

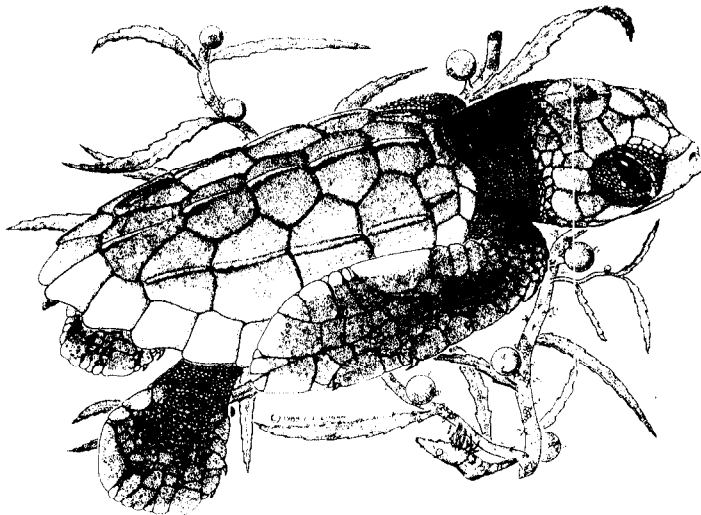
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## LOGGERHEAD SEA TURTLE NESTING: KIPARISSIA BAY, GREECE

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Three species of marine turtles are found in the Mediterranean; the loggerhead turtle (*Caretta caretta*), the green turtle (*Chelonia mydas*), and the leatherback turtle (*Dermochelys coriacea*). Of these, only the loggerhead turtle is known to nest on the Greek shoreline. Extremely important nesting areas for *Caretta* were discovered in 1977 on the island of Zakynthos (Margaritoulis 1982), where the main conservation effort and research concentrate. Nevertheless, regular nesting by *Caretta* occurs in other areas, too. One of them is the coast of Kiparissia Bay (Figure 1) on the western Peloponnesus. This area is characterized by extensive sandy beaches and very low housing and tourist development.

During 1987, 44 km of sandy beach along the Bay were surveyed regularly using All Terrain Cycles (ATCs). Nesting started on 10 June and ceased on 24 August. During this period, 1,534 loggerhead turtle emergences, including 598 successful nestings, were recorded. Nesting concentrated in the southern part of the Bay where nesting density reached 86.8 nests/km.

