



Strasbourg, 8 November 2019
[files48e_2019.docx]

T-PVS/Files(2019)48

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

39th meeting
Strasbourg, 3-6 December 2019

**Follow-up of Recommendation No. 9 (1987) of the
standing committee on the protection of Caretta
Caretta in Laganas bay, Zakynthos (Greece)**

- REPORT BY THE COMPLAINANT -

*Document prepared by
Archelon*

*This document will not be distributed at the meeting. Please bring this copy.
Ce document ne sera plus distribué en réunion. Prière de vous munir de cet exemplaire.*

ARCHELON, the Sea Turtle Protection Society of Greece



Conservation efforts during 2019 at the nesting habitat of *Caretta caretta* in Laganas Bay, Zakynthos, Greece

Short report submitted to
the European Commission, and
the Standing Committee of the Bern Convention

Athens, October 2019

Copyright © 2019 by ARCHELON

No part of this report may be reproduced in any form or by any means without the written permission of ARCHELON

ARCHELON, the Sea Turtle Protection Society of Greece

Solomou 57

GR-104 32 ATHENS

Greece

Tel./Fax: +30-210-5231342

e-mail: info@archelon.gr

URL: www.archelon.gr

Contents

| | |
|---|-------|
| Prologue | p. 4 |
| 1. Background | p. 4 |
| 1.1. Location and the National Park's creation | p. 4 |
| 1.2. The long-term field project of ARCHELON | p. 4 |
| 2. The actual situation in the field during the 2019 nesting season | p. 5 |
| 2.1. The terrestrial habitat | p. 5 |
| 2.1.1. Brief description of the nesting beaches | p. 5 |
| 2.1.2 Anthropogenic disturbances on nesting beaches during 2019 | p. 6 |
| 2.2. The marine area | p. 7 |
| 3. Conclusions and Recommendations | p. 8 |
| 3.1. Recommendations for the terrestrial habitat | p. 8 |
| 3.2. Recommendations for the marine area | p. 9 |
| Illustrations | p. 10 |
| Photos | p. 11 |

Prologue

This short report, a follow up to the previous reports submitted annually, presents the major events in the efforts to protect the habitats in Laganas Bay (Natura 2000 site GR 2210002 “Kolpos Lagana Zakynthou kai nisides Marathonisi & Pelouzo”) in general and the marine turtles in particular, during the 2019 reproductive period. In particular, this report presents the conservation status of the terrestrial as well as the marine habitat, as recorded through the fieldwork of ARCHELON.

1. Background

1.1. Location and the National Park’s creation

Laganas Bay, at the southern part of Zakynthos Island, in the Ionian Sea, hosts one of the largest reproductive habitats of the loggerhead sea turtle (*Caretta caretta*) in the Mediterranean Sea. The nesting habitat of Laganas Bay consists of a terrestrial part comprised of six distinct nesting beaches (Marathonissi, East Laganas, Kalamaki¹, Sekania, Daphni, Gerakas), of a total length of 5.5km, and a marine part comprising of the entire Bay, of a total area of 51.363sqkm. Map of the region is shown in Illustrations 1 and 2.

Due to the significance of Laganas Bay as a nesting habitat, and the pressures it faces from mass tourism and development, the Greek State has attempted, since 1984, to protect it through various legislative acts. However, these were generally poorly enforced. Following substantial pressure from NGOs, the Council of Europe (Bern Convention) and the European Commission and after several years of deliberations, the National Marine Park of Zakynthos (NMPZ) was eventually established in December 1999 and its Management Agency (MA) was set up in July 2000. The relevant Presidential Decree (Government Gazette D906/22-12-1999) includes a zonation system with varying regulations on land and at sea.

ARCHELON collaborates with the MA of the NMPZ since the Agency’s establishment. Moreover, ARCHELON, WWF-Greece and MOM (Society for the Study and Protection of Monk Seals) hold one joint seat on the 11-member Board of the MA.

1.2. The long-term field project of ARCHELON

ARCHELON has been systematically monitoring the Bay’s nesting beaches since 1984 and records annually nesting activity as well as associated conservation measures. The long-term project of ARCHELON, carried out yearly from early-May through mid-October, involves monitoring of the nesting population on land and at sea, protection of nests and hatchlings, recording of turtle strandings, as well as recording of violations on the nesting beaches and at the marine area. In addition, it includes an extensive public awareness programme to inform visitors and residents.

