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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

35th meeting
Strasbourg, 1-4 December 2015

Specific Site - File open

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

- REPORT BY THE NGO -

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

August 2015 Update Report
Loggerhead sea turtle (*Caretta caretta*) conservation monitoring in Fethiye and Patara SPAs, Turkey
MEDASSET - Mediterranean Association to Save the Sea Turtles

UPDATE REPORT BY THE NGO

Marine Turtle Conservation in the Mediterranean

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

7 August 2015

Updated 4 September 2015

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

*for the 35th Standing Committee Meeting of the Contracting Parties to the Convention on the
Conservation of European Wildlife and Natural Habitats (Bern Convention)*

Contents:

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

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 (September 2015) on the conservation status of sea turtle nesting beaches in Patara Specially Protected Area (SPA) in Turkey.

Contents:

- *BACKGROUND*
- *UPDATE*
- *CONCLUSION & RECOMMENDATIONS*
- *DOCUMENTS SUBMITTED TO THE BERN CONVENTION*
- *MAPS & PHOTOS*

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 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 to the Standing Committee on progress made. 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. In our view this 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 the 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 continues and inadequate management of the nesting beach and new beach development was documented in 2014 (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 Housing Cooperatives and that the request of one of the cooperatives to exchange their land for lands outside the protected area was not accepted by the 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 our 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 MEDASSET’s 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.

UPDATE

Nesting beach description (Fig. 1-2): the 12 km beach is split in a north and south beach by the Esen river that meets the sea in the middle of the SPA. At its northern end the beach is bordered by the Özlen river. There are 5 access points. At the North beach there is an entry point at the Özlen river outlet (Özlen beach) and another entry point at the Esen river (Letoon beach). At the South beach there are three entry points: at the mouth of the Esen river (Çayağzı beach), at the middle of the beach on the top of the dune, and at the south end of the beach (Patara main beach)

In 2015, the 27 new summer houses were inhabited and new foundations were laid in the cooperatives’ land inside the 3rd Degree Archaeological area (Fig. 5). A second road connecting the development to Gelemis/Patara village has been asphalted (Fig. 4). Official information is 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 (Fig. 6).

As regards the status of the nesting beaches, management problems remained unsolved in 2015.

- Insufficient personnel:
 - No guards or park rangers to enforce rules, to control vehicle and visitor access and provide information to beach users. The sea turtle monitoring team is burdened with responsibilities that should lie with the SPA management authorities.
 - A team of 2-3 biologists monitor and protect nests along the 12 km beach; this manpower is insufficient to systematically monitor the north beach (across the Esen river), in addition to monitoring of the south beach. Moreover, due to the lack of SPA personnel, the small team at the same time endeavours to raise awareness (Fig. 8a) and encourage compliance with rules (though they have no enforcement power).
- Inadequate beach furniture management: at the Patara main beach sunbeds are not collected at night and can impede nesting (in Patara nesting occurs 10-80 m from the waterline¹). During the on-the-spot appraisal, a plastic ribbon was placed vertically to the sea to delimit the right side of the sunbed area (Fig. 9); before the on-the-spot appraisal, there was no such delimitation and

¹ Yerli, S. & F. Demirayak. 1996. Marine Turtles in Turkey, A survey on nesting site status. WWF & DHKD, Istanbul. 129pp.

T.C. Çevre Ve Şehircilik Bakanlığı Tabiat Varlıklarını Koruma Genel Müdürlüğü. 2012. Patara Özel Çevre Koruma Bölgesi Tür ve Habitat İzleme Projesi Kapsamında Patara Kumsal Alanında Deniz Kaplumbağaları (*Caretta caretta*, *Chelonia mydas*) ve Nil Kaplumbağası (*Trionyx triunguis*) Popülasyonlarının Araştırılması İzlenmesi ve Korunması Projesi Final Rapor Kasım 2012. Türkiye Tabiatını Koruma Derneği

sunbeds occupied a longer area, depending on the number of users. In August, there were approximately 3-5 rows of sunbeds that remained within the cordoned area and expanded towards the waterline (Fig. 9).

- Lack of information and awareness:
 - Lack of signage: the only information sign is located at the Patara main beach entrance (Fig. 7). There are no information signs at the other 4 entry points. On the road between the new summer house village and the entry point via the sand dunes there is one old sign prohibiting “fires and pollution” and at the entry point there is one A4 sign prohibiting bonfires; users do not comply with these signs and there were signs of bonfires at the entry point, as well as litter that spread onto the dunes (Fig. 17).
 - At the Patara main beach, the delimitation of the nesting zone and of the visitor use zone that the public is allowed to use and place private umbrellas, is very unclear (Fig. 9). There is no nesting zone demarcation in the rest of the 12 km beach.
 - To our knowledge there are no information leaflets or similar material available to inform visitors or the local community about the protected area, the nesting beach and the code of conduct.
 - At the Patara main beach, in the absence of guards and rangers, the monitoring team has installed hand-made signs at the Patara main beach bar inviting visitors to meet them twice a week for an hour at the beach bar and contact them at their lodging for information. There is no SPA personnel to operate the derelict information kiosk and there is no other information point in the SPA (Fig. 10). The former SPA information kiosk on the north beach (Letoon beach) is abandoned and derelict (Fig. 11).
 - The local community remains largely unaware of the importance of the SPA and its nesting beaches.
- No guards or barriers to control access of people and vehicles at 4 of the 5 entry points.
 - At night, at all entry points there is no barrier or guard to prevent beach access.
 - There is one barrier and guard during the day at the fee collection point on the road to the Patara archaeological area and the main beach entrance; however, after 7-8 pm there is no guard and the barrier is open (so that locals can reach their properties). Visitors are therefore free to access the beach during the prohibited time and locals suggest this to tourist who wish to avoid the entrance fee.
 - The mid-beach entry point, where the forest meets the top of the sand dune and which is the new summer house village’s closest link to the nesting beach, is not guarded and there is no information sign about the beach use hours and code of conduct. Users park their cars at the access points (safari vehicles could drive through the dune), walk down the dunes to the beach and/or use the entry point and the dunes as a picnic area and a sunset or full moon viewing point (Fig. 17). Though very rare, there are signs that 4x4 and quads have been driven on the sand dunes and down to the beach (Fig. 18, online material), hence a vehicle barrier would be beneficial before the completion of the 300 villas.
 - Due to the lack of barriers, vehicles can drive on the beaches using 3 of the 5 entry points (via the 2 entrances on either side of the Esen river and via Ozden beach). Cars are parked on both sides of the Esen river and there is no barrier to prevent driving on the beach (Fig. 13-14). Quads and 4x4 vehicles are driven on the north beach, entering through its two entry points (via the Esen and Ozden river), posing a threat to nests, and potentially accelerating sand compaction caused by wave action (Fig. 19). Numerous 4x4 vehicles are available for rent at the Ozden beach entry point (Fig. 19).
 - Campers remain on the beach at night at Ozden beach and on both sides of the Esen river in view of the beach.
 - During the on-the-spot night assessment, after 10 pm, no people were present at the mid-beach entry point on top of the dunes and on the Patara main beach; the other 3 entry points were not assessed due to time limitations.
- Beach litter was documented as per every year (Fig. 20). Users sometimes do not discard their litter in the bins provided at the entry points and there is a lack of a litter collection or beach cleanup programme. At Ozden beach, litter is widespread on the shore and dunes. The mid-beach

entry point and adjacent dunes are littered with bottles and packaging; some of the litter was collected for the on-the-spot appraisal, but this was not the case before or after the Bern Convention's visit. The beach sections near the outlet of Eşen river are especially impacted by litter transported by the river which runs through the SPA's agricultural area (greenhouses); in addition to agricultural waste, hospital waste (medicine bottles, testing tubes, etc) was also observed, indicating poor upstream waste management.

- Camping is regular on Ozden beach and both sides of the Eşen River outlet in view of the beach (Fig. 13).
- Stray dogs roam the beaches and could pose a threat, potentially digging up nests (Fig. 8b).
- Bonfires are lit at Ozden beach, at the mid-beach entry point where the forest meets the sand dunes and on both sides of the Eşen River outlet on the beach (Fig. 16-17).
- Fishing nets are used close to the shore during the nesting and hatching season, posing a threat to adult turtles and hatchlings (Fig. 15).
- Horse riding on the beach is advertised, though the route allegedly avoids the beach during the nesting and hatching season, and horses are supposedly ridden further up the dunes.
- Light pollution: during the on-the-spot night assessment of the main Patara beach entry point, one strong light on the south hill above the archaeological site was visible. The rest of the beaches were not assessed at night during the on-the-spot assessment due to time limitations.
- Illegal development: in Çayağzı beach, near the Eşen river outlet, the new beach bar that was established in 2014 was closed in 2015 as it was deemed illegal. Its derelict structures (pre-fabricated building, cabanas, lifeguard tower, carousel) have not been removed from the beach nor has the sand dune been restored (Fig. 12). It is unclear if there are official plans to allow businesses to operate and place infrastructure on this location and on the rest of Patara's protected sea turtle nesting beaches and sand dunes.
- Dune conservation: As reported in 2005-2009, the plantation of Acacia trees in dunes causes erosion. The area is subjected to constant wind action, hence the sand shifts towards the high parts of the dune and creates ridges on the beach. Acacia trees planted in the upper part of the dune forming a barrier to sand movement are exacerbating the erosion – tall species increase sand deposition rather than stabilise the dune system. Palms and rushes planted since 2007 are occupying the back of the beach and as the plantations grow, the sand stops spreading freely and forms small mounds making the beach narrower. While plantations are necessary at some places to protect the archaeological site, they can be disastrous at other places, as they destroy the natural dune system. Moving sand dunes are a very rare, endangered habitat which requires active and well-planned conservation and protection.

