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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE  
AND NATURAL HABITATS

**Standing Committee**

40<sup>th</sup> meeting  
Strasbourg, 30 November - 4 December 2020

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**Specific Sites - Files open**

**Presumed degradation of nesting beaches  
in Fethiye and Patara SPAs  
(Turkey)**

**- REPORT BY THE COMPLAINANT -**

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

**August 2020 Update Report**

**Loggerhead sea turtle (*Caretta caretta*) conservation monitoring in Fethiye and Patara SPAs, Turkey**

**MEDASSET - Mediterranean Association to Save the Sea Turtles**

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**UPDATE REPORT BY THE NGO**

**Marine Turtle Conservation in the Mediterranean**

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

**11 August 2020**

*Document presented by*

*MEDASSET - the Mediterranean Association to Save the Sea Turtles*

*for the 40<sup>th</sup> Standing Committee Meeting of the Contracting Parties to the Convention on the  
Conservation of European Wildlife and Natural Habitats (Bern Convention)*

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## LOGGERHEAD SEA TURTLE (*CARETTA CARETTA*) CONSERVATION MONITORING IN PATARA SPA, TURKEY

MEDASSET hereby submits an update report to the second Bureau Meeting of the Bern Convention (15-16 September 2020) on the conservation status of sea turtle nesting beaches in Patara Specially Protected Area (SPA) in Turkey.

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### SUMMARY & RECOMMENDATIONS

**In 2020, there was no considerable improvement in the conservation status of the nesting beaches and conservation problems remain:** lack of management staff and insufficient nest monitoring, lack of zoning and information signs, vehicle access, horse-riding, camping, litter, derelict facilities on beaches, etc. There were no signs of new efforts or conservation activities, with the exception of sunbed stacking at night and installation of a new sign. **The SPA remains unmanaged and inadequately protected. To date, Recommendation No. 182 (2015) has not been implemented.**

**At the same time, construction of the 300-312 summer house development in the 3<sup>rd</sup> Degree Archaeological site of the SPA continues, and another 20 buildings seem to have been built without permission in the SPA, benefiting from a recent construction law.** Once completed the summer population will increase by at least 120% (current population during the summer being ca. 1000). It is evident that the pressures and disturbances presently occurring will increase likewise.

### *MEDASSET calls upon the Turkish authorities to:*

- Urgently implement Recommendation No. 182 (2015). Revise the SPA management plan and implement a comprehensive and updated action plan before May 2021 that will allocate necessary financial and human resources for sea turtle monitoring of the entire beach and for the SPA management and rules enforcement, and include measures aiming to solve the documented conservation problems on the nesting beaches and sand dunes, strengthen management and rules enforcement, and ensure adequate protection of the natural and archaeological site.
- Address the concerns raised in MEDASSET's complaint regarding the 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.
- Provide an update on the ongoing redetermination of the SPA's zoning 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.

### *MEDASSET calls upon the Bern Convention Standing Committee to:*

- Discuss the case file at the 40th Meeting of the Standing Committee.
- Encourage Turkish authorities to provide further information on the case as requested above
- Urge Turkish authorities to implement Recommendation No. 182 (2015) before May 2021.

## BACKGROUND

*For a full description of the site and of the case background, see MEDASSET 2012 Complaint.*

Patara Specially Protected Area (SPA) is a unique archaeological site of global importance and a protected nature site that includes coastal forest, wetlands, shifting sand dunes and a loggerhead sea turtle (*Caretta caretta*) nesting beach that is among the most important rookeries for the species in Turkey. Patara's river and wetland systems created the most important and largest dune ecosystem on the Turkish Mediterranean coast.

Threats to Patara were first raised by MEDASSET in 1988 and the case has since been supported by others at the Standing Committee Meetings of the Bern Convention. In 1996 a Case File was opened and the 9-measure Recommendation No. 54 was adopted. MEDASSET submitted further detailed and specific recommendations in 1998 (T-PVS (98) 49). The File was closed in 2001 despite some remaining problems and Turkey was asked to continue reporting progress. MEDASSET continued to monitor the conservation status of Patara and submit reports to the Standing Committee.

In September 2012 MEDASSET submitted a complaint (2012/9) on a large scale summer house construction project by 3 housing cooperatives within Patara SPA's 3rd Degree Archaeological protected area (Fig. 2-3) and on the failure of the current land use and management plan to secure adequate protection for both the natural and archaeological site. As described in the complaint, the project (450-700 villas for a population of around 3000 people, according to 2011 press articles) will impact the loggerhead nesting population, by increasing disturbances and habitat damage. The complaint also presents an interpretation of the multiple changes to the zoning and the Patara SPA management plan, which made construction within the the 3rd Degree Archaeological area possible, and shows a clear bias towards construction interests and disregard of expert opinion provided by archaeologists and planners since 1978. The original plan did not allow new permanent constructions in the 3rd Degree Archaeological protected area, apart from those necessary to cater to the needs of the small village, and envisaged the development of low-impact, small-scale tourism facilities, with the aim to maintain cultural, historical, archaeological and natural components of the site. The large-scale summer house construction project within Patara SPA is incompatible with the Bern Convention Recommendations No. 12 (1988), No. 24 (1991), No. 54 (1996) and No. 66 (1998). No information on an environmental impact assessment (EIA) or carrying capacity study prior to the approval of the project is available. To our knowledge, the approval of the construction project has not been matched with an updated plan to ensure increased resources to manage and mitigate impacts of the much higher number of users of the protected area.

In 2013, 27 villas and swimming pools were completed (by Ozlenen Deniz Housing Cooperative) and inadequate management of the nesting beach was documented (T-PVS/Files 2013 9). In December 2013, a case file was opened to address the complaint (together with the complaint regarding Fethiye SPA) and to encourage Turkish authorities "to work towards greater accountability, cooperation and responsibility". No information, response or update was provided by Turkish authorities before or during the Standing Committee Meeting.

In 2014, constructions continued and inadequate management of the nesting beach and new beach development was documented (T-PVS/Files 2014 16). Articles in the Turkish press (Annex 1 of T-PVS/Files 2014 16) reported that in total 300 villas will be built inside the protected area by the 3 Cooperatives and that the request of one of the cooperatives to exchange their land for lands outside the protected area was not accepted by authorities. The government stated that the summer house development is "2 km away from the beach" and at the "opposite direction" of the 1st Degree archaeological site (T-PVS/Files 2014 25). In MEDASSET's view the development site is linked to both the nesting beach and the archaeological site and cannot be viewed as a separate or isolated section of the SPA. To the best of our knowledge, the development is 1 km from the beginning of the sand dunes and 1.5 km from the nesting site. In addition, the government report did not address the concerns raised in the complaint regarding an EIA, carrying capacity study and management of the associated impacts related to the increased users and businesses that will result from this development. In December 2014, the Standing Committee decided to conduct an on-the-spot appraisal in view of identifying a set of recommended actions for consideration of the Committee at its 2015 meeting.

In 2015, the 27 new summer houses were inhabited and new foundations were laid in the cooperatives' land inside the 3rd Degree Archaeological area. A second road connecting the development to Gelemis/Patara village was asphalted. Official information was not available about the final number of summer houses to be constructed, however, during the Bern Convention's on-the-spot appraisal on 28 July 2015 an official stated that in total 312 summer houses will be constructed. As regards the status of the nesting beaches, management

and conservation problems remained unsolved in 2015, such as lack of guarding and access control, poor beach furniture management at night, littering, lack of information signs, etc. In December 2015, the Standing Committee, alarmed by the findings of the on-the-spot assessment in July 2015 which confirmed MEDASSET's reports, adopted Recommendation No. 182 (2015), asking Turkey to take urgent action to improve management and conservation of Patara.

In 2016, 2017, 2018 and 2019, Rec. No. 182 (2015) was not implemented and there was no significant improvement in the conservation status of the nesting beaches and management problems remained, such as lack of local management staff and insufficient nest monitoring personnel, lack of zoning and information, severe vehicle access problems, camping, litter, etc. At the same time, construction of the summer house development in the 3rd Degree Archaeological site of the SPA continued.

## 2020 UPDATE

### LOGGERHEAD SEA TURTLE (*CARETTA CARETTA*) CONSERVATION MONITORING IN PATARA SPA, TURKEY

*Patara nesting beach description (Fig. 1-2): The 12 km beach is split in a north and south section by the Eşen River that meets the sea in the middle of the SPA. At its northern end, the beach is bordered by the Özden River. There are 5 access points. The North beach has an entry point at the Özden river outlet (Özden beach) and another one at the 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 dune, and one at the south end of the beach (Patara main beach).*

MEDASSET visited Patara SPA in July 2020 to assess and document the conservation situation on the nesting beaches. The following presents the survey findings in relation to each of the measures under Recommendation No. 182 (2015). Due to the global COVID-19 pandemic, the “normal” extreme touristic pressures are not presented this year and cannot entirely be reflected in our 2020 assessment. Recommendations which are effected by the COVID-19 pandemic are stated in the text. Furthermore, the means of land transportation were scarce and the only two local fishermen encountered were reluctant to help a stranger cross the Eşen River. Consequently, the survey only covered the South beach, consisting of Patara main beach and the Çayağzı beach, with a few photographs of the Letoon beach taken from the other side of Eşen River.

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

Although beaches in Patara looked rather clean and empty during our visit in 2020, the situation is very likely to be related to the outbreak of COVID-19 global pandemic. There seems to be no official update on the region's legal protection or management. The website of the Turkish Ministry of Environment and Urbanization only has the map showing the borders of the SPA section designated as “Strictly Protected Area” under Antalya region's jurisdiction -including Gelemiş, Patara and Yeşilköy, Fırnaz Bay and around.<sup>1</sup> However, maps showing the re-zoning of Patara's SPA section under Muğla region's jurisdiction are still not available. Related pages on the website of the Ministry of Environment and Urbanization do not include any updated information.<sup>2</sup> A full update from the authorities is required in order to clarify the current status of all sections of Patara SPA.

Although the archaeological site's entrance was guarded only between 08.00 AM and 09.00 PM, a second guard post located closer to the sea was active 24/7 with gendarmerie officers stopping everyone going to the beach at night. No unauthorized persons or vehicles were allowed to pass before 08.00 AM and after 09.00 PM. However, the strict controls may have had to do with the construction of a new “visitor welcoming centre” right next to the guard post (Fig. 4-5).

Locals mentioned about the restrictions to extract sand from the dunes, including certain fines<sup>3</sup>. However, the exact scope of these restrictions and the related fines are unclear.