In 2019, fieldwork on the six nesting beaches of the Bay commenced on 5 May and terminated on 10 October. According to preliminary data, on the six nesting beaches of the habitat approx. 1,250 nests (average annual number of nests since the beginning of nest counts in 1984 is about 1185 nests) and 113,544 violations against the Presidential Decree regulations were recorded (see 2.1.2.). In addition, ARCHELON carried out systematic monitoring of the NMPZ protected marine area (ARCHELON field observers attended Turtle-Spotting Boats², and tour boats³ as on-board observers), during which 2,120

¹ The MA of the National Marine Park of Zakynthos refers to the beaches of East Laganas and Kalamaki as Kalamaki and Crystal respectively.

² Professionals who are supposed to be exclusively involved with sea turtle observation in Laganas Bay. In the previous years, the NMPZ MA used to sign a Memorandum of Understanding with the professionals, who were committed to comply with the Turtle-Spotting Code of Conduct, providing them with a Badge of Special Associate Endorsed by the NMPZ (“**Observation of the Sea Turtle in the Area of the NMPZ**”). Since 2015, this practice is not being applied.

³ Professionals who are supposed to be exclusively involved with sea tours lasting between 3 and 6 hours. Their main task is to inform/educate visitors about the natural environment and sea turtle biology. In the previous years, the NMPZ MA used to sign a Memorandum of Understanding with the professionals, who were committed to follow the MA guidelines, providing them with a Badge of Special Associate Endorsed by the NMPZ (“**Eco-tourist Sea Tour in the area of the NMPZ**”). Since 2015, this practice has not been applied.

violations of the maritime legislation and 3,673 cases of non-compliance with the turtle spotting code of conduct were recorded (see 2.2.). Of course ARCHELON personnel reported to both the NMPZ MA and the local Coast Guard major incidents and problems frequently observed in the marine area and on the nesting beaches.

Regarding the recording of turtle strandings, 34 incidents (28 dead and 6 injured) were recorded from the beginning of 2019. Of the total number of strandings, 8 sea turtles were located within the marine protected area of Laganas Bay. Examination of the stranded animals showed interaction with fisheries (fishing gears) as well as signs of injuries caused by boat collision (Photo 1).

Besides the above, ARCHELON conducts a public awareness programme for residents and visitors, to minimize the possible disturbance of the protected animals or their nests. In total ARCHELON carried out during 2019 more than 850 public awareness (PA) shifts, informing approx. more than 62,000 people.

2. The actual situation in the field during the 2019 nesting season

This section focusses on the anthropogenic disturbances that resulted in direct and indirect damage to sea turtles (adults and hatchlings), their nests and the nesting habitat in Laganas Bay during the 2019 nesting season. These disturbances were experienced through the fieldwork of ARCHELON.

2.1. The terrestrial habitat

2.1.1. Brief description of the nesting beaches

Marathonissi (zone A2: Nature Protection Site, maritime zone B): Marathonissi is an island with low temperatures that produces predominantly male hatchlings. This makes this short beach an extremely important one at regional level, as most other beaches in the Mediterranean produce mainly female hatchlings. The beach is a popular destination for day-visitors who arrive by boat from several locations in the Bay, although up to 200 people are aloud at any time, according to the Management measures of the NMPZ MA. Over the last years, nest numbers on Marathonissi show a significant decrease (average 65 nests/year in the period 2005-2018 in contrast to 137 nests/year in 1995-2004).

East Laganas (zone II3: Nature Protection Site, maritime zone B): This beach of 2.7km length, is partially backed by an extensive sand dune field. A limited number of hotels and taverns, which were built before the establishment of the NMPZ, is found along the back of the beach. These businesses and some additional operators rent the 11 beach furniture businesses and the 5 pedalos/canoes businesses located along the beach. In a small distance behind the beach (2 km) is found the international airport of the island, which is supposed to remain closed during night hours for the period from May to October in order to prevent substantial light and noise pollution.

Kalamaki (zone II3: Nature Protection Site, maritime zone B): Kalamaki is a 600m beach (located east of East Laganas). Access to the beach is gained through a single official entrance, but four more illegal entrances exist. At the back of this beach is found a hotel, which was built before the establishment of the NMPZ. This business and one additional operator rent the beach furniture, while one more business with pedalos and canoes operate on the beach.

