



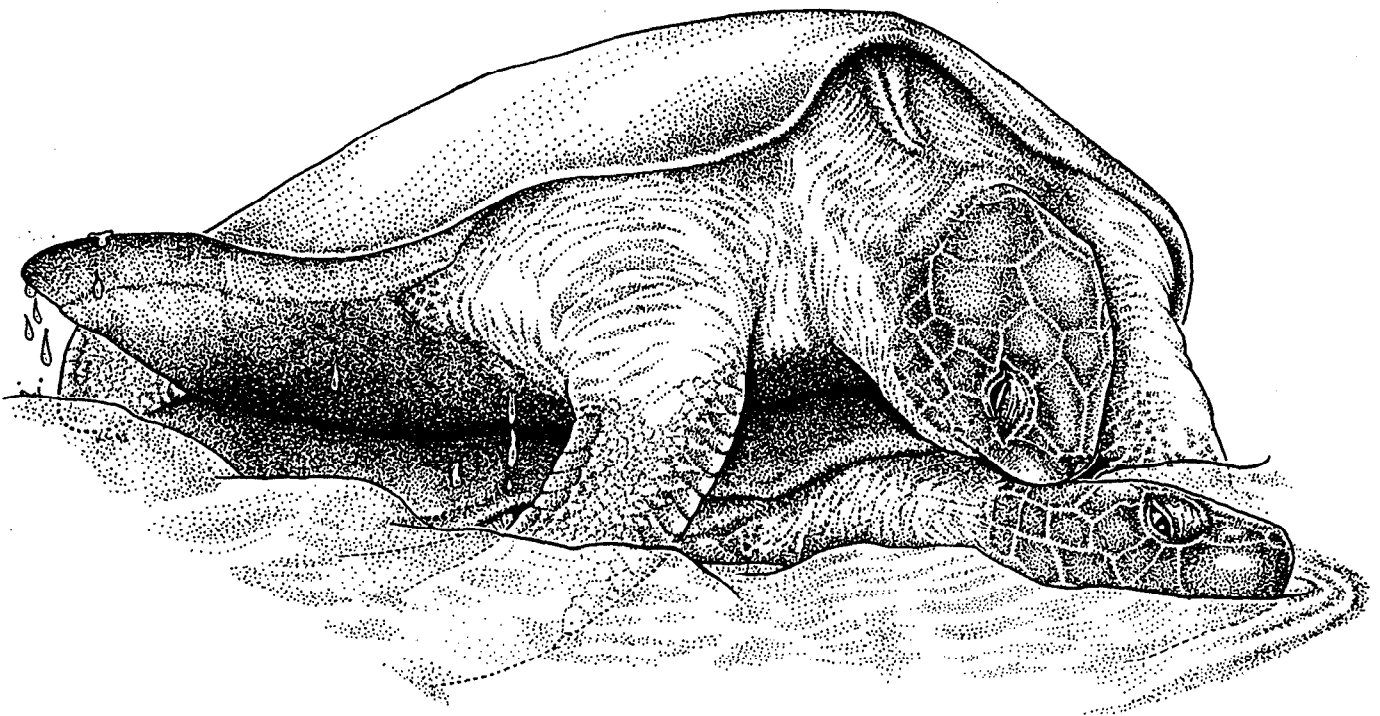
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NEW HOPES FOR THE LOGGERHEAD TURTLE ON ZAKYNTHOS: ACQUISITION OF THE MOST DENSELY NESTED AREA IN THE WORLD

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Three species of marine turtles are found in Greek waters: the loggerhead, the green turtle and the leatherback. Of these, only the loggerhead is known to nest on Greek beaches. Extremely important nesting areas for this species were discovered in 1977 on the island of Zakynthos in the Ionian Sea (Margaritoulis, 1982).

Sea turtle nesting is proved to occur also at Peloponessus, Crete and scarcely on some other areas. After a survey of the biggest part of the Greek coastline (12,000 over 16,000 km) conducted by STPS (1988-1991) there is a concrete knowledge of the situation on the nesting sites in Greece (Margaritoulis et al, in press). The regular monitoring of all the important nesting beaches conducted by STPS permits the application of various conservation tactics depending on the threats e.g. fencing against predation on Peloponessus, public awareness to reduce the effect of tourism on Zakynthos (see Dimopoulos, 1991) etc.

Sea turtle nesting in Greece is not evenly distributed in the different nesting areas. Zakynthos is proved to be the most densely nested area in Greece receiving about 60% of known nesting activity and it is considered the most important loggerhead nesting area in the Mediterranean.

