



ZAKYNTHOS ANNUAL REPORT 2022

*Conservation efforts during 2022 at the
nesting habitat of *Caretta caretta* in Laganas
Bay, Zakynthos, Greece*

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

Athens, October 2022

**ARCHELON, The Sea Turtle
Protection Society of Greece**



Copyright © 2022 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.: +30-210-5231342
e-mail: info@archelon.gr
URL: www.archelon.gr

1 INTRODUCTION

The nesting beaches of the loggerhead turtle (*Caretta caretta*) in Laganas Bay, Zakynthos Island have been included in the site GR2210002 "Kolpos Lagana Zakynthou (Akr. Geraki-Keri) kai nisides Marathonisi kai Peluso" of the European Natura 2000 network. In 1999 the 6 distinct nesting beaches (Marathonisi, Eastern Laganas, Kalamaki*, Sekania, Daphni, Gerakas) were included in the National Marine Park of Zakynthos (NMPZ), designated by Presidential Decree (PD - Government Gazette 906D/22-12-1999) (Images 1, 2).

The PD contains specific regulations for each protected zone, however, a Management Plan (MP) for the species and habitats of the NMPZ has not yet been issued. The significant pressures on the species and habitats, both on land and in the protected marine area, are expected to be addressed by the Special Environmental Studies (SES) and Management Plans (MPs) under elaboration for all Natura 2000 sites. These documents are drafted by a project of the Ministry of Environment and Energy (YPEN), but great delays have been observed in its completion. Responsible for the safeguarding, protection and management of the NMPZ is the Management Unit (MU) of the National Parks of Zakynthos, Ainos and Protected Areas of the Ionian Islands, based on Zakynthos, which is supervised at a central level by the Natural Environment and Climate Change Agency (N.E.C.C.A.).

* The Management Unit of the National Marine Park Zakynthos refers to the nesting beaches of East Laganas and Kalamaki as Kalamaki and Crystal respectively



2 RESULTS

ARCHELON is present in Laganas Bay continuously since the early 80's, carrying out monitoring and protection of sea turtle nests, while systematic beach monitoring began in 1984. The Project of ARCHELON in Laganas Bay is the oldest monitoring project in the Mediterranean, involving nest counts and collection of various reproductive data. Analysis of the previous 38-year data (1984-2021) highlighted the effects of global warming on this important sea turtle population.

The monitoring and protection project of ARCHELON during the 2022 nesting season was carried out by volunteers/researchers between 5 May and 15 October and was successfully completed. According to preliminary data, more than 1,100 sea turtle nests were recorded, which were protected with the support of the NMPZ's MU, against trampling, inundation by the sea and light pollution. Despite the establishment of NMPZ 22 years ago, light pollution remains a serious threat for sea turtle nesting in the habitat (Photos 1a, 1b). In particular, during the 2022 nesting season, a significant number of nests were affected by artificial lights, while the problem mainly occurs on the beaches of Kalamaki (24% of nests affected), East Laganas (77,9%) and Daphni (41,3%).

A total of 49 incidents of sea turtle strandings were recorded on Zakynthos Island, of which 13 were located within the marine protected area of Laganas Bay, during the first 10 months of 2022. Of those, 43 were dead turtles and 6 injured ones. The cause of death/injury was unknown in 30 incidents and in 9 cases there were indications of interaction with fisheries (Photo 2). Boat collision was clearly indicated in 10 incidents, of which 3 were found in the marine protected area of Laganas Bay (Photos 3a, 3b, 3c).

Regarding the public awareness efforts, more than 25,000 locals and visitors were informed about the nesting of sea turtles and the protection measures in place. The activities included informative shifts on the nesting beaches, at various touristic facilities and on boats, as well as at the ARCHELON's Information Station in the town of Zakynthos. Beach patrols, wardening and protection of the nesting zone on the beaches with use of ropes were implemented by the NMPZ-MU. The observatory against wildfires in the area behind Sekania beach, was operated by WWF Greece.