CONCLUSION & RECOMMENDATIONS

Once the 300-312 summer house development is completed in the 3rd Degree Archaeological site of the SPA, 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, that the SPA is already inadequately managed and protected, and that Recommendation No. 54 has not been fully implemented.

Recommendations:

- Management plan revision for expected increase in number of visitors and residents due to summer house village construction. Increased human and financial resources should be ensured for the adequate management and monitoring of the SPA and of the nesting beaches.
- Tourist flow control (Rec. No. 54).
- Prevention of human settlement behind beach (Rec. No. 54).
- Enforcement of regulations against illegal building in the SPA (Rec. No. 54).
- Prevention of permanent constructions on sand dunes and beaches.
- Removal of abandoned facilities of illegal bar in Çayağzı beach and site restoration.
- Low-impact day-use of beaches that is appropriate for the sensitive nature of the site.
- Prevention of sand dune destruction. Dune stabilisation, restoration and conservation (Rec. No. 54) using native vegetation and removal of planted non-native species that promote erosion.

- No new roads or entry points.
- Guards at all entry points for rules enforcement (in relation to beach use, bonfires, littering, walking in dunes, etc), access control and manning of information kiosks (Rec. No. 54). Guarding should include the mid-beach entry at the top of the dunes which is the access point for new summer house village.
- Vehicle access prevention on beaches, through guarding and barriers at all entry points & fines for noncompliance.
- Signs at all entry points with information on the importance of the site, its protected status, rules and penalties.
- Awareness raising among local population and tourists (Rec. No. 54).
- Clearer zoning signage of nesting area and of visitor use area.
- The beach furniture zone should not extend into the core nesting zone and should be carefully designed in consultation with sea turtle monitoring experts and be based on longterm monitoring results.
- Sunbed removal at night & fines for noncompliance.
- Camping and fire prevention.
- Beach litter collection (avoiding use of vehicles and machines to clean the beach and dunes)
- Collaboration with agricultural community to tackle waste disposal in rivers.
- Regulation of fishing activities and enforcement of nearshore fishing ban during the nesting and hatching season.
- No seaward-facing lights (Rec. No. 54).
- Marine turtle monitoring on the *entire* beach (north and south) during the nesting & hatching season (Rec. No. 54) with adequate manpower, resources and equipment (e.g. for predation control, nest relocation due to threat of inundation, etc).
- Community-based tourism activities related to turtle monitoring (patrols, hatchling releases, etc) should only be allowed after management problems have been resolved and under strict scientific supervision with precise rules and codes of conduct.
- Recreational activities such as horse riding and 4x4 safaris should be strictly regulated and routes carefully designed, especially with the view of protecting the dune ecosystems. Enforcement of prohibition of horse riding and safaris on nesting beach during May-September.

MEDASSET calls upon the Turkish authorities to:

- Address the concerns raised in MEDASSET's complaint regarding the villa construction project, its scale, the associated impacts, the lack of an EIA and of a carrying capacity study.
- Revise the SPA management plan and implement a comprehensive and updated action plan before May 2016 that will 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. Allocate the necessary financial and human resources for sea turtle monitoring of the entire beach and for the SPA management and rules enforcement.
- Inform about plans to allow beach business to operate on the sand dunes and sea turtle nesting beaches.

We call upon the Bern Convention Standing Committee to:

- Consider whether the construction of 300+ summer houses within Patara SPA is compatible with Recommendations No. 12 (1988), No. 24 (1991), No. 54 (1996) and No. 66 (1998).
- Encourage Turkish authorities to provide further information on the case, as requested above.
- Adopt a new Recommendation in order to reiterate and update Rec. No. 54, with the view of encouraging and assisting Turkish authorities to improve management of the protected area, conserve the site against illegal or unsuitable development, and protect Patara's unique sand dunes and the sea turtle nesting beaches against adverse human impacts.

DOCUMENTS SUBMITTED TO THE BERN CONVENTION

Available online at www.medasset.org or 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.

MAPS & PHOTOS

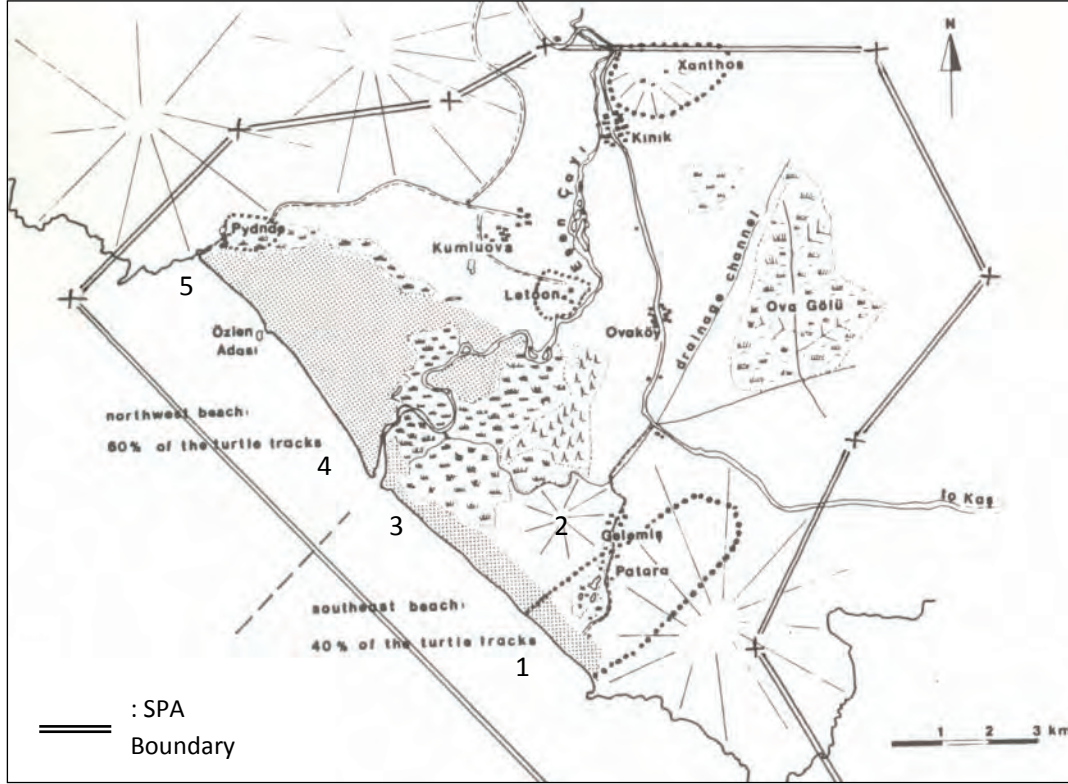


Fig. 1. Patara SPA. Patara main beach is No. 1, entry point via sand dunes is No.2. Çayağzı beach is No. 3 (Esen River outlet at the north edge of the south beach), Letoon beach is No.4 (Esen River outlet at the south end of the north beach) and Özlen beach is No. 5 (next to Özlen river outlet). Map 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 Gelemis village. “b:” is archeological site fee collection point with daytime vehicle barrier. No. 1-5 are entry points: 1 is Patara main beach entry point, snack bar & beach furniture; 2 is entry point via sand dunes, connecting beach with summer house village; 3 is Çayağzı beach entry point & illegal beach bar (est. 2014, closed in 2015); 4 is Letoon beach entry point & abandoned SPA information kiosk; 5 is Özlen beach entry point, bar, camping site, 4x4 rentals (Özlen river outlet). Esen river outlet lies between No.3&4.

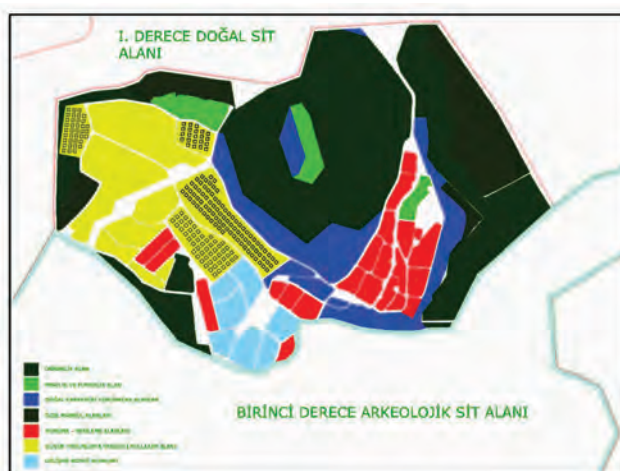


Fig.3. EPASA Management Plan Map of Patara SPA “3rd Degree Archaeological Site” (see blue area in Fig. 2). Construction is allowed in the red and blue areas, which include Gelemis village, and in the yellow area which includes the summer housing cooperative lands.