According to the Presidential Decree the maximum permitted number of beach furniture on both East Laganas and Kalamaki is 150 umbrellas/ 300 sunbeds.

Sekania (zone A1: Absolute Protection Site, maritime zone A): This beach hosts one of the highest nesting densities for *Caretta caretta* in the world and as a result is the most strictly protected nesting site of the habitat, where human presence is permitted only for scientific reasons. It is reminded that WWF-Greece in 1994 acquired the private land behind the beach preventing development.

Daphni (zone II1: Nature Protection Site, maritime zone A): Daphni beach is located next to Sekania beach and until 2000 hosted the second largest number of nests on Zakynthos, but since then, nest numbers show a significant decrease (average 142 nests/year in the period 1984-2004 in contrast to 98 nests/year in 2005-2018). This beach and specially the area behind the beach, where private properties are found and 7 illegal businesses operate, has been subject to many illegal activities such as building and road constructions, flattening of dunes, sand removal, planting of non-native vegetation, while the Presidential Decree foresees no operation of businesses at the back of the beach and that the maximum

numbers of beach users should not exceed 100 people at any time.

Gerakas (zone II2: Nature Protection Site, maritime zone A): Gerakas beach is accessed via a single entrance, with a barrier restricting vehicular access. The back of the beach is free from development and light pollution, while one group of operators rent the beach furniture found on the beach. The Presidential Decree foresees that the maximum numbers of beach users should not exceed 350 people at any time, while the maximum number of beach furniture is 60 umbrellas/120 sunbeds.

2.1.2 Anthropogenic disturbances on nesting beaches during 2019

According to the Presidential Decree, the implementation of protection management measures must be ensured on the nesting beaches of NMPZ. Unfortunately, during the whole season of 2019 the terms of the PD were poorly enforced by the local authorities.

Beach use and beach furniture: The businessmen infringed the regulations concerning the nesting beaches and did not apply the terms of the Presidential Decree. Specifically, the foreseen maximum numbers and density of beach furniture, as well as the distances from the back of the beach were not observed, while the removal of beach furniture at sundown was implemented either not at all or incorrectly (Photo 2). Throughout the season, ARCHELON recorded 97,171 violations regarding the removal of sunbeds (either being completed left out overnight or folded on their side) in Gerakas, Kalamaki and East Laganas. This fact made those parts of the beaches non accessible for turtles and caused them to abandon nesting attempts (Photo 3). Moreover, regarding the maximum numbers, ARCHELON project members recorded in mid-August 364 sunbeds in Gerakas (while the foreseen by the Presidential Decree number is 120, see in 2.1.1.) and 945 sunbeds in Kalamaki and east Laganas (while the foreseen by the Presidential Decree number is 300, see in 2.1.1.).

Pedalos and Boats: The operators of pedalos and canoes are supposed to moor these in the water or to remove them from the beach at sundown. During 2019, pedalos were recorded to be stored on the beachfront in Kalamaki and East Laganas, blocking the access for turtles (Photo 4). Throughout the season ARCHELON researchers recorded 4,521 violations on the nesting beaches during nighttime.

Light Pollution: Light pollution is a serious threat for sea turtles, as it causes not only hatchling disorientation but also disturbs the nesting females and can result in the abandonment of nesting attempts. East Laganas beach suffers from light pollution caused by the airport of Zakynthos, businesses (i.e. hotels, beach bars) and streetlights at the back of the beach. ARCHELON researchers recorded 161 incidents of light pollution. In Kalamaki beach light pollution was observed in 73 occasions during 2019, because of the already closed but not yet restored illegal landfill site (see below), the existing at the back of the beach hotel and streetlights. Besides the beaches of East Laganas and Kalamaki, also Daphni beach faces serious problems because of the operation of 7 illegal businesses behind the beach (see below). The cases of light pollution on Daphni beach were 37 in total. This serious threat was recorded also at the Absolute Protection Site of Sekania Beach for at least 25 cases (Photo 5).

Human presence on the nesting beaches at night (sundown to 7 a.m.): On the 6 nesting beaches of the habitat there are 9 wardening posts, which need to be staffed 24 hours. Unfortunately, during 2019, the MA of NMPZ due to lack of wardens throughout the season (only 14 wardens were available), was unable to achieve effective wardening. As a result, 2,754 incidents of human presence were recorded, despite the relevant restrictions of the Presidential Decree.

