commonly left next to zoning posts (Fig.3d-e, 4a-c, 71a, 75c-e, 77a-f). Some litter was also left near the meshed barrier (Fig.27a-b).

Public usage areas in Yanıklar were quite littered during the day (Fig.31a-b), while the hotels area did not really have a litter problem. Drainage channels reaching the sea remain as sources of pollution (Fig.40a, Fig.78a-c)

The main channel near Çalış Hill also continues to be a concern, as it collects the draining water from all greenhouses and usage water from the houses around it (Fig.79a-b).

13. Set up adequate regulations and enforcement for the measures above, including regular day and night controls along the entire coast. Define and enforce fines for noncompliance with above regulations;

Zabıta were seen at the entrance of promenade area (border between Çalış A and B) at night. Instead of patrolling or warning people about beach usage and compliance, they were busy chatting (Fig.80). About 40 mins later, they were seen at the same spot, still doing nothing about all the people sitting on the beach with their lights. No control was observed in Çalış A or B.

There is still no clear information regarding fines against noncompliance with all above regulations, and the extent of enforcing these fines (if any) is even less clear.

14. Ensure that adequate financial and human resources are allocated to the control and management of the beaches;

No clear information on this could be obtained during our survey.

15. Improve information to local community and tourists about sea turtle nesting and sustainable use of the beach. This should include effective communication of regulations (incl.

regulations implementing the Recommendation) by the authorities to stakeholders and businesses, signs at all major beach entry points, and awareness campaigns aimed to the guests of the big resorts, in collaboration with the owners and managers. Encourage beach hotels and businesses to support scientific teams and involve the local community in the protection and management of the protected area;

Fethiye is one of the few SPA's where local community and tourists receive frequent information about sea turtles and beach usage. Although everyone is aware of the region's importance as a sea turtle nesting site, the survey in 2023 failed to observe any form of community involvement or a proper use of the beaches.

The number of signs in the SPA did not change in 2023, with the addition of just one seemingly incomplete new sign behind the newly built mesh barrier in Çalış B (Fig.3a-c). The public picnic facility in Akmaz Beach still lacks a sign regarding sea turtles, even though it is adjacent to the pristine section. Yanıklar, in general, definitely needs more signs.

The sea turtle observatory next to the Municipality's facility in Akgöl was closed.

16. Continue to protect all nests with cages, until the different conditions obtained through the other measures above will allow again a more natural process;

Nests in Çalış A, Çalış B, along with those in front of Deniz İncisi and the hotels in Yanıklar, and in Akgöl were protected with prism cages (Figures 3d-e, 4c, 5d-e, 8a-b26, 27a-b, 31a, 34b, 48a-c, 68a-b). Due to the very high number of visitors during our surveys, none of them could be checked for the additional protective grills at the base. All of the nests that could be identified in the pristine section of Yanıklar were fully predated (Fig.74a-c). The overall number of nests in the pristine section was considerably lower this year. Since no visible demarcations were seen (for potential old nests that are still intact), the presence of buried flat grills could not be checked either.

Observations on other activities and impacts:

- The SPA was unusually overcrowded during the time of our survey, teeming with people and cars, which may be the direct cause of overfilled garbage bins and too much litter on the beach, especially in Çalış A and B.
- The construction of Fabay Villas (Fabay Kızılada Apart Houses) behind Hotel Liberty Fabay was finished (Fig.12d).
- Tiny houses seem to be the new trend in the SPA, where 3 facilities were closed for building tiny houses by the beach, and several more being built behind the facilities.
- Pieces of concrete were observed for the first time near the stone wall at the border between Yanıklar and Akgöl (Fig.81a-b).
- Rod fishing was observed at several locations in the entire SPA, in the morning and at night (Fig.48c, Fig.61b, Fig.82a-e). Fishing boats were seen in Çalış A early in the morning.
- Ungulate droppings were seen in Karataş, Akmaz, and the pristine section (Yanıklar) (Fig.65c, Fig.83a-e).
- No apparent coastal erosion was observed.
- Stray dogs were common in Çalış A and B, and at Akgöl, especially near the core nesting area (Fig.46a).
- The number of nests in the pristine section of Yanıklar seemed to have decreased, compared to previous years (actual nest numbers may be needed).

TABLES

Table-1. GPS data of important locations in Fethiye SPA. Records were taken by GPS Coordinates, developed by Fundroid 3000, with an accuracy of 8-14 m. (*=added or updated in 2023)

	COORDINATES	DEFINITION
Ç	36°39'24.23"N - 29°06'37.87"E	South end of section and the promenade area
A	36°39'33.18228"N - 29°06'35.59716"E	Sign at beach entrance ("Makri Beach")
L	36°39'37.55664"N - 29°06'33.25860"E	Sign at beach entrance ("Motto Bar")
I	36°39'45.16272"N - 29°06'30.03840"E	Sign at beach entrance ("Çalış Taxi")
Ş	36°39'57.07188"N - 29°06'22.82364"E	Sign at beach entrance ("Uras Beach")
-	36°40'04.77156"N - 29°06'18.30204"E	North end of section and the promenade area
A		
	36°40'05.4"N - 29°06'16.8"E	Sign right before promenade stairs
Ç	36°40'13.8"N - 29°06'10.9"E *	Newly installed umbrella poles
A	36°40'19.2"N - 29°06'06.6"E *	Southern start of new facility
L	36°40'22.9"N - 29°06'01.0"E	Water sports ramp near "Sunset Beach"
I	36°40'23.2"N - 29°06'00.5"E *	The small pier in of "Jiva Beach"
Ş	36°40'25.4"N - 29°05'59.5"E	Sign in front of "Sunset Beach (Hanel Houses)"
-	36°40'29"N - 29°05'53"E	Jetty near "Surf Cafe"
B	36°40'43.98708"N - 29°05'32.24940"E	Abandoned concrete platform
	36°40'43.40532"N - 29°05'33.50256"E	North end of the facilities ("Mavi Beach")
	36°40'44.9"N - 29°05'31.6"E *	Approximate end of zoning posts
	36°40'44.51988"N - 29°05'31.21836"E	Large drainage channel and stones at its mouth
	36°40'46.73"N - 29°05'23.95"E	Caravan area used by "Zirkon Beach"
Y	36°40'40.72728"N - 29°04'58.82592"E	South end of "Deniz İncisi"
A	36°40'43.1"N - 29°04'55.8"E	Sign at "Deniz İncisi"
N	36°40'43.77612"N - 29°04'52.48776"E	North end of "Deniz İncisi"
I	36°40'48.6"N - 29°04'42.3"E	South border of "Liberty Fabay"
K	36°40'51.6"N - 29°04'33.3"E	Water sports ramp between 2 hotels
L	36°40'52.6"N - 29°04'31.6"E	Jetty and Lifeguard in front of "Barut Sensatori"
A	36°40'55.0"N - 29°04'23.5"E	End of pavilions and sign at "Barut Sensatori"
R	36°40'50.3"N - 29°04'04.6"E	Polluted drainage (north end of Akmaz Beach)
	36°40'57.0"N - 29°03'17.1"E	Vehicle access point in pristine section *
	36°41'02.5"N - 29°03'06.2"E	Starting point of wooden posts
	36°41'07.73160"N - 29°02'58.06068"E	Northernmost facility in Yanıklar Beach
	36°41'10.1"N - 29°02'55.3"E	Jetty and information sign at "Lykia Botanika"
	36°41'12.7"N - 29°02'51.5"E	Drainage channel near "Doğa Camping"
	36°41'16.5"N - 29°02'46.8"E	Drainage channel near "Kafi"
	36°41'20.14584"N - 29°02'41.52624"E	Jetty and water sports equipment ("Tuana")
A	36°41'24.0"N - 29°02'35.4"E	Kargı Stream, bridge, vehicle entrance point, and concrete wall (Yanıklar-Akgöl border)
K		
G	36°41'32.2"N - 29°02'28.8"E	New sign in front of Municipality's Facility
Ö	36°41'38.9"N - 29°02'21.8"E	Information sign ("Hayal" - former Karaot Bf.)
L	36°41'49.03548"N - 29°02'08.39040"E	Information sign, near parking spot
	36°41'48"N - 29°02'07"E	Wooden pavilions, section's north end

MAPS & PHOTOGRAPHS

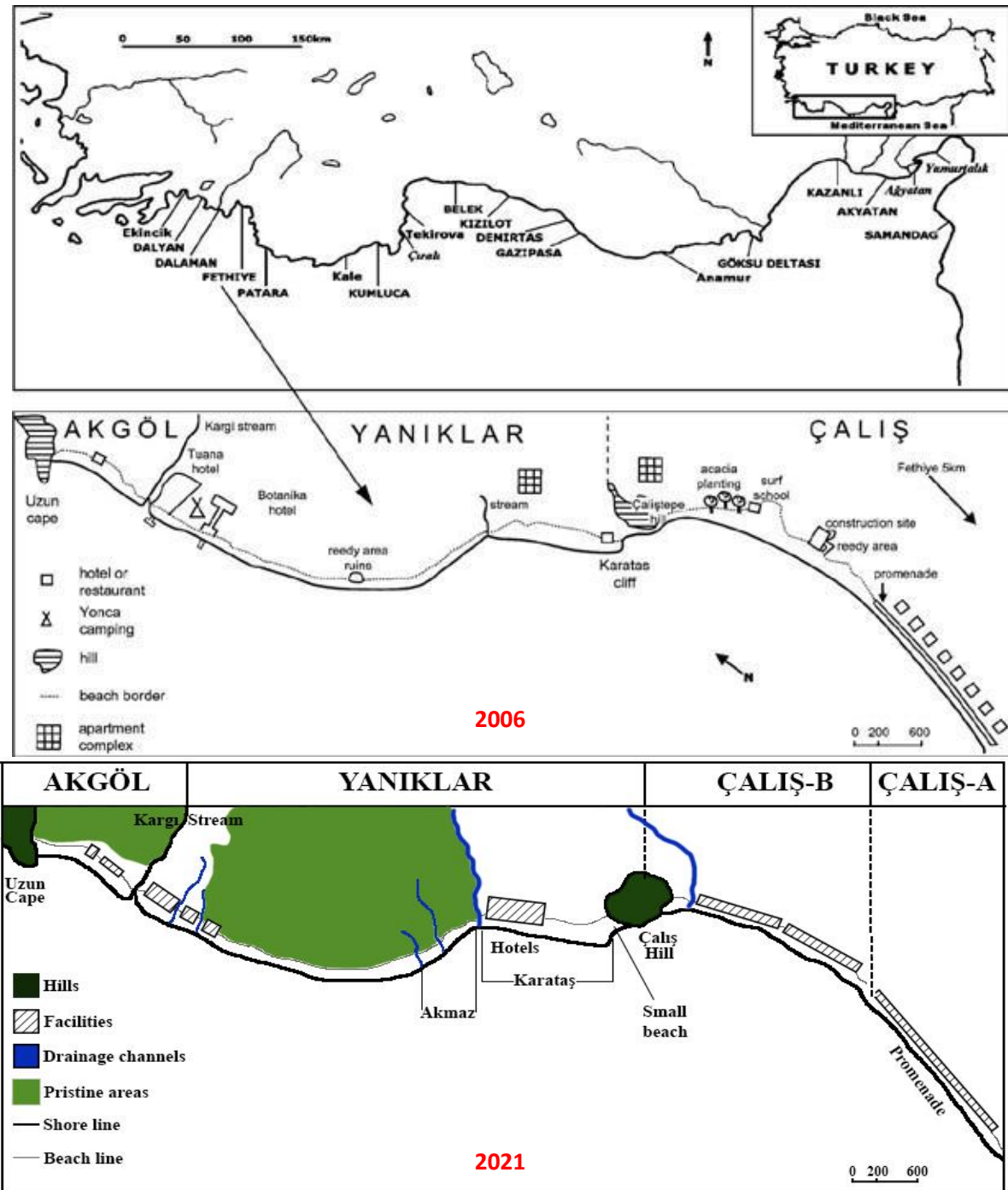


Fig.1. TOP: Fethiye SPA among important nesting beaches. MIDDLE: Fethiye nesting beach sub-subsections and development until 2006. *Source: Ilgaz et al., 2007.* BOTTOM: Fethiye nesting beaches sub-subsections and development as of 2021.



Fig.2. Fethiye SPA, Çalış A. Hose installed at the beach entry point, directly leaking onto the sand.



Fig.3. Fethiye SPA, Çalış B. Mesh barrier filled with large stones, as a new permanent barrier for vehicles. Note the incomplete sign in 3a-b-c, and the use of personal umbrellas in 3c. Note the campsites behind the mesh, the new umbrella poles, cages in the area and litter in 3d and 3e.



Fig.4. Fethiye SPA, Çalış B. Umbrella poles installed in front of the mesh barrier. Note litter on the beach and cages between the poles.





Fig.5. Fethiye SPA, Çalış B. Large new facility being constructed on the beach, likely a cafeteria. Note the horizontal and vertical walkways in 5 a-b-c, the lifeguard tower in 5c, changing cabins in 5c-d, the cage and the motorcycle in 5d.

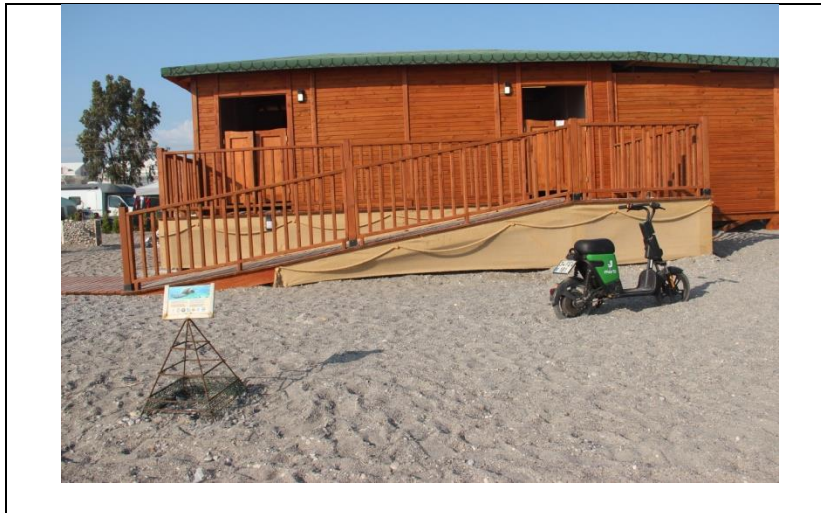


Fig.5.Continued. Fethiye SPA, Çalış B. A cage in front of the new facility's changing cabins, and a motorcycle parked near it, within the nesting zone.