Fig. 4. Patara SPA 3rd Degree Archaeological Site. June 2015. New second road connecting summer house development with Gelemis village.



Fig. 5a-b. Patara SPA 3rd Degree 3rd Degree Archaeological Site. July 2015. The 27 summer houses in view of the nesting beach were completed and inhabited in 2015.



Fig. 6a-b. Patara SPA 3rd Degree 3rd Degree Archaeological Site. April 2015. New foundations are being laid for a total of 300-312 villas.



Fig. 7. Patara SPA. Patara main beach entrance. 28 July 2015. Yellow sign asks visitors to stay within 20 m from the waterline during the day and leave after 20:00, prohibits litter, fires and pets.



Fig. 8a-b. Patara SPA. Patara main beach. 28 July 2015. Left: The 2-3 members of the monitoring team, in addition to day and night patrols to protect nests on the 12km beach, endeavour to fill the awareness raising gap by inviting visitors through handmade signs to meet them at the beach bar for an hour twice a week or contact them at their lodging in Gelemis village. Right: Stray dogs wonder the beach despite the pet ban that aims to prevent nest excavation by dogs.

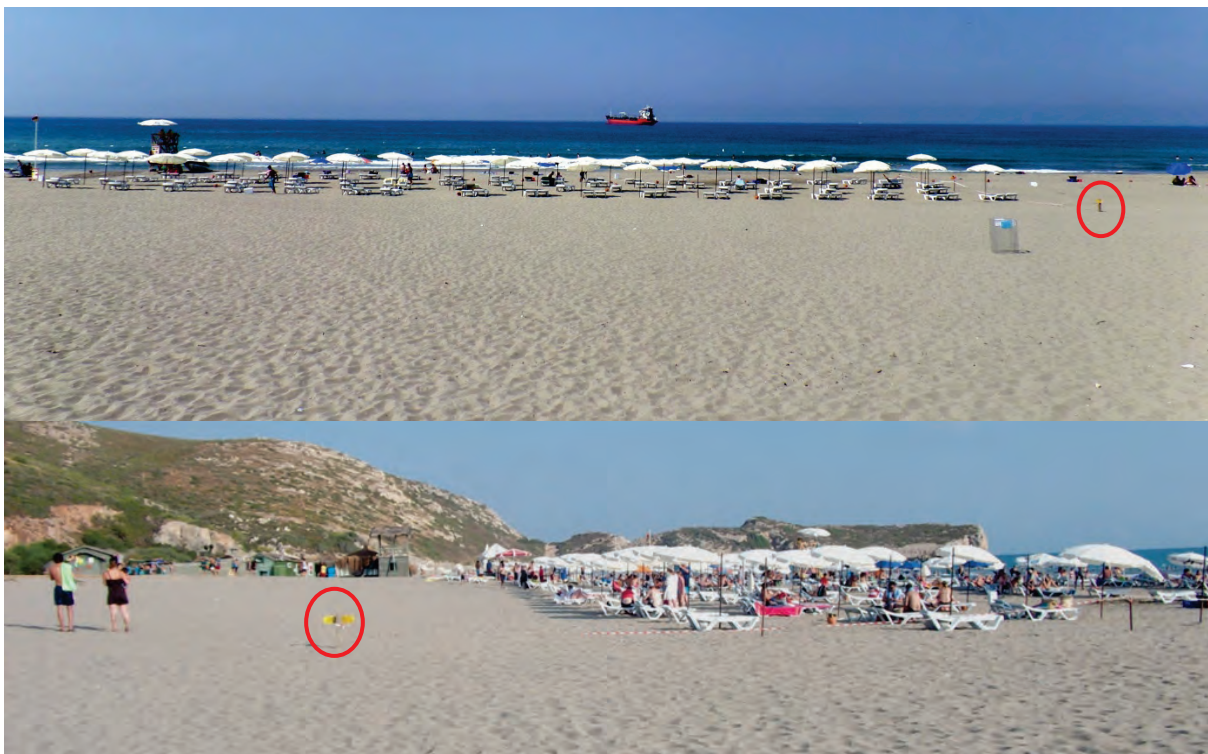


Fig. 9a-b. Patara SPA. Patara main beach. Top: 28 July 2015. Bottom: August 2015. At night these three rows of sunbeds are not removed and impede turtles attempting to nest. The small wooden sign posts (cyrceled in red) that delimit the nesting zone where visitors are not allowed to use their own equipment is not sufficiently clear in this vast beach. With the exception of this beach stretch, there is no zoning and signage in the rest of the 12 km beach.



Fig. 10. Patara SPA. Patara main beach. July 2015. There is no SPA personnel to manage the derelict information kiosk. No information material is available.



Fig. 11. Patara SPA. Letoon beach (north of Esen River outlet). July 2015. There is no SPA personnel to manage the deserted information kiosk.



Fig. 12a-d. Patara SPA. Çayağzı beach entry point next to Esen River. July & August 2015. The snack bar that operated on the beach in 2014, was closed in 2015 due to its illegal status. Most facilities have not been removed and remain on the dunes (top to bottom): barrels in the dunes (which formed the pillars of a detachable pool in front of the bar), platform and large bar hut, several wooden cabanas and a lifeguard tower. More cabanas and a carroussel have also been abandoned on the road behind the dunes.



Fig. 13. Patara SPA. Esen river outlet and Çayağzı beach entry point. 28 July 2015. On both sides of the Esen river, there is vehicle access, camping and bonfires on the river banks in view of the beach.



Fig. 14. Patara SPA. Esen river outlet and Çayağzı beach entry point. August 2015. Vehicle access due to lack of barriers or guards.



Fig. 15. Patara SPA. Çayağzı beach Nets are used for coastal fishing, sometimes too close to the shore during the nesting and hatching season, as there is no personnel to enforce fishing rules.



Fig. 16. Patara SPA. Çayağzı beach entry point. Bonfires are lit on the beach and in the dunes by users and campers.



Fig. 17 a-d. Patara SPA. 1st Degree Archaeological Site. Unguarded entry point to south beach and sand dunes (top, August 2015). The parking area and access point is currently used by locals, tourists and safari tours; users are expected to increase as this area is directly linked to the 300-312 sumemr house village. Bonfires (middle left, 28 July 2015) are lit despite signs prohibiting fires (middle right). The dunes are littered by waste that is left behind by people using the area as a picnic area, sunset and fullmoon viewing spot (bottom, August 2015). There is no information sign on the area's protected status and code of conduct.



Fig 18. Patara SPA. 4x4 and quad tour advertisements state the route stops at the parking area, however, as there is no vehicle barrier or information, though occasional, driving on dunes does seem to occur based on online user's photos and videos.



Fig. 19a-c. Patara SPA. North beach. 28 July 2015. Quads (top) and vehicles drive on the nesting beach due to lack of vehicle access control and no information signs. Bottom left: quad tracks on Ozden beach. Bottom Right: 4x4 rentals outside beach entrance next to Ozden river.



Fig. 20a-d. Patara SPA. The beaches and dunes are littered with garbage that is left behind by users (bottom) or carried ashore by the sea and the Esen river (top).

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 (September 2015) on the conservation status of sea turtle nesting beaches in Fethiye Specially Protected Area (SPA) in Turkey.

Contents:

- *BACKGROUND*
- *SUMMARY & CONCLUSION*
- *DETAILED ASSESSMENT*
- *RECOMMENDATIONS*
- *REFERENCES*
- *MAPS & PHOTOGRAPHS*

BACKGROUND

The loggerhead sea turtle (*Caretta caretta*) nesting beaches in Fethiye (Mugla Province, Turkey) are among the 12 most important nesting beaches in Turkey.² Recently, the northernmost green turtle nest was also recorded here (Patara previously held this record).³ Protection here is not only significant in terms of nesting numbers but also in order to ensure the genetic diversity of the loggerhead population in the Mediterranean.⁴ Fethiye's importance increases because of the relatively higher proportion of male-producing nests.⁵ 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.⁶ Habitat loss and human pressures to the nesting population have constantly increased since 1993-4.⁷ Real estate and tourism development is progressing with no regard for the sea turtle nesting habitat and the protected coastal ecosystem which includes small wetlands and forests. Loss of wetlands due to tourism development has also been documented.⁸ Scientists have suggested conservation measures but these have not been applied.⁹ A UNDP 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.¹⁰

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).

² Türkozan 2000; Margaritoulis *et al.* 2003; Canbolat 2004

³ Fellhofer-Mihcioglu *et al.* 2015

⁴ Yılmaz *et al.* 2008

⁵ Kaska *et al.* 2006

⁶ Ilgaz *et al.* 2007; Katilmis *et al.* 2013. It should be noted that absolute values or short-term trends (e.g. of 1-3 years) of annual nest numbers in the recent years do not reflect the current management or the present human pressures or condition of the site, and any increase in nesting should be treated with caution: changes in nest numbers may be due to natural fluctuations of nesting frequency and of clutches laid by the nesting population; and/or may reflect the positive results of nest monitoring and protection 20 years ago (since 1994), as hatchlings that successfully reached the minimum age of maturity (15-20 years) now return to breed. In addition, nesting shifts among the nesting beaches are also significant as these reveal the deterioration/loss of beach subsections.

