



ANNUAL ACTIVITY REPORT CRETE PROJECTS

———— 2025 ————

We can all LIVE TOGETHER!

Athens, December 2025

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



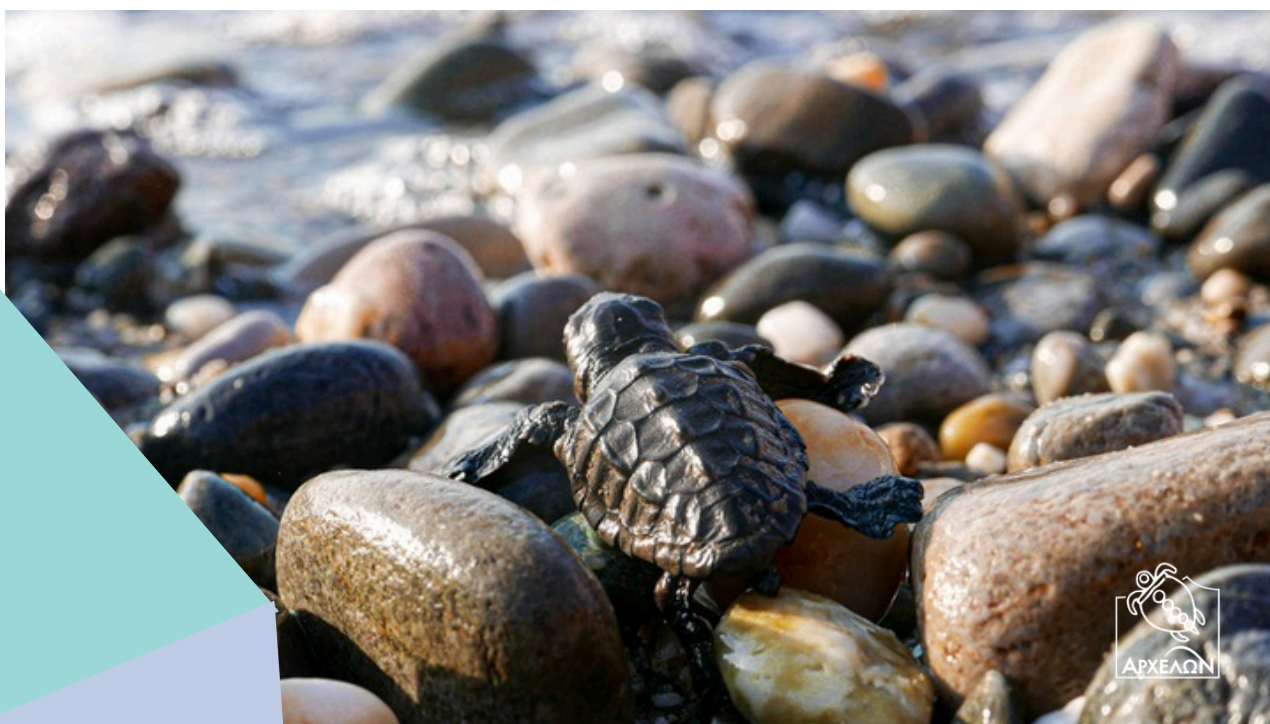
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1 INTRODUCTION

The main nesting sites for the Loggerhead sea turtle (*Caretta caretta*) in Crete are included in **4 Natura 2000 Network sites**:

- **Rethymno beach** (10.8km long) in **GR4330004** "PRASSANO FARANGI - PATSOS - SFAKORYAKO REMA - PARALIA RETHYMNOU KAI EKVOLI GEROPOTAMOU, AKR. LIANOS KAVOS – PERIVOLIA"
- **Chania beach** (13.1km long) in **GR4340003** "CHERSONISOS RODOPOU – PARALIA MALEME – KOLPOS CHANION" and (partly) in **GR4340006** "LIMNI AGIAS – PLATANIAS – REMA KAI EKVOLI KERITI – KOILADA FASA"
- **Messara Bay beach** (8km long) in **GR4310004** "DYTIKA ASTEROUSIA (APO AGIOFARANGO EOS KOKKINO PYRGO)"

The Protected Areas Management Units (MUs) of the Natural Environment and Climate Change Agency (NECCA) are responsible for the management and protection of these sites. Specifically, the **Management Unit of Samaria National Park and the Protected Areas of Western Crete** is responsible for the areas of Rethymno and Chania, while the **Management Unit of Eastern Crete Protected Areas** is responsible for Messara Bay.