Beach users: Beach visitors are required to remain close to the shoreline and to avoid the nesting area in the hind part of beach in order for incubating nests to be protected from trampling, shading and damage from umbrellas. These provisions were not implemented during 2019 for at least 6,309 occasions. Moreover, in the cases of Marathonisi, Daphni and Gerakas the permitted maximum number of beach users (200, 100 and 350 respectively) not only was not implemented but it was in great excess of the limits. Specifically, on Marathonissi, due to the great number of touristic boats moored at the same time, the beach users have increased to more than 600. The MA tried to reduce the effect of this problem to incubating nests by placing a rope along the beaches of Marathonissi and Gerakas (Photo 6) but not in Daphni. The same measure should be applied to the beaches of Kalamaki and East Laganas (where the number of beach users is not limited) due to mass tourism.

Vehicles: During 2019, 312 vehicles, quad bikes and tracks were observed on the beaches. The sand

compaction caused by the vehicles can cause damage to turtle eggs 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.

Horses: There is a significant growth of commercial horse-riding activity in the sand dunes behind East Laganas and in Vrodonero beach (which is between Kalamaki and Sekania). During 2019, 239 cases of horses were recorded (Photo 7). Horses have significant negative effect not only on incubating nests but also on the sand dunes.

Illegal constructions at Daphni beach: Daphni beach is subject to many illegal activities such as building and road constructions, flattening of dunes and sand removal. Following recommendations by the Council of Europe, the removal of illegal buildings at Daphni has been an obligation of the Greek State since 1987, when only 2 businesses existed (Recommendation No. 9, Bern Convention). Although at present the operating illegal businesses are 7, no action for their removal has been taken and the relevant issued demolition protocols are not applied. As a result, the illegal construction activities continue year by year (illegal buildings and businesses are increasing in size, areas around the buildings are planted with grass, showers are added with their water ending on the nesting beach, illegal roads are flattened for easy access, wide parking area is constructed, new lines of sunbeds are set in suitable areas for nesting – Photo 8).

Other daily violations: During 2019 nesting season ARCHELON researchers recorded vandalism of nests in 87 occasions, cutting of sand dune vegetation in 25 occasions, presence of dogs on the nesting beaches in 1,612 cases and noise pollution in 218 cases.

Recent illegal actions: In December 2015 a new illegal road was constructed within the boundaries of the NMPZ and partly within the Natura 2000 site. The road was constructed in the area between the nesting beaches of Gerakas and Daphni (zone Φ1: protected landscape) and was about 6m wide and 1km long, connecting the main road to Vasilikos with a small beach next to Gerakas (Photo 9a). Not only no restoration works took place since 2015, but also in March and April 2018 the construction works continued (Photo 9b). Since August 2018 though, fines were imposed on the alleged perpetrator.

At the end of 2017 two new illegal buildings in the area behind Gerakas beach were located (zone Π2: nature protection zone), where any building activity is prohibited. In particular, one new stone house (of approx. size 80sqm) and one stable (of approx. size 150sqm) were constructed (Photos 10a, 10b). Although the competent Urban Planning Authority imposed fines, no demolition and restoration works took place until now.

In mid-March 2018, behind the nesting beach of East Laganas (location Louros, zone Π3: nature protection zone), heavy vehicle intervention took place in the sand dune zone, resulting in total destruction of dune vegetation (Photo 11a). No action was taken by any competent authority while the interventions were continued during 2019 by the owners of the property (Photo 11b).

The landfill site: Within the boundaries of the NMPZ (behind Vrodonero beach, between Kalamaki and Sekania) exists an overused landfill site. Since 2018 it is closed but not yet restored by the Municipality (despite the imposition of fines by the Prefecture), continuing to constitute a permanent toxic pollution threat to both the nesting beaches and the marine area (Photo 12).

