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**Threats to marine turtles in Thines Kiparissias
(Greece)**

REPORT BY THE NGO

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Conservation efforts during 2015 at the nesting habitat of *Caretta caretta* in southern Kyparissia Bay (Natura 2000 - GR2550005 “Thines Kyparissias”)

*Short report submitted to the European Commission and
the Standing Committee of the Bern Convention
Athens, October 2015*

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PROLOGUE

This report, a follow up to the previous reports submitted annually since October 2012, presents the main events in the efforts to protect the habitats of southern Kyparissia Bay (Natura 2000 site GR2550005 “Thines Kyparissias”) in general and the marine turtles in particular, during the last year. Specifically, this report focuses on the actions taken by the Greek government and the local authorities regarding the infringement case EL2011/2156 and the relevant case file in the Bern Convention, as well as the actual situation at the nesting area during the nesting season of 2015, as recorded through the field project of ARCHELON.

1. BACKGROUND

1.1 Location and core nesting area

Kyparissia Bay, at the western coast of central Peloponnese, has a significant ecological value because: 1) it is the second most important loggerhead sea turtle (*Caretta caretta*) nesting habitat in the Mediterranean Sea (Margaritoulis et al., 2003), and 2) contains an extensive system of sand dunes consisting of the following habitats: Embryonic shifting dunes 2110, dunes with *Euphorbia terracina* 2220, and the priority habitat coastal dunes with *Juniperus* spp. 2250 that is included in Annex I of Directive 92/43/EEC. The sandy coastline consists of about 44km of continuous beach from the river Alfios in the north, to the river Arcadikos in the south, with a small number of additional beaches separated by rocky outcrops further south. Maps of the region are shown in Illustrations 1 and 2.

Although turtles nest along the entire 44km beach, the core nesting area is located in the southernmost 9.5km, between the rivers Neda and Arcadikos (Margaritoulis & Rees, 2001), where about 82% of the total nesting activity is recorded. This part of the beach is entirely included in the Natura 2000 site GR2550005 “Thines Kyparissias”. The core nesting area is divided for monitoring purposes by ARCHELON, into four sectors (A, B, C, O), of which the northernmost three (A through C, totaling about 7.3km) are the least developed and are backed by stretches of coastal pine forest, low dunes and cultivated fields, while the southernmost sector (O, about 2.2km) is characterized by many disturbances, affecting turtle nesting and hatching, as it contains the expanding coastal village of Kalo Nero. The village of Elaia and the small settlement of Agiannakis are found at a short distance from the beach behind the Sectors C and B respectively (Illustrations 3 and 4).

The marine area of Kyparissia Bay includes another Natura 2000 site (GR 2330008 “Marine area of Kyparissia Bay: Katakolo Cape – Kyparissia”), a part of which is found in front of the core nesting area (Illustration 2).

1.2 Local government

The Municipality of Trifylia, based in the town of Kyparissia, administrates the entire core nesting area. The Municipality falls under the Region (Perifereia) of Peloponnese, based in Tripoli, and to the Decentralized Administration (Apokentromeni Dioikisi) of Peloponnese-Western Greece-Ionian Sea, based in Patras.

In May 2014 the Municipal elections were held and the new composition of the Municipality of Trifylia was elected. The 5 year tenure of the new Municipality will last from September 2014 through to 2019.

1.3 The long-term field project of ARCHELON

Since the beginning of the 80s, ARCHELON has organized and operated a seasonal conservation project in Kyparissia Bay. Tagging of turtles started in 1982 (before the founding of ARCHELON, by students hired by the Ministry of Environment) and systematic beach surveys commenced in 1984. During the period 1984-1989 the entire long beach of Kyparissia Bay was surveyed but since 1990 the monitoring project was restricted to the southernmost 9.5km of beach, which was assessed as the core nesting area. Since 1992, all nests within the core area are protected against predation by foxes, inundation by the sea, and disorientation of hatchlings as a result of bright artificial lighting. The massive protection of nests has caused an annual increase in the number of nesting turtles since 2006,

which is 14 years after the initiation of mass nest protection. In addition, ARCHELON carries out an extensive public awareness programme to inform visitors and residents about sea turtles and their nesting habitat, and the prominent threats they face (Rees et al., 2002).

The annual field project of ARCHELON during 2015 started on 15 May and terminated on 30 September. Preliminary data raise the number of nests that were located in the 9.5km core area (Neda River to Arcadikos River) to 1490. This is the third year that over 1000 nests were laid in the core nesting area (1452 nests in 2013 and 1286 nests in 2014) and in all three years the number of nests exceeded those recorded on Zakynthos Island. The increase in nest numbers, recorded since 2006, combined with the increase of neophyte turtles (i.e. turtles nesting for the first time) is attributed to the massive protection of nests applied in the core nesting area since 1992 (Margaritoulis et al., 2013). The 14-year period from the start of massive nest protection (1992) until the onset of upward trend in nest numbers (2006) coincides with the minimum age at maturity of *Caretta caretta* in the Mediterranean, estimated at about 14 years of age (Casale et al., 2011).

Note: During the 12-year period (1994-2005) nesting effort in the core area (sectors A-C, O) averaged 552 nests per year. However, in the last 9 years (2006-2014) there has been a considerable increase in nest numbers with an average of 872 nests per year!

1.4 The LIFE-Nature project and the Specific Environmental Study (EPM)

In the context of a LIFE-Nature project (LIFE98NAT/GR/5262), approved by the Ministry of Environment and the Ministry of Agriculture, ARCHELON commissioned a consultancy to elaborate a Specific Environmental Study (SES or “EPM” in Greek) for southern Kyparissia Bay, according to Technical Specifications approved by the Ministry of the Environment. The EPM, accompanied by a Management Plan and a draft Presidential Decree, were submitted for approval and application to the Ministry of Environment in May 2002. These documents comprised a precondition for the Ministry to issue a Presidential Decree and establish a Management Agency that would oversee the effective conservation of the NATURA 2000 site in southern Kyparissia Bay (Efthymiou et al., 2002).