2 ACTIVITIES & RESULTS

ARCHELON's 2025 Conservation Project was carried out from early May to late October, by three distinct groups of volunteers/researchers and was successfully completed. The nest protection and monitoring activities were implemented thanks to the valuable participation of **150 full-time volunteers**, of whom 53 completed their student internships. In addition, approximately 15 local residents contributed as part-time volunteers.

2.1 Nest Monitoring and Protection

ARCHELON has been systematically recording and protecting the Loggerhead nests and hatchlings on the three main nesting beaches in Crete since the 1990s. According to preliminary data, more than **710 nests** were recorded on these beaches in 2025. The largest percentage of nests were protected against trampling, flooding by waves and the effects of light pollution. Specifically:



In **Rethymno** (where the project has been implemented every year since 1990) **248 nests** were recorded and protected in 2025. The researchers/volunteers monitored the beach daily, on a total of 456 six-hour monitoring shifts and 128 three-hour nest shading shifts. Protective shading was applied to the vast majority of the nests (86%). It is estimated that **14,000 hatchlings** successfully hatched from the nests in Rethymno.

In **Chania** (where the project has been implemented every year since 1992) **246 nests** were recorded and protected in 2025. The researchers/volunteers monitored the beach daily on a total of 456 six-hour monitoring shifts and 59 three-hour nest shading shifts. Protective shading was applied to the vast majority of the nests (89%). It is estimated that **13,000 hatchlings** reached the sea safely in Chania.

In **Messara Bay** (where the project has been implemented every year since 1993) **222 nests** were recorded and protected during 212 six-hour shifts of daily monitoring in 2025.

2.2 Migration studies using satellite transmitters

Within the framework of the **LIFE MareNatura** project, a total of **20 satellite transmitters** were fitted on sea turtles that were nesting on the beaches of Chania and Messara Bay in 2024 and 2025. These transmitters contribute to the research for feeding areas and migratory routes used by the local Loggerhead population.



2.3 Strandings

During the project's run, a total of **41 dead sea turtle strandings** were recorded: 19 in Rethymno, 20 in Chania and 2 in Messara Bay. One alive sea turtle was found stranded on Voulisma beach in Lassithi with a severe head injury deliberately inflicted by humans. The **injured turtle** was transferred to ARCHELON's Sea Turtle Rescue Centre for treatment.



2.4 The problem of feeding turtles in Marathi Akrotiri and the old port of Chania

Marathi Akrotiri and the old port of Chania are both located far from the nesting beaches. However, in recent years, a worrying phenomenon has been observed, driving our attention in these areas. Certain businesses and citizens are feeding the sea turtles.

It's important to note that the intake of inappropriate food causes discomfort to the animals. Additionally, sea turtles might develop aggressive behaviour towards humans as a result of this practice. Several cases of sea turtle biting bathers have been reported in Marathi Akrotiri.

In the summer of 2025, ARCHELON provided advisory support to the Municipality of Chania (Civil Protection Department) in the construction and installation of **5 informative signs in Marathi**. The new signs advise against the feeding of turtles. Regarding the feeding incidents in the old port of Chania, ARCHELON made intense efforts to activate the competent port authority, but without any real outcome. Unfortunately, the illegal feeding practice continued, endangering not only the wild animals, but also the humans bathing in these areas.