2.2. The marine area

Although the marine area of Laganas Bay is a Nature Protection Site according to the Presidential Decree (Zone Ia), it's carrying capacity regarding vessels was never studied. This lack of assessment combined with the problematic legislation regarding vessels' licensing⁴, has resulted in rapid and uncontrolled increase of boating activity in recent years. In 2019, according to Coast Guard data, 467 vessels operated in the NMPZ waters. This uncontrolled growth combined with the lack of wardening by the MA and local Coast Guard, resulted in an overall harassment of sea turtles in the habitat of Laganas Bay, as an

⁴ General Port's Regulations 20 (Government Gazette B 444/26-4-1999 as amended) and 38 (Government Gazette B 748/19-5-2004 as amended).

increased number of violations was recorded. In particular:

The Presidential Decree includes three zones (A, B and Γ) in the marine area and regulates maritime traffic (i.e. speed limit of 6 knots, ban of boats in zone A, ban of anchoring in zone B) and fishing annually from 1 May to 31 October (Illustration 2). In 2019, 2,120 violations of legislation were recorded by ARCHELON in the marine area. Of these, 1,991 incidents were boats breaching the speed limit of 6 knots, which is in place to prevent lethal collisions with sea turtles. This very high number of violations combined with at least 2 dead sea turtles with signs of injuries caused by boat collision, indicates the problematic situation in the protected marine area of the NMPZ resulting in direct disturbances to marine turtles. In the case of boats entering zone A, 26 incidents were recorded, while 85 incidents of anchored in zone B boats were documented.

In Laganas Bay exists a huge industry of turtle spotting, for which specific guidelines⁵ were drafted by the NMPZ MA and ARCHELON and since May 2018 were included in a legislative act of the Coast Guard⁶. Moreover, since 2006 the MA introduced the “Turtle-Spotting Zone”, which, hosting a high density of turtles, is supposed to be exclusive for “endorsed Turtle-Spotting Boats” with carrying capacity <25 passengers but still remains voluntary (Illustration 3). In 2019, ARCHELON recorded 3,673 cases of non-compliance with the turtle spotting code of conduct and of unauthorized boats entering the “Turtle-Spotting Zone”. Specifically, during 533 turtle observations in 2019, ARCHELON recorded 127 boats with a carrying capacity >25 passengers in the “Turtle Spotting Zone”. Regarding the guidelines for Turtle-Spotting, ARCHELON recorded 3,547 incidents of non-compliance (Photos 13a, 13b, 13c). Of these, in 1,186 incidents the approach distance was violated, in 442 incidents the approach angle was violated, in 939 incidents more than 2 boats were present, in 461 incidents the boats observed the turtle more than 10 minutes, in 257 incidents the observation was not terminated even if the turtle was disturbed and in 250 incidents the boats demonstrated disturbing behavior. Lastly, during 2019 nesting season the phenomenon of sea turtles’ feeding, which was a common practice during 2016 and 2017, was only sporadically recorded (i.e. 11 cases).

3. Conclusions and Recommendations

20 years since the NMPZ’s establishment not only the majority of conservation issues remain unresolved but also recent illegal actions lead to further degradation of the habitat. Moreover, the results of marine area monitoring in 2019 highlight that there is serious harassment of sea turtles in Lanagas Bay. National and international pressure is essential to achieve favorable conservation status of the habitat in general and marine turtles in particular.

3.1. Recommendations for the terrestrial habitat

- All competent authorities, including the NMPZ MA, must ensure the law enforcement (especially regarding beach furniture and beach users).
- Adequate wardening on a 24-hour basis is absolutely essential.
- A permanent and sustainable solution for Daphni beach (point 1, Recommendation No. 9 of Bern Convention) needs to be found (in order to not only prevent any further developments but also remove all the illegal constructions).
- Light and noise pollution at all nesting beaches of the Bay should be minimized (point 7, Recommendation No. 9 of Bern Convention).
- The area of the illegal sanitary landfill must be restored as soon as possible.
- The elaboration of a Management Plan, which would include all the specific conservation measures, should be urgently resumed and strictly enforced.

⁵. The guidelines for Turtle-Spotting, which are required to be implemented by all boat operators, minimize disturbances of sea turtles during observation and regulate: (a) approach distance, (b) approach angle, (c) maximum number of boats that can be present in an observation / queuing distance for boats waiting to enter the observation, (d) maximum duration of observation, (e) obligation to terminate the observation when the turtle seems disturbed or tries to escape, (f) the ban of disturbing or noisy behavior, (g) the ban of physical contact with sea turtles, (h) the ban to feed sea turtles and (i) the ban to dive off vessels to swim with sea turtles.

⁶. Ref. No. 2131.13/2063/29-05-2018.