Regrettably the EPM was never adopted or implemented by the Ministry of Environment although it was classified as technically acceptable (Ministry of Environment letter No 61801/4642/13-11-2002 to the European Commission). Moreover, conservation objectives were not laid out nor were specific protection or management measures taken. As a result, the sea turtle nesting area and the other habitats in southern Kyparissia Bay remained unprotected. In contrast, significant management and conservation issues remained unresolved and resulted in the gradual degradation of habitats, as well as direct and indirect disturbances to sea turtle nesting (Vallianos and Margaritoulis, 2011).

Specifically, buildings have been erected, in some cases on sand dunes. Dirt roads have been paved and bright street lighting has been installed. The beach of Kalo Nero village is almost entirely occupied by umbrellas, sunbeds and wooden walkways; light pollution is severe and there are signs of coastal erosion. In the coastal area between the settlements of Elaia and Agiannaki, approx. 2.5 km in length, which is owned by the real estate firm "Neos Kotinos S.A.", five roads were illegally constructed perpendicular to the beach in 2011 and 2012, which resulted in the destruction of sand dune formations (conclusion of General Inspector of Greek Public Administration, December 2013). At the same time, 47 building permit applications were filed with the Urban Planning Authority and are still pending. The permits involve the construction of two-storey holiday homes with basements and swimming pools (Illustration 5). Forty-three of the planned holiday homes are shown to have direct access to one of the five illegally constructed roads (under Article 10 Paragraph 1 Law 31212/2003, land plots outside urban planned areas can be built on when they have a “face” or access to a public road).

2. INFRINGEMENT CASE 2011/2156

2.1 The Reasoned Opinion (October 2012)

As a consequence of the above, in October 2012 Greece received from the European Commission a Reasoned Opinion (EL2011/2156 ENVI) for violation of articles 6 and 12 of Habitats Directive 92/43/EEC.

It must be noted that in the Reasoned Opinion, it is specifically stated that the construction plan of 47 two-storey homes with basements and swimming pools in this ecologically sensitive habitat is not consistent with the requirements of the European legislation.

In response to the European Commission on the Reasoned Opinion, the Ministry of Environment committed to take protection measures for the core nesting area (Ref. No. 5074/22-11-2012). The measures to have been taken included: (a) the immediate control of anthropogenic disturbances, and (b) the implementation of an Action Plan for the medium and long-term protection of the area.

2.2 The Greek State taken to the Court of Justice (March 2014)

Despite the commitments of the Ministry of Environment to take appropriate measures to safeguard the core nesting area of the loggerhead sea turtle, the majority of conservation issues remained unresolved during the 2013 nesting season. Since no measures were taken in time to mitigate the problems within the 2013 nesting season, no substantial steps were taken to promote the long-term conservation of the area and as the new nesting season was about to begin in two months, the European Commission decided in March 2014 to take Greece to the Court of Justice over failure to provide adequate protection for the endangered sea turtles and their nesting habitat.

3. THE CASE FILE IN BERN CONVENTION

3.1 The case file and the on-the-spot appraisal (July 2014)

Regarding southern Kyparissia Bay, the Bern Convention opened a case file in 2013, noting the lack of protection measures for sand dunes and loggerhead turtles *Caretta caretta*, a species listed in Annex II of the Convention.

In July 2014 experts of the Bern Convention carried out an on-the-spot appraisal in the core nesting area, during which they had the chance to see firsthand all the anthropogenic disturbances that result in direct and indirect damage to sea turtles (adults and hatchlings), their nests, and the nesting habitat in southern Kyparissia Bay, as well as to meet with representatives from the Municipality of Trifylia.

3.2 The Recommendation No. 174 (December 2014)

In December 2014 the Standing Committee of Bern Convention issued to Greece the Recommendation No. 174 on the conservation of the nesting habitat in southern Kyparissia Bay. The Recommendation consists of 12 points. Specifically it is recommended among others that Greece:

- 1) considers giving the key nesting area a protection status that may ensure the long-time conservation of its high natural value (National Park or equivalent),
- 2) permanently prohibits the construction of any villas or other buildings, new roads or other infrastructure, in the key area where construction licenses have been suspended thus preserving the present natural state of those areas,
- 3) restores the original sand dune and forest habitat in the above mentioned area by demolishing the roads built perpendicular to the shoreline, as well as other artificial infrastructure; blocks as a matter of urgency, until the demolition works are carried out, the roads perpendicular to the shoreline with non-mobile barriers at the entry of the road, so to avoid further damage to the neighboring dunes and forest,
- 4) addresses, in the entire Natura 2000 site, the problem of photo-pollution, particularly in Kalo Nero;

5) ensures that the beach furniture used now in the Natura 2000 site is removed at night or stored in a way that reduces the area occupied on the beach; does not give any licenses to any new beach furniture so that most beaches remain free from obstacles for nesting turtles,

6) enforces measures aimed at avoiding people and cars from visiting the sea turtle nesting beaches at night.

4. FOLLOW UP OF THE COMMITMENTS OF GREECE

4.1 The issue of the Draft Presidential Decree (August 2014)

In order for the Greek authorities to meet their European commitments, the Ministry of Environment decided to update the already approved Special Environmental Study (SES or “EPM” in Greek) for the neighbouring Natura sites «GR2330005 Sand dunes and coastal forest of Zacharo, Kaiafa Lake, Strofylia, Kakovatos» and «GR2330008 Marine area of Kyparissiakos Bay: Katakolo Cape- Kyparissia» by adding the site «GR2550005 Thines Kyparissias (Neochori – Kyparissia)». The SES and the accompanying Draft Presidential Decree were delivered on 28 July 2014 and released for consultation on 8 August 2014 for a period of one month according to the provisions of the current legislation (Art. 6, Para 7, Law 3937/2011). The Draft Presidential Decree referred to the three Natura 2000 sites and adjacent areas but it was obvious that the area was not treated in an integrated manner.

4.2 Comments on the Draft Presidential Decree

The environmental organizations ARCHELON, MEDASSET and WWF Greece submitted in September 2014 to the Ministry of Environment, in the context of the consultation, detailed comments on the Draft Presidential Decree, with focus mainly on southern Kyparissia Bay¹.