⁷ Oruc *et al.* 2003

⁸ Özdemir *et al.* 2011

⁹ See conclusions of papers in references.

¹⁰ Bann C. & E. Başak. 2013. Published by the GEF-funded 2009-13 project "Strengthening the system of Marine & Coastal Protected Areas of Turkey". 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.

Recommendation No. 66 (1998) makes particular reference to Fethiye and requests that Turkish authorities: “- *secure the remaining unbuilt beach plots against development*”. Furthermore, actions are encouraged to: “*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 monitored and reported on the conservation status of sea turtle nesting beaches in Fethiye SPA. In August 2009 MEDASSET submitted a complaint to the Bern Convention about the severe degradation of the sea turtle nesting beaches 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 30th Standing Committee Meeting in 2010 and commitments for improved protection were made by the Turkish authorities.¹¹ In 2011 steps were taken to mitigate some of the tourism-related impacts during the nesting season.¹² In 2012, these management measures were not sustained and further coastal build-up was recorded.¹³ At the 32nd Standing Committee Meeting in 2012, the Delegate of Turkey stated that authorities would monitor the situation more closely in 2013 and that matters were expected to improve. In 2013, the coast was further built-up and habitat destruction was documented, there was no improvement of the protection and management of the nesting beaches, with the exception of beach furniture management in a small part of the nesting beaches and some new signage which, however, remained inadequate.¹⁴ At the 33rd Standing Committee Meeting in 2013 a Case File was opened to address the issue together with the complaint regarding Patara SPA (2012/9) in order 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 continued.¹⁵ The 34th Standing Committee Meeting decided to conduct an on-the-spot appraisal in view of identifying a set of recommended actions for consideration at its next meeting in 2015.

SUMMARY & CONCLUSION

In 2015 there was little improvement in the protection and management of the sea turtle nesting beaches in Fethiye SPA. Habitat destruction and coastal build-up continues. Businesses expand on the sandy sections of the nesting beaches, further reducing the available habitat and increasing disturbances. The threats identified lead to the destruction of nests, unsuccessful nesting attempts, mortality of hatchlings and adult turtles.

Threats identified:

1. No guarding and rules enforcement by authorities. No local SPA management unit.
2. Coastal build-up continues: new resort hotel built behind a previously pristine sea turtle nesting area, installing a new boat pier, making intensive use of the beach and generating additional human pressures. No official decision to cancel shipyard construction.
3. No beach furniture management or sunbed removal at night on 6.5 km of the 8 km nesting beaches. Permanently fixed equipment and volleyball courts on nesting beaches. Businesses are further occupying the nesting beaches.
4. Bushes and trees that have been intentionally planted in previous years on sandy sections of nesting beaches have not been removed and continue to expand and transform the natural profile of the beach.¹⁶

¹¹ T-PVS/Files 2010 23 (Government report); Authority’s letter in Annex 1 of MEDASSET, December 2011

¹² MEDASSET, December 2011

¹³ T-PVS/Files (2012) 42

¹⁴ T-PVS/Files (2013) 9

¹⁵ T-PVS/Files (2014) 16

¹⁶ Planted trees and bushes reduce the available nesting area and their roots obstruct nesting.

5. Lack of signage in the largest part of the nesting beaches. Users are largely unaware of existing regulations and the protected status of the beach. No zoning and no demarcation of nesting zone.
6. Uncontrolled visitor access during day and night. Beach business operation at night with lights and loud music.
7. No vehicle access control. Use of vehicles on nesting beaches.
8. Camping and bonfires on nesting beaches.
9. Severe light pollution.¹⁷
10. Litter on nesting beaches.¹⁸
11. Motorised watersports and fishing activities directly off nesting beaches.
12. Sand extraction.

The earlier start of nest monitoring (in May) is an improvement in comparison to previous years; however, the operation of the new huge resort hotel requires an increase in the monitoring and protection effort, and hence this should imply an increase in the monitoring personnel in season 2016 onwards, in order to ensure nests are protected in this previously pristine beach.

During the on-the-spot appraisal (29-30 July 2015), and a few days after and before the appraisal, though most problems listed above remain unresolved, there were a few improvements: the amount of beach furniture in the nesting zone was reduced; carpets and some (though not all) fixed structures were removed; the nesting zone was kept clear in two of the four beaches; ditches were dug to control vehicle access on one of the four beaches; a small number of lights causing hatchling disorientation were turned off. New signs were installed in one of the four beaches. It is regrettable that these measures were not applied at the beginning of the nesting season in May 2015. Furthermore, just a few days after the appraisal, beach furniture management measures were reversed and the removed sunbeds, carpets and equipment were reintroduced onto the nesting beaches; the only exception remains the beach furniture management system along 1.5 km of the 8 km beach (in Calis Section A).

In conclusion, since the complaint was submitted in 2009 and a case file was opened in 2013, it is clear that there is inadequate management of the protected area and conservation measures are not being satisfactorily applied in Fethiye SPA in order to sufficiently protect sea turtles and their habitats. In fact the last remaining pristine areas are being destroyed each year, in disregard of Rec. No. 66. In addition, the shipyard construction project on one of the nesting beaches has not been officially cancelled.

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

Given that habitat damage has already occurred within the protected area with obvious impacts on the endangered species, in view of the fact that there is little or no progress despite previous commitments by the authorities and that Recommendation No. 66 has not been observed or implemented so far in Fethiye SPA, the issue merits the urgent attention of the Standing Committee.

The next section of the report presents a detailed account of the status of the nesting beaches, the developments and threats recorded during the 2015 nesting season, as well as a list of recommendations.

DETAILED ASSESSMENT OF 2015 SEA TURTLE CONSERVATION IN FETHIYE

For a description of the Fethiye SPA nesting beaches see MEDASSET, September 2009.

Information to assess and document the conservation status of nesting beaches in Fethiye SPA was collected by MEDASSET volunteers and also provided by concerned tourists in late April, June, early July and mid-August 2015. MEDASSET participated in the Bern Convention on-the-spot appraisal of the site on 29-30 July 2015.

¹⁷ Disorients hatchlings and disturbs nesting females.

¹⁸ Attracts predators, traps hatchlings on their way to the sea and can be consumed at sea by nesting adult turtles.

1. Monitoring and conservation

Monitoring and conservation of sea turtle nests were carried out by Hacettepe University and the Turkish Association for the Conservation of Nature (TTKD) in summer 2015.¹⁹ To our knowledge the monitoring and protection activities started in mid-May, which is an improvement in comparison to the early-June start in most previous years. The impacts of the new huge resort on Karatas beach (light pollution, human presence, etc) means that more monitoring manpower is necessary in this area which did not require constant monitoring in the past. For example, due to light pollution, biologists need to be in situ to release hatchlings from caged nests and ensure they reach the sea; this requires a member of the team to make several visits per day/night from a distant field base. Hence, the Ministry-supported project should be revised in terms of human and financial resources, and/or the new hotel could support monitoring costs in this section (e.g. finance a member of the project team, provide accommodation or support travel costs, etc). Though the hotel provides some nest cages and nest signs, the cages are inappropriate for light pollution management.²⁰

2. Beach furniture and permanent structures

In general, the situation was very distinct during May-July, in comparison to a few days prior and during the on-the-spot appraisal on 29-30 July. Just before the on-the-spot assessment the amount of beach furniture decreased and the management of the furniture and of the nesting zone improved. However, in August, these improvements were reversed in Çalış Section B and Akgöl.

Çalış nesting beach (see Fig. 1 for map):

- In Section A (nesting beach lined by promenade - see Fig. 1)
 - Çalış Turizm ve Tanıtma Derneği (Çalış Tourism Promotion Association)²¹ was responsible for the implementation of beach furniture management measures along Section A of Çalış beach, as per 2014.
 - From the start of the nesting season there were only two rows of beach furniture which were appropriately spaced (Fig. 2). This is an improvement in comparison to previous years, when an additional third row of poorly spaced beach furniture was placed inside the nesting zone in some areas of Section A.
 - In previous years, sunbeds were turned on their sides every night. In 2015, the pair of sunbeds of every umbrella were stacked together and pulled away from the waterline. They were not, however, pulled all the way back to the promenade wall.
 - Beach users continue to place their own umbrellas, beach furniture and, in some cases, tents inside the zone where umbrellas and sunbeds are prohibited.
 - Showers and cabins remain on the edge of nesting beach since 2012 and shower water was not channelled into the sea and instead leaks directly onto the nesting beach (Fig. 2).
- In Section B (nesting beach section not lined by promenade - see Fig. 1) furniture remains unmanaged (Fig. 3). Businesses place 3 - 5 rows of beach furniture, wooden pathways and carpets on the nesting beach. It seems that the SPA authorities do not regulate, restrict, supervise or manage the location and density of the furniture and fixed equipment which occupies the nesting zone. In some sections, before the on-the-spot assessment, the sunbeds were reduced to 2 rows and at night were pulled back towards the upper part of the beach; unfortunately, in this position they directly cover the thin strip of sandy beach that is suitable for nesting. However, shortly after the on-the-spot appraisal, with the exception of one business, all other business reintroduced beach furniture inside the nesting zone and did not stack or remove sunbeds and night. In addition:

¹⁹ Monitoring was carried out by Pamukkale University in 2011-2013 and Hacettepe University in 2014.