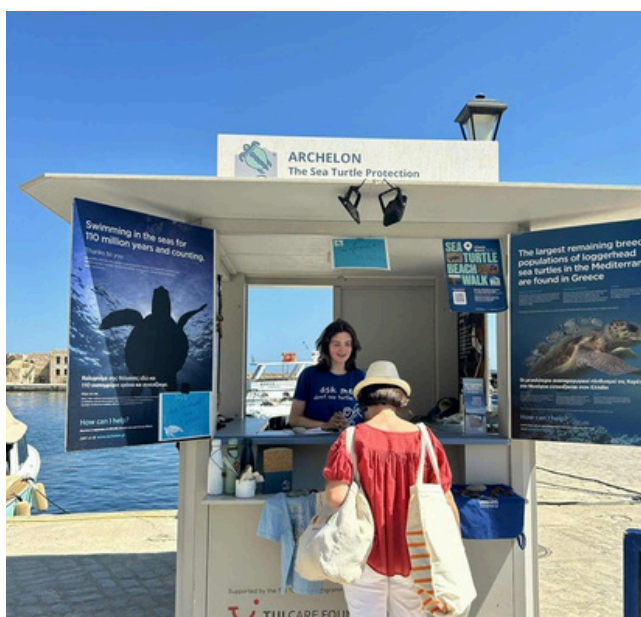
2.5 Raising public awareness

Info Stations

The Rethymno Information Station operated for 320 three-hour shifts, informing a total of **4,101 visitors** and locals about sea turtles. The Information Station in the old port of Chania operated for 370 three-hour shifts, informing **5,108 visitors**, while the Information Station in the settlement of Matala in Messara Bay operated for 289 three-hour shifts, raising awareness among **2,394 visitors**.

Sea Turtle Beach Walks

The Sea Turtle Beach Walk programme operated throughout the season in all three areas. In Rethymno, our volunteers guided 1,138 visitors during a total of **148 walks**. In Chania, **112 beach walks** informed 537 people and, finally, in Messara Bay, **31 beach walks** raised awareness among 242 participants.



Public Nest Excavations

Several days after a nest hatches, ARCHELON researchers/volunteers excavate it to collect valuable data on hatching success. Some excavations are open to the public, offering a rare opportunity for people to watch field research in action. During the hatching period, ARCHELON field teams carried out 49 public nest excavations in Rethymno, 59 in Chania, and 31 in Messara Bay, giving a total of over **4,116 visitors and locals** (1,736 people in Rethymno, 1,540 people in Chania and 840 people in Messara Bay) an unforgettable experience.



Promoting sustainable tourism in Rethymno and Chania & The “TUI Turtle Aid Greece” project

In 2025, ARCHELON strengthened its efforts to promote sustainable tourism in Crete. We continued to collaborate with 16 hotels in Rethymno and 16 in Chania, offering weekly awareness-raising activities, such as presentations, film screenings, educational activities for children, beach clean-ups and more.

We also continued to support the pilot phase of the **Turtle-Friendly Certification for Hotels**, an initiative with the support of the TUI Care Foundation in the framework of the TUI Turtle Aid Greece project. Three hotels in Rethymno and five in Chania participated in the pilot certification program. ARCHELON provided the hotel staff with the necessary guidance and training regarding the management of the nesting beach located in front of their facilities.

Participation in local events

In Rethymno, the ARCHELON team attended the **Cretan Food Festival** (July 3-7) and the **Amari Green Festival** (July 18-21). In Chania, the field team participated in the **Alternative Tourism Festival** (May 16-18) and the **Earth Festival** (July 2-6). In Messara Bay, ARCHELON participated in the **Matala Street Painting Festival** (July 4-6).

Environmental Education

During the period May – June and September – October, the field teams held a total of **45 presentations for children** (26 in Rethymno, 14 in Chania and 5 in Messara Bay), introducing students to the biology of the sea turtle, the challenges faced by the species and the importance of protecting coastal ecosystems.



3 THREATS

In 2025, ARCHELON continued to record pressures with short-term and long-term impacts on the conservation of sea turtles and their habitats on the beaches of Rethymno, Chania and Messara Bay. The relevant data for each nesting habitat collected during the 152 days of monitoring is presented below.

3.1 RETHYMNO

3.1.1 Threats with short-term impact

Occupancy of available nesting space by beach furniture

In 2025, 94 businesses operated on the beachfront of Rethymno from the city to Skaleta (total length 10.8km). The percentage of businesses that removed their beach furniture after sunset (so that there is available space for adult turtles to nest) seems to have increased from 20% in 2024 to 52% in 2025. Undoubtedly, this increase is a positive development. But, in order to achieve a satisfactory habitat state for turtle nesting, significant improvements are needed.