At the opinion of the above environmental organizations this Draft Presidential Decree could not achieve favourable conservation status of marine turtles and the habitat in southern Kyparissia Bay. On the contrary, it was expected to irreversibly contribute to a significant decrease of the conservation status of both the *Caretta caretta* and the dune habitat. It could not be considered a tool for sustainable development for the broader area, but instead seemed to aim at serving building interests, thereby risking the habitat’s future. Specifically:

Despite the proven international ecological value of the habitat as the second largest nesting area of loggerhead sea turtles in the Mediterranean, the Draft Presidential Decree proposed the area to be designated as a Regional Park in accordance with the Law No. 1650/1986 (Articles 18 and 19, as amended by Law No. 3937/2011). This classification seriously downgraded the need for protection measures that are required to achieve “favourable conservation status” (in accordance with Article 6 of the Habitats Directive 92/43/EEC) and “legitimised” more building activities in the region, which at the moment remains relatively pristine. On the contrary, the large size of the area and its prominent ecological and natural significance call for its designation as a National Park.

While the Draft Decree claimed that it seeks to achieve “the integrity of the protected area”, it nonetheless suggested the fragmentation of the habitat into 37 (!) zones and sub-zones and introduced a medley of measures and regulations, which were vague and did not take into account the nesting data collected for many years and the existing anthropogenic pressures and threats. The multitude and variety of zones simply showed the attempt to consolidate the status quo and transform the natural habitat into a tourist / residential area, without any appropriate assessment of impacts and future risks for the site.

It is noteworthy that the Draft Decree referred to the use of “existing” roads, avoiding differentiation between legal and illegal roads and therefore actually legitimizing, for example, the illegal roads that have been constructed by the real estate firm “Neos Kotinos S.A.” and for which criminal courts are still pending. Furthermore, there was no reference to the need for management measures on the beachfront of Kalo Nero, where the light pollution, the beach furniture, the illegal

¹ Through the summary that was sent to the Ministry afterwards the environmental organizations ARCTUROS, Hellenic Ornithological Society, ELLINIKI ETAIRIA- Society for the Protection of Environment and Cultural Heritage, Hellenic Society for the Protection of Nature, Mediterranean SOS Network, Callisto-environmental organization for wildlife and nature, Ecological Recycling Society, Greenpeace Greece and MOm expressed their support to the above comments.

structures on the beach for which demolition orders have been issued (Ref. No. 3769/12.08.2011 Decision of Public Land Authority of Messinia) and the intensive human presence remain a constant threat to sea turtle nesting.

Indicative of the lack of a clear and well-documented protection plan in the Draft Presidential Decree, was that a narrow Eco-Development Area (POIK 4) had been sandwiched between two Nature Protection Areas (PPF 3 and PPF 4), that run parallel to the sea and include the nesting beach and the pine forest. In this zone (POIK 4), which has a width of 100-150 meters, building was effectively allowed on land plots of 4,000 sqm (a nationwide limit which applies for building outside planned areas). The only building restriction imposed by the Decree was a minimum distance of only 5m (!) from the dunes and a building height limit of 6m. It must be noted that the zone PPF 3 included the core nesting area where about 82% of the total nests in Kyparissia Bay are deposited and that the Eco-Development Area POIK 4 coincided with the land where building permits were previously suspended by the Ministry of Environment (see below under 4.4.), effectively recognizing the need to preserve the natural features of the area. With the introduction of Zone POIK 4, the natural continuity and connectivity of the forest with the dunes and the beach was interrupted and the last pristine part of the habitat was destroyed, by allowing development at a distance of only 5m (!) from the dunes and at practically 20m from the nesting zone.

The Nature Protection Areas (PPFs) were designated as such only in name, since the Draft Presidential Decree permitted 30% of the beach to be occupied by beach furniture, even in the core habitat, where there had never been requests for such a use in the past. In addition, the Draft Decree did not foresee visitor management measures, especially at night, on the nesting beaches. Finally it was impressive to notice throughout the text of the Draft Decree, the lack of reference to the need for restoration of the natural elements that had been damaged or even destroyed, such as dunes due to ploughing and illegal road building, especially in a large part of the PPF 3.

4.3 The review of the Draft Presidential Decree from the Council of State (December 2014 – April 2015)

The supreme administrative court in Greece, the Hellenic Republic Council of State (known by its Greek acronym as “StE”) is authorised among others to review all proposed Presidential Decrees for constitutional lawfulness. According to the Greek legislation all Presidential Decrees are subject to the prior recommendation of the “Natura 2000 Commission”² and the prior approval of the StE (Art. 95.1 of the Greek Constitution & Art. 21, para. 7 of Law 1650/1985 as amended by Art. 6 of Law 3937/2011) before they are signed into law. The Ministry of Environment submitted the Draft Presidential Decree for Kyparissia Bay to the StE in December 2014. In April 2015 the StE issued the relevant decision³. The StE found that the Draft Presidential Decree should be rejected on the formal basis that the Natura 2000 Commission had not given its prior endorsement lawfully. Moreover the court took the opportunity to provide guidance to the Greek administration on the substance of the proposed Draft Presidential Decree in light of the urgency of passing legislation concerning southern Kyparissia Bay. Regarding the substantial provisions the StE found:

- The Draft Presidential Decree which designated the Natura 2000 sites and the surrounding areas as a Regional Park was not legally justified as the area is of national, European and international importance. The protection given to national parks is stronger than that granted to regional

² The Natura 2000 Commission was established by the Joint Ministerial Decision which implemented the Habitats Directive in 1998; its task is to oversee protected areas and to coordinate, supervise and assess planning, organisation and operational issues relating to the national system for the management and administration of protected areas. It is also authorised to comment on draft legislation and to advise the Ministry on sustainable management of protected areas, including the characterisation of protected areas and the determination of permitted activities within such sites. Law 3937/2011 provides that the Natura 2000 Commission “constitutes the central scientific advisory body for the co-ordination, supervision and assessment of policies and measures for the protection of biodiversity in Greece.” The Commission is also authorised to advise the Ministry concerning issues relating to the operation of the protected area management bodies, as well as advising on the allocation of funds for these purposes.