²⁰ Mesh size of cages provided is too large so hatchlings pass through and crawl towards the lights. Hence a second cage with a smaller mesh size is inserted in the evening, is regularly checked during the night for release of emerging hatchlings and is raised in the morning, for late-emerging hatchlings to be able to exit.

²¹ An association of hotels and restaurants along Çalış Beach Section A. In 2011-2013 FETAB (Fethiye Turizm Altyapı Birliği) was responsible for beach furniture management.

- On the beach in front of “Sunset Beach Apartments”, 2 wooden pavilions, a lengthy permanent sunshade and a children’s playground have been installed, in addition to existing beach furniture.
- A vertical walkway exists between “Sunset Beach Apartments” and “Jiva Resort”.
- “Calis Spor Cafe”, established in 2013, has further occupied the beach: tables and chairs, sunbeds and umbrellas, 4 wooden pavilions, a large stone patio and a large wooden structure with a roof terrace are placed directly on the sandy beach. This structure is equipped with numerous lights that remain lit at night. On the beach area next to the Cafe, there is a volleyball court and fixed tents which campers use at night. (Fig. 10-12)
- “Surf Cafe” continues as per every year to place green carpets on the nesting beach, 2 - 3 rows of sunbeds, umbrellas and bean bags. There is barely any furniture-free sandy area left for sea turtles to nest. Shortly before the on-the-spot appraisal the carpeting was removed from the beach and at night the furniture was stacked, for the first time since this business was established. During August, the carpets and bean bags were reintroduced and remained on the beach at night together with 2-3 lines of sunbeds. (Fig. 13-14)
- “Bakrac” open-air beach bar and disco established in 2013 continues its operation as per previous years. In addition to sunbeds, several wooden pavilions are now placed onto the beach at the edge of the disco, which was built on former sandy nesting beach, and has installed a new stand-alone wooden pavilion in the middle of the nesting beach. Two nests were laid in this section in August. Strong floodlights are still directed onto the beach at night. (Fig. 17-19)
- Businesses “Zentara” and “Koca Calis” beach bar occupy the beach with 3-5 rows for furniture and “Zentara” placed a new volleyball court on the beach next to the furniture rows. (Fig. 15-16)

Karatas nesting beach (see Fig. 1 for location²²): Behind this previously pristine nesting beach, a huge new hotel (Barut TUI Sensatori Resort) was constructed in 2014 and started operating in May 2015 (Fig. 22). The entire beach section between the waterline and the hotel has been occupied (Fig. 22-26): a children’s playground, tennis court, snack bar and toilets, 3 permanently installed large tents for beach sports equipment; vertical and horizontal wooden walkways; a row of numerous fixed wooden pavilions; and about 200-300 sunbeds and umbrellas (5-8 rows depending on beach width; 258 sunbeds, 128 umbrellas in early July; 210 sunbeds, 104 umbrellas in August). They removed 2 row and still situation same. 10 pavillion is closer than 30 meter to sea. It’s also illegal for our Coast Law’s. Several pavilions and a walkway in front of these pavilions are inside the nesting zone. In addition, the walkways and sunbeds are washed every day; the water runoff can negatively affect nests by altering sand temperature, moisture and compactness (Fig. 24). The sand around the sunbeds and walkways is flattened and smoothed by personnel on a daily basis. During the on-the-spot appraisal, the sand area in front of the first line of sunbeds was flatter than the rest of the sand towards the waterline, and beyond this flattened section, nests were laid in a clear line in parallel to the flattened section: it is unclear if there were sunbeds placed on the flattened area that had been removed or drawn further back, or if this is related to the smoothening and flattening of the sand by the hotel personnel. In any case, the first row of sunbeds, the first horizontal walkway behind them, and the second row of sunbeds, are inside the nesting zone.

Lastly, a large tent-like structure over a new childrens’ playground has been installed on the beach next to the “Karatas Buffet” (Fig. 20).

In the adjoining sandy beach (the so called “small beach”) there is no zoning and beach users can place their equipment as they please; there have been incidents of nest destruction or cage removal (Fig. 21).

Yaniklar nesting beach (see Fig. 1 for location): Hotel Majesty Club Lykia Botanika and Majesty Club Tuana placed volleyball courts on the nesting beach, 2-3 beach furniture rows with permanent sunshades at about 18 m from waterline, inside the nesting zone, and as per every year do not remove

²² In previous reports, Karatas nesting beach was included under Yaniklar nesting beach and was not referred to separately, as there were no beachside businesses and human impacts were minimal prior to 2015.

beach furniture at night (Fig. 27). A camping site's wooden pavilion and permanently fixed large sunshade (about 13 m long) that were installed in 2013 are still inside the nesting zone. In an adjacent property that has not yet completely transformed the upper sandy part of the beach, nests were observed among planted trees, sunbeds and a volleyball court (Fig. 28).

Akgöl nesting beach (see Fig. 1 for map): There is one business operating on the nesting beach since 2013 (Fig. 29); previously, human activity was relatively low and the beach was considered pristine. There is no zoning or management on this beach. In front of a wooden snack bar located directly on the beach, 5 of the business' 9 wooden pavilions remain inside the nesting zone, together with scattered sunbeds and umbrellas (Fig. 30). Next to the bar, there is a volleyball court and large tents (Fig. 30). The business moved the remaining 4 of the 9 pavilions onto the north end of the beach, which is the nesting hotspot in Akgöl (Fig. 31). In this area, the business placed a new small hut to sell snacks and offers dozens of sunbeds and non-fixed umbrellas (approx. 11) that do not have permanent positions and are inserted into the sand by visitors as they see fit (Fig. 31). A new shower was installed next to the riverbed that passes through the nesting hotspot. A generator was installed onto the beach and electric wire connects it with several loudspeakers installed on the cliff surrounding the beach; very loud music was heard in July during the night and till the early morning (Fig. 35). A large black canvas supported by 6 large wood beams was also erected to provide shade to 3 new large wooden picnic tables and a white hut was installed at a short distance away at the back of the beach (Fig. 34). All these items were removed shortly before the on-the-spot appraisal, using heavy machinery (a caterpillar tracked excavator) that drove in between the nests and considerably compressed the sand (Fig. 33). Importantly, these structures were not permanently removed but placed in the weedy area behind the beach. All equipment was reinstalled onto the nesting hotspot in August, shortly after the on the spot appraisal, presumably with the same method they were removed in July (Fig. 32).

3. Signage

In Çaliş nesting beach in Section A, signs have been erected at most of the beach entrances by Çaliş Turizm ve Tanıtma Derneği, many of which were installed shortly before the on-the-spot appraisal. A sea turtle information booth was operated during the evening on the promenade. In Çaliş Section B, there is one official information sign and one sign by Çaliş Turizm ve Tanıtma Derneği at the beginning of the beach and at a very small distance from each other, in the same inappropriate location as the sign erected in 2011 (which disappeared in 2012). In the same area there is also a sign prohibiting parking on the beach and a sign prohibiting littering. Further along the beach, Jiva Resort installed two small signs in three languages in front of the sunbeds to inform guests that no sunbeds are to be moved beyond that point. A mobile sign was installed, prior to the on-the-spot appraisal, on the beach next to the "Calis Spor Cafe", welcoming visitors to the nesting area and thanking them their "caution". There are no other signs beyond that point.

In Karatas nesting beach, there is no information sign; the new hotel operators provided several nest cages and these were equipped with a small sign. Only one of the panels on the sign next to "Karatas Buffet" remains, stating that this is a nesting beach (Fig. 20). There is no sign in the adjoining sandy beach (the so called "small beach") where there are a few nests per season that are often destroyed.

In Yanıklar nesting beach, the two official signs are in poor condition (one between "Yonca Lodge" and "Onur Camp" and one in front of hotel Lykia Botanika Sun & Fun Club). Although there are more than six possible entry points, no new signs have been erected.

In Akgöl nesting beach, there is no official sign in the nesting hotspot at the end of the beach and the sign at the beginning of the beach, next to the snack bar, has not been reinstalled (Fig. 30). There is one official sign poorly positioned in the middle of the beach away from any entry point, which invites visitors to only sunbathe in front of the furniture row near the sea, although there has never been such furniture management or zoning on this beach.

Lastly, there is no official signage delimitating the nesting zone in any of the beaches; in Akgöl, a plastic ribbon with an A4 sign in 4 languages was placed vertically to the sea by the monitoring

team, in an attempt to signal the start of the nesting hotspot. This had no apparent effect due to the complete lack of any management or control on this beach.