Fig.6. Fethiye SPA, Çalış B. Visitors washing their feet with a hose near the changing cabins.



Fig.7. Fethiye SPA, Çalış B. Large hole under an unburied umbrella base, posing a threat for hatchlings.



Fig.8. Fethiye SPA, Çalış B. A cage next to a vertical walkway.

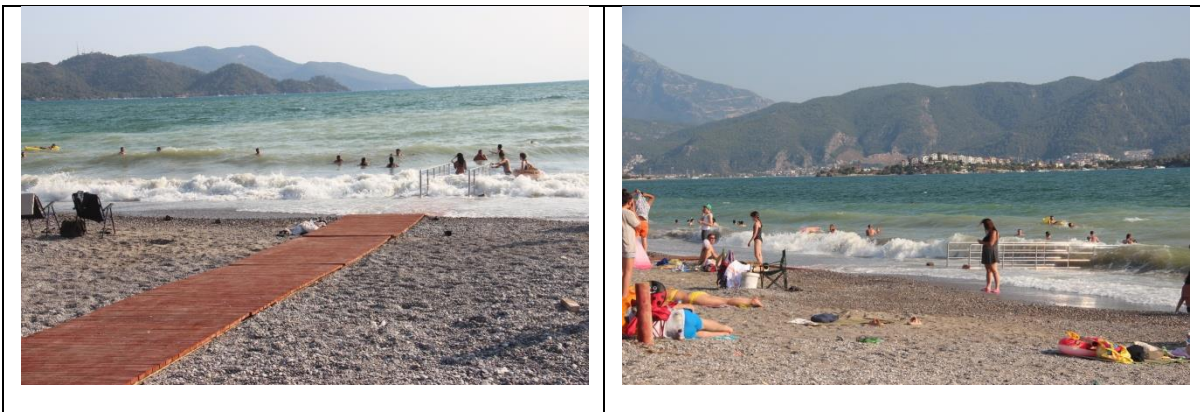


Fig.9. Fethiye SPA, Çalış B. A vertical walkway extending until the waterline, connected to a scaffold-like structure.

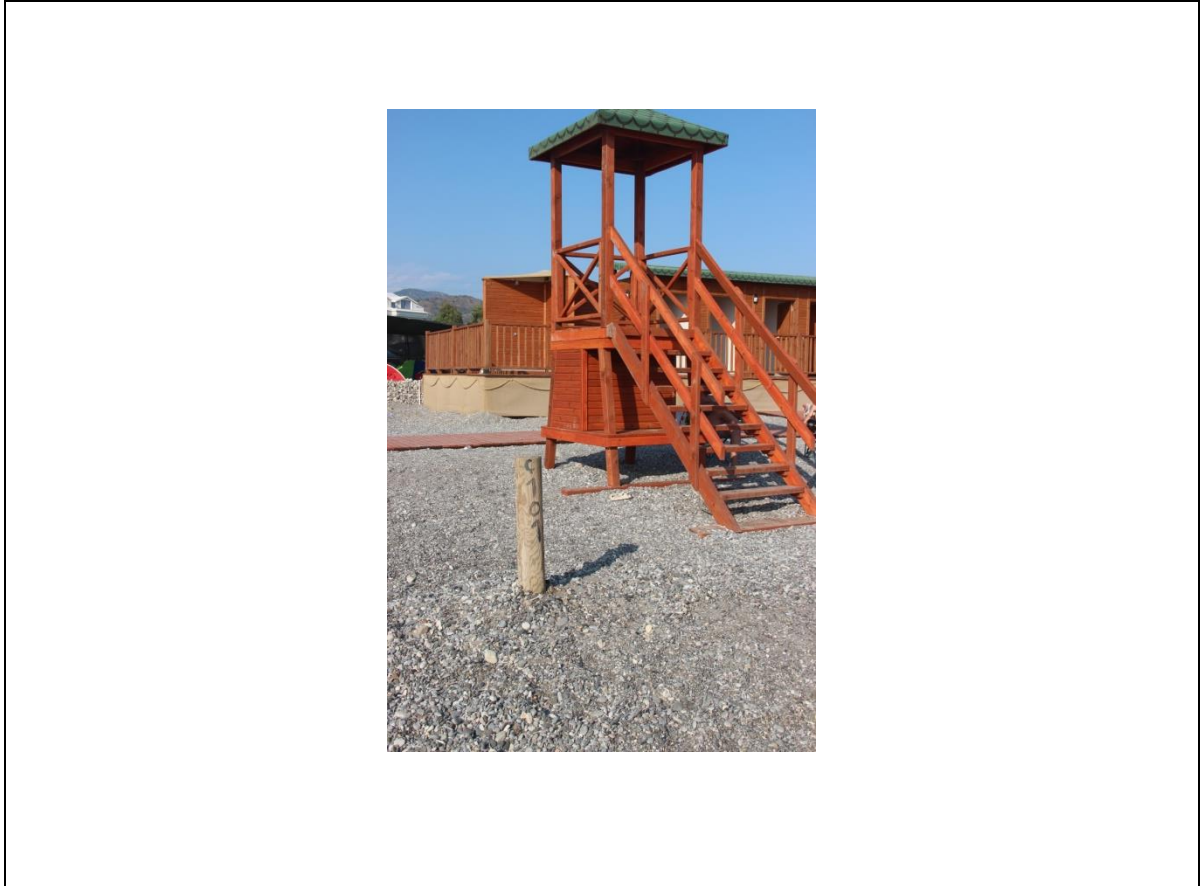


Fig.10. Fethiye SPA, Çalış B. Lifeguard tower of the new facility.



Fig.11. Fethiye SPA, Çalış B. Tiny houses being built in the section. Note the vehicle tracks in 11a.



Fig.12. Fethiye SPA, Yanıklar. Construction of the third hotel in the section. Note the vehicle tracks on the beach in 12b and 12c.

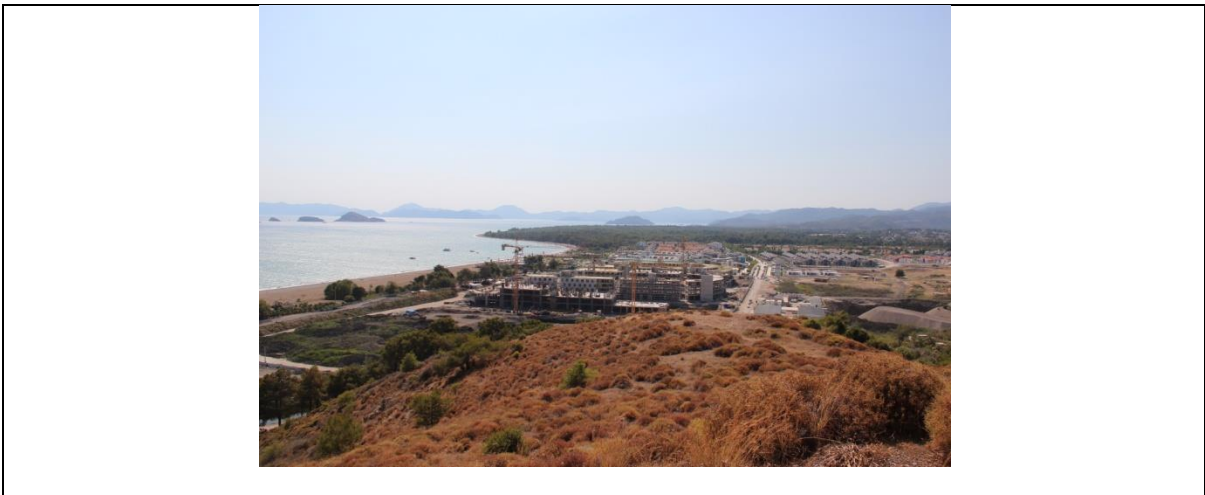




Fig.12. Continued. Fethiye SPA, Yanıklar. Construction of the third hotel in the section.

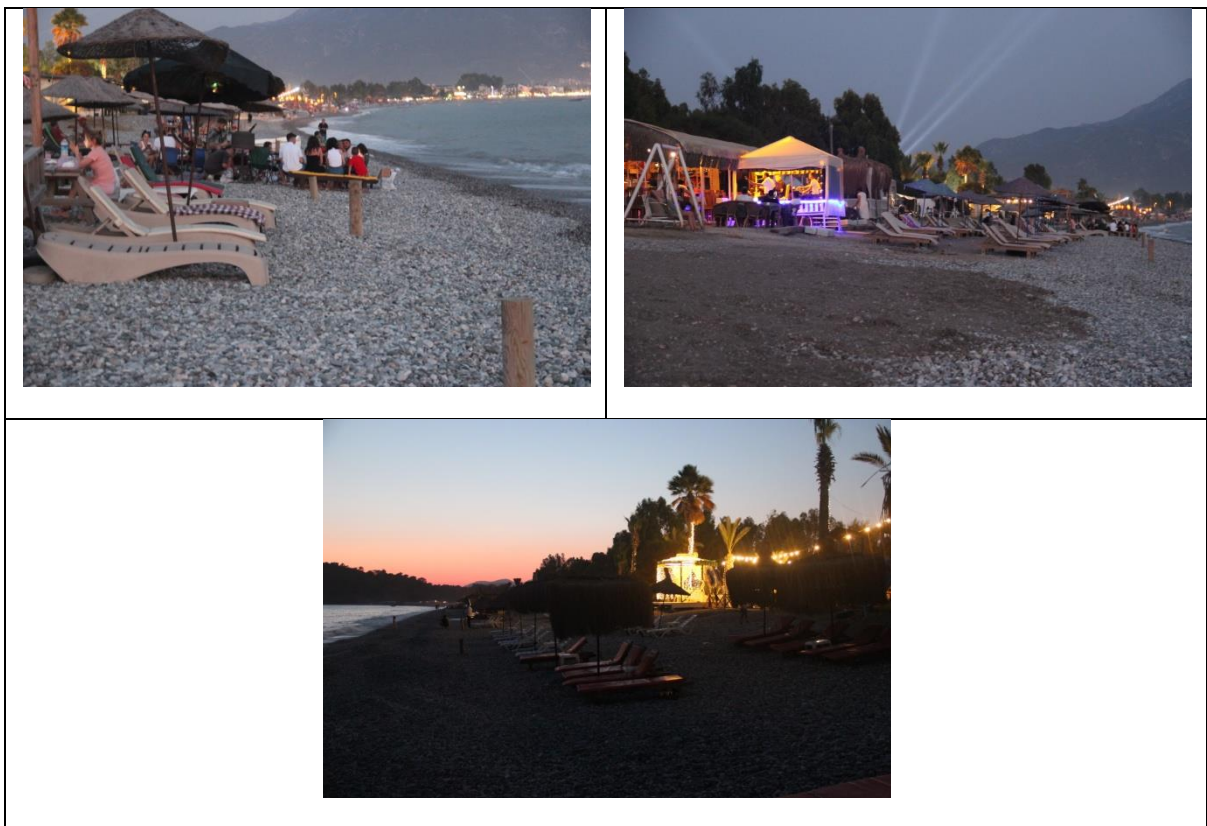


Fig.13. Fethiye SPA, Çalış B. Wooden posts supposedly marking the nesting zone, placed only a few metres from the water line. Note the table too close to the sea in 13a, the musicians' platform and the lightshow in 13b, and the wedding venue in 13c.



Fig.14. Fethiye SPA, Yanıklar. Wooden posts located too close to the sea, while the actual nesting zone is reserved for recreational usage by the facilities. 14a) Lykia Botanika (note the artificial grass and the volleyball net), 14b and 14c) Yonca Lodge (not the volleyball net and the showers near it).



Fig.15. Fethiye SPA, Çalış A. Sunbeds in the section placed in a single row or in 2 rows. 15a) Litter on beach at the back of sunbeds, 2 cages between the 2 rows; 15b) stacked beds and the changing cabin.



Fig.16. Fethiye SPA, Çalış A. Sunbeds stacked, but left inside the nesting zone.



Fig.17. Fethiye SPA, Çalış A. Sunbeds inside the nesting zone at night, freely used by beach visitors.



Fig.18. Fethiye SPA, Çalış A. Personal umbrellas can be freely and randomly inserted into the sand. Also note the tent right in front of the sea turtle information sign at the beginning of the promenade area.



Fig.19. Fethiye SPA, Çalış A. Shower cabins draining directly onto the beach. Note tents further in the background.

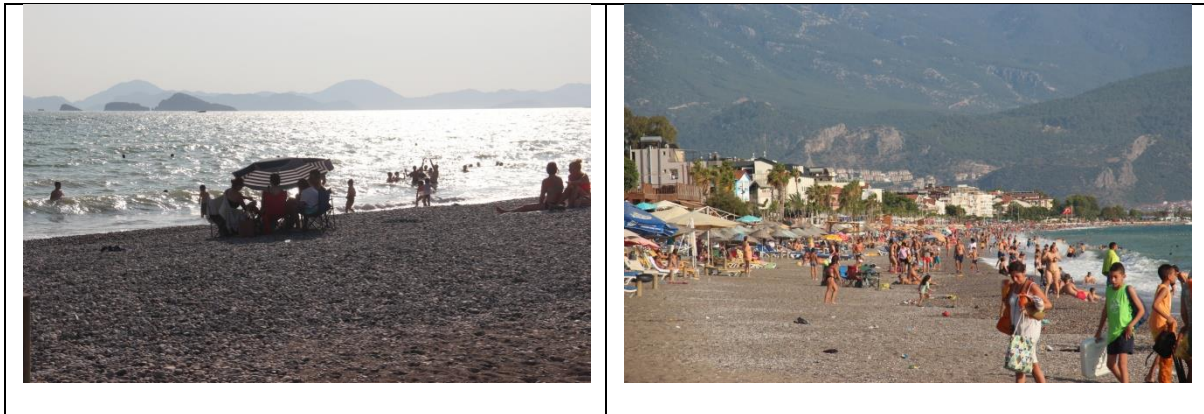


Fig.20. Fethiye SPA, Çalış B. Personal umbrellas inserted in the sand in many locations.