³ StE Minutes of Review process (Praktiko Epexergasias in Greek) No. 32/2015.

parks⁴, for instance: residential development is permitted in regional parks in the areas surrounding the fully protected areas; tourist development is permitted; and State-owned land completely within a national park may not be developed.

- The proposed in the Draft Presidential Decree five Eco-Development Areas (POIK) -including the Eco-Development Area 4 which is set behind the core nesting habitat- were occupying the biggest part of the area and were not legally justified⁵ since they were inconsistent with the characterization of the area, the conservation objectives in general and the favourable conservation status of both the *Caretta caretta* and the dune habitat in particular. Moreover the court asked that the boundaries of the existing villages and settlements of the area be defined by Decree, while for existing installations and projects outside urban-planned areas the court asked that only their preservation and maintenance be allowed provided that these are compatible with the conservation objectives.
- The proposed right to build on land plots of at least 4,000 sqm area (a nationwide limit for building outside planning areas) was not legally justified⁶; according to the court the building restrictions should be stricter or –after taking into account the conservation objectives of the habitat– even banned in some areas.
- The proposed in the Draft Presidential Decree “simple” uses of the beach area were not legally justified: these “simple” uses include very broad and vague activities such as “public recreation”, as well as horse riding, removal of sand and gravel for reasons of “public interest” and the use of vehicles on the access roads. The court found that the reference to vehicular access implied the continuing use of unlawfully-constructed roads which was not justified⁷.

Finally the StE emphasised that the issue of an improved Draft Presidential Decree was urgent in light of the Infringement case 2011/2156 and the Bern Convention Recommendation. Therefore suggested to the Ministry of Environment the rapid resubmission of an improved draft.

4.4 Beach Management Measures (May 2015)

In May 2015 the Decision of the Deputy Minister of Environment (Beach Management Measures, Ref. No. 20925/946/27.05.2015) clarified the terms under which the Municipality of Trifylia could concede to local businesses the “simple beach use” for the 2015 season. According to this Decision the two beach bars that had operated until 2012 in sectors A and B (beaches of Vounaki and Agiannakis) were not allowed to open. However, the third beach bar in sector C (in front of Elaia village) was allowed, provided that this would operate from 7:00 a.m. until 21:00 p.m. Moreover, the Decision provided terms during the nesting season concerning beach cleaning, light pollution, beach parties and management of beach furniture (designation of precise locations for setting sun beds, in cooperation with ARCHELON, and their removal from the beach at sundown).

The area of Kalo Nero (O sector) was not mentioned at all in this Decision, so officially beach furniture or other installations of “simple beach use” were not allowed.

Unfortunately, apart from the non-operation of the two beach bars in sectors A and B, the other measures of the Ministerial Decision were not enforced by the Municipality of Trifylia, as will be described in the following chapters. It is also worth noting that the beachfront of Kalo Nero was occupied by sun beds, umbrellas, wooden paths, showers and other structures without any license. However for the second year the sun beds were **fragmentarily** stacked for in the period 7 July until 20 August.

4.5 Extension of the building permits suspension (June 2015)

The Ministerial Decision (FEK 280/24.05.2013), which suspended the issuing of building permits and other works (e.g. pumping installations, drilling, fencing of fields, and cultivation of land between the coastal forest and the beach) behind the core nesting area, was valid for only one year. Therefore,

⁴ StE Minutes of the Review process No. 32/2015, Paragraph 13

⁵ StE Minutes of the Review process No. 32/2015, Paragraph 14

⁶ StE Minutes of the Review process No. 32/2015, Paragraph 15

⁷ StE Minutes of the Review process No. 32/2015, Paragraph 16

in May 2014 the Deputy Minister of Environment issued a new Ministerial Decision (FEK 175/28.05.2014), which extended the duration of the previous Decision for 7 months, i.e. until the end of 2014. In December 2014 the suspension was extended for 6 more months, i.e. until the end of June 2015 (FEK 396/24.12.2014). In June 2015 the suspension was extended, one more time, until the 24th of May 2016 (FEK130/29.06.2015). It is noted that the extended Ministerial Decision did not affect the building of houses and other works which already had a permit, since it concerns only the issuing of new permits. Moreover it is noteworthy that the recent extension was the last one since according to the relevant legislation the building permits suspension cannot exceed the duration of 3 consecutive years. If the relevant Presidential Decree is not issued in time, i.e. before May 2016, the southern Kyparissia Bay will be again without any protection, even a temporary one, from building interests.

4.6 Implementation of national and international requirements

As mentioned above (see in 4.3) the StE emphasised in April 2015 that the issue of an improved Draft Presidential Decree was urgent in light of the Infringement case 2011/2156 and the Bern Convention Recommendation and suggested the rapid resubmission of an improved draft. Unfortunately almost seven months after the issue of the StE decision the Ministry of Environment has not so far resubmitted a new Draft Presidential Decree.

Concerning the implementation of the 12 points of the Bern Convention Recommendation (see in 3.2) unfortunately no progress was made during the 2015 nesting season. Specifically:

- 1) Protection status: The Ministry has not issued a new Draft Presidential Decree which foresees the appropriate protection status for the area of southern Kyparissia Bay.
- 2) Permanent prohibition of constructions: As mentioned above (see in 4.5) the extension of building permits suspension took place in June 2015 and will last until May 2016. If the relevant Presidential Decree is not issued in time, i.e. before May 2016, Southern Kyparissia Bay will be again without any protection, even a temporary one, from building interests.
- 3) Restoration of original dune and forest habitat: Not only has restoration work not taken place, but also the mobile barriers that were placed during 2014 on 8 perpendicular roads to the beach (the asphalt roads in Agiannakis and Elaia, the five illegal roads that “Neos Kotinos S.A.” constructed and the road in Vlassada) have been removed, so that vehicles could and did access the sand dunes and the nesting beach.
- 4) Adjustments to existing houses: No actions have been taken to reinstate the previous dune ecosystem in houses built within the vicinity of nesting areas, nor have any actions been taken to reduce photo-pollution from the existing houses.
- 5) No agriculture on public land and the dune area: The cultivation of water melons and market vegetables continues on the dune area.
- 6) Photo-pollution reduction: No efforts have been made to avoid or reduce photo pollution.
- 7) Beach equipment management: The beach furniture in Kalo Nero was fragmentary stacked for 43 days (7 July until 20 August).
- 8) Sand and gravel extraction. Due to the reduction in public works as a result of the financial crisis, sand and gravel extraction has not been a significant issue during the 2015 season.
- 9) Further building outside planned areas: If the relevant Presidential Decree is not issued in time, i.e. before May 2016, southern Kyparissia Bay will be again without any protection, even a temporary one, from building interests.
- 10) Regulating the navigation of vessels: Fishing with nets near the nesting beach is currently not forbidden, and is a widespread practice leading to adult turtles and hatchlings being caught during nesting and hatching season.
- 11) Human presence on the nesting beach at night: No measures have been taken to keep people and cars off the beach at night nor were there any signs warning people to stay away. The absence of ARCHELON information kiosk in Kalo Nero (more information is given in 5.2) led to a great increase of human presence on the nesting beach.