4. Beach access

People can access and remain on all of the nesting beaches at night, to camp, for night swims, bonfires and picnics, as there are no barriers or guards to enforce the 8pm-8am ban (Fig. 4-6, 10, 12, 19, 30). Beachside bars and hotels operate at night, night parties with loud music and lights were observed; there does not seem to be any rule regarding their night operation, especially for those that operate directly on the beach (e.g. in Calis Section B, Yaniklar and Agkol). In Calis Section A, Çalış Turizm ve Tanıtma Derneği said an effort is made by the employees who ask people to leave the beach at night. During the on-the-spot appraisal, human presence was documented on all beaches at night. This was also the case at Karatas beach (incl. the so-called “small beach”). In addition, there are reports that clients of the new resort in Karatas are allowed to use the beach prior to 8 am during nest hatching time²³ and hence clients and hotel staff (who have not received training; security manager pers. comm. during on-the-spot appraisal) interact with the hatching process, sometimes without supervision as there is not enough project personnel to monitor hatching nests on a nightly/daily basis.

Vehicles were observed on all beaches, due to the lack of barriers or guards (Fig. 6, 36-37). Bulldozer ruts were observed in Yaniklar nesting beach. In Akgöl, in addition to the use of heavy machinery to remove equipment from the end of the beach (see section 1), heavy machinery was used in front of the snack bar located at the beginning of the beach in order to shift sand and pebbles. Just before the on-the-spot appraisal, ditches were dug between the road and Section B of Calis beach in order to prevent vehicle access; this technique has been used in the past and proved to be unsuitable as uncollected waste accumulated inside the ditch. In August, on Calis Section B, next to Bakrac disco, hatchling tracks running parallel to the sea were observed inside bulldozer tracks.

5. Light pollution

Light pollution, which leads to hatchling disorientation (Fig. 7), is severe on all beaches and there were no apparent new efforts to mitigate the problem. Most, but not all, public lights at Çalış Section A are screened; however there has been no measure to mitigate the lights from the numerous businesses that line the beach. None of the public lights in the other beaches are screened. In Calis Section B, beach businesses operate at night and do not turn off their lights (Fig. 19). In addition, in 2015 new light pollution sources were documented:

- Calis Spor Café in Calis Section B has installed numerous lights in order to operate at night and also offers lights to tents permanently fixed next to the cafe (Fig. 12).
- At Akgöl, the business operating the two snack bars at the beginning and at the end of the nesting beach has installed lights inside the wooden pavilions, the snack bar, and in between the tents that it offers next to the bar (Fig. 30).
- The Karatas nesting beach is affected by the new hotel’s seaward lights and therefore hatchlings are disorientated, unless the monitoring team is on site to ensure they reach the sea. Though turned off on 29 July 2015 during the on-the-spot appraisal, two security floodlights shine onto the beach and the new wooden pavilions on the beach are equipped with colourful light bulbs, which not only create light pollution but also encourage night use of the beach (Fig. 25).

6. Litter & pollution

Litter was observed on all nesting beaches (Fig. 38). Users do not seem to collect their litter. This is especially severe in Calis, Yaniklar and Karatas (incl. the so called “small beach”) nesting beach areas that are not occupied by sunbeds and that are used by locals as a picnic spot during the day and

²³ Tripadvisor.com Reviews of Barut Fethiye Sensatori: 25 August 2015: “If you were lucky, you might get to see a baby turtle hatching in the morning.” 18 August 2015: “slip down to the beach for sunrise at 6.15 [...] and if you are truly privileged as we were - watch the last few baby turtles hatch from the nests on the beach and struggle down to the sea under the watchful eyes of the Sea Turtle Rescue Project Team.”

night. In Calis Section A, a series of waste bins was partially inserted into the sand along the mid section of the beach between the two rows of sunbeds.

Karatas beach, since the opening of the new resort, is intensively sprayed with insecticides in the early mornings (Fig. 23).

In July, raw sewage was observed in abundance in the sea; officials should urgently report the results (source, cause, etc) of investigations and the action taken to manage and penalise this illegal sewage release. Local experts confirmed the sewage was not of turtle origin (Dr. Y. Kaska pers. comm.), nonetheless, clients of the new resort in Karatas were told it was turtle faeces²⁴ and a hotel in Yaniklar installed a small sign with the same statement; the sign was removed prior to the on-the-spot appraisal.

7. Buildings and structures

In disregard of Rec. No. 66, unbuilt beach zones continue to be developed and sandy nesting zones reduced. In Calis beach the occupation and transformation of the sandy area continues (Fig. 8) and, as described above, businesses have further extended onto the beach (e.g. Spor Cafe). In Karatas nesting beach, directly behind the previously pristine nesting beach, a new huge resort has been constructed, occupying the entire coastal forest and beach section in front of its facilities, placing a long wind fence perpendicular to the waterline (at the south end of its beach infrastructure) and a large new pier to facilitated motorised water sports and boat 'taxis' (Fig. 22). See points 1-9 for impacts and threats from this new development. In addition, there are local reports of plans for additional beachside hotel complexes next to this new resort, which would lead to a further increase of human pressures on the nesting beach and the complete transformation of the last remaining untouched dune landscape in the SPA.

8. Plantations and sand extraction

An excavated hole was documented along Yaniklar beach, probably associated with sand removal (Fig. 39). Small amounts of sand seem to be extracted every year from this area; given the small stretch of sandy zone in comparison to the pebbly zone, every effort should be made to prevent sand extraction. A bulldozer and a truck were observed loading sand and gravel at the end of Calis beach Section B (Fig. 39).

In late April, just before nesting starts, major mechanical works to restructure the beaches were documented (Fig. 40), presumably these aim to prepare the beach for tourists, protect business facilities (that are installed on what used to be the beaches' sandy area) and facilitate the installation of wooden platforms, sunbeds, volleyball courts, etc. on the beach in front of the business facilities.

Acacia trees and bushes planted in the sand on Section B of Çalış nesting beach since 2001 have not been removed; hence the sandy nesting zone is slowly being transformed into a vegetated area (Fig. 8). In between Calis Spor Cafe and Sunset Beach Apartments, fresh rows of trees were observed, probably planted in order to also transform this last beach of sandy zone into a shaded and treed area for another bar or business to be installed (Fig. 9). In Karatas, the new resort planted palm trees and other plants directly on the beach. In addition to the transformation of the natural profile of the beach and hence of land uses, the shade of planted trees affects nest temperature and the dense root network affects the nesting zone in all directions, in an area far beyond the trees themselves

9. Motorised water sports and fishing

Water sport activities and fishing activities were documented close to the shore of Yaniklar and Akgöl nesting beach (Fig. 42-43). In Karatas beach, maritime traffic increased this year as the new resort provides several new motorised water-sport boats launching from its new pier. Based on

²⁴ Tripadvisor.com Reviews of Barut Fethiye Sensatori: 8 July 2015: "There was raw sewage floating around very close to the shore. The Tompsons reps insisted that it was produced by the turtles that frequent the beach but speaking to a local resident they seemed to think that it was actually human waste escaping from somewhere." 7 July 2015: "We also saw lots of pooh! Huge lumps floating by. Apparently it's turtle pooh" 6 July 2015: "whilst in the sea I saw a large poo floating by (this I was told was turtle poo.."

information provided during the one-the-spot assessment stakeholder meeting, to that date over 12 dead sea turtles were documented in 2015. Lastly, press articles reported a turtle that was intentionally drowned with a pavement brick tied to its neck (Fig. 41).

10. Shipyard/Drydock

No official news has been received on the final decision regarding the government plan to construct a shipyard on Akgöl nesting beach, where approximately a fifth of all nests in Fethiye are recorded. As described in MEDASSET's complaint and reports, such a development will permanently and irrevocably one of the last pristine sites of the SPA²⁵. The local community has strongly disagreed with the project that is incompatible with the area's protected status and is in complete contradiction with integrated coastal management and marine spatial planning practices, conservation policies, laws and International Conventions.

RECOMMENDATIONS

- A **SPA management plan** that will cover both the land and marine areas should be formulated that will include a clear description of permitted land uses and activities.
- **Authorities should enforce rules and ensure necessary resources for SPA management.**
- **Unbuilt beach areas should be secured against development.** No additional hotels or complexes that occupy nesting beach areas should be authorized. No new boat piers should be allowed on the nesting beaches.
- **No shipyard, drydock or marina should be constructed on the nesting beaches.**
- **Sandy nesting areas that have been occupied need to be reclaimed and restored:** beachside restaurants and similar establishments that have expanded onto sandy parts of the nesting beach should be required to remove their infrastructure. The first 1-2 rows of acacia trees and other planted trees and bushes that have been planted in the sandy area of the nesting beach should be removed together with their roots. Damaged sand dunes and naturally vegetated areas (buffer zones) should be restored to their natural state.
- **Guarding** needs to be reinforced and increased to enable correct implementation of management and conservation measures (control of beach access, correct beach zone use by visitors, recording and acting upon violations, etc). Guarding should commence at the start of the nesting season.
- All **sunbeds** should be removed at night, or rearranged in an upright position and secured or hung on the umbrellas, preferably locked. The number of sunbeds and umbrellas should not increase. In all cases, sunbeds should not be placed in the sandy sections of the beaches that serve as prime nesting areas. Multiple rows of dense sunbeds and umbrellas need to be reduced and rearranged with sufficient space in between, to permit nesting turtles to access the beach and hatchlings to return to the sea unhindered.
- **Fixed or semi-permanent structures** should not be allowed on the nesting beach. This includes small huts, pavilions, cabanas, cemented or stone patios and playgrounds. **Carpeting** should be removed from the nesting beach. **Walkways** (vertical or parallel to the sea) placed inside the nesting zone should not be allowed.
- Water from **beach showers** should be channelled to not directly run off onto the nesting beach; preferably, beach showers should be relocated away from the beach. Beach furniture and walkways should not be washed on the nesting beaches.
- **Picnic** areas (Calis, Yaniklar) should be officially designated away from the nesting beaches.
- Regulations should be effectively **communicated to stakeholders and business holders.**
- **Information sign** location should be corrected and additional signs should be installed at the start of the nesting season at all major entry points to the beaches.