No campers were observed at or around the dunes, but random pedestrian entrances were observed in a few locations early in the morning (Fig. 6-9). A motorcycle and the Municipality's truck were seen at the

<sup>1</sup> <https://tvk.csb.gov.tr/antalya-kas-ilcesi-gelemis-mahallesi-patara-ve-yesilkoy-firnaz-koyu-ve-cevresi-dogal-sit-alani-icerisinde-bulunan-kesin-korunacak-hassas-alana-ait-tescil-islemi-duyuru-348125>

<sup>2</sup> <https://tvk.csb.gov.tr/patara-i-399> AND <https://ockb.csb.gov.tr/patara-ozel-cevre-koruma-bolgesi-i-2755>

<sup>3</sup> Personal communication with the very few locals encountered.

mouth of Eşen River, on Çayağzı Beach (Fig.10-12). The Municipality's vehicle belonged to three municipality workers cleaning Çayağzı beach near the river mouth early in the morning, collecting pieces of Styrofoam scattered around into plastic bags (Fig.13). Also, vehicle tracks were observed near the end of the Çayağzı beach, towards Eşen River, in front of the sand dunes (Fig.14-15). However, the low number of vehicles and vehicle tracks observed during the survey may be due to COVID-19, and thus may be considered as "not representative".

**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;**

Although the unused and derelict SPA facilities in Letoon beach mentioned in the previous year's report could not be checked, tents were seen on Letoon beach, from the other side of the Eşen River (Fig.16). There were no remains of the illegal beach bar in Çayağzı section. No new road constructions or walking paths were observed in the entire South beach section. However, an active construction site could be seen from the sand dunes in Çayağzı beach, which was illuminated at night, until 11.30 PM (Fig.17, and also, note the crane in background in Fig.7 and Fig.30). Archaeologists claimed it was the restoration site for the ancient lighthouse<sup>4</sup>, which was also mentioned in the news a few months earlier.<sup>5</sup>

In March 2020, Antalya's regional board for the General Directorate of Cultural and Natural Heritage took a decision to demolish 74 illegal structures within the Patara SPA, which also includes the antique town of Patara, a 1st Grade Archaeological Site. These illegal structures included residences, hotels, greenhouses, a pool, and a bath. Of these 74 structures, 63 belonged to public property and 11 to private property.<sup>6</sup>

The demolition of illegal structures within the borders of Gelemiş district started in May 2020, under the supervision of gendarmerie. The news also stated that more than 2,000 illegal structures were constructed in the past 3 years, benefiting from law No. 1787 dated 06/07/2018 known as the "construction amnesty" or "zoning peace". Although a demolition tender was signed by the Kaş Municipality in 2017 in order to remove 2,067 illegal structures, the inability to execute such orders when coupled with ineffective inspection and enforcement seems to encourage further illegal constructions.<sup>7</sup>

There were no signs of dune restoration.

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

Due to the impacts on tourism of the COVID-19 pandemic, very few visitors were seen in the South beach during the day hours, either using the equipment provided by the facility at Patara main beach area or their own towels (Fig.18-21). No personal sunbeds or parasols were seen in other parts of the beach. Parasols to be rented from the facility are unfixed ones that can be inserted in the sand by visitors, completely unsuitable for a sea turtle nesting beach, with the risk of piercing and damaging nests.

At night, sunbeds of the facility at the main beach were left unstacked within the nesting zone, placed side by side in groups of two, with parasols laid on them. The two boats next to the lifeguard tower (Fig.19) were also not removed from the beach at night. There were no other boats, kayaks or surf boards on the beach during the day. Boardwalks, on the other hand, only stretched until the small buffet well-behind the sunbed area. No additional boardwalks were laid between the sunbeds, and the volleyball court was removed.

At the main beach entrance, several signs were in place. One at 36°15'17.4"N / 29°18'49.9"E indicating the area's status as an SPA was partly concealed by the palm and oleander trees (Fig.22). Other signs around 36°15'12.3"N / 29°18'44.6"E, emphasizing Patara's status as a sea turtle nesting beach and informing visitors about the proper usage of the beach and the beach equipment (Fig.23-25). The location of the wooden posts on the beach marking the "beach border" and the "responsibility area" near the sunbeds possibly remain unchanged and inaccurately placed, approximately 40-50 metres from the high water line. It is not clear whether their locations were chosen with the purpose of ensuring their visibility by everyone using the sunbeds or with the purpose of marking the actual nesting zone border. In case the purpose in

<sup>4</sup> Personal communication with an acquaintance archaeologist who worked in Patara until the beginning of 2020.

<sup>5</sup> <https://www.aa.com.tr/tr/kultur-sanat/patara-deniz-fenerini-tas-hastanesi-ayaga-kaldiracak/1863206>

<sup>6</sup> <http://www.gunhaber.com.tr/haber/Patara-da-74-izinsiz-yapiya-yikim-karari/447555>

<sup>7</sup> <https://www.milliyet.com.tr/yerel-haberler/antalya/patarada-74-izinsiz-yapiya-yikim-karari-6172680>

<sup>7</sup> <https://odatv4.com/ve-kacak-yapilarin-yikimina-baslandi-13052014.html>

mind was the latter, they should be relocated to an accurate distance -nests were seen beyond and behind them (Fig.26).

The shower and toilet area at the back of the restaurant remains, possibly still draining onto the nesting beach at the base of oleander plants (unclear as they were unused at the time of the survey).

Except from this section, there was no use of beach equipment along the South beach, and it was completely empty after 09.00 PM.

***(iii) prohibit access of vehicles by placing barriers at the beach entrances;***

Vehicle access was restricted at the main beach entrance after 09.00 PM, not at the fee collecting point, but the gendarmerie guard post, although there were no physical barriers on the road.

Entry point at the top of dunes could not be distinguished as there were no tracks of quads or motorcycles in that section.

No control point or barriers were observed on either side of the Eşen River, and vehicle tracks were observed along the Çayağzı beach, starting from around 36°16'59.1"N / 29°16'26.2"E towards the river mouth (Fig. 10, Fig.14-15). Still, not a single vehicle was encountered at this section at night.

The Letoon beach and the Özden beach could not be surveyed.

***(iv) prohibit illumination of the beach;***

At Patara main beach, lights from the facility were dimmed but still visible (blueish white) at night (Fig.27). Although lights from the welcoming centre construction were not visible from the beach at night, two street lamps with orange lights could be seen from top of the nesting beach. Short lamps were installed on both sides of the road connecting the historical site to the beach (Fig.28). Assessment of their illumination could not be made as these lights were not operational during the time of the survey, but their cumulative light may reach the beach in case they will all be left on at nights.

As opposed to the expectation stated in last year's report, no heavy light pollution was observed between Patara main beach and the dunes entry point. However, a single section behind the dunes was illuminated until 11.30 PM – possibly from the ancient lighthouse construction site, or the summer houses (Fig.17).

No hatchling tracks were observed during the surveys, and therefore, it is unclear if any of these lights cause hatchling disorientation.

As mentioned above, it was not possible to visit Letoon beach and Özden beach at night.

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

No fishing activities (nets, rods, fishermen or boats) were observed along the main beach and the Çayağzı beach. Situation in other beach sections is unknown, but one fisherman was observed on the Letoon beach, possibly checking a fishing net at the Eşen River mouth (Fig.29).

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

Although campers, tents, caravans, or even people with camping gear were not observed along the South beach (main beach and Çayağzı beach), it cannot be concluded in the assessment that this is the result of improved enforcement due to the COVID-19 pandemic. No visitors were encountered after the permitted hours.

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

On the South beach (Patara main beach and Çayağzı beach), there were no signs of horse-riding or 4x4 / quad safaris, however it cannot be concluded in the assessment that this is the result of improved enforcement due to the COVID-19 pandemic.

***(viii) define fines for non-compliance with above regulations***

Fines are in effect for non-compliance in Patara, as well as some other important sea turtle nesting beaches. However, these are mostly related to vehicle entrance and direct damage on protected species. Locals also mentioned fines concerning sand extraction from the dunes<sup>8</sup>, although this could not be officially confirmed. Strict regulations and fines should be defined and implemented on beach usage by the facilities and the public.

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

Monitoring teams in Turkey's nesting beaches almost never have the authority to enforce measures or charge fines. No gendarmeries or other officers were encountered on or near the beaches at night or early in the morning, suggesting their responsibility or authority to enforce regulations and fines in the SPA may also

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<sup>8</sup> Personal communication with the two fishermen (tomato producers in winter) encountered at Eşen River mouth.

be limited. The responsibility of the officers at the fee collecting point and the gendarmerie guard post were possibly limited to their specific posts.

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

Besides the ongoing developments, there was a new construction behind the beach, which was the restoration work of an ancient lighthouse within the archaeological site. The cooperatives section inside the 3rd Degree Archaeological area is composed of several different cooperatives, some of which finished in recent years. Construction of the largest one still continues, to be finished in June 2021.<sup>9</sup> Locals mentioned that the cooperatives are still not completed as their plans have changed for the 3rd time, and stated their concerns that the dunes will definitely be affected when the houses are finished as they will be connected to the beach in some manner.<sup>10</sup>

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

There are enough bins at Patara main beach, of different sizes. The two large bins at the dunes access point could not be located (as this access point was not identified during the survey). One large bin was present at the Eşen River mouth, on the Çayağzı side (Fig.12).

Three municipality workers were observed cleaning the beach near the mouth of Eşen River, around 36°17'29.7"N / 29°15'48.1"E, although the plastic bags they filled mainly contained Styrofoam litter. It is also unclear whether litter is periodically removed from the beach by the municipality or any other persons/institutions. However, only a small amount of litter was observed on the main beach and the Çayağzı beach, most of which were possibly washed ashore by the waves (Fig.30-32).

The situation on Letoon and Özden beaches is unknown this year, although it must be noted that no bin facilities were provided last year.

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

A dense crab population was observed in Patara main beach and the Çayağzı beach, and a substantial ratio of nests were predated by crabs (Fig.33-38). Nests within the sunbed usage zone were protected with prism cages with surface grills attached underneath, mostly suitable for predation by small mammals, ineffective against crabs (Fig.39). A few randomly chosen nests outside this section were checked for protective grills buried in the sand, but none were caged against predation. All of the egg shells seen outside unattended<sup>11</sup> predated nests were dug up pre-emergence. Most of the predated nests were freshly lain, indicated by visible adult sea turtle tracks.

During the morning survey, three stray dogs were seen digging the sand at different spots (Fig.40-44), apparently trying to hunt crabs (possibly as a play). However, this digging behaviour may still damage eggs or hatchlings if there is a nest in close proximity.

**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;**

Cages were only used on nests in Patara main beach, inside the main tourist area, around sunbeds. Nests in other areas were marked with simple nest markers and/or driftwood sticks (Fig. 45-47).

**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;**

The Government fails to fulfil this as every year, related ministries announce a tender for several sea turtle nesting sites. The group with the lowest offer gets to do the contract, which substantially limits the funds and the workforce for conservation projects. This system also puts a strain on long-term conservation studies by the same group in many nesting sites.