12) Control of feral or stray dogs: During the 2015 nesting season the field project of ARCHELON recorded fewer attacks to nesting turtles than the previous season. Again the assistance of the Municipality of Trifylia was requested, whose responsibility is to collect stray dogs, but a response was never received (more information is given in 5.4).

5. THE ACTUAL SITUATION IN THE FIELD DURING THE 2015 NESTING SEASON

5.1 Illegal actions continue

The suspension of building permits in the area behind the beach sectors A, B and C of the core nesting area, concerns only the issuing of new permits. As a result building in cases of pre-existed permits has not been affected. Behind the core nesting area near Vounaki hill (sector B), the house that had been under construction since late November 2012, was finished in summer 2014. Building and garden creation works took place in the sand dune zone and resulted in total destruction of dune vegetation (Photos 1, 2). The relevant building permit involves the construction of 2 more holiday houses in the particular land plot outside the urban-planning area (ektos sxediou domisi).

Despite the provisions of the Decision of Deputy Minister of Environment of May 2015 (Beach management measures) concerning beach cleaning (beach cleaning with heavy vehicles should only be allowed before the 1st of May and after the 31st of October) and beach furniture (removal of sun beds from the beach at sundown and designation of precise locations in cooperation with ARCHELON), in May 2015 and while sea turtle nesting had already started, took place in the area of Kalo Nero (O sector) beach cleanings with heavy vehicles (Photo 3) while the beachfront of Kalo Nero was occupied by sun beds, umbrellas, wooden paths, showers and other structures without any license (Photo 4).

More information is given in the Appendices 1 and 2.

5.2 The field project of ARCHELON during the 2015 nesting season

The annual field project of ARCHELON during 2015 started on 15 May and terminated on 30 September. Unfortunately during the whole season the cooperation between ARCHELON and the newly elected Municipality of Trifylia was very limited, including the refusal to allow ARCHELON to set up the seasonal information station in Kalo Nero. In the relevant correspondence of ARCHELON (which was supported by a letter from the Deputy Minister of Environment) the Mayor of Trifylia responded by accusing ARCHELON for denouncing to European authorities illegal activities (opening of roads, ploughing of dunes, destruction of dune vegetation, etc.), as well as being responsible for the proposals of the Bern Convention experts during their meeting with Municipality representatives in July 2014. This was the second time since the beginning of 90s that the information kiosk was not allowed to operate (first time was in 2013) and resulted in a severe draw back to the public awareness program. The visitors and the locals could not be systematically informed about the efforts of the NGOs to protect a threatened species and its habitat. This, combined with the lack of information sign-posting, has caused a considerable increase in the number of tourists on the beach at night. This problematic situation resulted in the need for ARCHELON to introduce extra beach patrols at night, in addition to the standard turtle-tagging or nest-boxing work (for more information on nest-boxing, see Appendix 1), in order to minimize potential disturbance to nesting turtles.

5.3 Anthropogenic disturbances at the core nesting area (O and A-C)

This section focus on the anthropogenic disturbances that resulted in direct and indirect damage to sea turtles (adults and hatchlings), their nests, and the nesting habitat in southern Kyparissia Bay during the 2015 nesting season, as these disturbances were experienced through the standard fieldwork of ARCHELON. Because the beach at Kalo Nero (Sector O) differs greatly from the remaining beach (Sectors A-C) in both physical characteristics and in magnitude of disturbances, these two beach parts are examined separately.

5.3.1 Sector O: The beach of Kalo Nero (length: 2.2 km)

The distinction of Kalo Nero from the rest of the nesting beach is very important. This area is already severely affected by tourism development. It needs to be closely managed under the principles of sustainable development, so that the natural environment is not irrevocably damaged and the beach returns to a conservation status suitable - as much as possible - for sea turtle nesting.

When ARCHELON began monitoring the nesting activity on this beach, Kalo Nero was a small village with most families occupied with agricultural activities. Agriculture is still a significant source of income in the area, but Kalo Nero has quickly developed to a tourism resort.

Despite the fact that the beachfront of Kalo Nero was not included in the Decision of Deputy Minister of Environment of May 2015 (Beach management measures) and therefore no beach furniture or other installations were allowed, in fact the beach of Kalo Nero was occupied by sun beds, umbrellas, wooden paths, showers and other structures without any license. Apart from the fragmentary stacking of sun beds for 43 days (7 July until 20 August) no other measure was applied and as a result the situation in Kalo Nero has not improved over the 2015 nesting season.

A detailed description of the noted disturbances in Kalo Nero beach is given in the Appendix 1.

5.3.2 Sectors A, B, and C (length: 7.3 km)

If sea turtles are to be effectively protected in Kyparissia Bay, these three Sectors (A: Vounaki beach, B: Agiannakis beach, C: Elaia beach) concentrating about 75% of all nests in the 9.5km core nesting area, must be maintained at its current almost pristine condition or as close to it as possible. This area is characterized by a very wide beach with an appropriate inclination, backed by low sand dunes with vegetation. Unfortunately, also for these beach sectors the majority of the main conservation issues remained unresolved during the 2015 nesting season. The only positive fact during 2015 was the non-operation of the two beach bars at Agiannakis and Vounaki.

A detailed description of the documented problems in beach sectors A, B, and C is given in the Appendix 2.