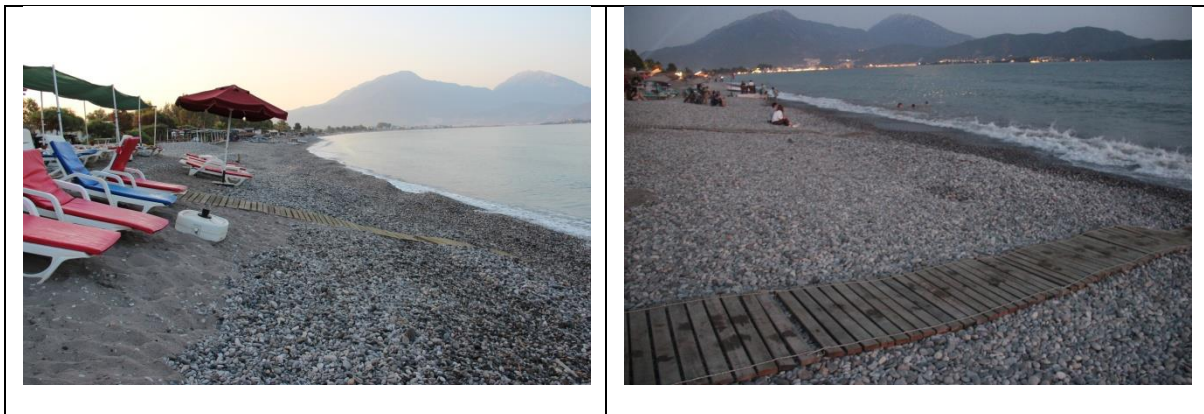


Fig.21. Fethiye SPA, Çalış B. Vertical walkways extending until the wet zone.



Fig.22. Fethiye SPA, Çalış B, Yücel Beach. Multiple vertical and horizontal walkways, with banana plants on the beach used for decorative purposes.



Fig.23. Fethiye SPA, Çalış B, Surf Cafe. Curious wooden decorations and a raised platform for sunbeds on the nesting beach.

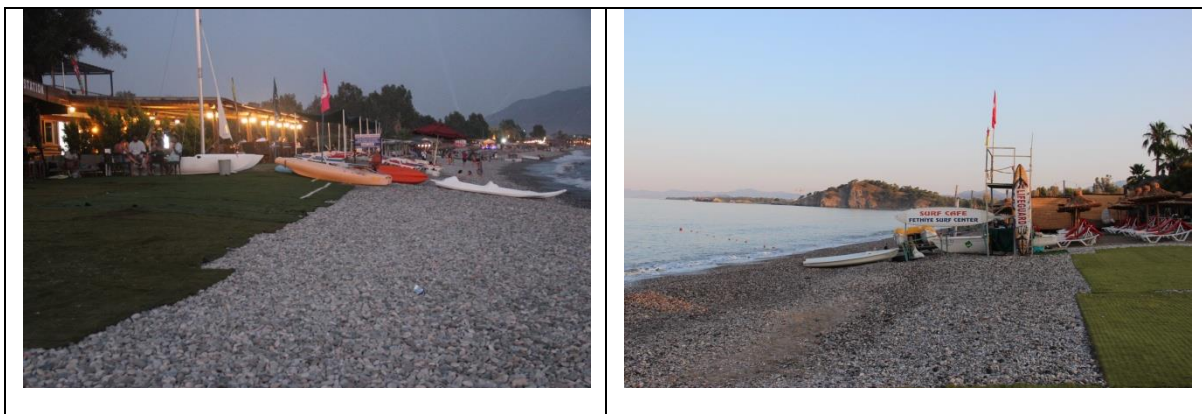


Fig.24. Fethiye SPA, Çalış B. AstroTurf carpets and water sports equipment in front of the surfing facilities.

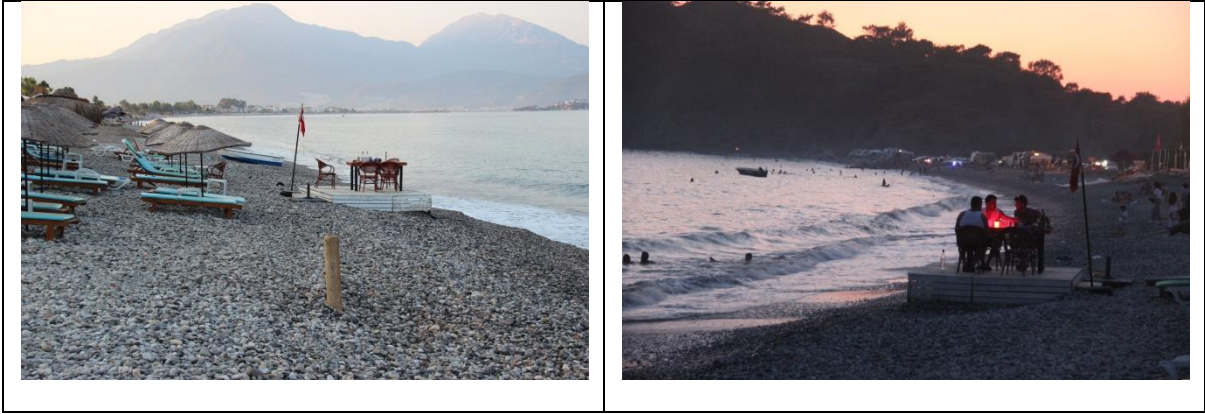


Fig.25. Fethiye SPA, Çalış B. Raised platform placed in the sea for dining.



Fig.26. Fethiye SPA, Çalış B. Makeshift structures in front of the new mesh barrier, resembling pavilion frames. Note the two cages at the front.



Fig.27. Fethiye SPA, Çalış B. Several cages in front of the new mesh barrier. Note the litter around.

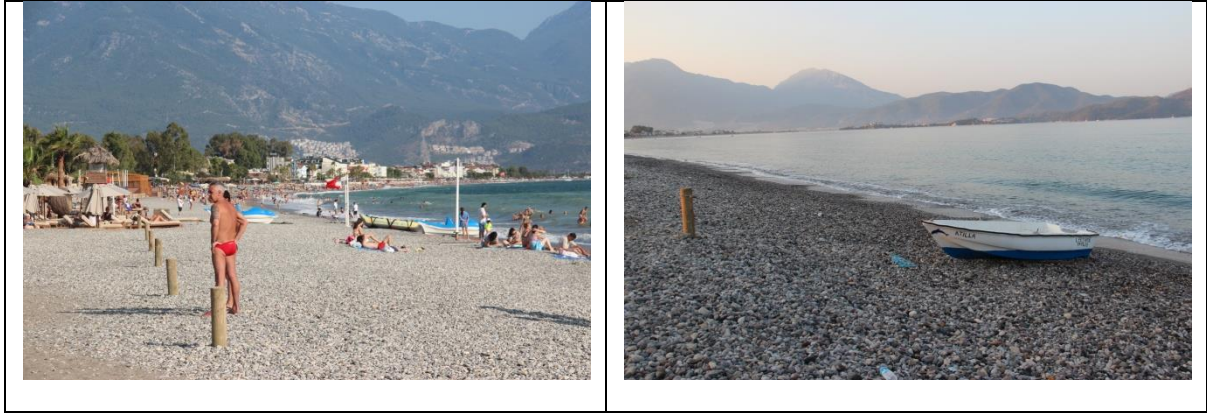


Fig.28. Fethiye SPA, Çalış B. Kayaks on the beach.



Fig.29. Fethiye SPA, Yanıklar, Karataş Beach. Facility occupies the entire beach.



Fig.30. Fethiye SPA, Yanıklar. A crowd of visitors in front of Deniz İncisi, where they seem to be free to insert their umbrellas in the sand as they please.

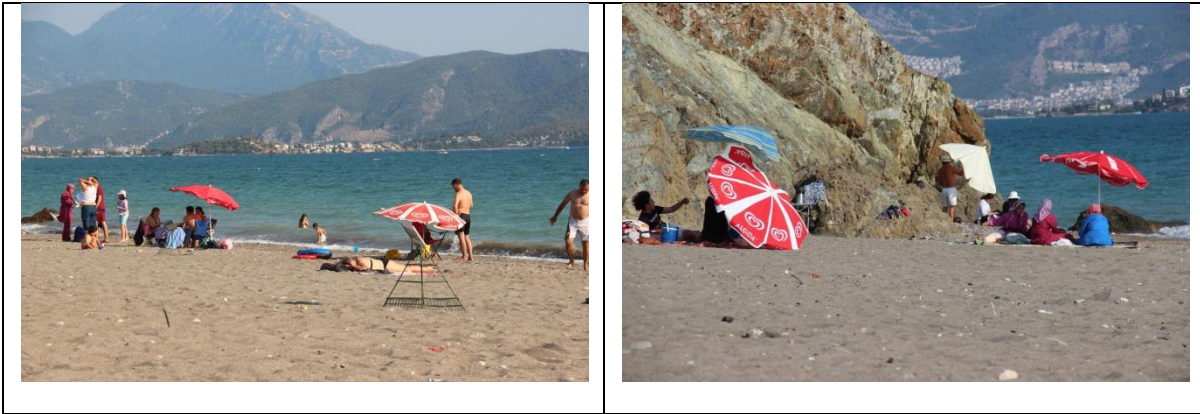


Fig.31. Fethiye SPA, Yanıklar. Three cages close to the rocky area toward the section's southern end, among visitors and their umbrellas.



Fig.32. Fethiye SPA, Yanıklar. Interesting usage of zoning posts.

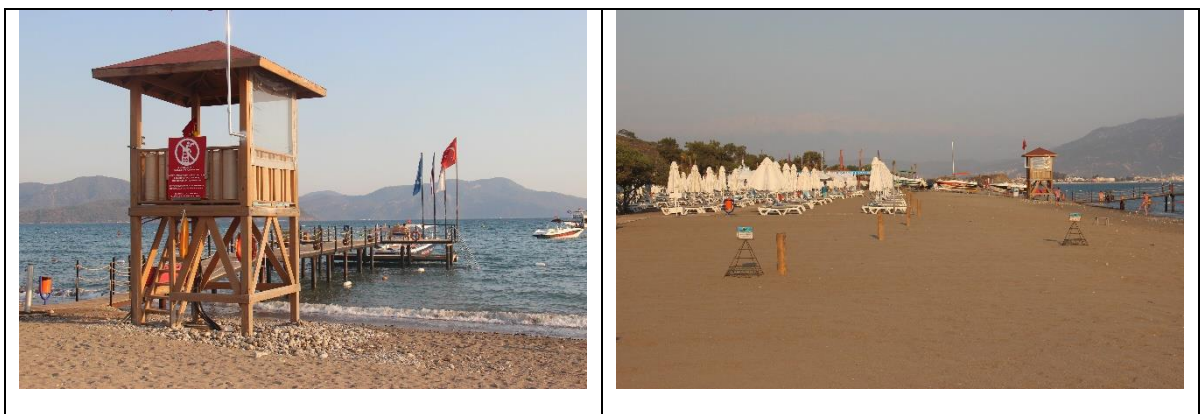


Fig.33. Fethiye SPA, Yanıklar, Hotel TUI BLUE Sensatori Barut. Lifeguard tower next to the quay. Note the cages in 32b.



Fig.33. Fethiye SPA, Yanıklar. The water sports area between Liberty Fabay and Hotel TUI BLUE Sensatori Barut, with a very high number of kayaks and speed boats.

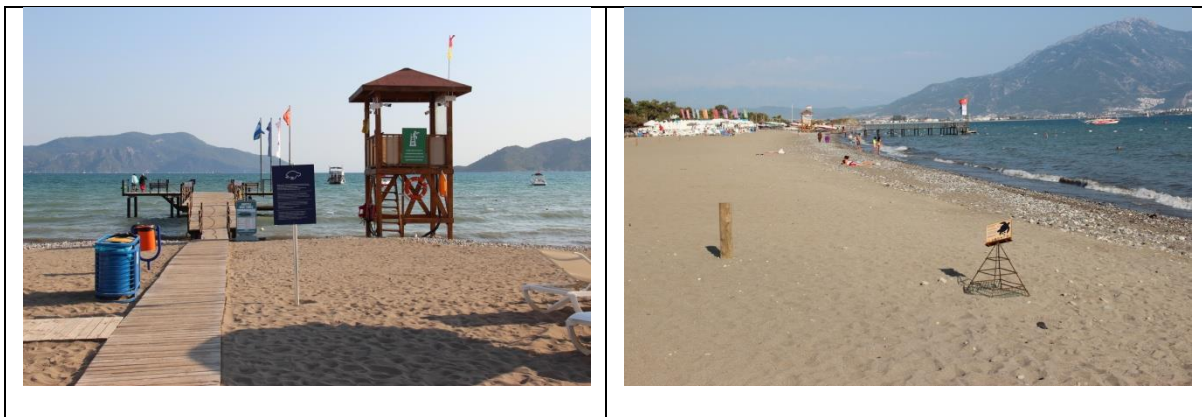


Fig.34. Fethiye SPA, Yanıklar, Hotel TUI BLUE Sensatori Barut. The lifeguard tower, along with vertical and horizontal walkways leading to a quay.





Fig.35. Fethiye SPA, Yanıklar. Overly crowded Akmaz Picnic Area and lots of umbrellas in the sand.

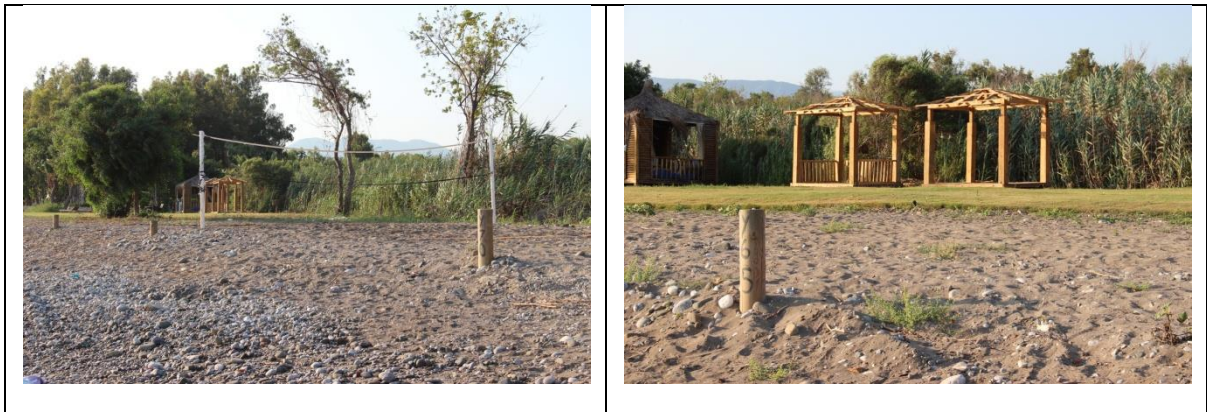


Fig.36. Fethiye SPA, Yanıklar. Nesting zone entirely covered with a layer of artificial grass in Lykia Botanika. Note the volleyball net in 36s, and the gazebos in 36b.