3.2. Recommendations for the marine area

- The existing legislation for vessels' licensing must be amended.
- The carrying capacity of the Bay must be studied as soon as possible.
- The existing legislation (Presidential Decree and the decision regarding the Turtle-Spotting Guidelines) must be strictly enforced by the MA and the local Coast Guard.
- The "Turtle-Spotting Zone" needs to be clearly defined and enforced.
- Adequate wardening is absolutely essential specifically in the core zone of the Turtle-Spotting activity and in the hot-spots of speeding violations.

Illustrations



Illustration 1: Map of the six nesting beaches in Laganas Bay

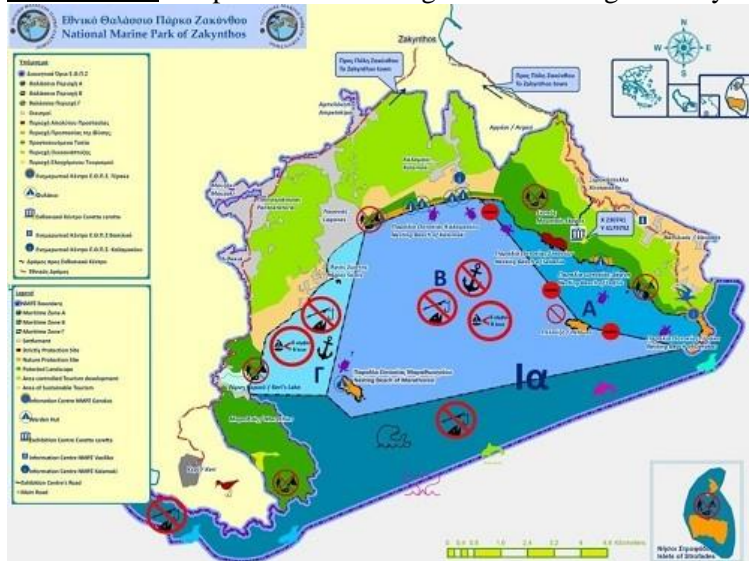


Illustration 2: Zonation scheme of the protected marine area of the NMPZ

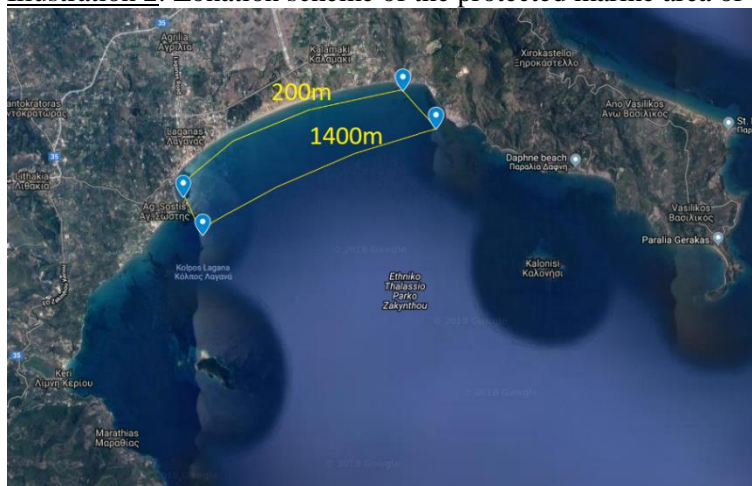


Illustration 3: Location and boundaries of the Turtle- Spotting Zone

Photos



Photo 1: Sea turtle injured due to boat collision in July 2019. The animal eventually died a month later



Photo 2: Beach furniture removal was implemented either incorrectly or not at all (Kalamaki beach, July 2019)



Photo 3: Abandoned sea turtle nesting attempt as the nesting zone was blocked by sunbeds (Gerakas beach, June 2019)



Photo 5: Light pollution on Sekania beach, originating from East Laganas beach (July 2019)



Photo 4: Pedalos blocking the access to female sea turtles (East Laganas, June 2019)



Photo 6: A rope was used as a boundary to block access to the back of the beach (Gerakas Beach, July 2019)



Photo 7: Horse riding on Vrodonero beach (September 2019)



Photo 8: Illegal businesses on Daphni beach (July 2019)



Photos 9a,b: Illegal road constructed between Daphni and Gerakas nesting beaches



Photos 10a,b: Illegal buildings behind Gerakas nesting beach



Photos 11a,b: Destruction of the sand dune zone in East Laganas (photo (a) taken in March 2018, photo (b) taken July 2019)



Photo 12: Illegal landfill established in the boundaries of the NMPZ



Photos 13a,b,c: No compliance with the Turtle Spotting guidelines