<sup>9</sup> Personal communication (phone call) with the real estate agent, selling 700 square metre land plots for houses to be built in one of the cooperatives: <https://www.sahibinden.com/ilan/emlak-konut-satilik-dunyaca-unlu-patara-da-sitede%2Cmodern-mimarili-muhtesem-villalar-790794790/detay>

<sup>10</sup> Personal communication with the owner of Medusa Pension, Mr. Pamir Yılmaz.

<sup>11</sup> For an 'attended' predated nest, the predated eggs are counted and recorded, all the shells and damaged eggs are removed from inside the nest and the undamaged eggs are reburied to help increase their chances of hatching success.



Four young volunteers were observed doing a night survey, who went on a partial patrol using red flashlights. Although the group was not seen during the morning survey on the main beach and the Çayağzı beach, between 07.00 AM and 10.00 AM, some new nests marked with the survey's exact date (Fig.45) suggested that they finished their work earlier. Locals said that different teams from different universities come to monitor the nests every year.<sup>12</sup>

**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;**

In addition to the signs and the wooden posts at the main beach (Fig.22-26), another sign was seen at Çayağzı beach entrance, near Eşen River, indicating restrictions that apply on the nesting beach (Fig.46). Although the signs at the main beach entrance bore the new logo of the Ministry of Environment and Urbanization (Fig.24-25), indicating they were recently made, the one at Çayağzı beach entrance had the old logo. It is possible that this sign was somewhere else before, and it was carried here once a new sign took its original place.

Information signs on littering, sunbathing, and beach access times were also present on the main beach, but no information kiosk was seen (or the kiosk was unused this year, and did not have a sign).

Caged nests on the main beach had signs on them explaining what they are. Even though the beach usage area is surrounded by more than 8 warning signs, the zoning is still unclear and inaccurate, and is not enforced. There is no zoning in the rest of the South beach.

The situation in Letoon and Özden beaches are unknown.

**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;**

Locals know about the volunteers monitoring the beaches, and what they do, but their knowledge and involvement is possibly limited with this.

**Observations on other human activities and impacts:**

- President Erdoğan announced 2020 as “the Year of Patara”.<sup>13</sup> Restoration works in the archaeological site escalated, including the giant pillars of the main “seaport” road<sup>14</sup> and the antique lighthouse<sup>15</sup>.
- In Patara, Yalı and Delikkemer vicinities are also subjected to a number of new constructions, most of which are thought to be illegal. Three construction firms (Yeni Hitit, Kumko, and Özlenen Deniz) are addressed frequently. The news piece from April 2020 shows the current situation of constructions in Gelemiş, revealing a petition signed by the Municipality of Kaş in March 2020. The petition gives the number of illegal structures identified in 2018-2020 and states that the Municipality took action against them. According to this document, action was taken against 1730 illegal buildings during 2014-2020, with a cumulative fine of almost 47 million TL (although only a quarter of this amount was collected). It also claims that a total of 2169 illegal structures were identified within Kaş, but the demolishing of these structures could not be executed due to the lack of participating partners.<sup>16</sup>
- A number of ads can be found in real estate websites, of people landing/selling properties or land in Patara.<sup>17</sup>
- Eşen river water did not seem murky and did not have a strong odour indicating organic or

<sup>12</sup> Personal communication with the vice president / assisting head of the archaeological site, staying at the same pension.

<sup>13</sup> <https://www.trthaber.com/haber/turkiye/2020-patara-yili-ilan-edildi-460440.html>

<https://basin.ktb.gov.tr/TR-255214/2020-patara-yili-ilan-edildi.html>

<sup>14</sup> <https://www.ahaber.com.tr/galeri/yasam/baskan-erdogan-tarafindan-2020-patara-yili-ilan-edilmisti-pataranin-dev-sutunlari-yerlerine-dikiliyor>

<sup>15</sup> <https://www.aa.com.tr/tr/kultur-sanat/patara-deniz-fenerini-tas-hastanesi-ayaga-kaldiracak/1863206>

<sup>16</sup> <https://odatv4.com/halk-evde-kalirken-bunlar-dagi-tasi-betona-gomduler-16042033.html>

<sup>17</sup> (land plot for sale within the archaeological site, no permit for construction) <https://www.sahibinden.com/ilan/emlak-arsa-satilik-1650-m2-pataraya-yurume-mesafesinde-836321258/detay>

(land plot for sale near cooperatives area, with construction permit) <https://www.sahibinden.com/ilan/emlak-arsa-satilik-patara-da-deniz-doga-manzarali-1.774-m2-villalik-imarli-arsa-815790942/detay>

(one of the 27 buildings constructed 2 years ago, for sale) <https://www.emlakjet.com/ilan/kas-patara-da-21-satilik-full-deniz-manzarali-villa-satilik-7818206/>

chemical pollution, as opposed to previous year's report. This is very possibly the result of restrictions enforced due to the COVID-19 pandemic.

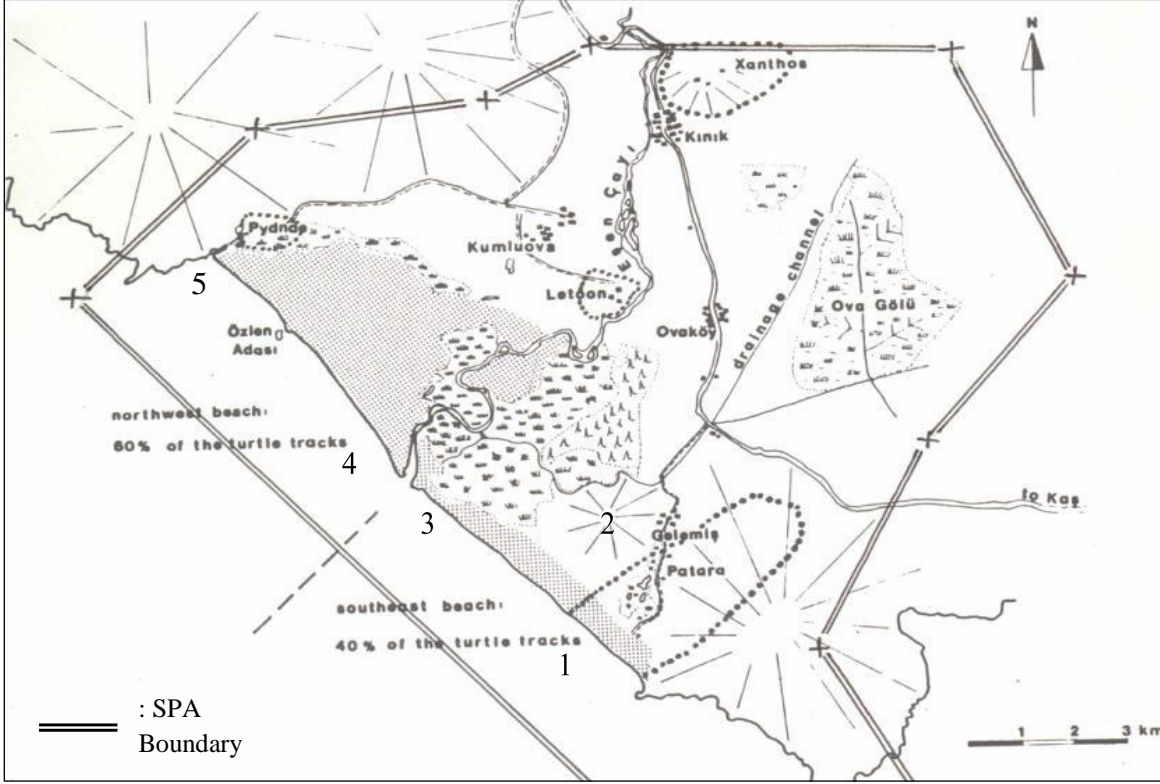
- Besides the tags and sticks used to mark nests, fresh adult tracks were also marked horizontally in order to not record the same track/nest again.
- Short wooden poles were observed at the back of the Çayağzı beach along sand dunes. Although their exact purpose was not understood, they may be used as zoning marks or reference points to map nest locations.
- It should be kept in mind that the emptiness and cleanliness of the beaches, and the better condition of the Eşen River might be the consequence of the global COVID-19 pandemic.

## DOCUMENTS SUBMITTED TO THE BERN CONVENTION

Available online at [www.medasset.org](http://www.medasset.org) or [www.coe.int/t/dg4/cultureheritage/nature/Bern/default\\_en.asp](http://www.coe.int/t/dg4/cultureheritage/nature/Bern/default_en.asp)

CoE Reference	
T-PVS (96) 53 A	MEDASSET: Conservation of loggerhead turtles, <i>Caretta caretta</i> , and construction projects on the beach of Patara, Turkey.
T-PVS (96) 53	MEDASSET: Conservation of loggerhead turtles, <i>Caretta caretta</i> , and construction projects on the beach of Patara, Turkey. (Brief Update on action to "Save Patara" 1989-1996).
T-PVS (97) 45	MEDASSET: Marine turtle conservation in Patara, Turkey.
T-PVS (98) 49	MEDASSET: Marine turtle conservation in Patara, Turkey.
T-PVS (99) 69	MEDASSET: <i>Caretta caretta</i> in Patara, Turkey.
T-PVS (2000) 57	MEDASSET: Conservation of the marine turtle, <i>Caretta caretta</i> , in Patara Turkey.
T-PVS (2001) 72	MEDASSET Review of nature conservation situation in Patara SPA, Turkey.
T-PVS/Files (2002) 14	MEDASSET. Update report and review of nature conservation measures in Patara SPA, Turkey.
T-PVS/Files (2003) 12	MEDASSET. Update report and review of nature conservation measures in Patara SPA, Turkey.
T-PVS/Files (2004) 13	MEDASSET. Update report and review of nature conservation measures in Patara SPA, Turkey.
T-PVS/Files (2005) 09	MEDASSET. Update report and review of nature conservation measures in Patara SPA, Turkey.
No T-PVS reference (2007)	MEDASSET. Update report and review of nature conservation measures in Patara SPA, Turkey.
No T-PVS reference (2009)	MEDASSET. Update Report and review of nature conservation measures in Patara SPA, Turkey.
No T-PVS reference Complaint (2012/9)	MEDASSET. Complaint to the Bern Convention: construction of summer houses within Patara SPA, Turkey.
T-PVS/Files (2013) 09	MEDASSET. Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2014)16	MEDASSET. Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2015) 34	MEDASSET. Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2016) 35	Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2017) 29	Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2018) 33	Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.
T-PVS/Files (2019)	Update on loggerhead sea turtle ( <i>Caretta caretta</i> ) conservation monitoring in Patara SPA, Turkey.

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. Kasparek. 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 archeological 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 & illegal beach bar (est. 2014, closed in 2015); 4 is Letoon beach entry point & abandoned SPA information kiosk; 5 is Özden beach entry point, bar, camping site, 4x4 rentals (Özden river outlet). Eşen river outlet lies between No.3&4.



**Fig. 3.** EPASA Management Plan Map of Patara SPA “3rd Degree Archaeological Site” (see blue area in Fig. 2). Construction is allowed in the red and blue areas, which include Gelemiş village, and in the yellow area which includes the summer housing cooperative lands.



