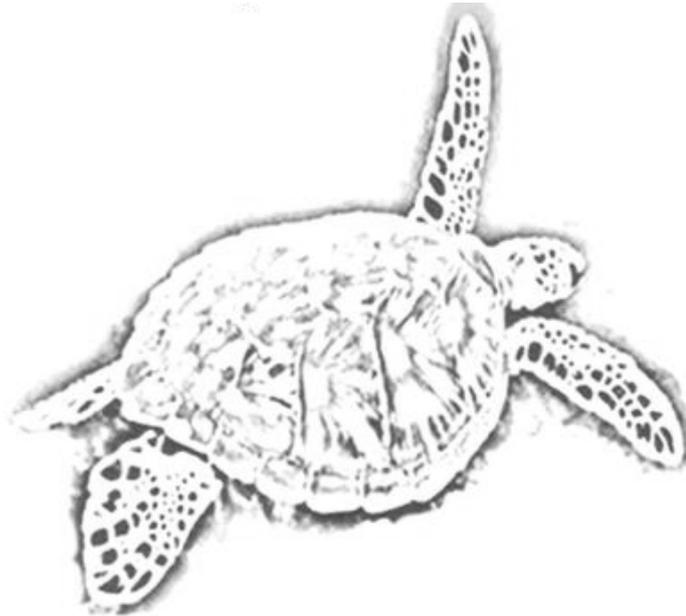


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MARINE TURTLE NESTING SURVEY, SYRIA 2004: DISCOVERY OF A “MAJOR” GREEN TURTLE NESTING AREA

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INTRODUCTION

Green turtle nesting in the Mediterranean is confined to the Eastern Basin with most nesting occurring in Turkey and Cyprus. Lower nesting levels have been recorded across the rest of the Levantine coast (Kasperek et al. 2001). The Mediterranean population has recently been classified as critically endangered in the IUCN Red Lists (ERASG 1996). Syria's 183km coastline was briefly surveyed in 1991 and limited nesting (attributed to loggerheads) was found on 2 beaches at Lattakia and between Tartous and Lebanon (Kasperek 1995). No follow-up surveys were subsequently carried out to better quantify nesting levels.

In 2004, a two-month survey of the 12.5km beach south of Lattakia, that was shown to have most turtle tracks by Kasperek (1995), was undertaken to provide up to date and more comprehensive information on marine turtle nesting in Syria.

METHODS

From 30 June to 27 August (excluding 1, 7 & 31 July and 1 August) the 7.5km beach between North Jableh and Snowbar (35.428°N, 35.907°E to 35.467°N, 35.862°E) was surveyed on foot in the early morning for evidence of marine turtle nesting, nest hatching and events that may have affected the incubation of nests, such as inundation by storm waves or depredation. The adjoining 5km beach to the north, from Snowbar to the river Al Kabir Ash Shamali next to Lattakia, was surveyed weekly, a total of 10 times, as a continuation of the daily survey.

Emergence tracks from adult turtles were checked for species and evidence of nesting and the track recorded as either a nesting or non-nesting emergence. Nest identification was verified by locating the eggs of each nest; intermittently before 18 July and systematically from then on. Thus, after 17 July, only emergences where egg deposition was confirmed were recorded as nests.

Nesting species was determined by appearance of the track (Schroeder and Murphy 1999) and by maximum width of the track. In the eastern Mediterranean, loggerhead turtles are generally far smaller than green turtles (Broderick 1996) and hence their track widths are much narrower. Additionally, confirmation of species was made by identification of dead or live hatchlings or embryos from post-hatch excavation of nests.

Nests and suspected nests made after 30 June were marked with driftwood and items of litter found on the beach that were labelled with the date of egg-laying and the emergence number for that day.

After the emergence was assessed and records taken, each track was marked with parallel scuff lines above the high-wave level to identify that it had been registered (most important on the northern part of the beach that was surveyed weekly) and the region of track nearest the sea was obliterated by scuffing so as to not confuse the next day's observations.

Total number of nests was calculated in two ways: 1) from initial track assessment that did not include clutch identification and 2) by summing the number of nests proven by observation of eggs. The four ways eggs were observed were; a) nest excavation after hatching, b) clutch location after deposition, c) nest depredation and d) direct observation at egg-laying. Accuracy of nest numbers obtained only from track assessment was checked by comparing nesting success (the percentage of emergences that result in clutch deposition) for the period before and after 18 July when observation of eggs became mandatory to assign nest status to an emergence.

RESULTS

The number of green turtle nests in Lattakia determined from track inspection (and subsequent to 18 July through clutch location) was 104. Nesting success was 33.6% for the period prior to routine clutch location and 40.6% after. Assuming no significant seasonal changes in nesting success, nest determination from track observation can be considered an accurate (or somewhat conservative) method and hence the total number of nests laid was probably more. The number of nests determined through direct observation of eggs was 98; comprising 28 from excavation of hatched nests, 34 confirmed through locating the eggs after clutch deposition, 32 from predation activity and 4 nests observed being made. It should be noted that hatching (and predation) activity was expected to continue through the month of September into October and that the nests from the start of July had only just started to hatch prior to the end of fieldwork (late August) thus the number of nests determined by observation of eggs is considered a low estimate of the true number and corroborates the conservative nature of the 104-nest estimate.

Two main threats to nests and the emerged hatchlings were identified from the beach monitoring; these were canid predation, with 27% of the nests already depredated prior to the end of August and a large but un-quantified level of hatchling misorientation that resulted in many tens of hatchlings being lost in the dunes etc behind the beach. These misorientated hatchlings if they managed to finally orientate towards the sea at dawn had prolonged their time on land which wasted limited energy reserves and increased the chances of their being predated by canids, ghost crabs or birds.

Other threats identified included nest inundation by the sea, vehicles trampling nests and vehicle tracks and litter that hindered or blocked hatchlings' journeys to the sea.

DISCUSSION AND CONCLUSIONS

A recent review of green turtle nesting within the Mediterranean (Kasperek et al. 2001) assigned levels of importance to nesting areas. Those with a maximum of over 100 nests were considered of "major" importance. The results of this study revealed Syria to host one such population which, according to nesting levels presented in the review, ranks in the top ten green turtle nesting areas of the Mediterranean.

Green turtle nesting numbers show high inter-annual fluctuations (Kasperek et al. 2001) and hence subsequent surveys of this nesting beach, probably for many years, are essential to

ascertain a more accurate estimation of the size of the nesting population in Syria and to identify any signs of population size trends. It is clear that this is an important area for green turtles in the Mediterranean and a unique one in Syria. On both a national and regional scale it warrants extensive conservation measures such as beach protection and nest management, to support the existing population and systematic monitoring and research to evaluate population status and conservation practices.

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