²⁵ MEDASSET complaint 2009; T-PVS (2010) 08 E; MEDASSET Update Reports April & December 2011.

- **The nesting zone that should not to be used by visitors should be evident and marked** via permanent cordoning, signage or other effective means suitable for each beach. Especially the nesting hotspot at the end of Agkol beach should be zoned and guarded; if there is no guarding this small sandy beach section should be completely cordoned off and business operation prohibited; beach use can be allowed in other parts of the beach that mainly consist of stones.
- **Vehicle and visitor access** problems need to be tackled effectively. Fencing that cannot be removed should be installed on all beaches in order to prevent vehicle access and be complemented by effective guarding, signage at the points of entry, together with education of residents, business owners and visitors. The 8pm-8am should be enforced and bars located on the beach should not operate at night.
- **Bonfires, night parties, fireworks and camping should not be allowed on the nesting beaches.**
- **Parking space:** appropriate areas that would not involve the flattening of dunes and removal of natural beach vegetation should be chosen. These parking areas should be shielded from the beach, e.g. by planting appropriate natural vegetation (species with roots that do not expand into the beach).
- **Heavy machinery** (bulldozers, earth-movers, tractors, etc) should not be permitted on the sandy parts of nesting beaches before or during the nesting and hatching season.
- The **sand extraction** prohibition should be enforced via guarding and penalties applied in case of noncompliance.
- A code of conduct to regulate fishing and motorised water sport **activities in the marine area** along the nesting beaches should be adopted and communicated to the local businesses and community. Speed restrictions and zoning should be applied to avoid injury of sea turtles during the day and night. The marine areas should be patrolled and penalties applied.
- No **lights** should be placed directly on the beach or on any fixed beach equipment, e.g. cabanas that are placed outside the nesting zone. All public and business lights shining onto the beach should be reduced at night hours during the nesting and hatching season, e.g. by: screening lights with appropriate vegetation/hedges or other light barriers; installing light shades; reducing wattage; using lights that can be dimmed; lowering lamps or lamp posts; using motion sensors to turn lights on briefly only when needed (e.g. for security reasons); painting the beach-oriented part of lamps with dark colours; replacing elevated lamps with embedded lowlight ground tube lighting. This can be done inexpensively and is feasible along the entire Fethiye coastline. Light show equipment should be prohibited.
- **Litter & pollution:** a coordinated effort can be pursued so that beach clean-ups combined with awareness raising among locals can be conducted at the start of the nesting season and at the end of hatching season. Rubbish collection should be done manually and not with the use of heavy machinery (e.g. bulldozers). Daily litter collection could be combined with beach furniture collection/re-arrangement at the end of the day. Illegal sewage discharge into the sea should be closely monitored; the source of the June-July 2015 sewage discharge incident should be investigated, polluters should be fined and official information made publicly available.
- **Scientific monitoring and nest protection** should continue to commence at the start of the nesting season in May to ensure protection of all nests, as the tourist season kicks off in April. The new development of Karatas beach should be matched by an increase of monitoring manpower. Long-term (multi-annual) monitoring projects are preferable to the current annual auctioning of the project and subsequent change of monitoring teams, as this shall ensure better scientific and conservation results and improve collaboration with the local community.

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MAPS & PHOTOGRAPHS

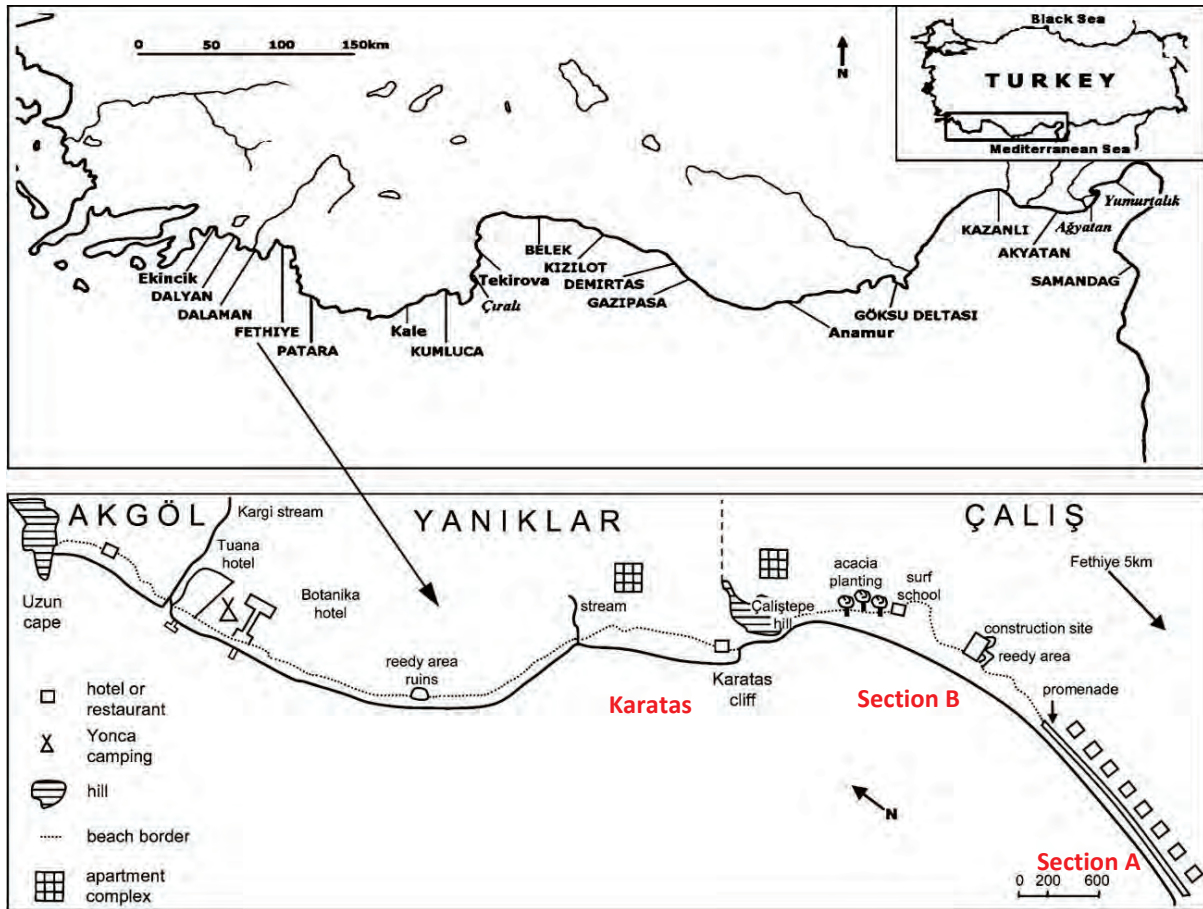


Fig. 1. TOP: Fethiye among important nesting beaches. BOTTOM: Fethiye nesting beach subsections; developments since 2006-7 are not shown here. *Source: Ilgaz et al., 2007.*



Fig. 2. Fethiye, SPA. Çalış. Section A. July 2015. There is effective beach management in this area, with two rows of sunbeds that are removed at night. Light pollution and night access remain a problem here. Shower water (white circle) that currently leaks onto the beach should be channelled to the sea.



Fig. 3a-d. Fethiye, SPA. Çalış. Section B. July-August 2015. In this part of Section B, the middle row of furniture inside the nesting zone (photo a, mid July) was removed a few days before the on-the-spot appraisal (photo b, note nest in white circle) and was reinstated in August (photo c), with the exception of one business (photo d). Removal of the first rows of sunbeds at night by one of the businesses (photo a) was an improvement.



Fig. 4. Fethiye, SPA. Çalış. Section B. July 2015 on-the-spot appraisal. Public lights shine on caged nest and further encourage night access on the beach (note human presence in photo)



Fig. 5. Fethiye, SPA. Çalış. Section B. July-August 2015. There is no access control or guarding so the existing 8pm-8am access prohibition is not implemented. In addition, business lights are not turned off. The area is severely littered as users do not collect their litter.



