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Baltimore, Maryland USA

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LONG-TERM MONITORING AND CONSERVATION OF LOGGERHEAD SEA TURTLE NESTS ON DALYAN BEACH, TURKEY: RESULTS OF THE RECENT CONSERVATION AFFORDS

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Dalyan Beach is one of the most important nesting sites of loggerhead turtles (*Caretta caretta*) in Turkey. Dalyan Beach was designated as a Specially Protected Area by the Turkish Ministry of Environment and Forestry in 1988. Nesting activity and conservation actions were started from 1988 breeding season and generally performed between 1 June and 30 September for subsequent years. The mean nest count was found as 230 nests for each year and the nest density was calculated as 49 nests per kilometer. The minimum nest number occurred in 1994 nesting season with 86 nests and the maximum nest was observed in 2010 nesting season with 354 nests. Nesting and non-nesting emergences were distributed 10-25m distance from the sea during breeding period. The majority of nesting activities by females occurred in June but started in the second half of May. These results show similarities in all years. The main predator was red foxes, badgers and ghost crabs. Approximately 60% of nests were screened against predation each year, with the screens being fixed with long metal hooks from the corners for additional safety. As a result of protection efforts, the last 5 year period (2008-2012 breeding seasons) the average number of nests was calculated as 308 nests per year. The mean hatching success was calculated as 51.9% (range from 33.52% to 69.17%). The recent increase in recorded nesting numbers can be explained by either the result of the first conservation efforts started nearly 20 years ago or better record of nesting activities especially early in the nesting season or a combination of both. While the observed predation rate seems to be higher than that documented in the literature, Dalyan Beach demonstrates a very good example of coexistence of turtles and tourists.

EXAMINING HERITABILITY IN NEST-SITE SELECTION FOR LOGGERHEAD TURTLES (*CARETTA CARETTA*) USING ADVANCED GENETIC AND SPATIAL TECHNIQUES

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Deposition of eggs into a suitable environment for embryonic development is the final parental obligation for many oviparous species and nest-site selection is critical to offspring survival. For marine turtles, the elevation of a nest relative to the spring tide line is of particular importance as nests laid below the high water mark are vulnerable to tidal inundation, which can lead to developmental arrest of incubating embryos. The correlation between incubation environment and offspring viability suggests the potential for evolutionary pressures to act on marine turtle nest-site preferences. Specifically, if some females consistently nest at elevations prone to inundation and this trait is passed to their surviving female offspring, the frequency of females nesting at low elevations should eventually decrease through natural selection.