Fig.37. Fethiye SPA, Yanıklar. Single piece shaders over sunbeds, widely used in the section.



Fig.38. Fethiye SPA, Yanıklar. Water sports railway extending into the sea.



Fig.39. Fethiye SPA, Yanıklar, Yonca Lodge. A volleyball net and showers inside the nesting zone.



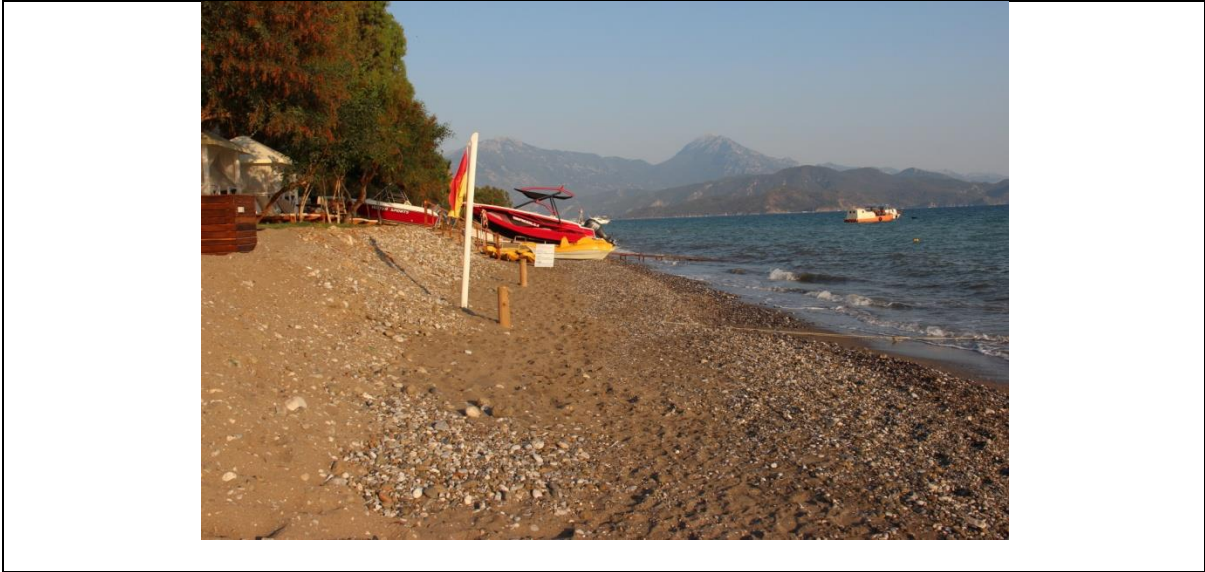


Fig.40. Fethiye SPA, Yanıklar. Water sports equipment and other recreational equipment all over the beach.



Fig.41. Fethiye SPA, Akgöl. Beach visitors with their umbrellas inserted in the sand. Note the sand piles in 41a, the caravan and the motorcycle in 41b.



Fig.42. Fethiye SPA, Akgöl. Municipality's facility, where the sunbeds are moved to the back of zoning posts at night. Note that the sandy area, suitable for nesting is actually occupied by the beach furniture.



Fig.43. Fethiye SPA, Akgöl. Sunbeds and pavilions of Hayal Café. Note the acacia trees.



Fig.44. Fethiye SPA, Akgöl. Umbrellas inserted in the sand at the core nesting area.

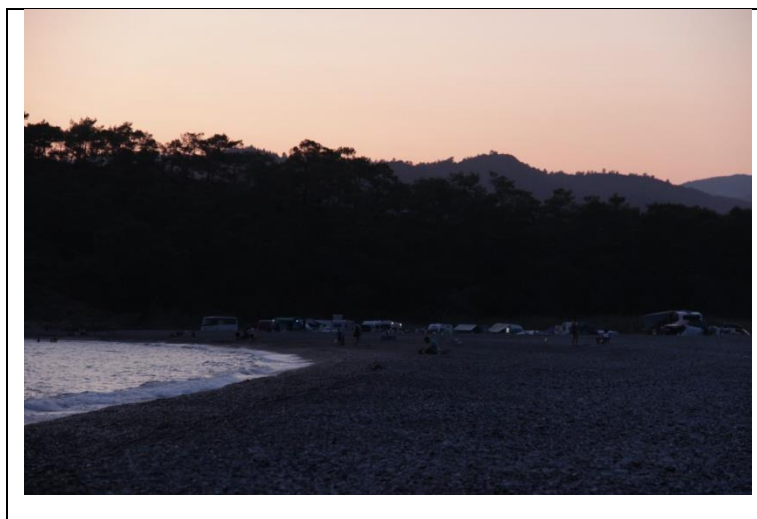


Fig.45. Fethiye SPA, Akgöl. Visitors deserting the beach after sunset.



Fig.46. Fethiye SPA, Akgöl. Seven remaining pavilions by the rocks at the section's northern end.



Fig.47. Fethiye SPA, Çalış B. Sand piles near the drainage channel's outlet.



Fig.48. Fethiye SPA, Akgöl. Cages in the core nesting zone. Note the vehicle on the beach in 48a, caravans at the back in 48b, and fishing in 48c.



Fig.49. Fethiye SPA, Çalış A. Night time visitors freely using the beach with lights.



Fig.50. Fethiye SPA, Çalış B. Orange hanging lights of Surf Café. Also note the water sports equipment on the beach.



Fig.51. Fethiye SPA, Çalış B. Lights of Apache Beach and the new building's changing cabins.



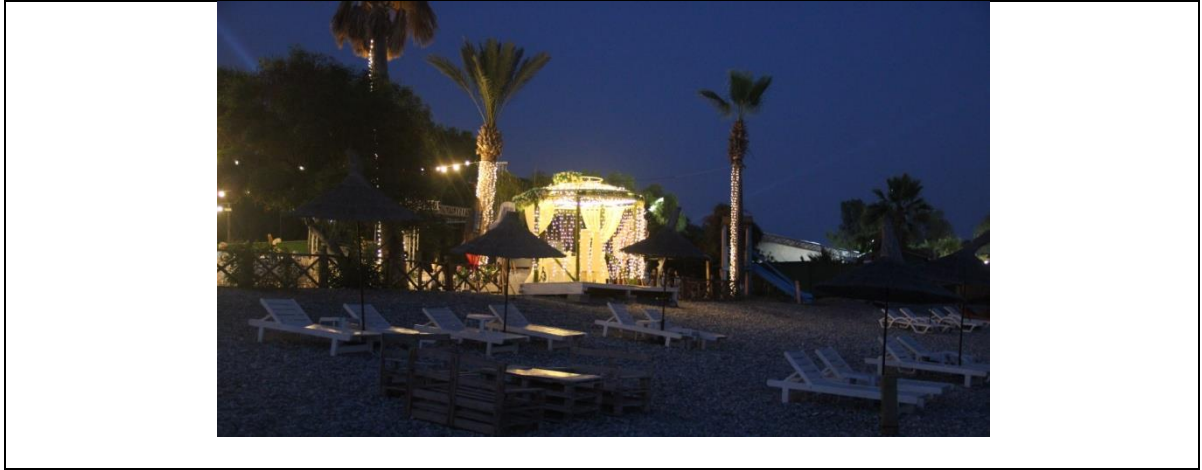


Fig.52. Fethiye SPA, Çalış B. Wedding venues at night.



Fig.53. Fethiye SPA, Çalış B. Terrace Café's colourful lights at night.



Fig.54. Fethiye SPA, Çalış B. Caravans near Çalış Hill. Note the bonfire in 54b.



Fig.55. Fethiye SPA. Construction of the new hotel continues at night, and can be seen from every section in the entire SPA. Note the dim blue lights of the quay between the other two hotels in 55b-c.

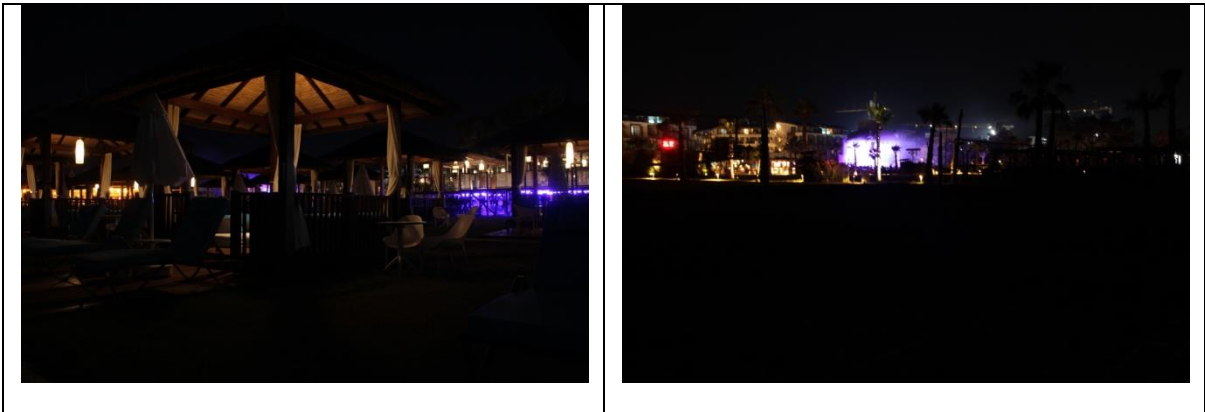


Fig.56. Fethiye SPA, Yanıklar. Liberty Fabay's pavilion lights in 56a, and aerial light show at its disco in 56b.



Fig.57. Fethiye SPA, Yanıklar. Lights from tent campers in the pristine section.

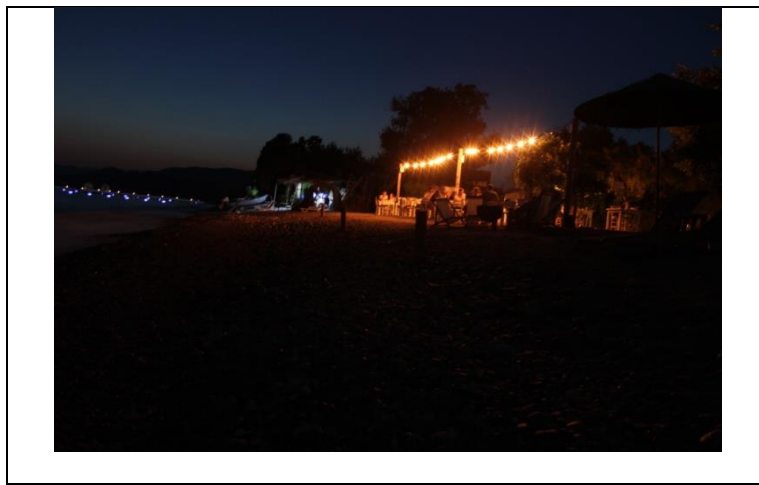


Fig.58. Fethiye SPA, Yanıklar. Orange lights used by most of the facilities in the section's north half.



Fig.59. Fethiye SPA, Yanıklar. The exceptionally bright security light between Okalıptüs and Tuana.



Fig.60. Fethiye SPA, Yanıklar. Lykia Botanika’s quay at night this year (much dimmer than it was in 2022).



Fig.61. Fethiye SPA, Akgöl. Caravans mostly using orange lights at night. Note the motor-boat and the fishing rods in 61b.



Fig.62. Fethiye SPA, Akgöl. Dim lights of Hayal Café and the Municipality’s facility. Municipality lights in the section are all orange.



Fig.63. Fethiye SPA, Çalış B. Caravan area close to Çalış Hill.



Fig.64. Fethiye SPA, Çalış B. Caravan area of Zirkon Beach at the other side of drainage outlet.



Fig.65. Fethiye SPA, Yanıklar. Vehicle tracks in the pristine section. Note the ungulate droppings on vehicle tracks in 65c.



Fig.66. Fethiye SPA, Yanıklar. A tractor seen directly on the beach in the pristine section. Note the tent in 66a and the fishing boats in the background in 66b.



Fig.67. Fethiye SPA, Yanıklar. Vehicle entrance point at the section's northern end, right by the drainage outlet. Note the low concrete wall in 67b.



Fig.68. Fethiye SPA, Akgöl. Vehicle entrance to the nesting beach. Note the cages around.



Fig.69. Fethiye SPA, Akgöl. Vehicle tracks on the beach, and the culprit –finally parked behind the zoning stakes.



Fig.70. Fethiye SPA, Akgöl. Campers making barbecue.





Fig.71. Fethiye SPA. Fishing boats and maritime traffic in Çalış A and B. Note the jetty in 71c.

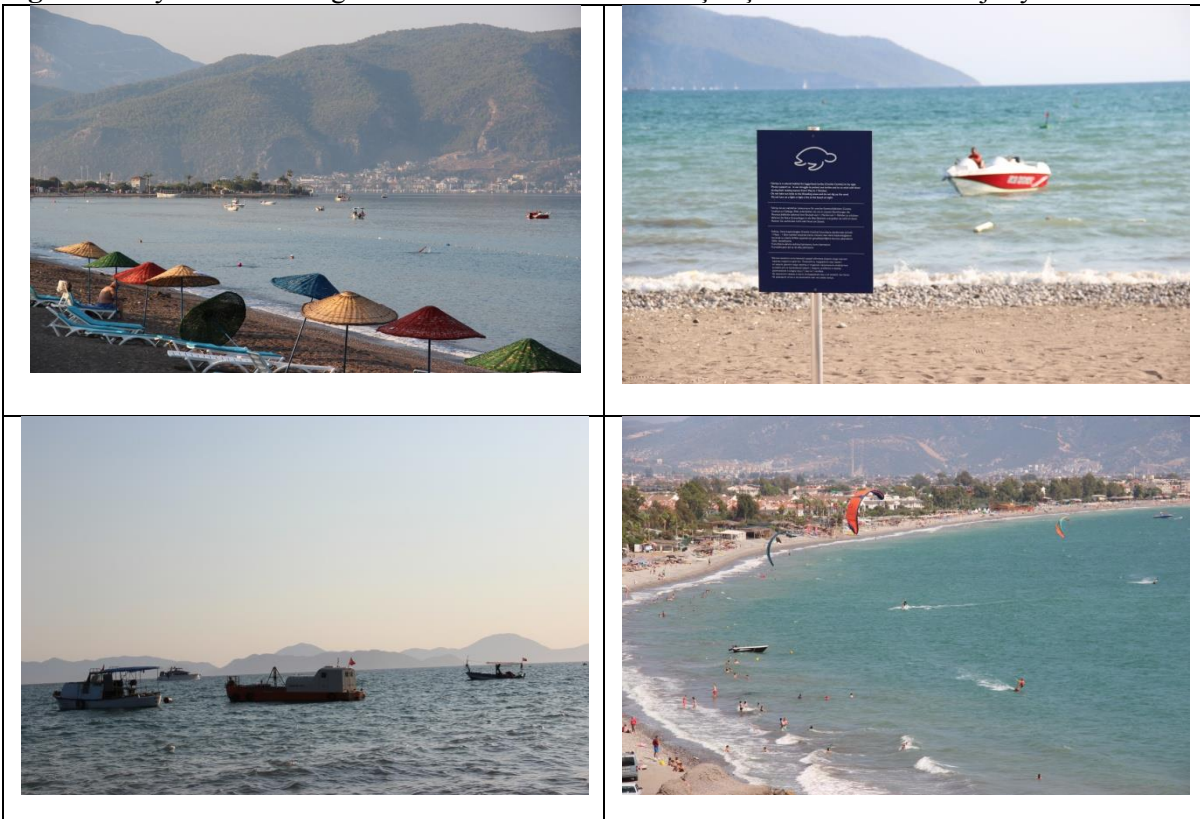


Fig.71. Continued. Fethiye SPA. Fishing boats and maritime traffic in Çalış A (71e), Çalış B (71h), and Yanıklar (71f-g). Note TUI's sign in 71g.