Fig. 6. Fethiye, SPA. Çalış. Section B. August 2015. Light pollution, vehicles and people on nesting beach at night



Fig. 7. Fethiye, SPA. Çalış. Section B. August 2015. Dead disorientated hatchling on coastal road.



Fig. 8. Fethiye, SPA. Çalış. Section B. 2003 – 2013 satellite imagery comparison shows the continual coastal build-up, planting of sandy area and occupation of nesting beach, in conflict with Rec. No. 66. Note how the sandy area (nesting zone) has been occupied and in most parts only the pebbly zone near the waterline is development-free. Several developments occurred after the complaint submission in 2009 (e.g. wetland destruction by new Jiva Resort, new beach bars and new coastal road).



Fig. 9. Fethiye, SPA. Çalış. Section B. April 2015. More trees planted in sandy area. Calis Spor Cafe in the background.



Fig. 10. Fethiye SPA. Çalış Section B. July 2015 on-the-spot appraisal. Camping on nesting beach. Spor Cafe in background.



Fig. 11a-b. Fethiye SPA. Çalış Section B. August 2015. Spor Cafe (est. 2013) fully expanded on nesting beach, with volleyball court, paved patio, wooden platforms, permanent sunshaded and rows of umbrellas and sunbeds that are not removed at night.



Fig. 12. Fethiye, SPA. Çalış. Section B. July 2015 on-the-spot appraisal. New strong lights on nesting beach by Spor Cafe (est. 2013). Several more beach bars operate at night and do not turn lights

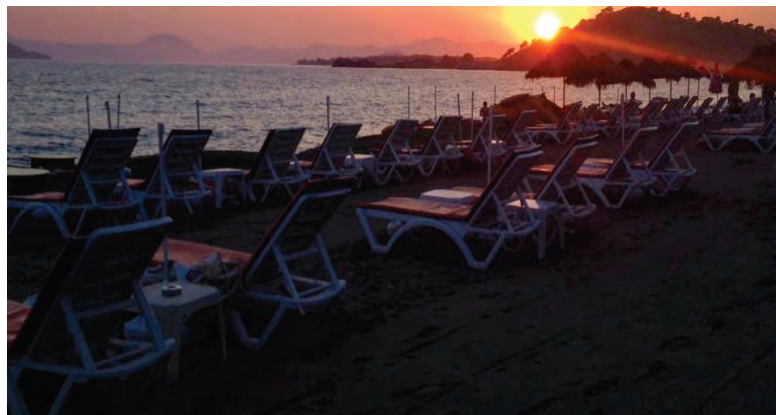


Fig.13. Fethiye, SPA. Çalış. Section B. Mid July 2015. Beach furniture is not collected at night.



Fig.14a-b. Fethiye, SPA. Çalış. Section B. Mid July (left) and August (right) 2015. Dense rows of sunbeds and carpets on nesting beach; there is no furniture-free nesting zone here. Carpets and beanbags were removed only on the day of the on-the-spot assessment.



Fig. 15. Fethiye, SPA. Çalış. Section B. July 2015 on-the-spot assessment. Dense rows of sunbeds on nesting beach.



Fig. 16. Fethiye, SPA. Çalış. Section B. August 2015 New volleyball court on nesting beach.



Fig. 17a-b. Fethiye, SPA. Çalış. Section B. August 2015. Right: Shaded platforms with tables, chairs and sunbeds on nesting beach. Left: caged nest at the edge of the disco.



Fig. 18. Fethiye, SPA. Çalış. Section B. July 2015 on-the-spot appraisal. Disco places pavillions and dense rows of sunbeds on nesting zone. Loud music and lights (white box) were recorded at night.



Fig. 19. Fethiye, SPA. Çalış. Section B. August 2015. Disco operation at night using strong lights. Note human presence and sunbeds on nesting beach.



Fig. 20a-b. Fethiye, SPA. Karatas. July 2015. LEFT: The remains of the only information sign in the entire nesting beach. RIGHT: Shaded playground on nesting beach.



Fig. 21a-b. Fethiye, SPA. Karatas “small beach”. Top: July 2015 on-the-spot assessment. Bottom: August 2015. Litter, bonfires, vehicle access, lack of any signage or zoning, and human presence at night disturb nesting and the few nests per season on this beach, which is not yet occupied by a business, are often destroyed.



Fig. 22. Fethiye, SPA. Karatas. New mega resort opened in May 2015 and occupies nesting beach.



Fig. 23. July 2015. Fethiye, SPA. Karatas. New resort spraying insecticide in early morning.



Fig. 24. Fethiye, SPA. Karatas. August 2015. New resort has installed large permanent watersports tents on beach. Note that sand is flattened and personnel is washing sunbeds on nesting beach.



Fig. 25. Fethiye, SPA. Karatas. New resort creates light pollution in previously pristine beach: cabanas illuminated at night (top left, July 2015); two security lights shine on nesting beach (top right and bottom photo, August 2015), as well as a hotel main building lights (bottom, Aug. 2015).



Fig. 26a-e. Fethiye, SPA. Karatas. New resort places cabanas and walkways inside nesting zone (photos a-c July 2015; note nest right next to walkway). Two sunbeds rows and a walkway in between them are within the nesting zone (photo e, August 2015). During the on-the-spot appraisal, in front of the sunbed row closest to the waterline there was a flattened sandy patch, beyond which nests were lined parallel to the sunbed row (see photo d, red rectangle); it is unclear if there was previously a row of sunbeds in the flattened area or if this is due to sand smoothing and sunbed washing (see Fig. 24).



Fig. 27a-b. Fethiye, SPA. Yaniklar. July-August 2015. Both hotels operating on this beach have placed permanent shades, walkways and rows of beach furniture at the back of the beach (which are not collected at night) thus reducing the nesting zone. Clients place more sunbeds anywhere they please (note nests in white circles). At night there is no control of human presence, there is loud music and some hotel lights still affect the beach (though several lights are turned off or shaded).



Fig. 28 . Fethiye, SPA. Yaniklar. July 2015. Planted trees, sunbeds and a volleyball court are inside the nesting zone: note nests in white circles.



Fig. 29. Fethiye, SPA. Akgöl. 2013 Satellite imagery. Business occupies core nesting zones (1 and 2).



Fig. 30. Fethiye, SPA. Akgöl. 2013 Satellite imagery. 5 permanent wooden pavilions remain on nesting zone since 2013 in front of a snack bar which rents additional sunbeds and umbrellas. Next to the snack bar, permanent tents with light bulbs (white circle). None of the bar and tent lights are switched off at night (bottom right photo, taken from Yaniklar beach).



Fig. 31a-c. Mid July 2015. Fethiye, SPA. Akgöl. Inside the nesting zone hotspot a business operates a snack bar, picnic table, and rents wooden pavilions, umbrellas and sunbeds for visitors to insert into the sand as they see fit. There is no zoning or guarding in this area. Note nests in white circle



Fig. 32. Fethiye, SPA. Akgöl. 30 July 2015. All equipment was temporarily removed from the nesting hotspot a few days before the on-the-spot assessment. The lack of nests in the upper part of the beach (which was previously occupied) was striking in comparison to several nests (white circles) in the lower and middle part of the beach. There were clear signs of bonfires on the beach (red circles) and users were also lighting fires in the forest in the cliff above, during the assessment.



Fig. 32. Fethiye, SPA. Agkol. August 2015. All equipment was reinstalled on the nesting hotspot.



Fig. 33a-b. Fethiye, SPA. Akgöl. July 2015. A few days before on-the-spot assessment, pavilions were removed from the nesting hotspot using heavy machinery. They were placed a few meters away, in the reedy area behind the beach. Note caged nest next to caterpillar tracks.



Fig. 34a-b. Fethiye, SPA. Akgöl. July 2015. Left: New snack bar hut and shaded picnic area on nesting beach (next to the stream). Right: hut removal a few days before on-the-spot assessment using heavy machinery.



Fig. 35a-b. Fethiye, SPA. Agkol. 30 July 2015 on-the-spot assessment. Left& Right: Generator (red circle) and white electric wire remains on beach. The wire was used to light the (removed) pavilions and music speakers.



Fig. 36a-b. Fethiye, SPA. Çalış. Section B. August 2015. Hatchling tracks in tractor rut.



Fig. 37a-c. Fethiye, SPA. Yanıklar and Karatas beach. July 2015. Vehicle access on nesting beaches.



Fig. 38a-b. Fethiye, SPA. July & August 2015. Litter is a severe problem on almost all beaches.



Fig. 39a-b. July 2015. Fethiye, SPA. Sand extraction in Calis (top) and Yaniklar (bottom).



Fig. 40a-c. Fethiye, SPA. April 2015 4th week. Heavy machinery restructuring the nesting beaches.



Fig. 41. Fethiye, SPA. June 2015. Turkish press photo of turtle found intentionally drowned with pavement brick and rope.



Fig. 42. Fethiye, SPA. June 2015. Fishing and speeding boats too close to the shore are regular as the marine area is not regularly patrolled.



Fig. 43. Fethiye, SPA. August 2015. Yaniklar . Speeding water sport boats too close to the shore.