**Fig. 4-5.** Construction of the “visitor welcoming centre” with a large parking lot in front of it. The gendarmerie guard post is located right by the construction area’s entrance.



**Fig. 6-9.** Random pedestrian entrance points in Çayağzı beach. Note the crane behind the dunes in Fig.7, possibly the ancient lighthouse restoration site.

**Fig.7.** possibly the ancient lighthouse restoration site.



**Fig. 10.** Motorcycle at the mouth of Eşen River, and its tracks on the beach.



**Fig. 11-12.** Municipality's truck at the end of Çayağzı beach, the mouth of Eşen River, and the bin behind it. No other vehicles were observed at the river mouth.



**Fig. 13.** Three municipality workers cleaning Çayağzı beach, collecting Styrofoam pieces, near the Eşen River mouth, around  $36^{\circ}17'29.7''\text{N} / 29^{\circ}15'481''\text{E}$ .



**Fig. 14-15.** Vehicle tracks near the end of Çayağzı beach, towards Eşen River.



**Fig. 16.** Tents on the Letoon beach, at the Eşen River mouth. Photograph taken from the other side of the river, the Çayağzı beach.



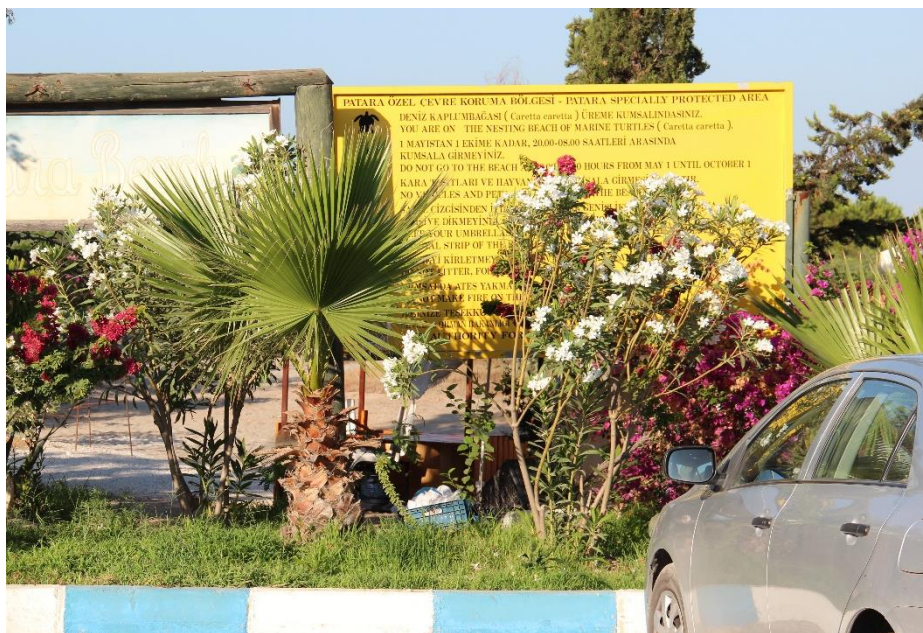
**Fig. 17.** Lights from the construction site behind sand dunes in the Çayağzı beach, illuminating the beach until 11.30 PM (possible restoration site for the ancient lighthouse).



**Fig. 18-19.** Facility at the entrance of the main beach. Sunbeds and the boats next to the lifeguard tower are left exactly where they are at night.



**Fig. 20-21.** Few visitors on the beach during the day, using their towels as the only beach equipment.





**Fig. 22.** SPA sign at the entrance to the facility on the main beach, concealed partly by the vegetation.



**Fig. 23-25.** Signs indicating the area’s role as a turtle nesting beach. New logo of the ministry on the signs are an evidence that they are new.



**Fig. 26.** Wooden posts marking the “beach border” and the “responsibility area” near the sunbeds, and two nests behind them (inaccurate nesting zone demarcation).



**Fig. 27.** Dimmed lights of the beach bar at the main beach are still visible at night.



**Fig. 28.** Short lights installed on both sides of the road connecting the archaeological site to the beach, not working at the time of the survey, but their cumulative light may be visible from the beach if they will all be on during the night.



**Fig. 29.** Fisherman at the Eşen River mouth, on Letoon beach, early in the morning.



**Fig. 30-32.** Very sparse litter on the beach, mostly washed ashore by the waves, except for the plastic bags and beer cans in Fig. 32 (note the eroded shore near Eşen River mouth in Fig. 32).



**Fig. 33-34.** Nests predated by crabs (note the crab in Fig. 34).



**Fig. 35-38.** More examples of crab predation – Çayağzı beach. All the egg shells were dug out before they hatched as adult sea turtle tracks were still visible in most of the nests, and as the shape of egg shells suggest (predated egg shells typically have scrape marks and they twist as they dry).



**Fig. 39.** A nest caged in the main beach, Patara SPA, inside the tourist area. Typical nest marking (plastic tags?) and the metal grid attached to the bottom of the prism cage.



**Fig. 40-43.** Stray dogs digging the sand to find crabs, and the holes they leave on the beach. Note the depth, which can be harmful to eggs or hatchlings if there is a nest underneath.



**Fig. 44-46.** Nests marked with typical plastic (?) tags and driftwood sticks.

## LOGGERHEAD SEA TURTLE (*CARETTA CARETTA*) CONSERVATION MONITORING IN FETHIYE SPA, TURKEY

MEDASSET hereby submits an update report to the second Bureau Meeting of the Bern Convention (14-16 September 2020) on the conservation status of sea turtle nesting beaches in Fethiye Specially Protected Area (SPA) in Turkey.

### *Contents:*

- *SUMMARY & RECOMMENDATIONS*
- *BACKGROUND*
- *2020 UPDATE*
- *REFERENCES*
- *MAPS & PHOTOGRAPHS*

### SUMMARY & RECOMMENDATIONS

**In 2020, there was no improvement and the conservation status of the nesting beaches has deteriorated: lack of beach furniture management, no zoning and lack of information, no vehicle access control, more fixed structures, severe light pollution, camping and human presence at night, etc. Habitat destruction continues as businesses expand on the sandy sections of the nesting beaches, further reducing available habitat and increasing disturbances. New hotels are to be constructed behind one of the last remaining pristine nesting areas, in complete disregard of the Bern Convention's Recommendations. There were no signs of new conservation or management activities. The only exception was litter collection and irregular beach furniture management in 1.5 of 8 km of the nesting beaches. The SPA remains unmanaged and inadequately protected. To date the majority of measures under Recommendation No. 183 (2015) have not been implemented.**

Without urgent conservation action and effective management, the recorded negative nesting trend will not be reversed and the few remaining areas in Fethiye SPA that have not been damaged will continue to be encroached upon by unplanned and unsustainable development.

### *MEDASSET calls upon the Bern Convention Standing Committee to:*

- Follow-up and keep the case file open at the 40th Meeting of the Standing Committee.
- Encourage Turkish authorities to provide further information on the case. Request an official update on the new hotel development and the status of the shipyard construction project.
- Urge Turkish authorities to implement Recommendation No. 183 (2015) before May 2021. Encourage and assist Turkish authorities to implement management and conservation measures.

### *MEDASSET calls upon the Turkish authorities to:*

- Urgently implement Recommendation No. 183 (2015) and implement a comprehensive and updated action plan before May 2021
- Revise/produce a SPA management plan that will cover both the land and marine areas, and will include a clear description of permitted land uses and activities. Allocate the necessary financial and human resources that will ensure enforcement of regulations and measures by authorities.
- Cancel plans for new hotel development and cancel the construction of a shipyard, drydock or marina, near or on Fethiye nesting beaches.

## BACKGROUND

The loggerhead sea turtle (*Caretta caretta*) nesting beaches in Fethiye (Mugla Province, Turkey) are among the 12 most important nesting beaches in Turkey.<sup>18</sup> Recently, the northernmost green turtle nest was also recorded here (Patara previously held this record).<sup>19</sup> Protection is not only significant in terms of nesting numbers but also to ensure the genetic diversity of the loggerhead population in the Mediterranean.<sup>20</sup> Fethiye's importance increases because of the relatively higher proportion of male-producing nests.<sup>21</sup> 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 severely declining.<sup>22</sup> Threats to the nesting population have constantly been increasing since 1993-4.<sup>23</sup> Real estate and tourism development is progressing with no regard for the sea turtle nesting population and the protected coastal ecosystems. Scientists have suggested conservation measures but these have not been applied.<sup>24</sup> A recent economic analysis of the SPA identified intensive use of beaches, excessive and uncontrolled housing and tourism developments among the many threats to the SPA and recommends enforcement of use and conservation principles, improved management and sustainable tourism development.<sup>25</sup>

There are at least four Bern Convention Recommendations that apply to Fethiye: Recommendation No 8 (1987), No 12 (1988), No 24 (1991) and No 66 (1998), the latter requesting that Turkish authorities “*secure the remaining unbuilt beach plots against development*”, “*improve control of the effects on the beaches of local tourism, secondary summer homes, caravans, camping and other activities [...] ; remove present adverse effects of these activities on nesting beaches; take urgent necessary measures to fully implement the protection status of SPAs; to enforce legislation against illegal sand extraction and assure that penalties are dissuasive; regulate and, where necessary, prohibit speed boats, jet skis and paragliding during the nesting season; ensure respect of low speed limits set and reinforce controls*”.

Since 2008, MEDASSET has been monitoring and reporting on the lack of management, poor spatial planning and build-up in Fethiye's coastal zone. In August 2009 MEDASSET submitted a complaint to the Bern Convention about the severe degradation of the protected sea turtle nesting beaches in Fethiye due to poor management, lack of spatial planning and uncontrolled build-up of the coastal zone due to tourism development. The complaint was discussed at the 30<sup>th</sup> Standing Committee Meeting in 2010, in relation to Recommendation No. 66/1998. Commitments for improved protection were made by the Turkish authorities,<sup>26</sup> and in 2011 some steps were taken to mitigate some of the tourism-related impacts during the nesting season. In 2012, these management measures were not sustained and further coastal build-up was recorded. At the 32<sup>nd</sup> Standing Committee Meeting in 2012, Recommendation No. 66/1998 was discussed and the Delegate of Turkey stated that authorities would monitor the situation more closely in 2013 and that matters were expected to improve. In 2013, there was no improvement of the protection and management of the nesting beaches, with the exception of beach furniture management in approx. 1.5 of 8 km of the nesting beaches and some new signage which, however, remained insufficient. Habitat destruction and coastal build-up continued. At the 33<sup>rd</sup> Standing Committee Meeting in 2013, the delegate of Turkey accepted that “the images [presented] are disturbing”, regretted that due to Ministry restructuring a response was not available. MEDASSET's call for a Case File to be opened was supported by the delegate of Norway who also proposed that the Committee commissions an on-the-spot assessment. A Case File was opened to address the issue together with the complaint regarding Patara SPA (2012/9), to encourage Turkish authorities “to work towards greater accountability, cooperation and responsibility”.