Fig.72. Fethiye SPA. A number of touristic cruise boats by the small island right across the pristine section.



Fig.73. Fethiye SPA, Çalış. A single monitoring person walking.



Fig.74. Fethiye SPA, Yanıklar. Predated nests in the pristine section.

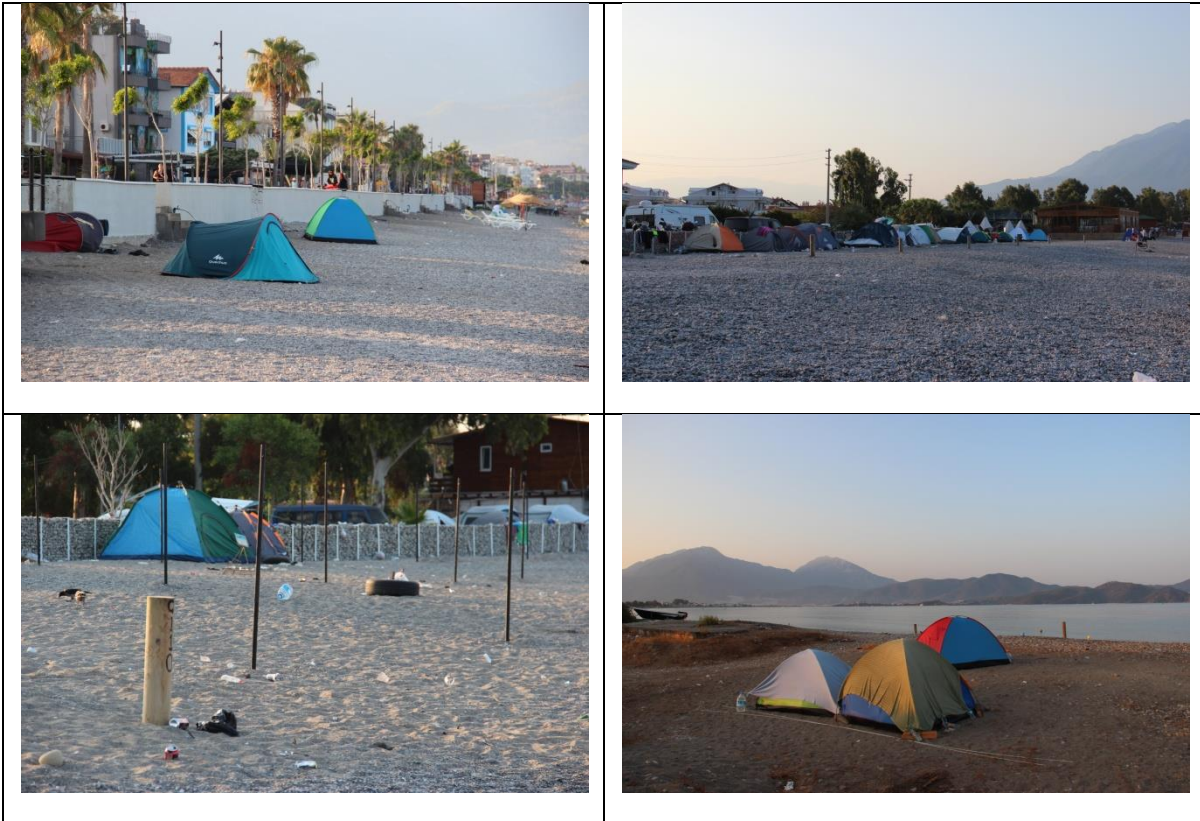


Fig.75. Fethiye SPA. Sporadic tent camping in random places outside designated camping areas. 75a) Çalış A, 75b-c) in front of permanent barrier (note the litter), 75d) Çalış B, near the hill.





Fig.75. Continued. Fethiye SPA. Sporadic tent camping in random places outside designated camping areas. 75e) on the platform near Çalış Hill, 75f-g) near Deniz İncisi (note the information sign, acacia trees, and the cranes at the background), 75h-i) near Akmaz picnic area (note rod fishing).



Fig.76. Fethiye SPA. Bonfire remains seen in different sections. 76a) Yanıklar, 76b) Çalış B.



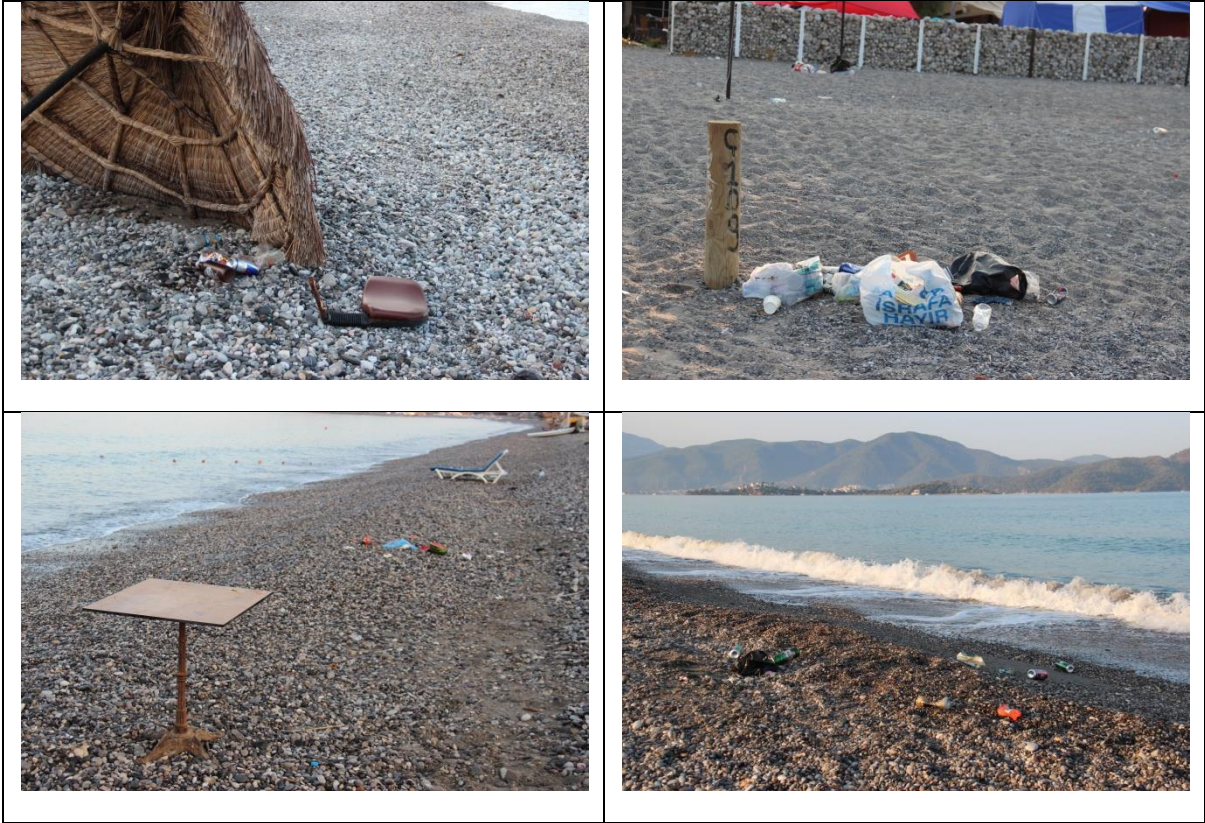


Fig.77. Fethiye SPA, Çalış B. Litter on beach.



Fig.78. Fethiye SPA, Yanıklar. Polluted drainage channels in the section.

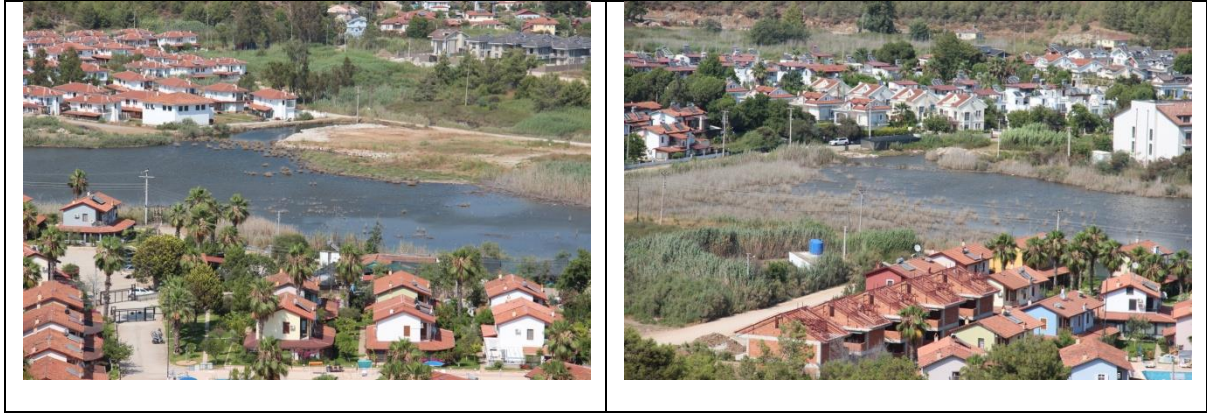


Fig.79. Fethiye SPA. Greenhouses and settlements in the region, likely polluting the main drainage channel that meets the sea near Çalış Hill.



Fig.80. Fethiye SPA, Çalış A. Zabıta, chatting near the promenade wall instead of patrolling the area or even warning people disobeying night time regulations in the section.



Fig.81. Fethiye SPA. Yanıklar. Pieces of concrete noticed for the first time at the border between Yanıklar and Akgöl, next to the stone wall at the outlet.



Fig.82. Fethiye SPA. Rod fishing in Çalış B (82a, b, c). And the pristine section in Yanıklar (82d-e).

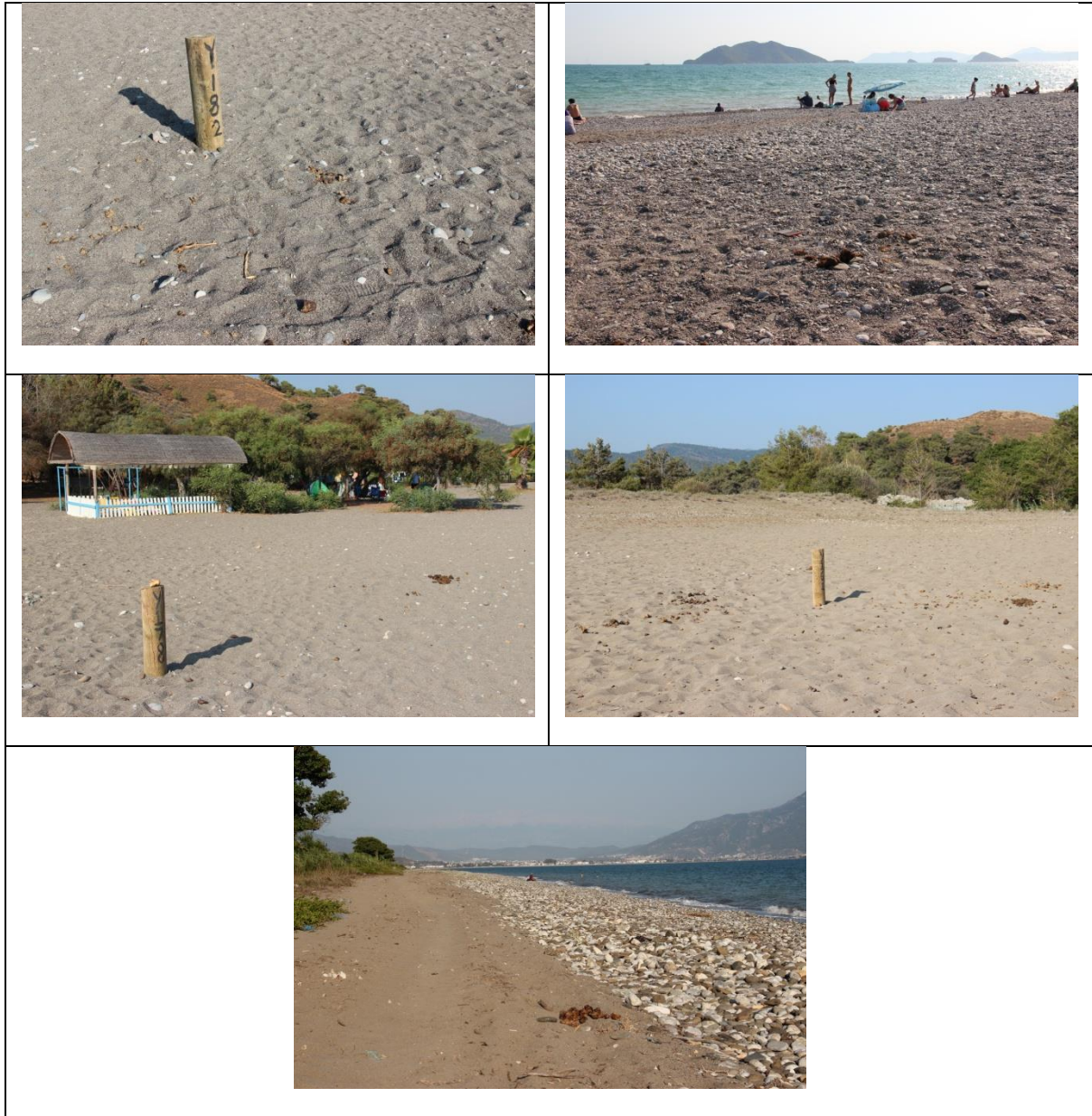


Fig.83. Fethiye SPA. Ungulate droppings in Yanıklar and Akgöl.