In addition, 9 water-sport businesses operated on the Rethymno beach-front, whose equipment remained on the beach during the night. Efforts to further improve the situation must continue to ensure that all businesses comply with this specific protection measure.

Another pressure is that some beachfront businesses level the sand daily using rakes and other tools (1,142 incidents were recorded). This tactic puts the nests at risk and makes it difficult for volunteers/researchers to locate and protect the nests.

Vehicles and human presence

Human presence on the beach at night prevents adult turtles from nesting and may result in the trampling of hatchlings. In 2025, ARCHELON recorded many (around 4,700) incidents of humans present at the beach at night aiming to observe turtles. In some cases when large crowds gathered around a nesting turtle, ARCHELON researchers/volunteers had to ask people to leave in order to reduce the disturbance to the animal.

In 2025 there was also a large increase in the number of **private dinners** offered by certain businesses on the nesting beach. Those dinners typically start before sunset and often last until late at night, preventing adult sea turtles from coming out to nest to the noise and light pollution.

In addition, a significant number of incidents of vehicle and heavy vehicle traffic on the beach were recorded (140 and 9 incidents respectively). This practice seriously endangers the existing nests, degrades the habitat by compressing the sand (making it unsuitable for nesting) and destroys the natural coastal vegetation.



3.1.2 Threats with long-term impact

Extensive light pollution from private and public light sources causes hatchling disorientation

Light pollution and noise pollution continued to be a serious problem in the habitat. There was strong lighting in extensive parts of the beach, which made it difficult for turtles to come out of the sea and nest, and caused disorientation to the hatchlings. To address this problem, ARCHELON researchers/volunteers applied protective shading to the vast majority of the nests (86%). Despite the fact, hatchling disorientation was observed in 184 nests (74% of nests) due to the extensive light pollution.

Destruction of sand dunes in the coastal zone & Intense coastal development

The destruction of the natural coastal vegetation (sand dunes) has contributed to the beach's erosion in large areas (Rethymno town, Sfakaki, Skaleta), causing extensive nest flooding. In these areas, intense interventions have completely changed the morphology of the coast. Those interventions are either related to coastal construction or large-scale projects, such as the local waste treatment plant and Skaleta's fishing shelter (which began construction in early 2023).



3.2 CHANIA

3.2.1 Threats with short-term impact

Occupancy of available nesting space by beach furniture

In 2025, 164 businesses using beach furniture and 10 water sport businesses operated on Chania's nesting beach (from Kato Stalos to Kolymbari, 13.1km long). Approximately 22% of these businesses removed their beach furniture after sunset (38% in 2024). The high number of businesses operating on the beachfront makes it clear that a large part of the beach was difficult to access for the nesting turtles. Intensive efforts are needed to ensure that all beachfront businesses comply with this specific management measure in the near future. Efforts are also needed to stop the daily sand leveling, which has now been adopted by a large number of businesses (1,026 incidents were recorded in 2025).



Vehicles and human presence

Human presence at night constitutes a high-intensity pressure for sea turtle nesting in Chania (3,234 incidents recorded in 2025). The main motivation for people staying on the beach was their desire to observe turtles and hatchlings up close. ARCHELON volunteers had to ask people to leave the beach in several incidents. It is worth noting that, during the 2025 hatching period, a beach party that lasted until late at night took place at Pyrgos Psilonerou, a part of the beach with dense nesting activity. The party's sound and lighting installations caused increased vibrations and intense light pollution, putting the hatching turtles at risk.

Threats with short-term impacts also include human intervention in existing nests mostly due to overcrowding (113 incidents), as well as vehicle and heavy vehicle traffic on the beach (86 and 34 incidents respectively).