In 2014, yet another sea turtle nesting season passed with no improvement in the protection and management of the sea turtle nesting beaches in Fethiye SPA, and habitat destruction and coastal build-up

<sup>18</sup> Türkozan 2000; Margaritoulis *et al.* 2003; Canbolat 2004

<sup>19</sup> Fellhofer-Mihcioglu *et al.* 2015

<sup>20</sup> Yılmaz *et al.* 2008

<sup>21</sup> Kaska *et al.* 2006

<sup>22</sup> Ilgaz *et al.* 2007; Katilmis *et al.* 2013

<sup>23</sup> Oruc *et al.* 2003

<sup>24</sup> See references.

<sup>25</sup> Bann C. & E. Başak. 2013. Note: although the project dealt with anthropogenic impacts in some of Fethiye SPA's marine areas, it did not include implementation of conservation measures or the creation of a business plan or management plan for the land area of the SPA.

<sup>26</sup> T-PVS/Files 2010 23 (Government report); Authority's letter in Annex 1 of MEDASSET, December 2011

continued. The 34<sup>th</sup> Standing Committee Meeting decided to conduct an on-the-spot appraisal in view of identifying a set of recommended actions.

In 2015, there was no progress in the protection and management of the site. The few measures, taken a few days before the Bern Convention's on-the-spot appraisal in July 2015, were reversed shortly after. Once again, there were unregulated beach furniture and fixed structures inside the nesting zone, littering, light pollution, uncontrolled visitor and vehicle access, and several other threats to sea turtles, hatchlings and nests. Businesses expanded on the sandy sections of the nesting beaches, further reducing the available habitat and increasing disturbances. A huge new resort opened on one of the last remaining pristine beach sections. The threats identified led to the destruction of nests, unsuccessful nesting attempts, mortality of hatchlings and adult turtles. In December 2015, the Standing Committee, alarmed by the findings of the on-the-spot assessment which confirmed MEDASSET's reports, adopted Recommendation No. 183 (2015), asking Turkey to take urgent actions to improve management and conservation of Fethiye.

In 2016, 2017, 2018 and 2019, there was no significant improvement of the conservation status of the nesting beaches: lack of effective management, no beach furniture management on 6.5 of 8 km of the nesting beaches, lack of zoning and information, nearshore fishing, no vehicle access control, more fixed structures and development on sandy sections of nesting beaches, two new jetties, severe light pollution, camping and human presence on the nesting beaches at night, sand extraction, planting of trees and bushes on the sand.

## 2020 UPDATE

*Nesting beach description (Fig. 1): the 8 km beach is split in three main sections: Çalış, Yanıklar, and Akgöl. Çalış is 2.5km long, separated from the other two beaches by a small rocky peninsula, having two sections mentioned in the report as Çalış B (northern part) and Çalış A (southern part), roughly divided by Jiva Beach Resort in the middle. Çalış Hill marks the beginning of Yanıklar, which extends northward for 4.5km (including Karataş beach). Kargı River marks the border between Yanıklar and Akgöl (1km). Akgöl is also known as the Karaot beach. For a more detailed description of the Fethiye SPA nesting beaches see MEDASSET, September 2009.*

MEDASSET visited Fethiye SPA in July 2020 to assess and document the conservation situation on the nesting beaches. The following presents the survey findings in relation to each of the measures under Recommendation No. 183 (2015). It is important to note, as with our Patara assessment, Recommendations referring to extreme tourism may be underrepresented during the 2020 assessment due to travel restrictions related to the global COVID-19 pandemic. Assessment of Recommendations possibly impacted by the COVID-19 pandemic are stated in the text as "not representative".

### **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 Çalış beach in Fethiye SPA is highly developed with dense distribution of businesses along the beach (Fig.2), with mobile and fixed structures placed directly within the nesting zone. The final (westernmost) facility on Çalış Section B is still Mavi Beach, which opened in 2017 as "My Beach" and expanded westward in the last 2 years (Fig.3).

In Karataş beach, a new hotel is being constructed to the east of TUI Sensatori Resort Barut Fethiye (est. 2015), which later increased its capacity by building a residence section to its west in 2019, bordered by the Günlük Kent Park near the river (Fig.4). The new construction is carried out by the Özyer Group<sup>27</sup> in the name of Ayfaba Tourism Investors<sup>28</sup>, planned to be completed in 2021<sup>29</sup>. In comparison of the 2019 and 2020 photos taken of the construction works, the access road has been widened intentionally, increasing the habitat destruction in the region. (Fig.5a-5b). Eastern border of the construction was marked with two red flags on the beach around 36°40'50.7"N / 29°4'35.4"E. Plots to the east of the construction area also seem drained, but are not immediately ready for development (Fig.5a-5b). However, they are reserved for the construction of two new hotels: Three Sisters-1 (Lillyana Resort Hotel) and Three Sisters-2 (Aronis Resort Hotel). The construction of Lillyana Hotel will possibly begin first<sup>30</sup>, as its EIA process has started<sup>31</sup>. It is expected to

<sup>27</sup> <https://www.ozyer.com/koyamat.php>

<sup>28</sup> <https://www.emlaknews.com.tr/haberler/ayfaba-turizm-fethiye-koyamat-mevkine-otel-yapiyor/>

<sup>29</sup> As stated in the website of Key Engineering, who will carry out the installation of all electrical systems of the hotel (the page also contains a recent video of the construction site): <https://www.keymuhendislik.com.tr/tr/d/fabay-koyamat-otel>

<sup>30</sup> <https://www.emlaknews.com.tr/haberler/fethiye-360-odali-lillyana-resort-otel-yapilacak/>

<sup>31</sup> <http://eced.csb.gov.tr/ced/jsp/ek1/27080>



host 850 visitors. No information or official news has been received or found about Melis Resort Hotel, or the construction of a shipyard on the nesting beaches, which were both mentioned last year. There were 5 caged nests in front of the TUI hotel, and 1 in front of the construction area. At the time of the night survey, an adult female *Caretta caretta* was encountered right in front of the construction, despite all the bright lights. She was left undisturbed, and her nest was identified the next morning. Despite this rare occasion, the construction of all the planned hotels in the Karataş nesting beach will definitely have a strong negative impact on sea turtle nesting as Karataş is the section with the largest sandy zone in the entire Fethiye SPA.

In Akgöl (Karaot beach), a new structure was being constructed during the nesting season at the time of our survey, to the east of the river (Fig.6). This structure opened recently, as "Turkey's first ecological beach". This facility was constructed directly by the municipality, without a petition, by using only wooden materials. It consists of a cafeteria, with showers and toilets on both sides, along with sunbeds and parasols in front of it. Authorities claim that everything has been placed taking into consideration the sea turtle nesting zone and any possible damage on endemic plants in the area<sup>32</sup>.

**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;**

There is no evidence of any form of restoration, nor of any form of mitigation of the impacts of the development in the SPA. Permanently fixed structures are found on all of the nesting beaches with some areas almost completely covered in beach furniture. No effort is made to stack or remove the beach furniture at nights.

Both sections of the Çalış beach are highly developed and filled with facilities behind and on the nesting beach. Sunbeds, parasols, pavilions, cushions, astroturf carpets, and walkways cover almost all of the nesting zone (Fig.3, Fig.7, Fig.38). For the majority of Çalış Section A, some effort was made to place the sunbeds in a single row on the nesting beach but not throughout the whole section A along the promenade (Fig.8). No jetties and docks were seen extending into the sea in Section B. However, the concrete platform on the nesting beach as previously reported can still be seen on Goole Earth (Fig. 3b). Cordoned areas remain in a few places, to prevent swimming guests from any accidents caused by water sports activities (Fig.9, Fig.11, Fig.19b, Fig.25). No volleyball courts or playgrounds were observed on the Çalış beach strand, and tents were only set up inside the camping facilities.

At Karataş, there were sunbeds and parasols in front of the facility called "Deniz İncisi", and the walkway was behind the sunbeds (on the upper part of the nesting zone), but there was not a playground as opposed to last year. (Fig.10). TUI Sensatori Resort Barut had a section of sunbeds, parasols, and pavilions at the western part of its beach (Fig.11-12). Although less in number than the previous years, beach equipment in this section was occupying most of the nesting zone. Sunbeds at the eastern part of the hotel were placed along the upper part of the nesting zone, with only horizontal boardwalks between sunbed rows, leaving some more sandy area for the sea turtles to nest. The hotel also bordered the swimming and water sports usage areas with cordons in the sea (Fig.11). Both the jetty and these cordons were illuminated at nights (Fig.25). The absence of a playground in front of Deniz İncisi and the lower number of beach equipment in front of TUI Sensatori Resort Barut may be due to COVID-19, and thus may be considered as "not representative".

At Yanıklar, the nesting beach is free of furniture until Doğa Camping, which was closed. East to west from Doğa Camping until Hotel Club Tuana, sea turtle nesting zone is heavily occupied by sunbeds, parasols, pavilions, boardwalks, tables and chairs, hammocks, volleyball courts, and even fire pits (Fig.13). Shower cabins on the beach drain directly onto the sand (Fig.14). Besides the two jetties, numerous boats and other water sports equipment were observed in this section (Fig.15a-15b).

At Akgöl, nine structures resembling pergolas/pavilions still remain (Fig.16), serving as shaded resting spots for the visitors. These are possibly installed on a heightened level of sand (maybe mixed cement). The toilet/shower cabins are behind the beach, next to the parking space (Fig.17). The only other structure in this section was the new facility being constructed by the Municipality (Fig.6).

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

At Çalış Beach, a small vehicle was seen digging and moving sand near the river mouth by the Çalış Hill early in the morning (Fig.18). In Yanıklar, around the construction site, there was evidence of sand being moved/piled. No information about the fines or penalties applied in case of sand extraction or removal.

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

<sup>32</sup> <https://www.fethiye.bel.tr/tr/haberDetay.aspx?ID=3325>

The Government did not only fail to remove the existing bushes, trees, and grass planted on the nesting beaches in previous years, but they also planted new ones in some areas. The lawn around TUI Sensatori Resort Barut pavilions, the palms and acacia trees around “Deniz İncisi” in Karataş beach (Fig.19a), acacia and oleander trees along Yanıklar (Fig.19b) and Çalış B are all still present. In Akgöl, new trees and bushes were planted near the construction on the beach (Fig.6 – bottom-right image). There seems to be no effort to restore the remaining sandy beach sections.

**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 (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;**

There was no evidence of an effective zoning in any of the beach sections throughout the SPA. Minor efforts were observed in Çalış A (single row of sunbeds – Fig.8) and Karataş (sunbeds near the jetty placed at the upper part of the nesting zone in TUI Resort – Fig.11). Removal or stacking of beach furniture at night was not observed anywhere.