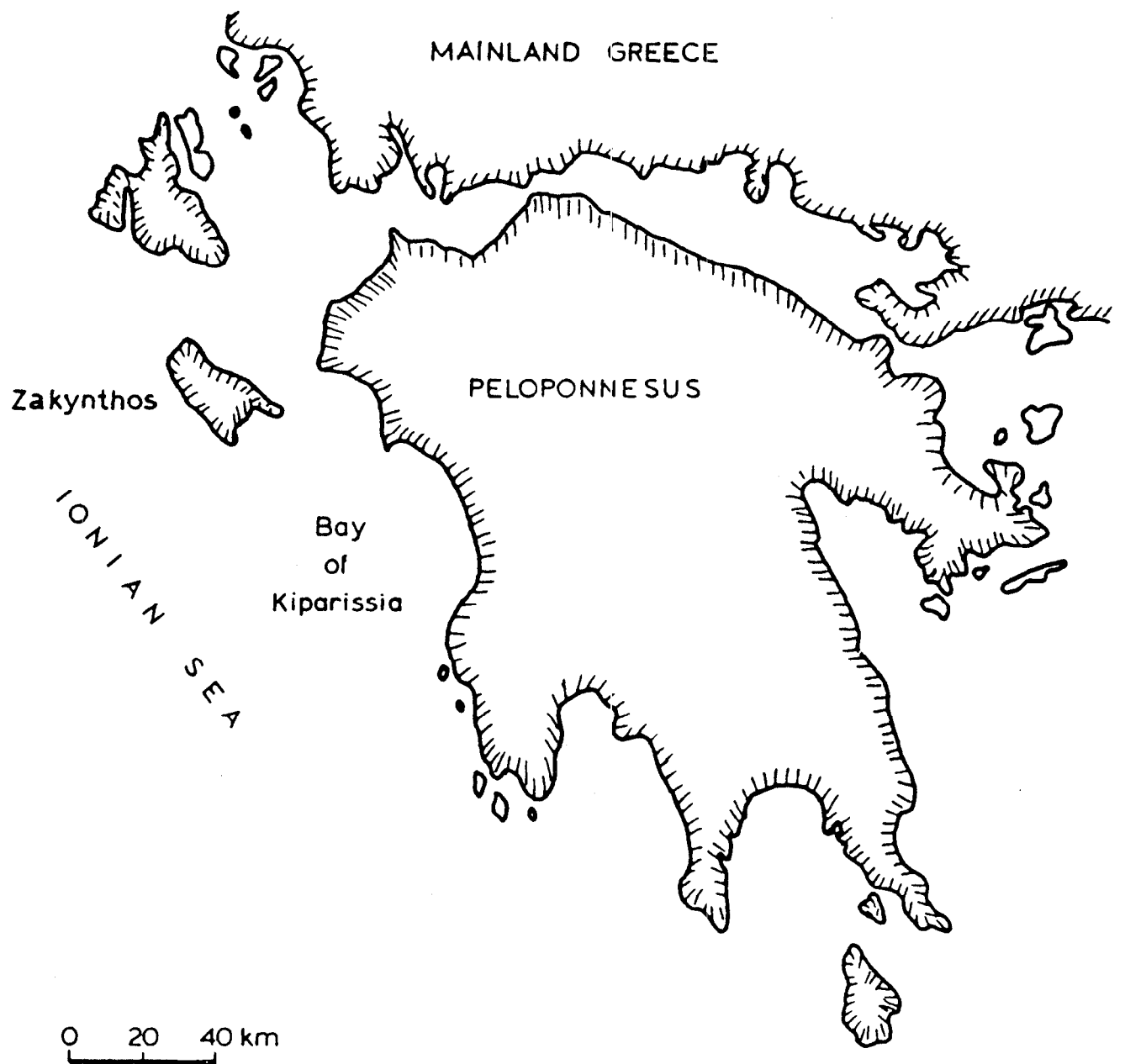
A 3 km beach length, at the most turtle-frequented sector, was patrolled on foot during the night by two tagging teams. Turtles were allowed to nest and were then tagged; if the turtle was already tagged, the tag number(s) were recorded. Tags were applied to the trailing edge of the fore or hind flippers. Prior to tagging, the flippers were examined at the standard tagging sites for scars or callouses attributed to lost tags. Three types of tags were used; monel No. 49, monel No. 681, and plastic "rototags". Seventy-four adult female turtles were encountered during the season. Of these, 27 individuals were seen again during the same season. The mean inter-nesting interval was found to be 15.2 days. Prior to (or following) tagging, four carapace dimensions were measured. Mean curved carapace length was 83.1 cm (sd=4.7, n=72), which confirms further the fact that loggerheads nesting in Greece are smaller than loggerheads nesting in other parts of the world (Margaritoulis 1982).

All nests laid in a 1.6 km sample beach sector were monitored during the season to determine their fate. From 91 nests found in this sector, 44 (48.4%) had been disturbed by predators (but only three were totally destroyed) and 27 (29.7%) had been inundated at least once by seawater. The primary nest predators were the red fox (*Vulpes vulpes*) and stray dogs. Excavation of undisturbed nests, after termination of hatchling, showed that the percentage of emerged hatchlings was 54.9%. Most of the depredated and/or inundated nests also produced hatchlings, but their hatch rate was lower. Clutch size, determined by excavation of nests after termination of hatching, was found to be 117.7 eggs (sd=22.7, n=52 clutches). Incubation period, i.e., the elapsed time in days from oviposition until the appearance of the first hatchling on the surface, was 55.5 days (sd=6.2, n=50).

An experimental beach hatchery was established on the high beach where 10 nests (1,079 eggs) were transplanted within 12 hours of oviposition. The overall hatch rate in the hatchery was 63.7%; higher than the mean hatch rate of nests incubated *in situ* (54.9%). Taking into account the loss due to nest predation and inundation, the difference becomes even more significant.

### LITERATURE CITED

Margaritoulis, D. 1982. Observations on loggerhead sea turtle *Caretta caretta* activity during three nesting seasons (1977-1979) in Zakynthos, Greece. *Biol. Cons.* 24:193-204.



**FIGURE 1. SKETCH MAP OF SOUTHWESTERN GREECE INDICATING THE POSITION OF THE BAY OF KIPARISSIA.**