5.4 Stray dogs attacking nesting turtles

During the 2015 nesting season the field project of ARCHELON recorded for a second year the phenomenon of stray dogs attacking nesting turtles. Attacks started about 2 June and were reported to all competent authorities (local, regional and central) (Ref. No. 27615/04.06.2015). It is the responsibility of the Municipalities to remove and deal with stray dogs; however the Municipality of Trifylia never responded to the relevant request of ARCHELON. The ARCHELON field project attempted to deal with the situation by conducting specific night patrols every night; volunteers would walk the beaches, aiming to stop any further attacks, as the dogs seemed to be averted by human presence. Fortunately there were fewer attacks than the 12 recorded in 2014. In total, 6 turtles were injured by dogs: 1 of these turtles was transported to ARCHELON Rescue Centre in Athens and 5 were locally treated and released (Photo 5).

5.5 Turtle Strandings

During the 2015 nesting season 12 dead and 2 injured turtles were found within the monitored beach section of 9.5km. The injured ones, with signs of entrapment in nets, were transported to ARCHELON Rescue Centre in Glyfada for rehabilitation. Superficial examination of the dead ones showed mainly interaction with fisheries (turtles entangled in nets and fishing lines) as well as signs of injuries caused by dynamite fishing (i.e. blood from nose, mouth and eyes) (Photo 6). Although dynamite fishing is against the law in Greece, during the 2015 nesting season this method of fishing was frequently recorded in the marine area. In addition, fishing boats and stationary nets were observed to be too close to the shore in all beach sectors, in some cases at distances less than 20m from shore. Set nets are usually left for the entire duration of the night, so any females attempting to emerge for nesting are at risk of getting trapped.

6. CONCLUSIONS AND RECOMMENDATIONS

Despite the national (decision of StE which suggested the rapid resubmission of an improved Draft Presidential Decree) and international (Infringement case 2011/2156 and the Bern Convention Recommendation) requirements and the relevant commitments of the Ministry of Environment, a new Draft Presidential Decree has not so far been issued, while the majority of the conservation issues remain unresolved for a third nesting season. Taking into consideration that the recent extension of building permits suspension behind sectors A, B and C will be the last one issued as such, since

according to the relevant legislation building permits suspension cannot exceed the duration of 3 consecutive years, the issue of a new draft, which will be in accordance to the StE suggestions, is urgent and imperative.

Favorable conservation status for the core of the second largest nesting area of *Caretta caretta* in the Mediterranean can be only achieved by the designation of the area as a National Park, the rejection of the Eco-Development Zone (POIK 4) and its replacement by a Nature Protection Area, with consequent building prohibition in order for the two Natural Protection Areas (PPF 3 and 4), that include the nesting beach and the pine forest, to be unified, the introduction of specific beach management measures and regulations to ensure undisturbed sea turtle nesting, and the reform of the entire Draft Presidential Decree, along the lines of a long-term vision, that will ensure: (a) long-term undisturbed *Caretta caretta* nesting, (b) preservation of the natural status of the area, and (c) high quality, sustainable development for the local community in harmony with the natural capital of the region.

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APPENDICES

Appendix 1: Disturbances in Kalo Nero beach (Sector O) during 2015

ARCHELON's Seasonal Information Station

The Municipality of Trifylia did not allow ARCHELON to set up and operate the seasonal information station in Kalo Nero. As a result, the visitors in the area could not be systematically informed about the efforts of the NGO to protect a threatened species and its habitat. This, combined with the lack of information sign-posting, has caused a considerable increase in the number of tourists on the beach at night, thus causing disturbance to female turtles that come to lay their eggs and highly threatening to hatchlings which emerge from their nests and try to reach the sea. The ARCHELON field project attempted to deal with the situation by introducing extra information beach patrols at night, in addition to the standard turtle-tagging and nest-boxing work, in order to minimize potential disturbance to sea turtles.

The Coastal Road

The 1.7 km coastal road behind the beach of Kalo Nero is used not only for accessing hotels and houses in the area but also as a car-park for beach visitors and as a free camping area for caravans (Photo 7). Especially during the high tourist season (July and August) which coincides with the late nesting season and early hatchling season the density of cars and caravans was very high during night hours, so that sea turtles attempting to nest were disturbed by vehicular lights or human presence and hatchlings were at risk of being trampled by tourists on the beach and/or disorientated by artificial lights.

Platforms on the Beach

In addition to the road, elevated platforms extend over the beach and are used by restaurants and bars located on the landward side of the coastal road. In recent years, these platforms were leased out by the Municipality under the guise of “simple beach use”. The Regional Public Land Authority (Ktimatiki Ypiresia) examined the beachfront of Kalo Nero in 2011, declared the platforms illegal and issued orders for their demolition. The need for their demolition was repeated in the Ministerial Decision of 23 July 2013 and the Decision of the General Secretary for Environment in May 2014 but not in the most recent Ministerial Decision of May 2015 (Beach Management Measures). The demolition protocols are not implemented by the responsible authorities (Municipality of Trifylia and Region of Peloponnese) yet. In June 2015 though, the new management of “Mesina Mare” hotel demolished the front platform voluntarily in order to avoid the relevant fine (Photo 8).

Light Pollution

Public road lights are installed on electricity poles along the coastal road of Kalo Nero. The lights hang from a height of five to seven metres and most are uncovered from all sides. Most road lights are very close to the beach, i.e. within 10m from the back of the beach. Additional light pollution is caused by hotels, restaurants and bars on the beach platforms, spot lights shining right on the beach, and lights from parked camper vans. Despite the terms in the Ministerial Decision of May 2015 (Beach management measures) about light pollution, neither the public nor the private lights were modified during 2015 (Photos 9, 10) and fireworks on the nesting beach during night time were reported on at least two occasions.