ANNEX 2: DETAILED UPDATE, BACKGROUND, MAPS & PHOTOGRAPHS
PATARA SPA, TÜRKİYE

Patara nesting beach description (Fig.1-2): The 12 km beach is split in a north and south section by Eşen River that meets the sea in the middle of the SPA. At its northern end, the beach is bordered by Özden River. There are 5 access points. The North Beach has an entry point at the Özden River outlet (Özden Beach) and another entry point nearby Eşen River (Letoon Beach). The South Beach has three entry points: one at the Eşen River mouth (Çayağzı Beach), one at the middle of the beach through the top of the dunes, and one at the south end of the beach (Patara Main Beach).

MEDASSET visited Patara SPA in July 2023 to assess and document the management and conservation status of the nesting beaches. The survey was funded by Aktionsgemeinschaft Artenschutz (AGA), www.aga-artenschutz.de. The following presents the survey findings in relation to each of the measures under Recommendation No. 182 (2015).

1. Urgently ensure that Patara nesting beach receives appropriate legal protection and management, in line with its exceptional, natural and ecological value;

At the time of our survey, entrance to the archaeological site at Patara's main beach section was manned and a fee was collected at the first check point. Gendarmerie were present during our visit, at a spot that dominates the entire entrance to the main beach. We were warned about the night-time entrance prohibition. The lights of a gendarmerie car were also seen on top of the sand dunes after 10:00 PM, possibly patrolling the area. Even though protection of the South Beach was improved, human presence and their footprints were spotted on several dunes along the South Beach (Fig.3a-d) and vehicle tracks were seen at the northern half of the section (Fig.4a-i).

Vehicles seen directly on the beach in the SPA were on both sides of Eşen River outlet (Fig.5a-g). Vehicle tracks seen on the North Beach were predominantly on Letoon Beach (Fig.6a-c). The entry point at Özden River outlet, which was barred in 2022, had a tall sliding door and a chain this time, further preventing vehicle entrance (Fig.7a-c).

Latest Patara SPA borders, revised in 2021, are still unconfirmed.

2. Urgently set up, enforce and monitor the implementation of strict regulations which:

(i) prohibit further development on the beach (including buildings, structures, roads) and enable the removal of abandoned illegal facilities and restoration of the dunes; during the nesting/hatching season;

The facility on the southern end of Patara Main Beach, and Green Park directly behind the northern end of Özden Beach are the only two permanent structures. In the South Beach, restoration work in the archaeological site behind the beach continues (Fig.3d, Fig.8), but the cranes were not operational at night and their lights were turned off. At the northern end, near Eşen River on Çayağzı Beach, lights from the makeshift structures and prefabricated bungalows of fishermen (Fig.5c) did not reach the nesting zone. One large wooden post was spotted in the semi-wet zone in mid-section, although its purpose is unclear (Fig.9).

In the North Beach, Camping site right by Eşen River on the Letoon Beach side remains (Fig.5f-g), and there was a bonfire at night (Fig.5g). Abandoned wooden structures of the former SPA facility are still on Letoon Beach (Fig.10), but not used in any way (by visitors or else). At the northernmost end of the SPA, facilities of Green Park remain closed and unused. Green Park has not been in use for a long time now, and thus has begun to look ramshackle (Fig.7c). Its situation -and fate- needs confirmation.

There are no further developments on or close to the beach, but no dune restoration effort was observed either. There is alarming spatial increase in coastal erosion along the South Beach (Fig.11a-g) probably related to the disturbed overall dune statics in the region as a result of the heavy sand removal in the past 2-3 years.

The construction of “Patara Bridge” is completed¹³, and it now connects Xanthos and Ova district, also Seydikemer and Kaş¹⁴. Its location looks far enough from the beach, but the construction work we believe negatively impacted the river dynamics. Expert view on these matter is needed.

(ii) regulate the extent and use of furniture on the beach and ensure furniture is removed from the nesting zone at night;

The facility at the Patara Main Beach is the only place in the entire SPA with beach furniture for rent. Sunbeds (approximately 100-150 in total) were scattered all around the nesting beach during daytime hours (Fig.12a-f). They were arranged in rows at night, with only some stacked in groups of two-to-six, on top of each other (Fig.13a-c) but all of them were located within the nesting zone marked by wooden posts. During the day, a lot of visitors were seen with their personal umbrellas inserted into the sand (Fig.14). Some of the umbrellas rented by the facility (approximately 50 in total) were folded and stacked on a wooden table behind the nesting zone (Fig.15), and some were stacked in two groups directly on the beach (Fig.12a, 12c, 12e). There should be fixed bases for umbrellas to prevent possible damage to nests under the sand. The lifeguard tower and the boat were on the beach (Fig.12a, 12d), but the kayak and the volleyball pitch behind the nesting zone were removed. The vertical wooden walkway in front of the facility extended only until the beginning of the nesting zone (Fig.12b). Nothing was removed from the nesting zone at night.

No beach furniture was seen on the North Beach, even in front of Green Park, which was closed. People preferred using foldable chairs or carpets to sit on the beach (Fig.16a-b).

(iii) prohibit illumination of the beach;

The only lights observed on the South Beach at night were the dim bluish light from the fridge inside the facility on Patara Main Beach (Fig.13b), and the very dim -almost invisible- LED string at where the gendarmerie kept watch. We also include photographs reflecting the night-time situation of the main beach (Fig.13a-c). The tall orange light at the parking area was visible from only a few points of the beach, as it is predominantly concealed by vegetation and sand dunes. The rest of the section was entirely empty and pitch black at night¹⁵. At the mouth of Eşen River, very few people were actually using lights (Fig.5b).

In the North Beach, at the camping site on the Letoon Beach side there were fewer lights this year. There were few vehicles, and one person was seen lighting a bonfire (Fig.5g). There were no lights on Özden Beach, from visitors or the facilities of Green Park, and the street lights at the back of the facility are not visible from the beach. Apart from one bonfire lit by campers (Fig.17), this section was entirely dark.

(iv) prohibit fishing with nets in front of the beach;

Rod and net fishing was observed near and at the mouth of Eşen River in the northern end of South Beach (Fig.18a-c, also the video titled “20230703_EsenRiver_NetFishing.mp4”). Net fishing was also observed at Özden Beach, near Özden River (Fig.19a-b). No fishing boats were seen during our survey.

(v) prohibit camping on the beach and on riversides in view of the beach;

We observed three people that put up tents near Çayağzı Beach (Fig.5a). The camping site at the other side of Eşen River (on Letoon Beach) continues to be a problem (Fig.5f-g).

No camping was seen on Özden Beach, as tents and caravans were at the back of the Green Park facility, and a few more were at the northern side of Özden River, far from the beach.

(vi) prohibit horse riding and 4x4 or quad safaris on the nesting beach;

This continues to be a major problem in the SPA. Although no motorised vehicles were spotted on the beaches during our survey, there are several 4x4 renting offices in Patara village, and people were seen riding these vehicles in the Patara touristic centre. Around the dunes, 4x4 tracks were observed,

¹³ <https://www.youtube.com/watch?v=9ABF41gGdAE>

¹⁴ <https://www.sabah.com.tr/yasam/50-yillik-hayal-gercek-oldu-patara-koprusu-yaya-olarak-gecildi-6465807>

¹⁵ Videos titled “20230703_PataraMain_Night1.mp4” and “20230703_PataraMain_Night2.mp4”.

coming from multiple entrance points (Fig.4a, 4c, 4d), indicating that the “secret” path inside the woods mentioned by the locals in 2022 is still being used. More vehicle tracks were seen in the north part of the South Beach, between the large dunes and Çayağzı (Fig.4b, 4e, 4f, 4g), where a single continuous motorcycle track was also spotted (Fig.4h-i). One small ATV was seen on top of the dunes (Fig.20). On this issue, Prof. Eyüp Başkale from Pamukkale University, who is leading the monitoring project at the SPA this year, recently stated the problem of ATV entrance to the beach and called the authorities to establish more deterrent penalties¹⁶.

Horse tracks and droppings were observed in front of the dunes and towards Çayağzı (Fig.21a-c). A horse rental spot operates at the top of dunes (Fig.22a-b), and several visitors on horses were seen climbing up the dunes (Fig.23a-c). Their main route to the beach over the dunes below was visible from the top (Fig.24).

(vii) define fines for non-compliance with above regulations

Since early 2022, entrance to Patara beaches is prohibited from 20.00 until sunrise, with a non-compliance fine of 109.785 TL (see last year’s report). However, there is no clear information regarding non-compliance with the rest of the above-given regulations, and there seems to be no absolute enforcement unless the incident is carried to the news.

3. Ensure that adequate financial and human resources are allocated for the control, management and enforcement of regulations;

The monitoring team, as all monitoring teams working in Türkiye, has no enforcing authority. However, there seemed to be a bit more control on the South Beach this year, particularly on Patara Main Beach.

There seems to be no management on Letoon Beach, where visitors are able to enter the beach from several points. The entrance point near Green Park at the northern end of Özden River was fitted with a tall sliding -and chained- barrier (Fig.7a-c), although no control personnel was seen.

Gendarmerie was seen keeping watch directly on Patara Main Beach and patrolling the top of dunes at night. We encountered no one patrolling the beaches at night; however, we only observed a few visitors and fishermen at the outlets of Eşen and Özden rivers (Fig.5a-g, 18a-c, 19a-b).

4. Continue to prevent uncontrolled human settlement behind the beach, particularly where these may result in making the beaches unsuitable for turtle nesting;

Construction works in Gelemiş village still continue in a few locations, although it seems to be largely finished. No newly started constructions were seen. Satellite images of the same location in 2011 and 2021 reveal the scale of the development in the region over the course of 10 years (Fig.25a-b).

5. Ensure that litter is periodically removed from the beach and dunes;

The South Beach, and the Main Beach in particular, had almost no litter, even though there were no news or mentions about a beach cleaning in Patara SPA anytime during 2023. In front of the facility, two men were seen collecting litter on the beach and emptying garbage bins before sunset (Fig.12f). The amount of litter increases towards Çayağzı (Fig.5b, 18c, Fig.26a-f), although most seem to have been washed ashore by the waves. Some litter from visitors was seen very close to Eşen River (Fig.27).

The North Beach was more littered than the South (Fig.28). The two main usage locations on this section, the camping site at the south of Letoon Beach and the beach in front of Green Park in Özden Beach had new garbage bins brought by Kaş Municipality (Fig.29a-b).

¹⁶ <https://www.haberturk.com/caretta-carettalarin-yuvalama-alanina-atv-ile-girdiler-3597531?page=6>

6. Address the problem of predation, including through population control's programmes;

No predated nests were seen on the South Beach, where the crab population also seemed to have significantly declined, especially on the southern quarter of the section. Hoof prints observed near the northern end possibly belong to wild boars, and there were several diggings along the tracks, although mainly outside the nesting zone, suggesting they were after crabs (Fig.30a-c).

In the North beach, crab population was higher and almost all of the nests in this section were predated by crabs and/or foxes (Fig.31a-c). Two-day-old sea turtle tracks in this section were not marked, suggesting there is no daily monitoring (Fig.32).

7. Ensure the proper fencing of all nests in areas with high human presence during the day, so as to protect them from trampling and from beach furniture;

All of the nests near the facility on Patara Main Beach were protected with prism cages bearing signs (Fig.12a, 13c, 14a, Fig.33). A total of 24 cages were counted around the facility alone. Two cages were seen near the Eşen River on Çayağzı Beach this year (Fig.34).

The North Beach entirely lacked nest marks, nest sticks, and cages –except for the single cage with no protective grill seen in Özden Beach (Fig.35). Tracks were not marked and all the nests were predated (Fig.32, Fig.31a-c).

8. Urgently set up long-term conservation and research programmes, entrusted to a permanent team that should be granted adequate man power to monitor the entire beach (north and south) during the entire nesting/hatching season and protect all nests if necessary;

No members of the team monitoring Patara SPA in 2023 were encountered during our survey, however the nests in the South Beach were properly identified and marked (Fig.36a-d). There are clear indications that the South Beach is monitored daily, in contrast to the North Beach as mentioned above.

It is strongly suggested that the research team monitoring the SPA are granted sufficient funds and manpower for monitoring both sections as effectively, while also keeping personnel at the information kiosk all day.

9. Improve information to and awareness of tourists about sea turtle nesting and on correct behaviour for the sustainable use of the beach and install clearer signage to indicate the nesting zone;

Wooden posts installed on the entire South Beach in 2022 marking the nesting zone correctly in most parts of the beach, except for a few sections, where multiple nests were seen behind the posts - especially between the dunes and the Main Beach. Posts in this section should be reinstalled by considering the topography and characteristics of the nesting beach instead of placing them all at the same distance from the shoreline. Visitors should also be prohibited from inserting umbrellas into the sand within the nesting zone. No wooden posts marking the nesting zone were present along the North Beach (Fig.28, 29a-b, 31b-c, 32).

Information signs, including beach rules, are present at the facility entrance at Patara Main Beach (Fig.37), and on the beach. An additional banner was hanged at the walkway to the facility, giving information about the sea turtles (Fig.38a-b). The sign at the parking lot behind the facility is concealed by vegetation (Fig.39), but there is another one standing on the wooden walkway to the beach (Fig.40). One sign was placed on top of the dunes, at the main visitor point (Fig.41). Ministry's signs were also present at the entrance point near Eşen River at Çayağzı Beach and on the beach, although hardly visible (Fig.5c). The only information sign on the entire North Beach was at the entrance point next to Green Park near Özden River (Fig.7a-b).

At the time of our survey, the sea turtle information kiosk near the facility on Patara Main Beach was closed. This kiosk should be open and manned during the day to inform visitors.

10. Improve information and education of the local community about sea turtle nesting, correct behaviour for the use of the beach, and intrinsic value of nature; and involve them in the protection, conservation, and management of the nesting beach;

Although the local community and visitors have at least basic knowledge about the sea turtles, they do not seem to be involved in the conservation and management studies.