In Çalış B and the western part of Yanıklar beach (towards Akgöl), touristic facilities and beach equipment leave very little available nesting zone. Regarding the observations made during our survey, the sections currently most suitable for sea turtle nesting, in terms of both being empty and hosting appropriate amount of sandy zone, are the eastern part of Yanıklar beach (between Doğa Camping and the beginning of Karataş beach), the hotel-free part of the Karataş beach, and moderately the Akgöl beach. However, a somewhat minor natural sand erosion problem was observed in Yanıklar (Fig.54b).

It is necessary to make a thorough assessment of the entire SPA, with respect to past and current nest numbers in different sections in different years, to identify potential hotspots, and the potential impacts from the ever-developing tourism infrastructure.

**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;**

The sandy zone in the Akgöl beach has been severely damaged due to touristic development. Nine pavilions still remain on the north end of the beach (Fig.16), serving as shaded resting spots for the visitors. At the rear of the beach, the area next to river bed is flattened and used as a parking area (Fig.20a-20b). Karaot Buffet at the south side of the beach remains and was very crowded despite the fact that it seemed to be not functional anymore (Fig.21). Bathroom facilities, boardwalks, sunbeds and parasols, picnic tables, volleyball court, and tents in front of it were removed. However, 2 boats remained on the beach, in front of the buffet area, by the sea (Fig.22). Possible impacts of the new facility constructed by the Municipality should be monitored and assessed in the following years. This area is heavily used for swimming, picnicking, and barbecuing, all around the cages. Such high levels of human traffic in close proximity of the caged nests will cause extremely high levels of disturbance to the incubating nests, and risk the relocation of precisely positioned cages, placed for the protection of the nests.

**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) 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;**

Light pollution is severe on all beaches and there were no apparent new efforts to mitigate the problem (Fig. 23-31). Beach businesses operate at night, many of them until midnight, with lights and loud music, and have made no adjustments to reduce light pollution.

In Çalış A and B, extensive street and business lights illuminate the beach (Fig.23), although some businesses were closed. At Karataş, there was heavy illumination coming from the construction site (Fig.24a-24b). The lights of TUI Resort on the beach were either switched off or replaced with low-height orange lights, although hotel lights in the background may have a disturbing or disorienting effect on the sea turtles

(Fig.25). The resort also had bright green jetty lights and blue lights on the bordering cordons in the sea (Fig.26).

At Yanıklar, although a large portion of the beach (towards Karataş) is empty and dark at nights (Fig.27), lights from the picnic area and the facilities (Fig.28-30) can be problematic.

At Akgöl, during this survey, there were no fires observed although this is not the general case as people stay on the beach until late hours. (Fig.31). Most of the light in Karaot were coming from the fishermen and their cars (Fig.31).

**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;**

There are no permanent barriers to prevent vehicle access to the beaches. Some designated parking spaces are found, but the SPA has several access points, and the vehicles are still free to enter and park unhindered. Despite this fact, vehicle tracks were only seen on Yanıklar Beach, in front of Doğa Camping, which was closed at the time of survey (Fig.32).

The most popular picnic areas seem to be the small beach next to Karataş (Fig.33), the southern end of Yanıklar (Fig.34), and the northern end of Çalış B. Akgöl and Çalış A had fewer people having picnics and making barbecues (Fig.35). More effort is required to designate picnic areas away from the beach, and strict regulations must be put into force because picnickers are responsible for litter, light, and sound issues on the nesting beaches.

**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;**

Boats and outlets for motorized water sports activities exist on all beaches (Fig.11, 13, 15a-b, 22, 36, 38a-b), although little activity was observed during the survey. Floating ropes or cordons are in place to delimit swimming areas in Çalış, Karataş, and Yanıklar (Fig.7a, 9, 11, 19b, 27). Surfers were observed at Çalış B near Çalış Hill (Fig. 18). Boats were seen in the sea at Yanıklar (fig.19b, 30, 36) and Çalış A (Fig.37). There is no evidence pointing to maritime traffic regulation or its enforcement during the nesting/hatching season.

**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);**

Monitoring and conservation of the sea turtle nests is carried out under a short-term contract, for one season only. This is how the general “tender bidding system” works in Turkey. Two volunteers were encountered in the morning in Çalış A. Although they phoned other friends asking for help with a nest, it is unclear how many volunteers work at the entire SPA every summer, and if they have enough manpower to monitor the entire beach every day.

No information about the recommended assessments (i)-(iii). However, the total seasonal nest number stayed approximately the same for the past couple of years, including this year<sup>33</sup>. There was no apparent effect of the global pandemic on nest numbers even though it is less crowded and fewer businesses were open.

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

There is uncontrolled visitor access to all beaches at night. Fires were observed at Yanıklar and Çalış, while barbecues were seen on all beaches (Fig.29a-b, Fig.35). Camping directly on the beach was not recorded on any of the beaches this year. There seems to be no night time restriction for the operation of businesses by the beach. Lights, loud music, and the presence of a lot of people definitely have a negative impact on nesting and hatching.

**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;**

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<sup>33</sup> Personal communication with the two volunteers encountered during the morning survey.

In Çalış A, bins are available along the promenade and are emptied daily by the Municipality workers (Fig.39a-b). Although small bins can also be found near sunbeds (Fig.40), some litter was left on the beach on several spots (Fig.41). In Çalış B, some bins are available at the back of the beach and along the road (Fig.3). At Karataş, only small bins were installed on the parasols belonging to TUI Sensatori Resort Barut (Fig.12). At Yanıklar, businesses have a few number of bins at the back of the beach or around sunbeds (Fig.13a), but litter is dumped under the trees around the picnic areas -despite the “do not litter” signs (Fig.34, 42). At Akgöl, bins are only available in the parking area but not on the beach (Fig.6, 31).

At Yanıklar, three drainage channels were observed (Fig.43). An extremely polluted one (Fig.44), which did not meet the sea at the time of the survey (but will definitely drain into the sea once water level rises a little), must be treated. Such channels carry agricultural wastes directly to the beach and the sea, posing a threat to the entire habitat. In June 2020, a protocol was signed by the district governorship and Fethiye municipality for the collection of agricultural wastes, in order to integrate them into the recycling systems. According to this protocol, containers will be placed in areas with heavy agricultural use.<sup>34</sup>

**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;**

No information available.

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

The nest monitoring team does not have the capacity or the authority to control and manage the beach, or to enforce regulations. No financial or human resources are allocated for this purpose.

**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;**

Signage remains mostly unchanged compared to 2015. In Çalış A, signs explaining regulations are only available at two access points (Fig.45), while the signs at the other access points seem to be missing also in 2020, as was in 2019. There were also two signs on the beach in Çalış B (Fig.46), although some businesses had additional signage inside the bar areas. There were no information signs in Karataş. A single sign was seen in Yanıklar around 36°41'10.5"N / 29°2'55.3"E, which was hardly visible from the beach, obscured by an acacia tree and oleanders (Fig.19b, Fig.47). At Akgöl, there was one sign on the northern end of the beach, by the river around 36°41'47.9"N / 29°2'8.4"E (Fig.35, Fig.48), and another one in the middle of the beach, right before the municipality's construction site (Fig.6a, Fig.49).

The sign boards are old, bearing the old Ministry logos, and they are poorly displayed, even concealed by the vegetation at some places. Most of the signs give very limited information on restrictions and guidelines to follow on nesting beaches. Some display the sea turtle life cycle, again, with limited information on nesting beaches. Although the public is aware of the presence of sea turtles in the entire area and acknowledge Fethiye's status as a nesting site, they seem to only use it as a means of advertisement for their businesses. Businesses and the public are largely unaware of regulations and the protected status of the beaches, or they seem to ignore the regulation as there are no enforcements or sanctions. A higher number of newer and clearer signs are needed, at more places, especially on every major entry point and at every bridge connections sections.

Information booths in both sections of Çalış were closed at the time of the survey (Fig.50), either due to the COVID-19 pandemic or the insufficient number of volunteers (or both). Info centres or desks must be operational on all sections, and monitoring team(s) should have informative brochures with them at all times.

**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 areas with dense touristic activities were caged with prism cages mounted on top of protective grills, although they were often improperly placed (Fig.7, Fig.14, Fig.16, Fig.20, Fig.51a-b). Not only these

<sup>34</sup> <http://www.fethiye.gov.tr/tarimsal-atiklarin-toplanmasi-ve-geri-donusume-kazandirilmesi-projesi-icin-hazirlanan-protokol-imzalandi>

prism cages are ineffective in preventing hatchlings from disorienting towards artificial lights, but also these grills must be buried in the sand, down to the wet sand level, to dissuade predators. In relatively remote and empty sections, predation cages consisting of simple protective grids/grills were buried right under the dry sand (Fig.52). However, four unattended predations identified at the pristine section of Yanıklar indicates that not all nests have been caged for protection (Fig.54). Nests in Yanıklar were also marked differently, with stones placed a semi-lunar shape around the nest, and driftwood sticks bearing the nest number and nesting date (Fig.54 a-b).

Paw prints observed around the predated nests in Yanıklar (Fig.54) could not be identified, but they possibly belong to small mammals. Six stray dogs were encountered in Çalış Section B (Fig.55), who kept playing on the beach and ran until Çalış Section A. Although they did not display predation behaviour, they may still pose a risk for uncaged nests. Crows frequently seen in both sections of Çalış (Fig.56) may also hunt down hatchlings, although this needs confirmation. The SPA does not host a crowded population of crabs, as their tracks were rarely seen in some sections.

