

A four-monthly newsletter of ARCHELON, the Sea Turtle Protection Society of Greece

TURTLE TRACKS



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Few years ago the scientific community discovered that in several species of turtles, among them sea turtles, the gender of hatchlings is determined by the nest temperature during incubation. In general, high temperatures produce female hatchlings whereas low temperatures males.

Nest temperature determines also the duration of incubation, i.e. the elapsed days from egg-laying until the appearance of hatchlings at the surface. High temperatures result in faster incubation of eggs, whereas low temperatures prolong incubation periods. Hence, knowing the incubation duration of a nest we can derive a gross estimation of the hatchlings' sex ratio.

Each turtle species, and probably each population, has developed its own incubation temperature, and consequently its own incubation duration, which produce equal number of males and females (sex



MARATHONISSI: THE "MALE BEACH" IN LAGANAS BAY

ratio 1:1). This nest temperature and incubation duration are called, in the scientific literature, pivotal temperature and pivotal incubation duration, respectively.

ARCHELON had the opportunity to cooperate with a world pioneer scientist on this subject, Prof. Nicholas Mrosovsky of the University of Toronto, in assessing the pivotal temperature and incubation duration for the loggerhead turtle in Greece. These were found to be 29.2° C and 56.6 days. This means that if a loggerhead nest hatches out in less than 56.6 days, its hatchlings are predominantly female and vice versa. The application of this method on the incubation data we have collected over many years on the six beaches of Laganas Bay in Zakynthos, gave the following results: The four easternmost beaches (Kalamaki, Sekania, Daphni, Gerakas) produce mainly female hatchlings; East Laganas beach produces a little

more than 50% males; Marathonissi beach produces almost 100% male hatchlings.

This fact, confirmed also by Judith Zbinden in her recent PhD research, creates new perspectives in the ranking of the nesting beaches in Laganas Bay according to their importance to the population. In the existing criteria of importance of a nesting beach (i.e. nesting level, hatching success, etc.) the sex ratio of hatchlings should also be added. Indeed, while the contribution of Marathonissi beach to the total nesting at Zakynthos is only about 10%, the value of this short beach increases dramatically because of its particularity to produce almost exclusively male hatchlings, something that will be more and more important in the future, having in mind the climate change and the increasing global temperatures.

Dimitris Margaritoulis
Board member of ARCHELON

"STUDENT AMBASSADORS" VISIT ARCHELON



Our previous successful cooperation with PEOPLE TO PEOPLE (an American Association aiming at global understanding) and its initiative STUDENT AMBASSADORS continued in the summer

of 2007. In the context of this project American students visit Greece, come in contact with relevant organizations, and carry out various cultural and environmental activities. One of these activities is to visit, learn about and help volunteers' work in various ARCHELON's projects. From 24 June to 1 August sixty four group visits took place at the Rescue Centre in Glyfada and 13 group visits at the Environmental Station of Pagalohori at Rethymno, Crete. In total, 2,897 students (from 14 to 17 years old) had the opportunity to experience the work of ARCHELON. In Glyfada they participated in various every-day routines and were able to watch the feeding of injured turtles. At Rethymno they helped ARCHELON volunteers in the construction of shadings for turtle nests affected by artificial lights.

FOREST FIRES THREATEN THE SECOND MOST IMPORTANT NESTING AREA IN THE MEDITERRANEAN

Blazing forest fires in August, with many human victims and thousands of hectares of forest land burnt in Peloponnesus, threatened also the core nesting area in the Bay of Kyparissia, which is the second most important nesting area of the loggerhead turtle in the Mediterranean. The fires destroyed a large part of the coastal forest to the north of the core nesting habitat. As the fire was moving southwards with high speed because of the strong winds, ARCHELON team had to abandon their camping site at Elaia. Fortunately the winds changed the fire's direction

and the core nesting area (south of Neda River) was saved. Regrettably, the coastal forest north of Neda River up to Kaiafa Lake, where there is also substantial turtle nesting, was burnt completely. In subsequent days ARCHELON volunteers assisted the Forest Service in patrolling the area for fear of new fires, and in one case they even helped to extinguish a remnant fire. The main impact of the fires on the nesting beach is to be expected with the first rains when the loss of vegetation will cause substantial soil erosion.

VODAFONE SPONSORS PUBLIC AWARENESS PROGRAMME

The "People of the Sea" public awareness programme was conceived by ARCHELON with the aim to sensitize people connected with the sea on the plight of sea turtles. The programme includes presentations and meetings with fishermen, Coast Guard personnel, boaters, sailors and other "people of the sea" with the objective to make them aware on the problems that sea turtles face at sea. At these meetings leaflets, information sheets and flashlights for their boats are handed out to participants. The first phase of the programme, conducted successfully in many coastal areas of Peloponnesus and Attica, ended in July. The entire activity is sponsored by the VODAFONE GROUP FOUNDATION, which also covers most of the operational costs of our Rescue Centre at Glyfada.