3.2.2 Threats with long-term impact

Extensive light pollution from private and public light sources causes hatchling disorientation

Another pressure that is very intense in Chania is light pollution. There are large parts of the beach without any dark spots. Light pollution affected 97.5% of the nests and forced the ARCHELON research team to apply protective shading to 89% of the nests. Despite the shading, light pollution was so intense that hatchling disorientation was observed in 169 nests (69% of the nests).

Coastal erosion and coastal development

Coastal erosion, as a result of ongoing urbanization and increasing coastal development along the entire length of the habitat, is one of the biggest problems in Chania, as it limits the available space for nesting.

To stop erosion in the Kolymbari area, three breakwaters were constructed in 2019-2020. Those appear to have led to sand deposition on the part of the beach adjacent to the jetty. However, it looks like the erosion problem has moved east, where sediment loss is observed. Ultimately, the construction of the three breakwaters in the Kolymbari area appears to exacerbate the erosion problem, rather than contributing to its solution.

Coastal development continues, with the construction of 5 new hotel units along the nesting beach (Agia Marina and Maleme locations), right at the back of the coastal zone. The operation of these units is expected to result in more light pollution, destruction of dune vegetation, more beach furniture, as well as people overcrowding on the beach.



3.3 MESSARA BAY

3.3.1 Threats with short-term impact

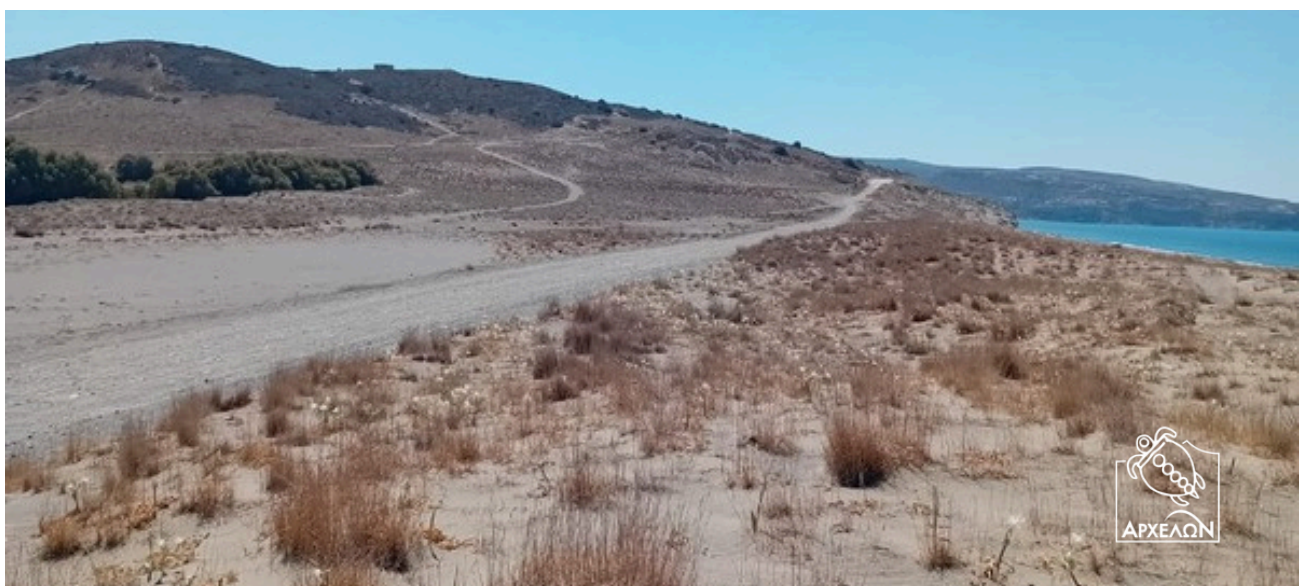
In Messara Bay, 22 businesses were recorded operating on the coastal front. 88% of these businesses (19 businesses) did not remove their beach furniture at night. Therefore, no improvement was observed in the implementation of the management measure compared to previous years. In 2025, new tables and chairs that were placed at the back of the beach in the evening hours added to the furniture load of the nesting beach.

Vehicles were also recorded on the beach, while human presence was observed in the evening hours on a daily basis. On a positive note, no beach party was organized in 2025.

