

FOLLOWING CHINA GIRL, SATELLITE TRACKING A LEATHERBACK SEA TURTLE FROM THE ARCHIE CARR NATIONAL WILDLIFE REFUGE

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Why track leatherbacks from Florida?

The Archie Carr National Wildlife Refuge is the northern extent of regular nesting by leatherbacks in the Atlantic Ocean. This colony has exhibited an increase in leatherback nesting activity from a few nests per year (0-4) to 25 in 1999. There has also been an increase in leatherback strandings in Florida in the last 2 years comparable to large increases in strandings in N. Carolina, S. Carolina and Georgia. These strandings may be attributed to an increase in the number of leatherbacks frequenting the nearshore waters of those states. To better understand how leatherbacks are using the Atlantic coastal waters of the United States, we initiated a satellite tracking project of leatherbacks from the east coast of Florida.

Leatherback # 1: "China Girl"

In May 19, 2000 we deployed our first satellite transmitter (PTT) to a 158.5 cm CCL female nicknamed "China Girl". China Girl has been nesting every 2 years since 1994 at ACNWR and thus represented an excellent 1st candidate for this research. The PTT, manufactured by Sirtrack Ltd of New Zealand is a 1 watt output instrument capable of 50,000 transmissions.

Where did she go?

After nesting on May 19, China Girl moved 45 km offshore and 120 NE of the nesting beach, returning to nest again on May 29. Subsequently she left the area and moved directly up the coast traveling at a rate of 37.7 km per day. Once she reached an area just east of the border between N. Carolina and Virginia on the 2nd of July, she slowed to an average of 18.14 km per day and resided in nearshore waters between N. Carolina and New Jersey until the batteries expired in her transmitter on 27 November. Minimum distance traveled by China Girl was 4,063 km during the 6 months she was tracked.

What have we learned?

China girl has provided us with a unique opportunity to study the behavior of leatherbacks who remain in coastal waters. Her activities are in direct contrast to our usual expectations of the species as a pelagic wanderer. China Girl remained within 100 km of the coast at all times, and in fact spent extended periods within 2 km of shore. Such movements indicate that some leatherbacks may actually be resident in areas quite close to the coast rather than transiting through these areas during migrations to northern feeding habitats. Further research is planned in 2001 to determine if her post-nesting movements and habitat choices are typical for Florida nesting leatherbacks. We will also be characterizing foraging habitats and seasonality of the movements to improve regulatory regimes designed to reduce mortality by coastal fishing fleets.

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ESTIMATION OF THE AVERAGE NUMBER OF NEST FOR GREEN TURTLE, ON REKAWA BEACH IN SOUTHERN SRI LANKA. THREE YEAR STUDY FROM SEPTEMBER 1996 TO SEPTEMBER 1999

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INTRODUCTION

Many marine turtle research programmes around the world involve the tagging of the nesting female turtles for obtaining information on the life history of the species (Broderick and Godley, 1999). The

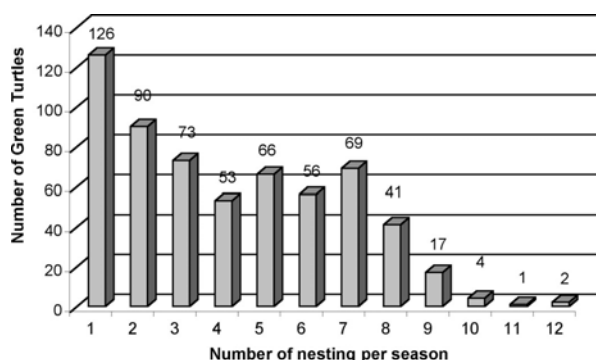
information could be the reproductive biology, movements (migration), stranding, and residency, re-nesting and growth rates (Balazs, 1999). The Turtle Conservation Project (TCP) is conducted an in-situ nest conservation program on Rekawa beach in southern Sri Lanka. A two-kilometer stretch of beach was patrolled for 24

hours per day and 365 days per year. Five species of the world's seven species of marine turtles come ashore to nest on this beach (Kapurusingha and Ekanayake, 2000). The species are Green turtle (*Chelonia mydas*), Olive ridley (*Lepidochelys olivacea*), Leatherback (*Dermochelys coriacea*), Hawksbill (*Eretmochelys imbricata*) and Loggerhead (*Caretta caretta*). Of this five species more than 90% was green turtle and therefore this species was selected for this study. Most of the turtle populations have individuals that display both regular and irregular re-nesting behaviour (Hughes, 1982) and Green turtles show a high degree of nest site selection. It has been observed that in Rekawa, Sri Lanka eight green turtles nested within this 2km stretch of beach was reappeared during the next nesting season, which occurred after a gap of 2.5 to 3.5 years.

METHODS

About 2050 m stretch of beach on the project site was marked by wooden posts with 50-meter intervals starting from 0 to 41. The numbering of the posts started from right side to the left side. Each post was marked with a number and the distance in meters that the post represents. While the survey was in progress, it was noticed that some turtles are laying to the right of the beach from the post 0. Therefore, another post was erected as beach post -1, thus extending the survey area by another 50 m. When a turtle comes to nest, the nesting site is marked on the data sheet indicating the location of the nest between a pair of beach posts. With the commencement of the project, turtles coming to nest at Rekawa beach are tagged. The best time I found for the tagging turtles was when they were covering their egg chamber. Therefore, most of the tagging was done during this time and the turtle was tagged on both hind flippers. For this I used the plastic tags (The Dalton Supplies Ltd, England). A number and address printed on both male and female part of the tag. About ninety five percent of the nesting green turtles and the re-nesting were recorded from September 1996 to September 1999.

Figure 1. The number of green turtles vs the number of nesting per season.



RESULTS

The total number of nests laid on the beach is 2442 and 598 green turtles were tagged during the reporting period. The lowest number of nest per season is one and, the highest number of nest per season for the green turtles is twelve (Table 1 and Figure 1). Out of 598 green turtles 21.14 % laid only one time per one nesting season and 0.34% green turtles laid twelve nest per nesting season. The mean number of nesting per season was four times.

DISCUSSION

All the species of turtles lay several clutches of eggs during a

nesting season (Hirth, 1980; Miller, 1997) and the nesting behavior could be regular or irregular (Hughes, 1982). The inter nesting duration vary from nine to thirty days for the sea turtles and for green turtle it is vary ten to 14 days (Miller, 1997). However the number of clutch laying in a season vary with the species, population and different individuals. Carr (1952) cited that green turtle lay two to five times in a single nesting season. Chan (1999) recorded that one green turtle laid 12 nests per season in Redang Island, east cost peninsula in Malaysia. In the past there was lack of study in Sri Lanka about re-nesting times of turtles. In this study I observed twelve nesting for two green turtles which came to nest on Rekawa beach.

Table 1. The number of nests per green turtle for a single nesting season.

Number of nests	Number of turtles	Total nests
One time	126	126
Two time	90	180
Three time	73	219
Four time	53	212
Five time	66	330
Six time	56	336
Seven time	69	483
Eight time	41	328
nine time	17	153
Ten time	4	40
Eleven time	1	11
Twelve time	2	24
Total	598	2442

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