References

Study of a Bimodal Nesting Season for Leatherback Turtles (Dermochelys coriacea) in French Guiana

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Between April and July, the beaches of the Guianas host the most important population of Dermochelys coriacea (Spotila et al., 1996) of the world. A second nesting season, much shorter and with less nests than the main one, occurs around December but had never been clearly characterized. French Guiana and Suriname are, as far as we know, the only nesting sites where leatherback turtles present two nesting seasons per year. The first goal of this study was to check the presence and describe the small nesting season. We also wanted to study the nesting ecology of the leatherbacks nesting during this season, the relationship between those turtles and other nesting groups, and the presence of a small nesting season for other marine turtle species.
Material and Methods

To study this small nesting season:
- the number of leatherback nests was counted every day from the 20th May 1986 to the 9th August 1987 on Ya:lima:po beach.
- from late December 1992 to early January 1993 Girondot reported the nesting activity on Ya:lima:po beach. However, counts were not performed on a daily basis.
- from late November to the end of January, several aspects of the small nesting season were studied. The number of nests was counted daily on Ya:lima:po beach and Cayenne Island beaches. Several other nesting beaches in French Guiana and Suriname were surveyed. Each leatherback observed nesting was identified with a PIT tag and blood was sampled for genetic studies.

Results

The small nesting season is specific to leatherbacks. The green turtles and the olive ridley turtles, also nesting in the Guianas, are not present during the December and January nesting season.

On Ya:lima:po beach, the main nesting beach of the Guianas (Girondot & Fretey, 1996), around 700 leatherback nests were laid in the 1986-87 small nesting season (Fig. 1). The repartition of the nestings present a clear bimodal annual pattern. During the 1998-99 small nesting season less than 40 nests were counted in Ya:lima:po (Fig. 2). This decline is certainly at least partly due the displacement of nests to other nesting beaches for example in Cayenne Island (38 nests) (Fig. 2). Farez, or the Spit in Suriname (Fig. 3), but it mainly corresponds to a global decrease in all nesting zones of the Guianas (Chevalier & Girondot, 1999).

Discussion

Since the turtles observed during this study had not been tagged prior to capture, the origin of the leatherbacks nesting during the small nesting season is unknown. Therefore, many questions remain:
- What are the relationships between the leatherbacks nesting in the small nesting season and during the main one? Do they have the same distribution area at sea?
- Are there relationships between the leatherbacks nesting in the small nesting season in the Guianas and the leatherbacks nesting at the same period in Brazil?

To try to answer these questions, a study of the mitochondrial DNA of 8 leatherbacks observed during the 1998-99 small nesting season will be performed soon. The study of this small nesting season will continue during the next few years to understand the unusual nesting ecology of the leatherbacks of the Guianas.
Figure 2. Number of leatherback nests per week during the small nesting season on the beaches of Ya:lima:po, in 1986-87 and 1998-99, and Cayenne Island in 1998-99. Arrowheads correspond to the leatherbacks observed and PIT tagged. The 2 joined arrows represent the turtle seen twice. (?) are weeks without data.

Figure 3. The nesting beaches of French Guiana and east Suriname during the 1998 main nesting season and the number of leatherback nests observed during the 1998-99 small nesting season surveys. (Results of beach surveys: Farez: 19 Nov. 98-1 nest, 6 Dec. 98-7 nests, 10 Dec. 98-13 nests, and 20 Dec. 98-10 nests; Galibi: 11 Jan. 99-1 nest; and Spit: 11 Jan. 99-1 nest)

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After reviewing the existing reports on the sea turtles in the Gulf of Venezuela, surveys were conducted on beaches in the Miranda, Insula Padilla, Maracaibo and Paez Districts of Zulia State, along the west side of the Gulf of Venezuela. Some surveys were made in the daytime to observe the tracks left by the turtles and/or by hunters. Some observations were also made at night to observe nesting females. Interviews were carried out with fishermen and local inhabitants to get more detailed information on the presence and abundance of sea turtles in the area. Based on the discovery of remains (shells and skulls) a prevalence of Chelonia mydas, Caretta caretta, Eretmochelys imbricata and Lepidochelys olivacea was observed, in decreasing order. No Dermochelys coriacea were observed, but the interviews do indicate the presence of this species in the area. The Paez District had the highest density of turtles and turtle consumption. Intentional capture appears to be the main cause of mortality due to the presence of indigenous hunters and the commercial use of the meat and shells. The project will be extended until May, 1999.

References

Preliminary Results of a Survey of Sea Turtles in the Gulf of Venezuela
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