Nesting on Zakynthos occurs mainly on six discrete beaches (about 4 km in total) of Laganas Bay. The total number of nests fluctuates from about 850 to 1,800 and nesting density ranges from about 200 to 430 nests per km per year, the highest in the Mediterranean. High nesting concentration on Zakynthos is attributed, on the one hand, to loss of habitat and, on the other, to lack of any serious nest predation. Nevertheless, nesting density is not equally distributed over the available space.

SEKANIA, THE MOST DENSELY NESTED BEACH FOR THE LOGGERHEAD

Former nesting sites on Zakynthos are now used less frequently due to noise, lights and intense human activity. Nesting is concentrated on the most isolated beach, Sekania which receives, on average, more than 52% of all nests deposited on Zakynthos. Nesting density on Sekania may reach in a "good season" 2,300 nests per km, perhaps the highest nesting density for this species anywhere in the world. Sekania is a remote beach, situated in the eastern part of the Bay, about 3 km from the nearest paved road. It is divided in two sectors by a low rocky promontory. The available nesting area stretches for about 450 m, the greater part belonging to the eastern sector which is characterized by a width of some 30-40 m. To the back of the beach, steep hills with dense Mediterranean maquis vegetation act as a barrier. No buildings are seen from Sekania. At night the beach is totally unaffected by lights and noise from the developed sites in Laganas Bay. The only access from land is an unpaved private road, usually in a very bad condition. The approach from the sea is also difficult because the water is very shallow and scattered with reefs and rocks, especially at the western sector.

THE MAIN THREATS

The single most important threat for the loggerhead nesting areas on Zakynthos is the uncontrolled development of tourism. The area of Sekania like almost all of the areas adjacent to nesting beaches on Zakynthos is privately owned. In order to stem the destruction of the sea turtles' nesting areas on Zakynthos the Greek state has implemented restrictive legal measures. However, this legislation is not enforced and the failure of the state to compensate the landowners affected by restrictions has exacerbated uncontrolled development of private land adjacent to the nesting areas, thus increasing the pressure on the loggerhead (Charalambides, 1990). This problem has been averted so far in Sekania due to the rough geomorphology of the land surrounding the beach and thus the high capital costs required for its development. Nevertheless, it seems that the only way to ensure Sekania in the future will be to control land use behind the beach. Given the inability and unwillingness of the Greek state to enforce the existing legislation there appears to be no permanent solution to the grave dangers, posed by development, other than the acquisition of the land adjacent to the beach by environmental NGO's in order to fully ensure the conservation needs of the area.

Another important threat facing Sekania is the heavy soil erosion from the steep hills behind the beach. This phenomenon is attributed to a fire three years ago which destroyed much of the vegetation on the hills. Eroding soil covers the sand and when dry forms a thick crust of clay too hard for the emerging hatchlings to break through. In 1992 East Sekania presented the lowest recorded hatching success since 1984 which has been attributed mainly to the clay that covered parts of the beach following heavy rains in late September. A secondary effect of soil erosion is the colonization of clay covered parts of the beach by vegetation which narrows increasingly the available nesting area.

As mentioned already, nest predation on Zakynthos, compared to other nesting sites of Greece, is minimal (Margaritoulis, 1988). In 1992 an effort was made to estimate the number of hatchlings taken by predators at Sekania. It was found that only about 2% of the total emerged hatchlings were taken on their way to the sea by rats, martens and gulls.

ACQUISITION AND MANAGEMENT OF SEKANIA

WWF-Greece is in the process of arranging the acquisition of the land adjacent to Sekania beach (approximately 30 hectares) in order to gain control of access to the beach. This is only the first step to ensure protection of the most important single nesting beach for the endangered loggerhead sea turtle in the Mediterranean. An integrated management plan will be needed for the stabilization and rehabilitation of the eroding hills. Furthermore an extensive cleanup of the clay and debris covering parts of the beach will be necessary.

Immediately upon purchase, the area will be placed under constant supervision to inhibit access to the beach. Especially in the busy summer season wardens will be placed for 24 hours/day protection. The estimated cost of purchase, rehabilitation and protection of Sekania will near 4 million USD. The EEC has earmarked approximately 1 million USD for the project. A one year fund raising campaign will be started in October 1993 by WWF Greece to raise the remaining 3 million USD needed.

Last but not least, in order to ensure Sekania's future it will be necessary to have the area declared a zone of "absolute protection" according to existing Greek legislation (law 1650 for the protection of the environment). However, it is clear that the purchase of Sekania should not be used as an alibi for the abandonment of plans to create a Marine Park in the Laganas Bay of Zakynthos and neglect conservation efforts at the other 5 beaches of the bay. Instead, with Sekania as the core area, the Marine Park should be established as soon as possible.

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