The analysis of previous data shows that after the establishment of the NMPZ, the contribution of individual beaches to the nesting of the species has changed. In particular, in recent years, the average contribution of the beaches of East Laganas, Kalamaki and Gerakas has increased, with a corresponding decrease in the contribution of Sekania beach. This long-term change can perhaps be attributed to better protection measures gradually implemented by the NMPZ-MU, as well as to better management of beach equipment by local businesses. However, a significant decrease in the number of nests has been observed on the beaches of Marathonisi islet and Daphni, which is related to the disturbance of sea turtles by boats in the marine area and to uncontrolled anthropogenic pressure on land respectively. Considering the longterm trend of the breeding population, as shown by annual nest counts over 39 years, it can be concluded that the population of loggerhead sea turtles nesting in Laganas Bay is rather stable, with strong annual fluctuations, and continues to constitute one of the largest breeding populations of the species in the Mediterranean.

3 THREATS

Zakynthos has become a major international tourist destination during the last 20 years. Thus, the number of touristic facilities and businesses operating within the NMPZ and its buffer zone has multiplied. Similarly, the number of visitors on the nesting beaches and on turtle spotting boats within the marine protected area, has increased rapidly. The constant presence of the NMPZ-MU and the great effort of the ARCHELON field team this summer, ensured the continuation of the long-term monitoring and protection of nests and hatchlings.

However, the willingness of local stakeholders and local authorities to collaborate towards better implementation of the current legislation within the NMPZ, was for another year very low. The indifference of the majority of coastal business owners resulted in violations of the PD regulations on a daily basis. The Coast Guard and the Police, which are the competent authorities for law enforcement in the marine area and on the beaches respectively, made a very low number of visits/autopsies during the touristic season. Fines were not imposed* for breaching the regulations of the PD for the conservation of nature in the marine area and on the nesting beaches.

* ARCHELON requested from the Coast Guard of Zakynthos the relevant data (number of conducted visits/autopsies, number of imposed fines, as well as the number of operating boats in the marine protected area of Laganas Bay during 2022– Ref. No. 29432/03-10-2022), but until today no answer was provided.



In the marine protected area, the inadequate presence of Coast Guard combined with the problematic legislation regarding the licensing of touristic boats (i.e. there is no restriction of the maximum number of boats that may operate within the marine protected area), has resulted in the presence of a significant number of turtle spotting boats, which are crowded in Laganas Bay on a daily basis, causing disturbances to the protected species.

More specifically, during the 2022 nesting season, several incidents of violations were recorded, both on land and at sea.

In the marine protected area of Laganas Bay, which is designated as a Nature Protection Zone (zone Ia), ARCHELON recorded 1,803 incidents of exceeding the 6 knots speed limit (Photo 3a). Further to that, there were 39 incidents of boats navigating within Zone A (Zone A is adjacent to Gerakas, Daphni and Sekania beaches, where no boat activity is permitted from 1 May to 31 October) (Photo 4). Within Zone B, there have been 78 incidents of boat anchoring (anchoring is prohibited in Zone B, both to protect the basking sea turtles in the shallow waters and the Poseidonia meadows – *Posidonia oceanica*).

The rules for the Sea Turtle Watching from boats (Turtle Spotting trips), which are in force by decision of the Zakynthos Coast Guard, were again not implemented. In particular, regarding the permitted maximum number of vessels watching a sea turtle at the same time (up to 2 vessels), more than 109 incidents of violation were recorded, with an average of 8,5 boats observing a turtle at the same time (the number of boats varied from 3 to 28) (Photo 5). The incidents of violating the minimum distance from the turtle during observation (15m and approaching from the sides to avoid visual contact) were 134, while the incidents of observing a turtle for more than 10 minutes were 584. Moreover, in 28 incidents intense noise pollution was recorded during observation. Last but not least, more than 22 incidents of turtle feeding by fishermen, aiming to tips from tourists, were recorded in the harbor of Agios Sostis. It must be noted that this practice impacts sea turtles, as not only the wild animals receive inappropriate food, but also feeding appears to be linked with changes in their behavior.