### Other Notes

- Heavy fishing was observed throughout the SPA, mostly with hand-lines or rods, both early in the morning and late at night (Fig.9, Fig.29, Fig.36, Fig.58). Pieces of fishing line were encountered in Çalış and Yanıklar. Two fishermen were encountered at night in the pristine section of Yanıklar beach, around 22:00 using very bright lanterns.
- An activity centre for FETAV (Fethiye Tourism Promotion Cultural Environment and Education Foundation) was opened in December 2019. Monitoring their possible involvement in conservation studies is advised.<sup>35</sup>
- A site established by the Turkish Ministry of Health shares an online “swimming water monitoring system”, according to which the sea water in Çalış is not in a good condition.<sup>36</sup>

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<sup>35</sup> <http://www.fethiye.gov.tr/fethiye-turizm-tanitim-kultur-cevre-ve-egitim-vakfi-fetav-etkinlik-merkezi-duzenlenen-torenle-acildi>  
<http://www.fetav.com/en/fetav.php>

<sup>36</sup> <https://yuzme.saglik.gov.tr/>

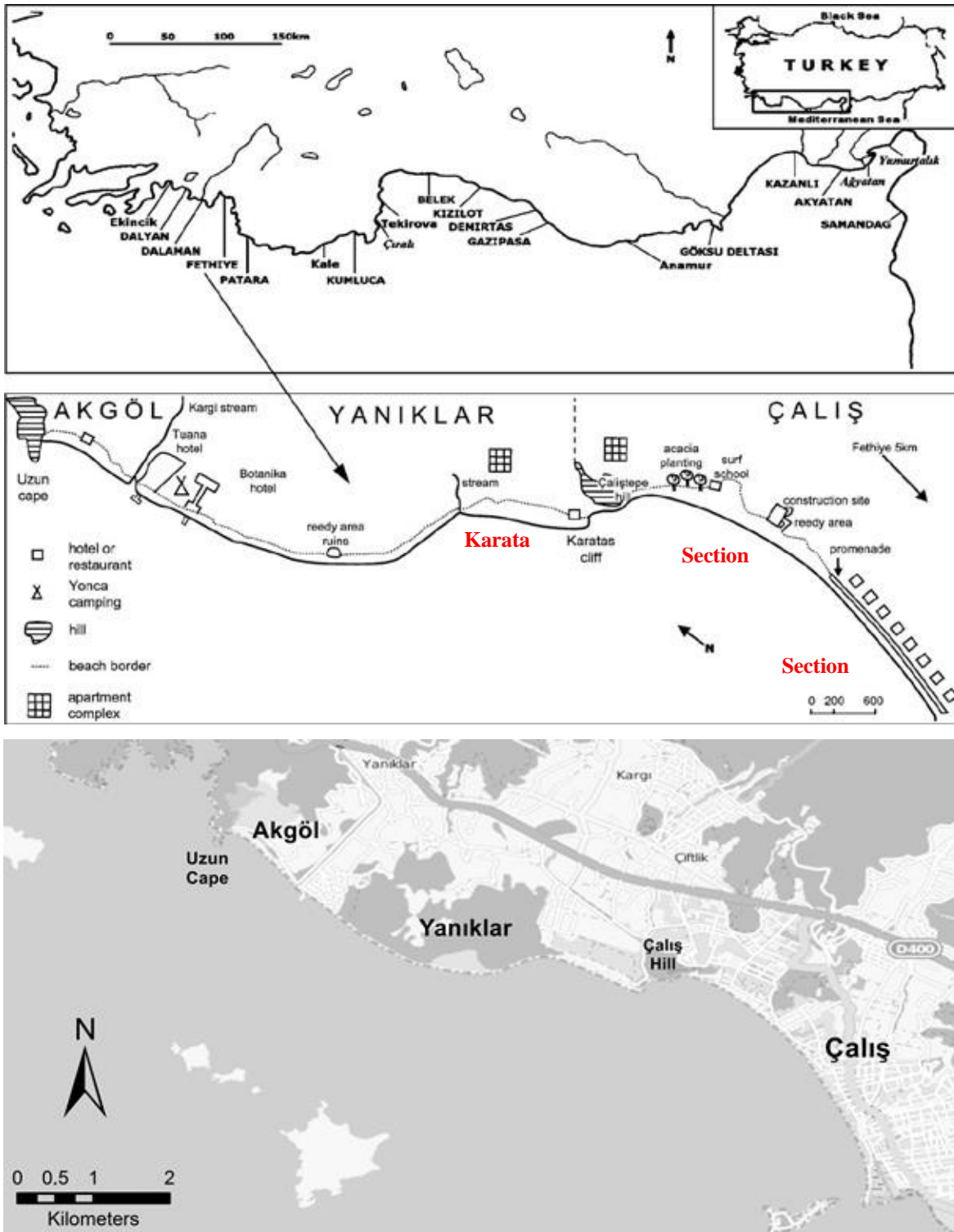
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## **MEDASSET REPORTS & COMPLAINT**

(Available at: [www.medasset.org/publications/technical-reports-position-papers-policy-recommendations/](http://www.medasset.org/publications/technical-reports-position-papers-policy-recommendations/))

- T-PVS/Files (2019) 28. Update Report. Loggerhead Sea Turtle (*Caretta caretta*) Conservation Monitoring in Fethiye and Patara SPAs, Turkey
- T-PVS/ Files (2018) 33 MEDASSET. August 2018. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye SPA, Turkey.
- T-PVS/Files (2017) 29 MEDASSET. August 2017. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye SPA, Turkey.
- T-PVS/Files (2016) 35 MEDASSET. October 2016. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye SPA, Turkey.
- T-PVS/Files (2015) 34 MEDASSET. September 2015. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye SPA, Turkey.
- T-PVS/Files (2014) 16. MEDASSET. March & August 2014. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye SPA, Turkey.
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- T-PVS/Files (2013) 9. MEDASSET. March & September 2013. Update on Loggerhead sea turtle (*Caretta caretta*) Conservation Monitoring in Fethiye, Turkey.
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### MAPS & PHOTOGRAPHS



**Fig. 1.** TOP: Fethiye among important nesting beaches. MIDDLE: Fethiye nesting beach sub- subsections; developments since 2006-7 are not shown here. *Source: Ilgaz et al., 2007.* BOTTOM: Map of Fethiye beaches. *Source: Başkale et al., 2016.*<sup>37</sup>

<sup>37</sup> Başkale et al., 2016. Monitoring and Conservation of Loggerhead Turtle’s nests on Fethiye Beaches, Turkey. *Biharian Biologist* 10(1):20-23 ([https://www.researchgate.net/publication/285322728\\_Monitoring\\_and\\_Conservation\\_of\\_Loggerhead\\_Turtle's\\_nests\\_on\\_Fethiye\\_Beaches\\_Turkey](https://www.researchgate.net/publication/285322728_Monitoring_and_Conservation_of_Loggerhead_Turtle's_nests_on_Fethiye_Beaches_Turkey))



**Fig. 2.** Fethiye SPA, Çalış - Section B. Google Earth images from 2003, 2019, and 2020. Satellite imagery comparison shows the continual coastal build-up, planting of sandy area and occupation of nesting beach, in conflict with Recommendations. Note that the sandy area (nesting zone) has been occupied and, in most parts, only the pebbly zone (less suitable nesting area) near the waterline is development-free.



**Fig. 3a.** Mavi Beach, the westernmost facility on Çalış - Section B, Fethiye SPA. Note the sunbeds, banks, astoturf carpets, and the surfboards on the beach. Also note the large bin (red circle) near the road





**Fig. 3b.** Mavi Beach, the westernmost facility on Çalış - Section B, Fethiye SPA. Note the concrete platforms adjacent to the restaurant circled in both photos 3a and 3b. Image sourced from Google Earth street view 10.08.2020.



**Fig. 4.** Fethiye SPA, Karataş. Google Earth images from 2003 (top) and 2020 (bottom). From left to right in the 2020 image: 1) Günlük Kent Park, 2) TUI Sensatori Resort Barut and its residence section, 3) ongoing new construction site (Fabay Koymat Hotel), and 4) the project sites for two new hotels (Three Sisters-1 – Lillyana Resort and Three Sisters-2 – Aronis Resort). The once pristine nesting beach is now covered with pavilions and sunbeds at the western end, although sunbeds seem to be placed behind the nesting zone towards the east of TUI Sensatori.



**Fig. 5a.** Fethiye SPA, Karataş. Construction site and the development area next to it, taken from top of the Çalış Hill.



**Fig. 5b.** Fethiye SPA, Karataş. Construction site behind the small beach in Karataş, as seen from the Çalış beach.



**Fig. 6.** Fethiye SPA, Akgöl. Construction in front of the vegetation, back of the beach, later confirmed to be the Municipality’s new “ecological” facility. Note the information board on the top-left image, and the newly planted trees in the bottom-right image.



**Fig. 7.** Fethiye SPA, Çalış. Sunbeds, parasols, pavilions, astroturf carpets and cushions on the nesting beach. None of these furniture were removed at night. Note two cages behind sunbeds in the upper-left image.



**Fig. 8.** Fethiye SPA, Çalış Section A. Sunbeds placed in a single row, not removed or stacked at night.



**Fig. 9.** Fethiye SPA, Çalış. Cordoned area in the sea, bordering the swimming area to avoid accidents caused by water sports activities. Also note the sunbeds very close to the sea, and the early morning fishing activities (around 06.30 AM).



**Fig. 10.** Fethiye SPA, Karataş. The beach strand in front of “Deniz İncisi”.



**Fig. 11.** Fethiye SPA, Karataş. The beach strand in front of TUI Sensatori Resort Barut. The sunbeds and pavilions at the western part of the hotel’s beach are less in number than the previous years. Sunbeds (Red circle) at near the jetty are placed along the upper part of the nesting zone. Also note the cordoned area in the sea.



**Fig. 12.** Fethiye SPA, Karataş. Sunbeds and fixed parasols that can be closed at the western part of TUI Sensatori Resort Barut, too close to the sea. Note the ashtray-like very small bind installed on the parasols.



**Fig. 13.** Fethiye SPA, Yanıklar. Sunbeds, parasols, pavilions, banks, tables, stools, and a fire pit on the nesting beach. No boardwalks were observed in this area. Note the “no sunbeds” signs on wooden posts, and the bins in front of the sunbeds on the upper image (13a).



**Fig. 14.** Fethiye SPA, Yanıklar. Water from the shower cabins leak into the sand (Red circle).



**Fig. 15a.** Water sports equipment and the jetty in Yanıklar, Fethiye SPA.



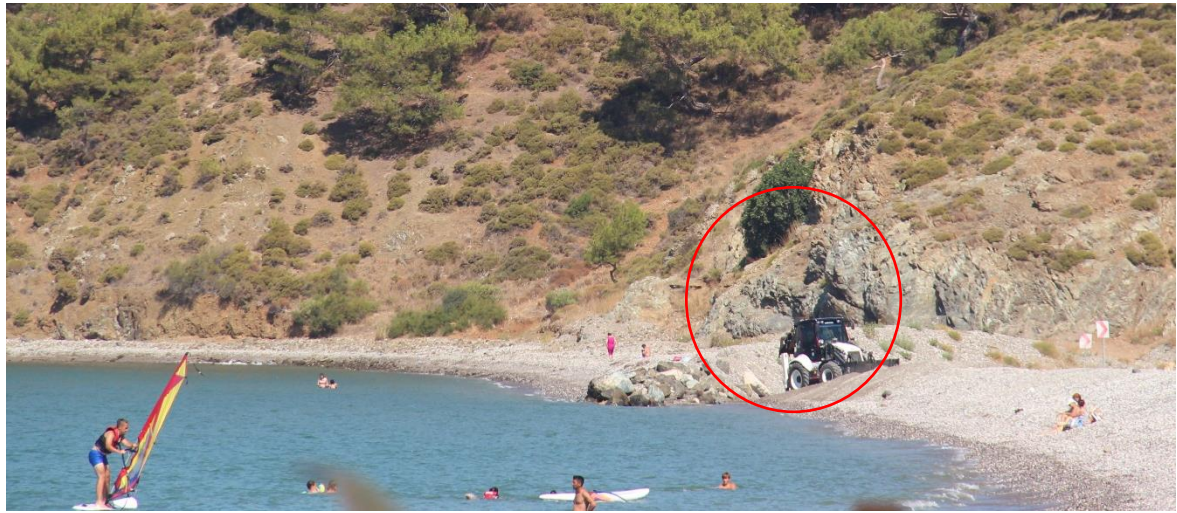
**Fig. 15b.** Water sports and jetty in front of Club Tuana, Yanıklar, Fethiye SPA. Note the car on the beach.