The height of road lights at Kalo Nero and their proximity to the nesting zone renders useless the standard method of “nest-shading”, used by ARCHELON in other areas, to protect emerging hatchlings from light disorientation (Photo 11), and forces the practice of “nest-boxing”. This is an “unorthodox” method comprising of a wooden box placed over the nest in such a way that in case of hatchlings’ emergence these remain inside the dark box and avoid disorientation by bright lights. The box is regularly checked during the night at regular intervals (e.g. every hour) and in case of emerged hatchlings, these are transferred and released in a nearby dark beach section. It should be noted that this practice may have consequences in the later behavior of the hatchlings, since they do not immediately head for the sea after exiting the nest, but remain trapped for a while, inside the box.

During 2015, the method of “nest-boxing” was used on 69 nests in Kalo Nero from 10 August until 13 September (approximately 27% of all nests in Kalo Nero). It should be noted that relocation of these nests in other parts of Kalo Nero beach cannot happen, for in the few suitable places that remain without bright lights and other disturbances there is a dense occurrence of natural nests.

Beach Use and Beach Furniture

Based on legislation and the recent Joint Ministerial Decision (FEK 578/09.04.2015 as amended by FEK 828/12.05.2015) prescribing beach use, Municipalities can lease portions of the beach to tourism and leisure related businesses. Under specific guidelines, both the public availability and the protection of the environment must be maintained, with the local Municipalities responsible to ensure guidelines are followed. Moreover, in the case of protected areas, the assent of the Minister of Environment is required in order for the special terms of the leasing to be clarified. This assent is issued after the relevant application of the competent Municipality.

According to the Decision of the Deputy Minister of Environment of May 2015 (Beach Management Measures, Ref. No. 20925/946/27.05.2015), which was a precondition for the necessary permission from the Municipality of Trifylia, the beachfront of Kalo Nero was not included in the areas to be leased (this part was not mentioned in the application of the Municipality too). As a result beds and umbrellas occupied a large part of the beach in Kalo Nero without any license (Photos 4, 9, 10). Moreover on many occasions, the beach structure was manipulated and wooden paths, showers, and other structures were added on the beach sand. However, for the second year the sun beds were stacked for the period between 7 July and 20 August. Although this is a progression towards protection of nesting, it was implemented fragmentary, since in some occasions during this period unstacked sun beds were recorded, and for a very short period (started in late nesting season) (Photos 9, 12).

Heavy vehicles on the beach

According to the Decision of the Deputy Minister of Environment of May 2015 (Beach Management Measures, Ref. No. 20925/946/27.05.2015) beach cleanings with heavy vehicles were not allowed for the period between 1 May and 31 October. However, on the beach of Kalo Nero beach cleanings were recorded at least twice in May 2015 while sea turtle nesting had already started in Southern Kyparissia Bay (Photo 3).

Appendix 2: Disturbances at beach sectors A-C during 2015

Beach Bar in sector C

While the two beach bars in sectors A and B (beaches of Vounaki and Agiannakis), that had operated until 2012, were not allowed to open for one more season, the Ministerial Decision of May 2015 (Beach Management Measures) allowed the reoperation of the third beach bar in sector C (in front of Elaia village), provided that this would operate from 7:00 a.m. until 21:00 p.m. Although no illegal constructions were made and the placement was not on the nesting beach, it was often monitored, especially during the high touristic season (July and August), that the beach bar would operate until midnight resulting in increase of light pollution (Photo 13).

Light Pollution

While the non-operation of the two beach bars (sectors A & B) resulted in the reduction of the light pollution compared to the past, the building that was not affected by the suspension of building permits (e.g. the new summer house near Vounaki hill, which was finished during summer 2014) created new light pollution in the nesting beach. The relatively small number of artificial lights attracted frequently hatchlings from distances of 400 metres or more. Hatchling tracks were often observed during the morning survey heading towards the sand dunes, instead of going towards the sea.

Roads

At the beaches of Agiannakis and Elaia, two existing rough roads reaching perpendicularly the beach were paved with compacted soil in 2006 and asphalted in 2009. Although these access roads pre-existed, their paving has destroyed the sand dunes and the associated vegetation where the roads meet the beach (Photo 14). Particularly in Elaia, part of the sand dunes is used as a car parking area (Photo 15).

The five new illegal roads that were constructed by the real estate firm “Neos Kotinos S.A.” in 2011 and 2012 between the above two asphalted roads (Sector C), connecting the forest road to the beach, resulted in a further destruction of sand dunes and their vegetation (Photo 16). Further, these five roads attract cars and camper vans right on the high beach among the dunes and this causes more destruction.

Another road providing access to the location of the old beach bar at Vounaki (sector A) was compacted in 2007 but it is not yet paved with asphalt. In this location, the sand dunes are also used as a car parking area.

Vehicles

During the entire 2015 nesting season a large number of 4x4 vehicle tracks were observed on the beach almost on a daily basis (Photo 17, 18). The vibrations of the vehicles can cause damage to turtle eggs since they may detach the embryos and potentially cause hatchlings to emerge prematurely. Emerging hatchlings can be trapped within car ruts for hundreds of meters before they can exit them or die of exhaustion, dehydration or predation. Moreover vehicles moving on the beach cause damage to the sand dune vegetation. In all entrances to the beach sand dune vegetation is absent, since these parts are used as parking areas (Photos 15, 19).

While in July 2014 (when the on-the-spot appraisal of Bern Convention experts was still pending) the Municipality of Trifylia put mobile barriers at 8 perpendicular roads to the beach (the asphalt roads in Agiannakis and Elaia, the five illegal roads that “Neos Kotinos S.A.” constructed and the road in Vlassada) in order to restrict vehicular access to the beach, this measure was not repeated in 2015 nesting season.

House Construction

Except the new summer house that was finished in Vounaki area (Sector B) in 2014 (Photos 1, 2) and was not affected by the suspension of building permits (the permit has been issued for building of three holiday houses in that plot of land), the plans for construction of up to fifty holiday houses along the entire beach length between Agiannakis and Elaia (sectors B and C) still exist (Illustration 5).

According to the real estate firm, the seaward boundaries of this strip of land are on the beach line, covering almost the entire sand dune ecosystem between Agiannakis and Elaia.

Free Camping

The coastal forest of Elaia (sector C), close to the sand dunes between Agiannakis and Elaia, attracts a large number of free campers every year. During the high summer season (July and August) of 2015 it was estimated that more than 1,000 people were camping simultaneously in the forest. Free camping is against the law in Greece and the local Police Station regularly received calls to patrol the area, but since free campers are a source of income for the local community, law enforcement is not strict with regards to free camping.