Violations of the existing provisions of the PD regarding the maximum allowed number of beach furniture were recorded on the nesting beaches which have been designated as Nature Protection Zones. ARCHELON recorded 177 sunbeds on Gerakas beach (instead of the permitted 120) and 610 sunbeds on Kalamaki and East Laganas (instead of the permitted 300) during the high touristic season (i.e. July-August).



In addition and contrary to the existing regulations, private umbrellas were observed on a daily basis on Kalamaki and East Laganas, close to the back of the beach (Photo 10). Further to the above, during 150 days of observation, ARCHELON recorded 87,070 incidents of beach furniture remaining on the beach at night on Kalamaki and East Laganas beaches, despite the regulation to remove beach furniture during nighttime, to secure available space for nesting (Photos 6a, 6b). The recorded incidents of watersports equipment remaining on the nesting beaches during nighttime was 2,481 (Photos 7a, 7b). Similarly, during 150 days of observation, ARCHELON researchers recorded human presence on the beach during night hours (1,628 incidents) (Photos 8a, 8b, 8c), vehicles (68 incidents) (Photos 9a, 9b, 9c) and horse riding (125 incidents) (Photo 9d).

It must be noted that even though Sekania beach is an Absolute Protection Zone, where human presence is not permitted, several incidents of visitors approaching the beach from both land and sea were recorded (Photo 9b). Unfortunately no improvement was recorded regarding the illegal activities which have a long-term impact to the sea turtle habitat. The old landfill site remains without any environmental restoration. The illegal road between the beaches Daphni and Gerakas, within zone Φ1, remained in operation and even worse, in 2022 the Prefecture of Ionian Islands issued a decision (Ref. No.: 38702/7817/16-5-22, Administrative Post Number: 6YI87AE-ΠΥΨ), according to which the imposed fine has been dramatically decreased (from 200,000 EUR to 10,000 EUR). Regarding the illegal buildings/residences behind Gerakas beach and the illegal buildings in the private properties behind Daphni beach, which operate as rental rooms and tavernas, the local and regional authorities have not implemented yet the demolition protocols, which were issued decades ago for these illegal constructions.

4 CONCLUSION

Although Zakynthos would benefit from a sustainable tourist destination approach, no concerted effort has been made towards this direction. The threats described above highlight the urgent need for sustainable management of the anthropogenic activities and for efficient wardening of the nesting beaches and the marine protected area. Also, there is great need for raising awareness to local stakeholders, authorities, and visitors regarding the significant ecological value of the NMPZ and the importance of habitat preservation.



INDEX

IMAGES AND PHOTOS



Image 1

Map of the six nesting beaches in Laganas Bay.