**Fig.16.** Fethiye SPA, Akgöl. Nine pergola/pavilion-like structures by the rocks serve as shaded resting places for visitors.



**Fig. 17.** Fethiye SPA, Akgöl. Toilets & shower/changing cabinets behind the beach, next to the parking space.



**Fig. 18.** Fethiye SPA, Çalış - Section B. Small vehicle digging/moving sand early in the morning, around the river mouth by the Çalış Hill.



**Fig. 19a.** Palm, oleander, and acacia trees around pavilions behind beach at Deniz İncisi, Karataş.



**Fig. 19b.** Acacia and Salix trees concealing nesting zone sign at Doğa Camping, Yanıklar.

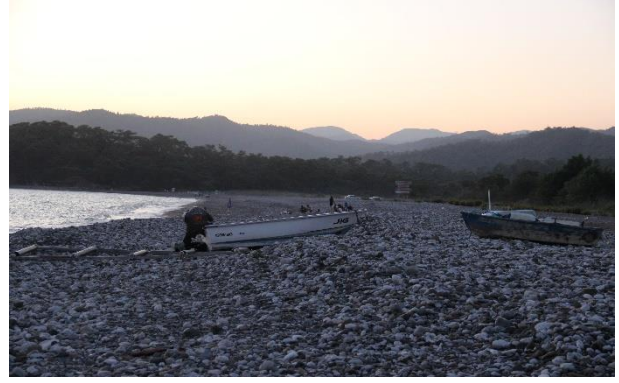


**Fig. 20a-b.** Fethiye SPA, Akgöl. The rear of the beach, flattened and used as a parking area. Note the two cages in the left image, and the caravan in the right image.





**Fig. 21.** Fethiye SPA, Akgöl. Karaot Buffet seems not functional anymore.



**Fig. 22.** Fethiye SPA, Akgöl. Boats left on the beach.



**Fig. 23.** Fethiye SPA, Çalış - Section B. Lights from the facilities directly affecting the nesting beach.



**Fig. 24a.** Fethiye SPA, Karataş. Lights from the construction site and TUI Sensatori Resort Barut.



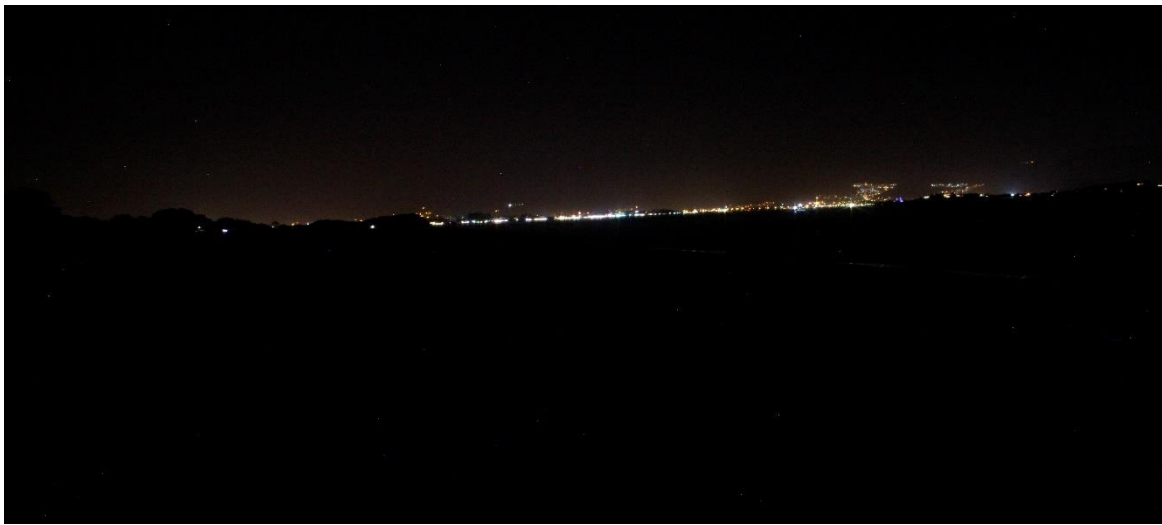
**Fig. 24b.** Fethiye SPA, Karataş. Construction lights on the nesting beach. Note the cage in front of it.



**Fig. 25.** Fethiye SPA, Karataş. Low-height orange lights at TUI Resort and hotel lights in the back.



**Fig. 26.** Fethiye SPA, Karataş. Green jetty lights and blue cordon lights at TUI Resort.



**Fig. 27.** Fethiye SPA, Yanıklar. Large beach section (towards Karataş) empty and dark at nights. Lights from Çalış – Section A can be seen far away.



**Fig. 28a-28b.** Fethiye SPA, Yanıklar. Picnic area at night. Light usage by campers, people making barbecues. Lights from TUI Sensatori Resort Barut in the back.



**Fig. 29.** Fethiye SPA, Yanıklar. Light usage at late evening hours. Jetty of Club Tuana.



**Fig. 30.** Fethiye SPA, Yanıklar. Lights from a facility on the beach.



**Fig. 31.** Fethiye SPA, Akgöl. People remain on the beach after sunset, but they do not build fires. Note that no bins are present on the beach.



**Fig. 32.** Fethiye SPA, Yanıklar. Vehicle tracks in front of Doğa Camping (closed at the time of survey).



**Fig. 33.** Picnic area at small beach, Karataş.



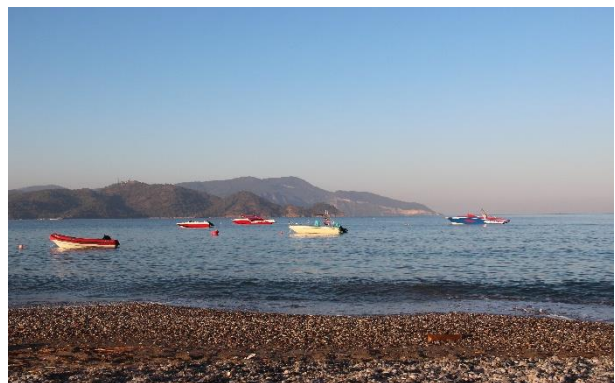
**Fig. 34.** Picnic area the southern end of Yanıklar. Note litter dumped under the trees.



**Fig. 35.** Fethiye SPA, Akgöl. People having picnics and making barbecue. Note the sea turtle nesting beach sign.



**Fig. 36.** Fethiye SPA, Yanıklar. Boats on the beach and in the sea, and the fishermen after 08.30 PM.



**Fig. 37.** Fethiye SPA, Çalış A. Boats in the sea around 07.00 AM.



**Fig.38.** Fethiye SPA, Çalış. A “surf zone” on the nesting beach, with an accompanying astroturf (red circle) carpet, in front of the facilities.



**Fig. 39a-b.** Fethiye SPA, Çalış – Section A. Bins along the promenade are emptied daily by the Municipality (Fethiye Belediyesi).



**Fig. 40.** Fethiye SPA, Çalış. Small pots used as bins near sunbeds.



**Fig. 41.** Fethiye SPA, Çalış. Litter on the beach.



**Fig. 42.** Fethiye SPA, Yanıklar. Litter dumped under the trees around the picnic areas. The sign on the tree (upper left image) reads “Please do not litter”.



**Fig. 43.** Fethiye SPA, Yanıklar. Drainage channel draining into the sea.



**Fig. 44.** Fethiye SPA, Yanıklar. Extremely polluted drainage channel draining onto the nesting beach.



**Fig. 45.** Information board in Çalış - Section A.



**Fig. 46.** Information board in Çalış - Section B.



**Fig. 47.** Fethiye SPA, Yanıklar. The only information board in the section, partially obscured by vegetation.



**Fig. 48.** 1<sup>st</sup> information board in Akgöl, on the northern end of the beach, by the river.



**Fig. 49.** 2<sup>nd</sup> information board in in Akgöl, in the middle of the beach, with old Ministry logo.





**Fig. 50.** Fethiye SPA, Çalış. Info desk, closed and in bad condition.



**Fig. 51a.** Fethiye SPA, Akgöl. Prism cage protecting a nest, improperly placed.



**Fig. 51b.** Fethiye SPA, Çalış B. Prism cage protecting a nest, improperly placed.



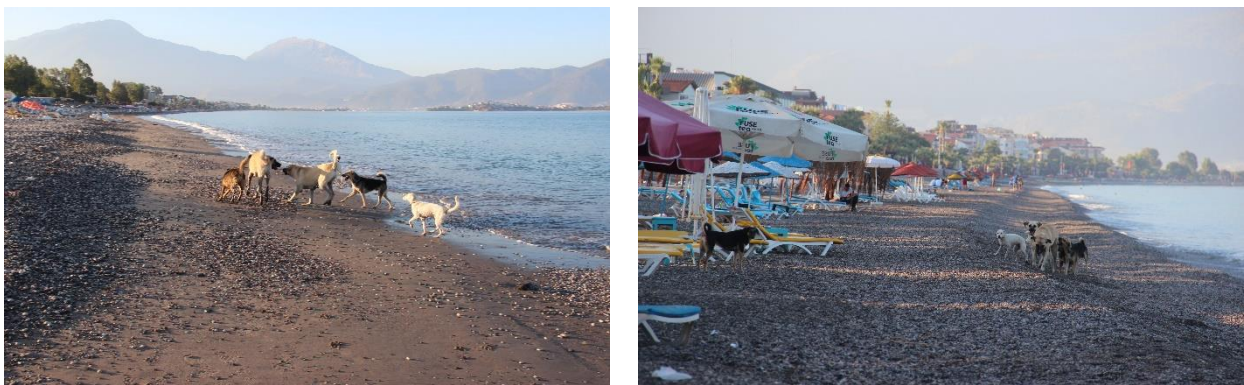
**Fig. 52.** Fethiye SPA, Yanıklar. Simple grids/grills used for caging nests against protection in relatively remote sections.



**Fig. 53.** Fethiye SPA, Yanıklar. Predation of nests indicate not all nests are caged for protection.



**Fig. 54a-b.** Typical nest marking in Yanıklar, Fethiye SPA. Note the nest number and the nesting date on the stone and the driftwood stick. There is only minor sand erosion in the area.



**Fig. 55.** Fethiye SPA, Çalış. Stray dogs encountered on the nesting beach, without displaying predatory behaviour.



**Fig. 56.** Fethiye SPA, Çalış. Crows frequently observed in the area, potential hatchling predators.



**Fig. 57.** Fethiye SPA, Yanıklar. Fishing rods in the evening, note the pier lights in the background.