Illustrations



Illustration 1: Map of western Peloponnese, showing the position of southern Kyparissia Bay.



Illustration 2: Map of the core nesting area (Neda River – Arkadikos River) in southern Kyparissia Bay showing its position within the boundaries of two Natura 2000 sites, the terrestrial one (GR2550005) and the marine one (GR2330008).



Illustration 3: The northern part of southern Kyparissia Bay (Sectors B & C).



Illustration 4: The southern part of southern Kyparissia Bay (Sectors O & A).

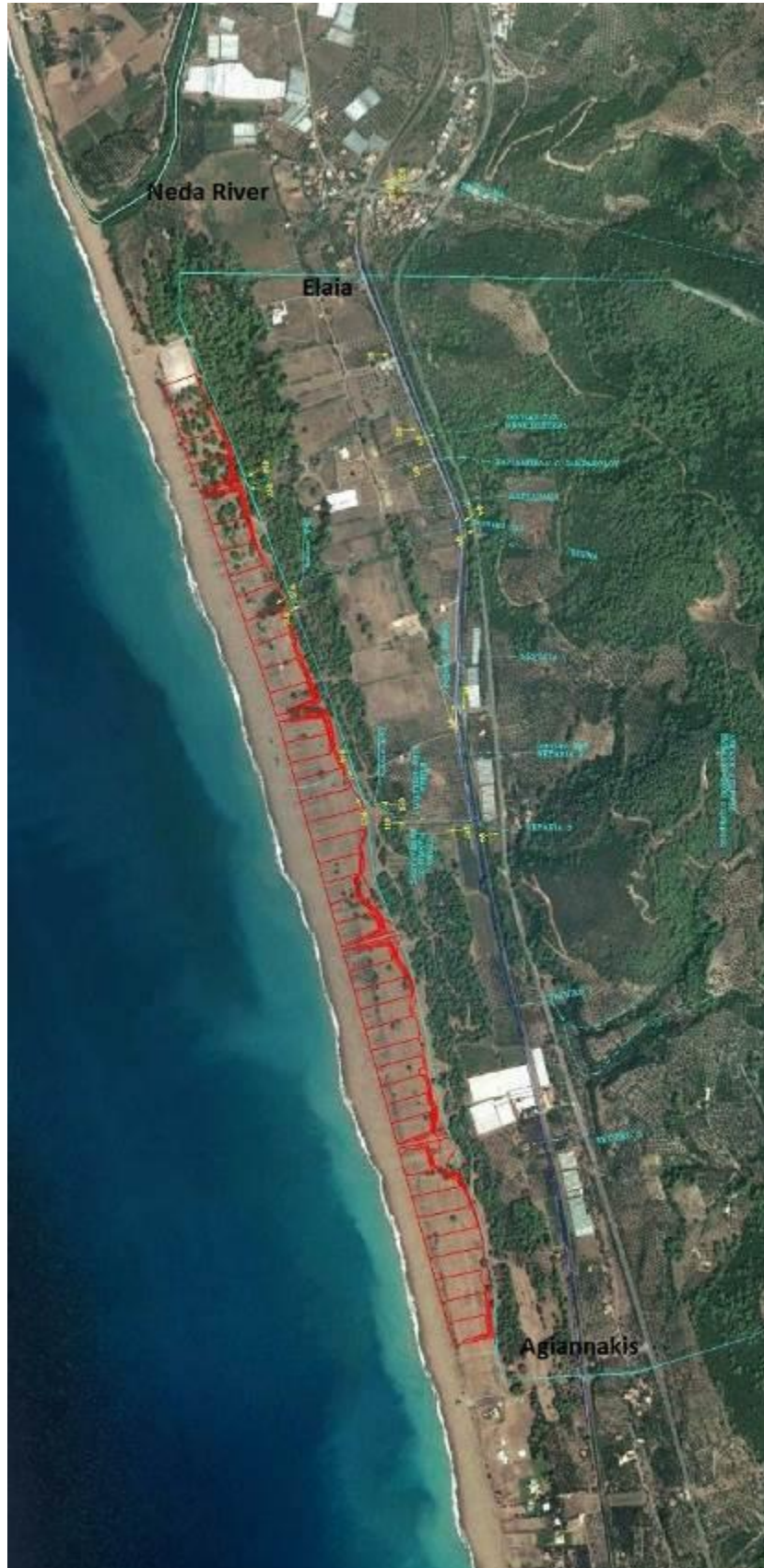


Illustration 5: The plans for building up to 50 holiday houses cover almost the entire sand dune ecosystem between Agiannakis and Elaia, just behind the core nesting area.

Photos



Photos 1 and 2: The new house near Vounaki (sector B). Building and garden creation works destroyed the sand dune vegetation.



Photo 3: Beach cleanings in Kalo Nero (sector O) were recorded in May 2015 while sea turtle nesting had started.



Photo 4: Placement of umbrellas in Kalo Nero without license.



Photo 5: Injuries from dog attack.



Photo 6: Blood from nose, mouth and eyes resemble injury from dynamite fishing.



Photo 7: The coastal road behind the beach of Kalo Nero is used as free camping area for caravans.



Photo 8: The part of the beach after the demolition of the illegal platform of Messina Mare hotel.



Photos 9 and 10: Light pollution in Kalo Nero from public and private lights.



Photo 11: Disorientated hatchling in Kalo Nero.



Photo 12: During the period between 7 July and 20 August the sun beds were not stacked every night. Photo 9 was taken on 19 July and photo 12 on 9 July.



Photo 13: The beach bar in sector C operated often after 21:00 p.m. resulting in increase of light pollution.



Photos 14, 15: The perpendicular roads of Agiannakis (photo 13) and Elaia (photo 14). Sand dune vegetation is absent.



Photo 16: One of the five illegal roads of the real estate firm “Neos Kotinos S.A.”.



Photos 17, 18: Vehicle tracks and bikes on the nesting beach.



Photo 19: Deterioration and fragmentation of sand dune vegetation because of vehicles on the sand dune zone.