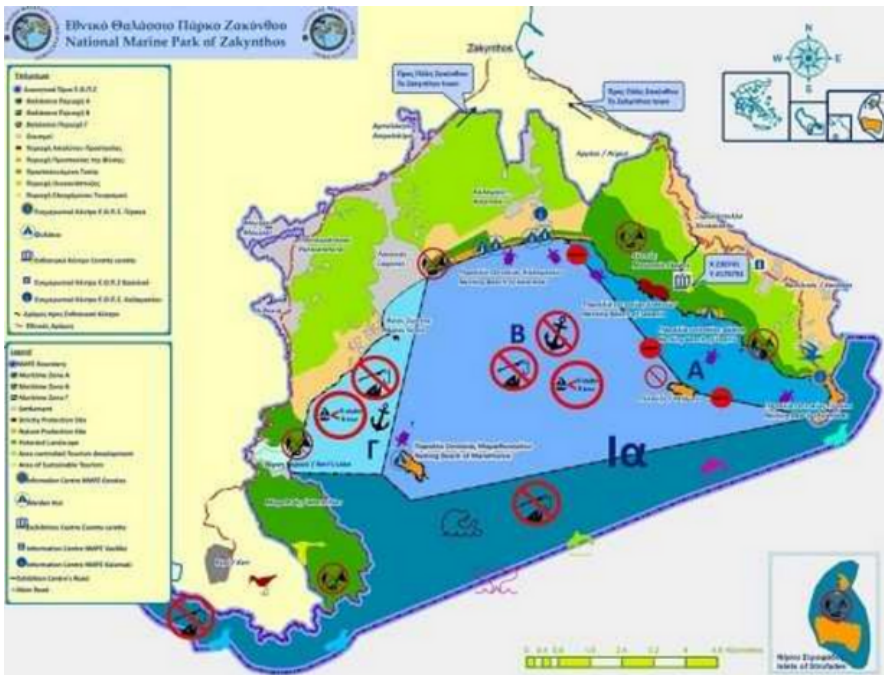


Image 2

Zonation scheme of the protected marine area of the NMPZ

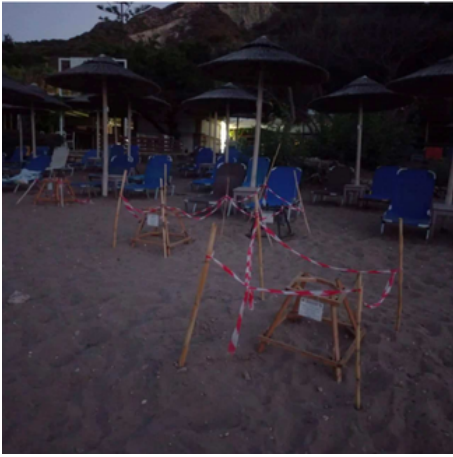


Photo 1a
Light pollution on Daphni beach in great proximity to incubating sea turtle nests. (September 2022)



Photo 1b
Disorientated hatchling tracks at a parking lot behind Daphni beach. (September 2022)



Photo 2
Injured sea turtle entangled in fishing line found in the marine protected area of Laganas Bay. (July 2022)



Photo 3a
Boat speeding (arrow) and numerous turtle spotting boats (circle) crowded to watch the same turtle. Marine protected area of Laganas Bay. (September 2022)



Photo 3b
Injured sea turtle from boat collision within the marine protected area. The turtle died shortly after. (July 2022)



Photo 3c
Dead sea turtle from boat collision found in Zakynthos port. (September 2022)



Photo 4
Boat (arrow) entered and remained in zone A near Sekania beach. (August 2022)



Photo 5
Turtle spotting in the marine protected area of Laganas Bay. The number of boats exceeds the permitted number of two boats watching a sea turtle at the same time. (August 2022)



Photo 6a
Unstacked sunbeds during nighttime on East Laganas nesting beach. (July 2022)



Photo 6b
Unsuccessful nesting attempt. Female turtle abandoned the attempt after she got disturbed by the sunbeds on Laganas Bay. (June 2022)



Photo 7a
Water sport equipment is always left on the protected nesting beach (East Laganas beach) deterring nesting females to emerge on the beach to nest. (June 2022)



Photo 7b
Water sport equipment is always left on the protected nesting beach (East Laganas beach) deterring nesting females to emerge on the beach to nest. (September 2022)



Photo 8a
Human presence during nighttime on nesting beaches. Tent on Daphni beach. (August 2022)



Photo 8b
Human presence during nighttime on nesting beaches. Tent and canoe on Sekania beach. (June 2022)



Photo 8c
Human presence during nighttime on nesting beaches. Caravan on Daphni beach. (July 2022)



Photo 9a
Quad tire tracks near caged nests (circles) on Daphni beach. (August 2022)



Photo 9b
Visitors entered the nesting beach in Daphni and drove next to protected nests (circles). (September 2022)



Photo 9c
Tire tracks on East Laganas beach next to nests (circles). (June 2022)



Photo 9d
Horse tracks next to a protected nest (more nests in circles in the background) on East Laganas nesting beach. (August 2022)



Photo 10
Although the beach use during the incubation period should be restricted within the front 5m from the shore, and although ropes have been placed by MU of NMPZ (green arrow), beach users kept violating that restriction (red arrows) on East Laganas beach. (August 2022)