

# Natural and anthropogenic factors affecting the nest-site selection of Loggerhead Turtles, *Caretta caretta*, on Dalaman-Sarıgerme beach in South-west Turkey

(Reptilia: Cheloniidae)

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**Abstract.** The nesting activities of Loggerhead Turtles (*Caretta caretta* Stejneger, 1902) and anthropogenic factors affecting them were monitored over 7 years (2002-2008) on Dalaman-Sarıgerme beach, one of the main nesting grounds in Turkey. Out of the 2620 nesting emergences recorded during the entire study period, only 645 (24.6%) resulted in successful nesting, giving an annual mean number of nests of 92. The collective number of eggs in these nests numbered 50239, with 40079 (79.8%) of them producing hatchlings. Out of the total number of eggs laid, 8128 (16.2%) resulted in dead embryos and 2032 (4.0%) in unfertilized eggs. The mean incubation period averaged 49 days (range 40-67 days) and the mean clutch size was 79.0 (range 18-150 eggs). Turtle nests were more concentrated on the undeveloped parts of the beach than on developed parts. In the other sections, few emergences occurred and either no or few nests were recorded. In Section I, which contained hotels and water sports facilities, only a few non-nesting emergences were observed. Of the number of nests that were observed, 32% were laid in Section II, which contained recently built hotels, 60% were in Section III and 8% were in Section IV, the undeveloped portion containing beach rocks. There is very clear evidence that the Loggerhead Turtles are shifting their nesting sites to the undisturbed sites along the beach. The negative factors that seem to be affecting them include water sports, hotel lights and beach rocks. In order to protect sea turtles, there needs to be a better understanding of how effective beach protection can be established.

**Key words.** Loggerhead Turtle, *Caretta caretta*, nest site selection, anthropogenic factors, beach protection, beach rocks, water sports.

## Introduction

The Mediterranean coasts of Turkey are important nesting grounds for Loggerhead (*Caretta caretta* Stejneger, 1902). The most important nesting beaches are found in Turkey, Greece and Cyprus (BRODERICK et al. 2002, MARGARITOU LIS et al. 2003), while smaller populations are found in Syria, Egypt, Israel, Lebanon, Tunisia, Libya and Italy (MARGARITOU LIS et al. 2003). Mediterranean marine turtle populations are fairly small in comparison with the world population, but because a significant part of the Mediterranean nesting population is using Turkey's beaches, this demonstrates the importance of protecting sea turtles in this country.

Based on nest numbers, Turkey holds the most important Green Turtle (*Chelonia mydas*) stock (BARAN & KASPAREK 1989, KASPAREK et al. 2001) and the second most important