Other observations:

- Eşen River and all drainage channels leading to it were polluted, with a pungent odour. The number of greenhouses in the region keep increasing, and regular water analyses for possible agricultural discharge is still advised.
- A strange structure was seen in the sea, near Eşen River outlet in Çayağzı Beach, for the first time (Fig.42).
- A truck to empty the septic tanks was seen at the facility site around 06:30 in the morning.

TABLES**Table-1.** GPS data of important locations in Patara SPA. Records were taken by GPS Coordinates, developed by Fundroid 3000, with an accuracy of 8-14 m. (* = added or updated in 2023)

	COORDINATES	DEFINITION
PATARA	36°14'55"N – 29°18'56"E	Southern end of the SPA
	36°15'17.42"N - 29°18'49.89"E	Concealed signs at the parking area on Patara Main Beach
	36°15'12.51"N - 29°18'44.58"E	Signs at the entrance of Patara Main Beach
	36°15'55.41"N - 29°17'48.93"E	Approximate entrance point at the top of the dunes
	36°16'13.4"N - 29°18'11.1"E *	
ÇAYAĞZI	36°16'21.7"N - 29°18'53.7"E	Entrance point for the “secret” passageway to the beach
	36°17'35.62"N - 29°15'45.50"E	The 3 signs at Çayağzı entrance & wooden posts
LETOON	36°17'37.04"N - 29°15'48.88"E	Entrance point at Çayağzı and the information sign
	36°18'00.98" N - 29°15'51.79"E	Beginning of section (Eşen River mouth)
ÖZDEN	36°17'45.29"N - 29°15'35.69"E	Abandoned wooden structures on Letoon Beach (former SPA kiosk)
	36°19'43.97"N - 29°13'34.58"E	Permanent barrier near Green Park, preventing vehicle entrance to the beach
	36°19'43"N - 29°13'31"E	Northern end of the SPA

MAPS & PHOTOS

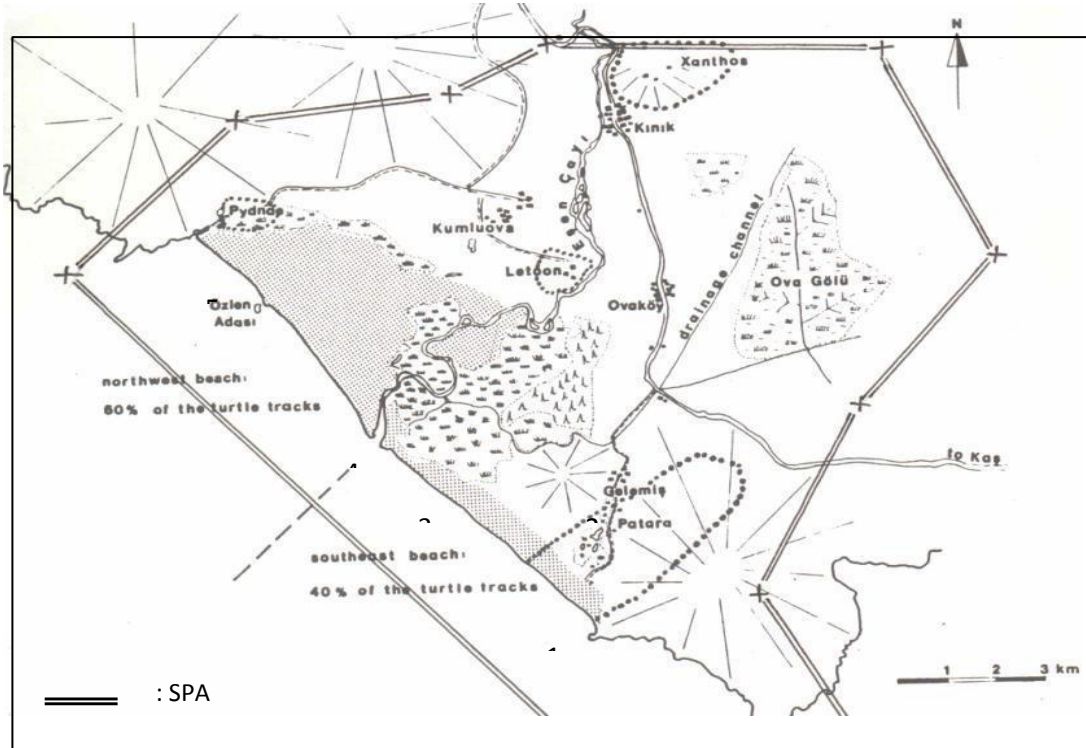


Fig.1. Patara SPA: 1) Patara main beach, 2) Entry point via sand dunes, 3) Çayağzı Beach (Eşen River outlet at the north edge of the south beach), 4) Letoon Beach (Eşen River outlet at the south end of the north beach), and 5) Özden Beach (next to Özden River outlet). *Map Source: Baran I., and M. Kasperek. 1989. Marine Turtles Turkey: Status Survey 1988 and Recommendations for Conservation and Management. WWF, Heidelberg, 123 + iv pp*



Fig.2. Patara SPA Satellite Map. White arrow: construction site of summer house village. “a”: new second road connecting villas and Gelemiş village. “b:” is archaeological site fee collection point with daytime vehicle barrier. No. 1-5 are entry points: 1) Patara main beach entry point, snack bar & beach furniture; 2) Entry point via sand dunes, connecting the beach with summer houses; 3) Çayağzı Beach entry point; 4) Letoon Beach entry point & abandoned SPA information kiosk; 5) Özden Beach entry point, Patara Green Park (bar, camping site – closed since 2021) (Özden River outlet). Eşen River outlet lies between No.3&4.



Fig.3. Patara SPA, Patara Main Beach. Humans and their footprints on several dunes along the South Beach. 3a and 3b) in front of the entrance point through the top of the dunes (note also the vehicle tracks in 3b); 3c) past the main dunes, towards mid-section; 3d) in front of the restoration works, note the crane at the back, and the makeshift sitting point inside the nesting zone.



Fig.4. Patara SPA, South Beach. Vehicle tracks. 4a-d) Different tracks in the section's southern half.

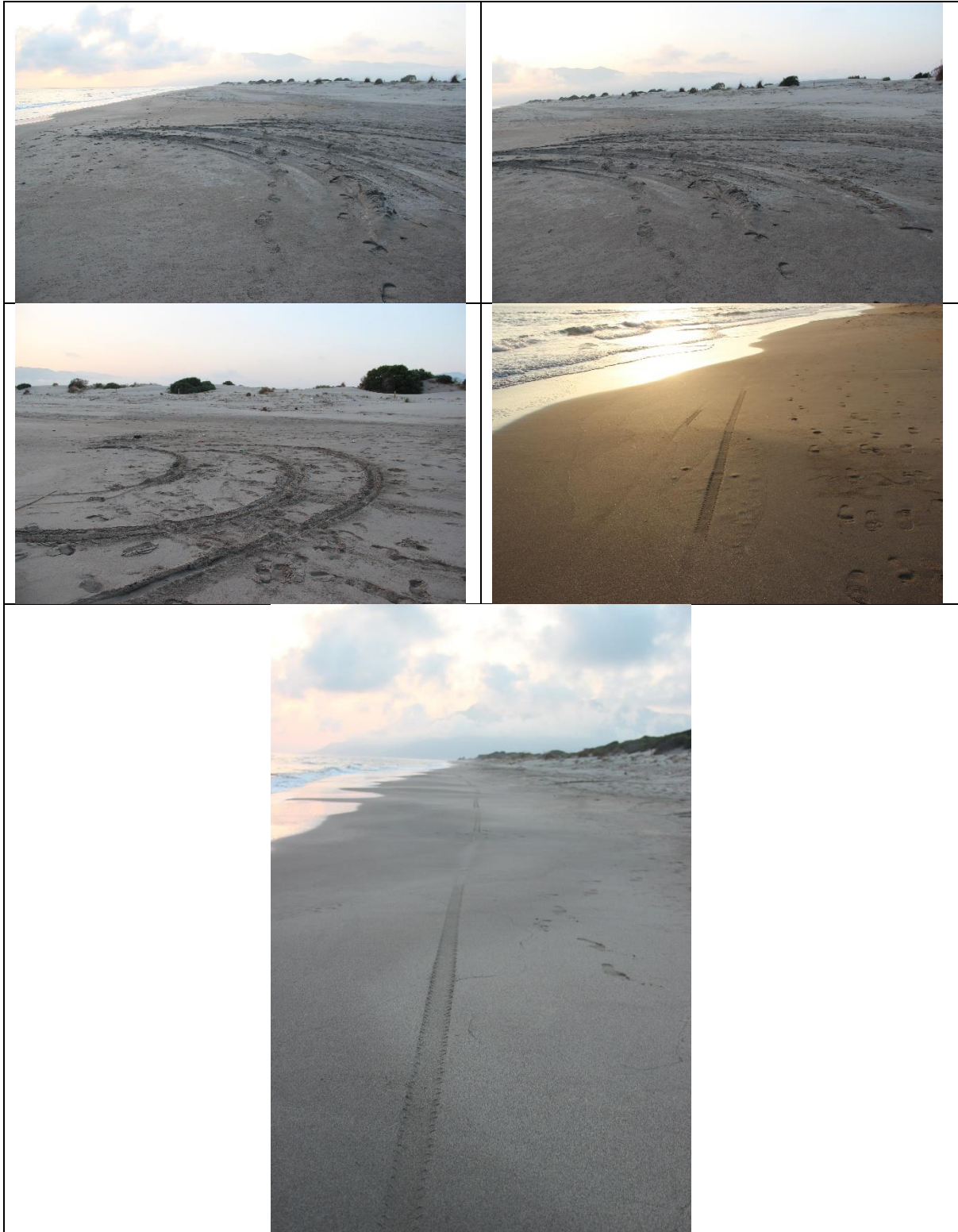


Fig.4 (continued). Patara SPA, South Beach. Vehicle tracks. 4e-f) drag tracks in mid-section; 4g) another drag track around the same location; 4h-i) a motorcycle track that continues until Eşen River.



Fig.5. Patara SPA, Eşen River outlet. Vehicles on the beach. 5a-e) On Çayağzı Beach (note the tents in 5a, the lights in 5b, the fisherman shed and the info sign in 5c, and the barbecue in 5e); 5f-g) on Letoon Beach (note the bonfire at night in 5g).



Fig.6. Patara SPA, North Beach. Vehicle tracks seen along Letoon Beach.



Fig.7. Patara SPA, Özden Beach. Vehicles, the info sign, and the tall sliding door locked by a chain, preventing vehicle entrance next to Green Park's facility.



Fig.8. Patara SPA, Patara Main Beach. Restoration work and the crane inside the archaeological site.



Fig.9. Patara SPA, South Beach. Wooden post in the semi-wet zone in mid-section. Purpose unclear.



Fig.10. Patara SPA, Letoon Beach. Abandoned wooden structures of the former SPA facility.



Fig.11. Patara SPA, South Beach. Coastal erosion along the entire section.



Fig.11 (continued). Patara SPA, South Beach. Coastal erosion along the entire section.



Fig.12. Patara SPA, Patara Main Beach. Sunbeds scattered all around the nesting beach during the day. 12a) Sunbeds, the lifeguard tower, a few cages near the wooden posts, and the umbrellas stacked on the beach; 12b) Umbrella renting spot, vertical walkway removed after the wooden posts marking nesting zone, and the sunbeds inside the nesting zone; 12c) stacked sunbeds, stacked umbrellas, and bins; 12d) sunbeds, bins, the lifeguard tower, and a boat by the shoreline.



Fig.12 (continued). Patara SPA, Patara Main Beach. Sunbeds scattered all around the nesting beach during the day. 12e) Sunbeds and umbrellas stacked on the beach; 12f) two facility workers emptying the bins and renewing plastic bags.

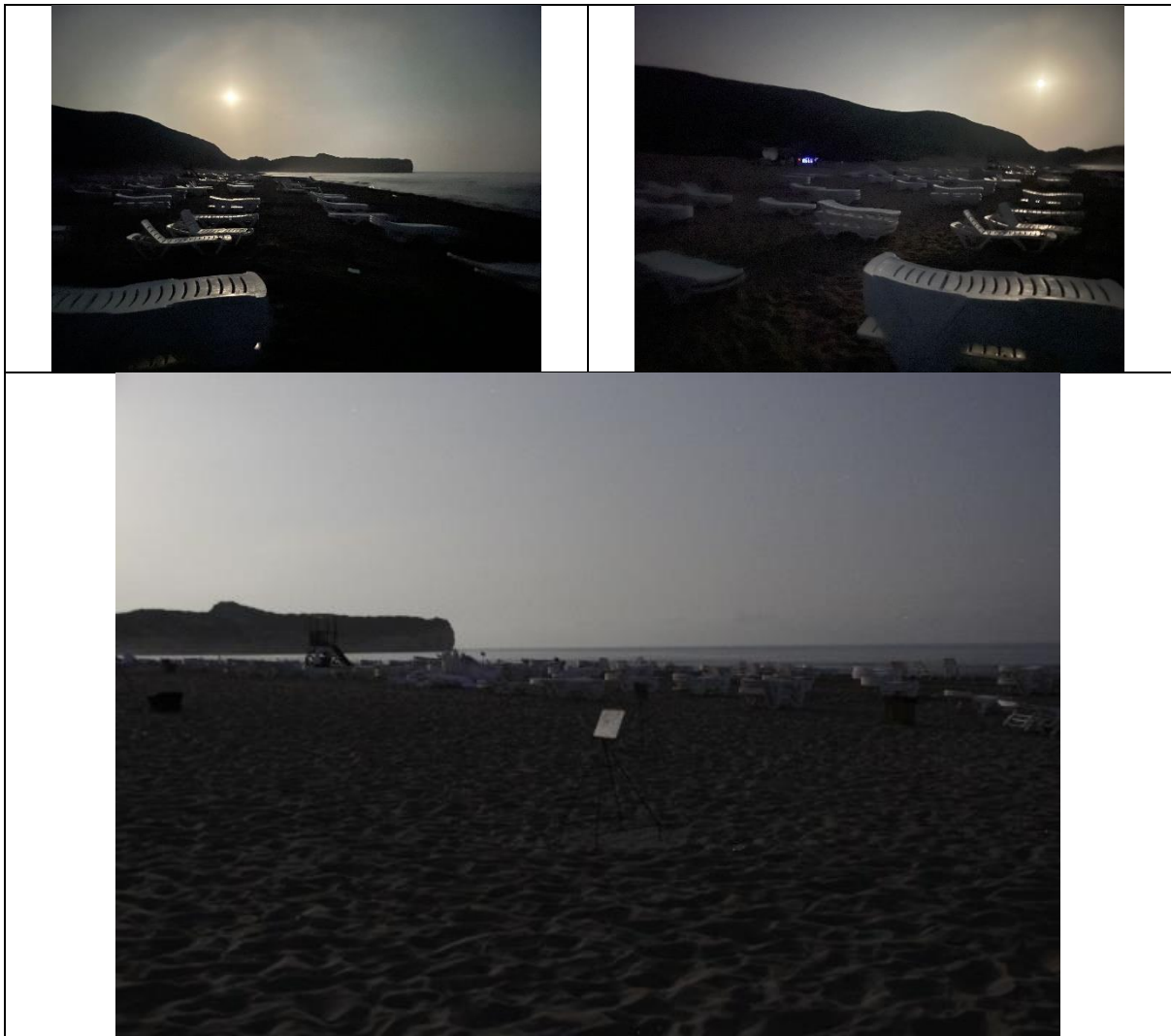


Fig.13. Patara SPA, Patara Main Beach. Sunbeds in the nesting zone at night.