ARCHELON MEETS WITH THE INFLATABLE BOATS ASSOCIATION

It was one spring evening when the members of the Inflatable Boats Association of Greece welcomed ARCHELON's delegates on their premises at Alimos. More than fifty skippers attended the presentation given by our Director Mr Theodoros Benos-Palmer, who presented the biology of sea turtles and ARCHELON's activities. Most of the skippers had had some experience with sea turtles and hence showed a great concern and asked many questions. Some even described their encounters with sea turtles. The members of the Association showed particular interest in participating in the Sea Turtle Stranding Network, which operates nationwide by ARCHELON in cooperation with the Coast Guard. The event was organized in the frame



of raising awareness among the "People of the Sea", an initiative of ARCHELON, supported by the VODAFONE GROUP FOUNDATION (see relevant article in this issue).

SEA TURTLE RELEASE IN HONOUR OF THE COAST GUARD



The Coast Guard in Greece faces with genuine interest the protection of sea turtles and contributes greatly in their rescue. Most of turtle strandings as well as injured turtles are reported to ARCHELON

through the Coast Guard Stations all over Greece. Coast Guard efforts were rewarded by giving them the opportunity to release two injured turtles after their treatment at ARCHELON's Rescue Centre. The commanding officer and personnel of Glyfada Coast Guard Station, supplemented by volunteers of ARCHELON, released the turtles offshore Glyfada in Saronikos Bay. It was a very emotional moment when the two juvenile animals, "Christos" and "Carolina", disappeared in the deep blue. For the history, Carolina was found in Kissamos Bay of Crete on 4 May 2007 with a rear flipper injury, and Christos, found in Saronikos Bay on 6 May 2007, had swallowed a hook. Once more the cooperation of ARCHELON with a public service produced a great result.

SURFING ON THE INTERNET....

Sperm whales return to the Mediterranean...?

Researchers of the University of Pavia, Italy, have announced that sperm whales have returned to the Mediterranean in "remarkable numbers" since they were first spotted two years ago. Then NEMO - the Neutrino Mediterranean Observatory - started picking up strange sounds off Catania, Sicily. The sounds turned out to be the "clicks" of sperm whales talking to each other. The International

Fund for Animal Welfare (IFAW) said two years ago that large herds of sperm whales had become unheard of in the Mediterranean. Scientists say there may be hundreds of sperm whales off Sicily now. Environmentalists however are sceptical; IFAW has suggested that researchers are counting the same whales more than once.

From: www.physorg.com/news90689434.html

ZAKYNTHOS NEWS

In the middle of May, ARCHELON together with the National Marine Park of Zakynthos conducted beach cleans on the nesting beaches of Gerakas, Daphni, Sekania, Kalamaki and East Laganas. This season, the first nest at Zakynthos was recorded on 17 May! It is the earliest nest on record since 1984, when we started our long-term standardized monitoring project, probably a response to global rising temperatures. During June and July Dr Judith Zbinden, a long-term ARCHELON volunteer and field leader, successfully attached satellite transmitters to 11 turtles as part of her post-doc research study. The movements of the turtles can be viewed on the website www.seaturtle.org. Regrettably, this nesting season a total of 13 dead and 3 injured turtles were reported with a further 6 being released from fishing lines or nets by our sea turtle rescue team. These numbers are considered very high and are attributed to fishing activities, mainly outside the limits of the National Marine Park.

PELOPONNESE NEWS

The opening of an illegal road destroying sand dunes at Sani beach (between Kalo Nero and Kyparissia) was stopped thanks to concerned residents who informed us on time (this beach is not included in our monitoring routine). The problem now is who and when will restore the destroyed part of dunes. The fruitful cooperation was continued with OLYMPIA RIVIERA, a Grecotel owned hotel at Killini, north of Kyparissia Bay, just across Zakynthos. Several presentations to tourists were done by the ARCHELON team, based in Kyparissia Bay. Although not many turtles nest in this area, Grecotel and its primary tour operator TUI wish to have their clients informed in case they encounter a sea turtle or a hatching nest in the area. It is to be reminded that ARCHELON has a long-standing collaboration with Grecotel, mainly on Crete where the company operates several hotels close to nesting beaches. In Lakonikos Bay, the project continued in Mavrovouni with in situ protection of all nests made over this 5 km beach. In Koroni, the information kiosk was set up in the town and the nesting beach is being monitored, with all nests protected with screens against mammal predation.

CRETE NEWS

Despite the difficulties caused by the change of location of volunteer camps at Rethymno and Chania, we eventually managed to run successfully beach monitoring and nest protection in all three project areas on Crete. The public awareness programme was also successful this year as the number of informed visitors seems to be increased compared to last year. However, there is still work to be done with the local communities in order to gain the needed cooperation in several aspects of conservation measures. Of great concern is the planning of the construction of a huge

container port in the Bay of Messara, very close to the nesting beach. We are in contact with other environmental organizations to follow up closely this issue, which will impact not only the turtles but the whole area which, besides its aesthetic value, contains sand dunes, a coastal cedar forest, and important archaeological sites. Hopefully, we will have more information in the next TT issue.

FUNDERS-THANKS



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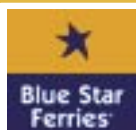
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For supporting the Environmental Awareness Programme



For support



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For support



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Now is the time to apply by visiting ARCHELON website:
<http://www.archelon.gr>

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