3.3.2 Threats with long-term impact

Unlike Rethymno and Chania, light pollution does not occur throughout the entire length of the habitat of Messara Bay. That is, there are still dark spots left. However, there are areas like the settlements of Kalamaki and Kokkinos Pyrgos, where the problem of light pollution is particularly intense. Therefore, out of the total of 222 nests identified in the summer of 2025, 60 were affected by light pollution (27%).

The illegal road that was built in 2021 and connects Kalamaki with Afrathia remains open. At the end of this road (towards Kalamaki), new houses and a hotel unit are under construction in recent years. On the other end of the road (towards Afrathia), we observed fragmentation and degradation of the sand dunes.



4 CONSERVATION

Genetic research has shown that **the population of sea turtles breeding in Crete is genetically distinct** from populations breeding in other areas of Greece. Therefore, its protection is of vital importance for the Mediterranean.

In the past, analysis of long-term nesting data series showed a significant decrease in the annual number of nests in Rethymno and Chania, and an upward trend with annual fluctuations in Messara. In recent years, the nest numbers have raised giving a tone of optimism for the recovery of the population in Rethymno and Chania. The situation is even better in Messara Bay, where the nest numbers now show a significant upward trend. Long-term nest protection has contributed significantly to this trend increasing the number of hatchlings reaching the sea every summer. After several years, the protected hatchlings return back to the nesting habitats for reproduction. Therefore, the number of adult turtles and, accordingly, the number of nests increases. In any case, it is necessary to continue the nest protection, since there are still threats recorded both on land and at sea.



The recording and protection of nests and hatchlings in the nesting areas of Crete is a high priority action, according to the **National Action Plan for the Loggerhead Sea Turtle**, which has been institutionalized since 2021 by Joint Ministerial Decision. To date, this action has been covered exclusively by ARCHELON resources. If the Greek Authorities continue not to support the implementation of the Action Plan in these areas, a serious problem will arise since ARCHELON cannot continue to assume this expense in full indefinitely.

Crete is considered the flagship of the Greek tourism industry. It is now called upon to move towards sustainability and to develop eco-tourism alternatives in order to address the ongoing degradation of the sea turtle habitats.

In order to reduce the pressures, we need the engagement of the local communities, including municipalities, businesses and authorities, as well as the continued support from the Regional District.

Crete's three sea turtle nesting habitats are included in the Natura 2000 Ecological Network sites. The preparation of the Special Environmental Studies (SES) for their protection and management begun six years ago. And yet, no tangible result has emerged. Although the studies have been approved since September 2025, the corresponding Presidential Decrees (PD) and Management Plans (MPs) for the areas have not been issued yet, making it impossible to implement management measures. Therefore, NECCA's Management Units have an important role to play.



5 RECOMMENDATIONS

Implementation of the National Action Plan & issuance of Presidential Decrees and Management Plans

- Accelerate the procedures for the issuance of the PDs and MPs for the protected areas of Crete (Rethymno, Chania, Messaras Bay), based on the already approved environmental studies.
- Ensure the financial and operational support for the implementation of the National Action Plan for the Loggerhead Sea Turtle in the areas of Crete, so that the nest monitoring load does not fall exclusively on ARCHELON.

Threat Mitigation on the Nesting Beaches

- Make sure that the beach-front businesses remove all beach furniture, tables, chairs and water sports equipment from the nesting beach during the night (Rethymno, Chania, Messaras Bay).
- Make sure that the beach-front businesses do not level the sand with rakes or other tools (especially Rethymno, Chania).
- Prevent human presence on the beach at night during the nesting and hatching period.
- Prevent the organization of private dinners and beach parties on the nesting beaches, due to the noise and light pollution they cause.
- Prohibit the movement of vehicles on the nesting beaches.
- Implement measures to reduce light pollution (e.g. use of low, downward-directed, orange/red lighting) along the entire length of the nesting beaches.

Visitor Awareness & Promotion of Sustainable Tourism

Expand collaboration so that more tourism businesses participate in the "Turtle-Friendly Certification for Hotels" on the nesting beaches of Rethymno, Chania and Messara Bay.

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