Fig.14. Patara SPA, Patara Main Beach. Visitors with their personal umbrellas inserted into the sand.



Fig.15. Patara SPA, Patara Main Beach. Umbrellas folded and stacked on a wooden table behind the nesting zone.

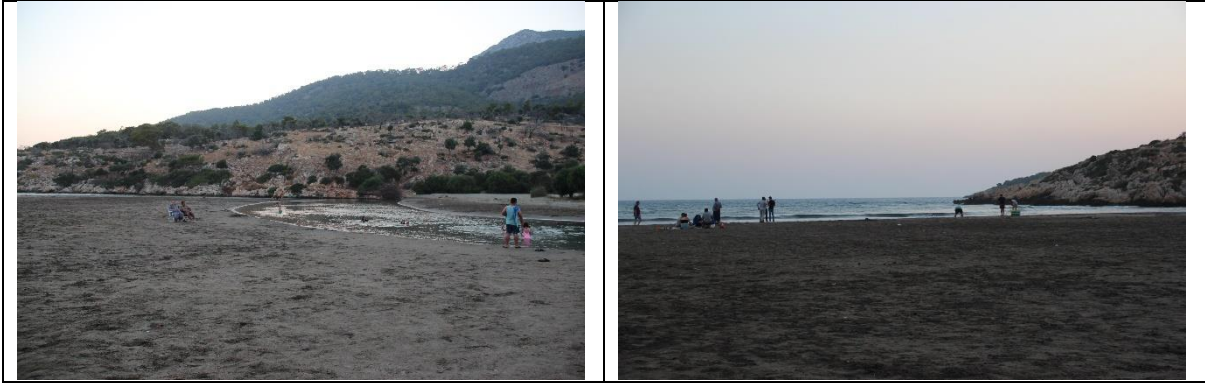


Fig.16. Patara SPA, Özden Beach. Beach visitors using foldable chairs or carpets to sit on the beach.



Fig.17. Patara SPA, Özden Beach. Bonfire lit by campers well behind the beach.

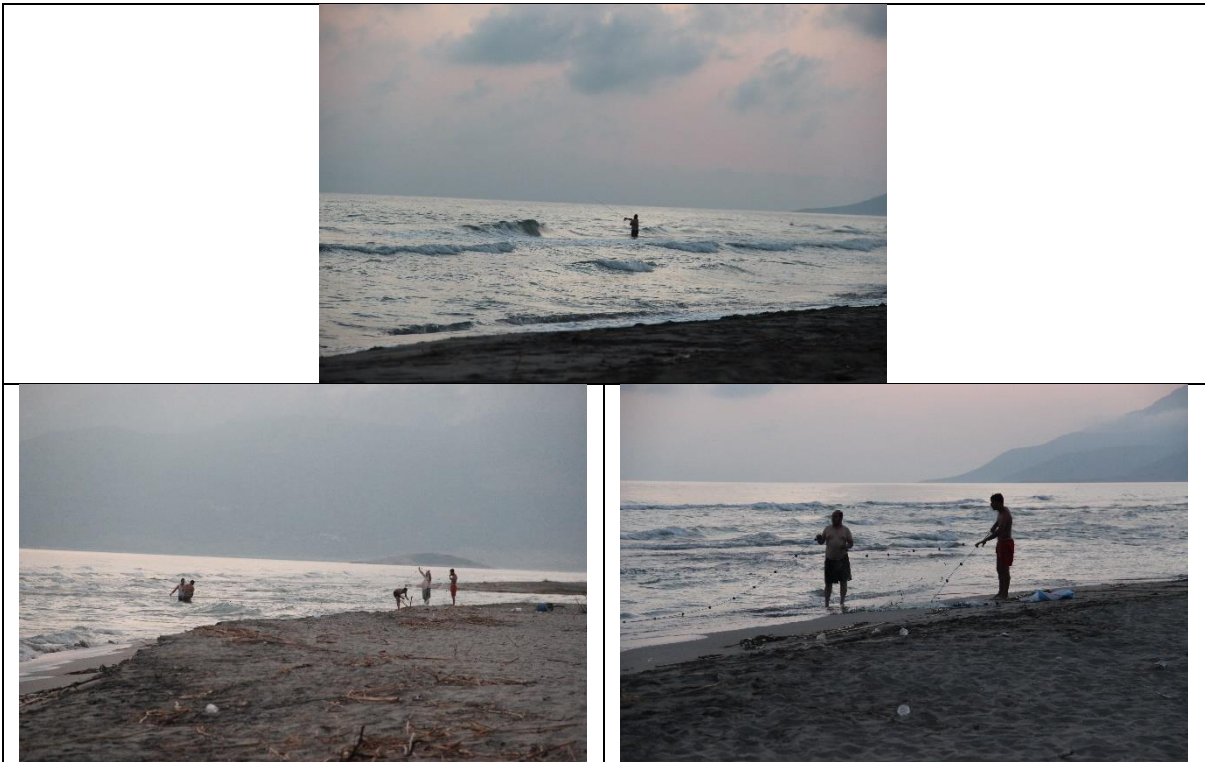


Fig.18. Patara SPA, Çayağzı Beach. Fishing with rod (18a) and net (18b-c).



Fig.19. Patara SPA, Özden Beach. Net fishing at sunset.



Fig.20. Patara SPA, Patara Main Beach. Small ATV parked on top of the dunes.



Fig.21. Patara SPA, South Beach. 21a-b) Horse tracks; 21c) horse droppings in front of dunes.



Fig.22. Patara SPA, Patara Main Beach. Horse-riding rental spot on top of the dunes. The caravan suggests that the family may be staying there at nights.

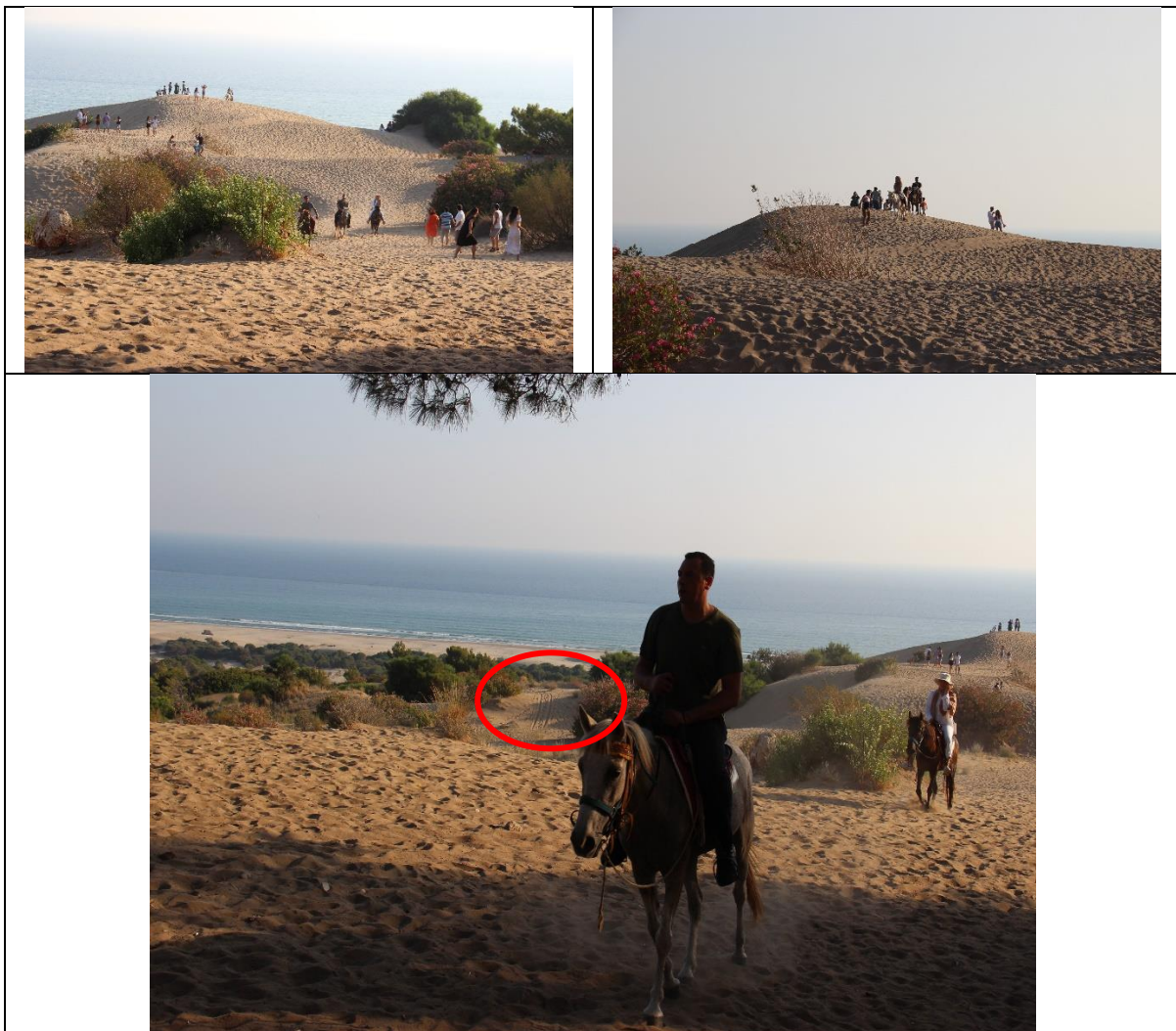


Fig.23. Patara SPA, Patara Main Beach. Visitors on horses, returning from the beach through the dunes. Note the dense tracks in 23c, likely indicating their main route.

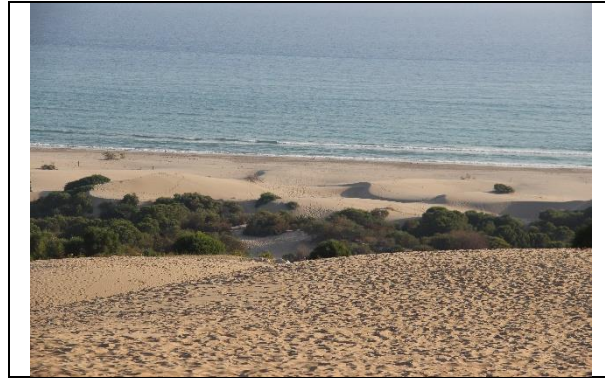


Fig.24. Patara SPA, Patara Main Beach. Horse tracks on the dunes, showing one of the likely main routes to the beach.



Fig.25. Patara SPA. Satellite imagery revealing the development from a)2011 until b) 2021.



Fig.26. Patara SPA, South Beach. Increasing amount of litter towards Çayağzı Beach. Note the nest in 26b, and the dug hole (by a wild boar) in 26e. In 26f, five people are fishing with a net at the Eşen River outlet. There's a cage near the final slope, and most of the litter seems to have been washed ashore by the waves.



Fig.27. Patara SPA, Çayağzı Beach. Litter left behind by visitors.



Fig.28. Patara SPA, Letoon Beach. Litter on the beach. The section is less polluted than it was in 2022.



Fig.29. Patara SPA, Özden Beach. New bins brought by Kaş Municipality.



Fig.30. Patara SPA, Çayağzı Beach. Hoof prints and holes dug in the sand (possibly of wild boars, hunting crabs).



Fig.31. Patara SPA, Letoon Beach. Unmarked, predated nests. 31a) fox predation; 31b) fox and crab predation; 31c) crab predation.



Fig.32. Patara SPA, Letoon Beach. A two-day old and unmarked *Caretta caretta* track, indicating there is no daily monitoring in the section.

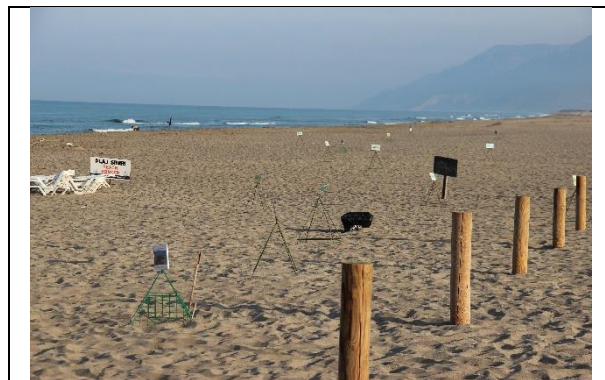


Fig.33. Patara SPA, Patara Main Beach. About 24 caged nests in front of the facility.



Fig.34. Patara SPA, Çayağzı Beach. A caged nest near Eşen River. Note net-fishing at the back.



Fig.35. Patara SPA, Özden Beach. A brand new prism cage in front of Green Park. The underside has no protective grill.



Fig.36. Patara SPA, South Beach. Every single track and nest identified, properly marked with sticks, and demarcated with perpendicular lines intersecting tracks.



Fig.37. Patara SPA, South beach. Ministry's information signs on the beach. Some were removed and carried to other places in the section.



Fig.38. Patara SPA, Patara Main Beach. New sign on the path to the seaside.



Fig.39. Patara SPA, Patara Main Beach. Ministry's info board at the entrance, covered by plants.



Fig.40. Patara SPA, Patara Main Beach. One of the Ministry's info boards, carried to the wooden walkway towards the sea.



Fig.41. Patara SPA, Dunes. Information sign placed on top of the dunes.



Fig.42. Patara SPA, Çayağzı. Three metal structures, resembling pole bases, seen inside the sea for the first time. Purpose unknown.