

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 one of us (M.G.) has 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 of 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 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 (cf 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* (cf 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) (cf fig.2). Farez or the Spit in Suriname (cf fig.3), but it mainly corresponds to a global decrease in all nesting zones of the Guianas (Chevalier & Girondot, 1999). The trend of the number of leatherback nests during the main and the *small* nesting seasons appears quite close, at least the important decline for the early 1990s (cf fig 4). The origins of both declines are still unknown, but the driftnets of the industrial fisheries occurring in the Maroni river estuary are the main suspects (Chevalier *et al.*, 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 the leatherbacks nesting 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.

Acknowledgments

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Figure 1 : Number of leatherback nests on *Ya:lima:po* beach from May 1986 to August 1987

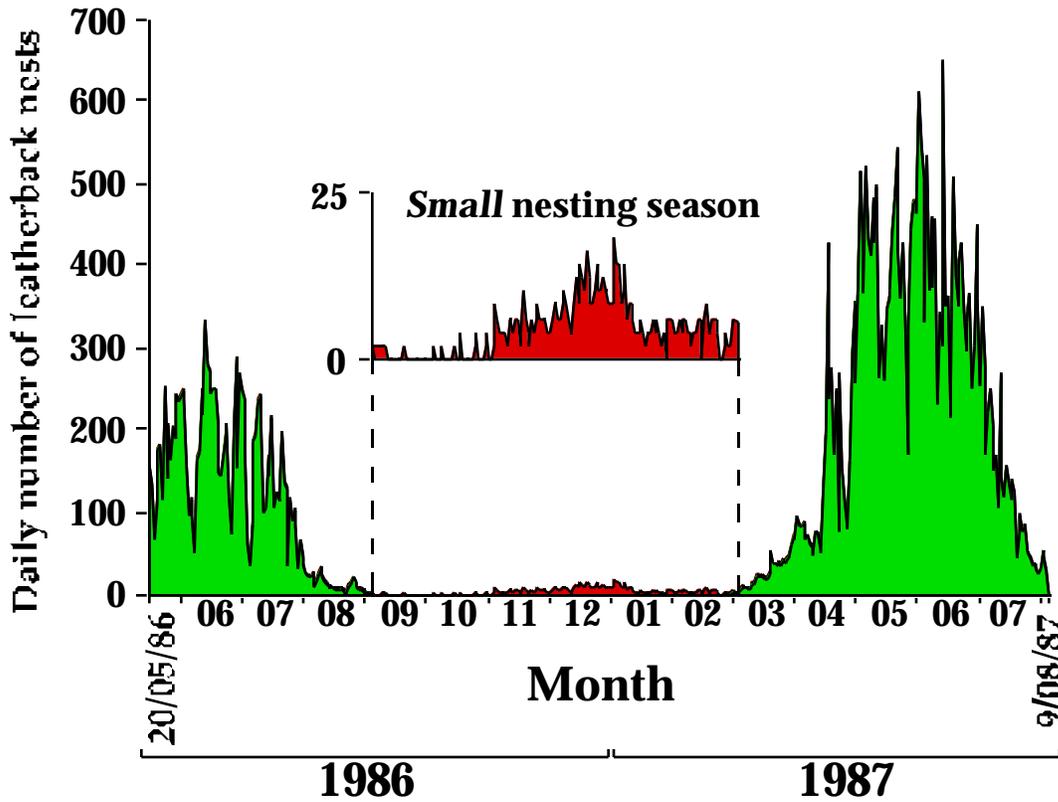


Figure 2 : Number of leatherback nests per week during the *small* nesting season on the beaches of *Ya:lima:po*, in 1986-87 and 1998-99, and Cayenne Island in 1998-99.

✓ correspond to the leatherbacks observed and PIT tagged. The 2 joined arrows represent the turtle seen twice. (?) are weeks without data.

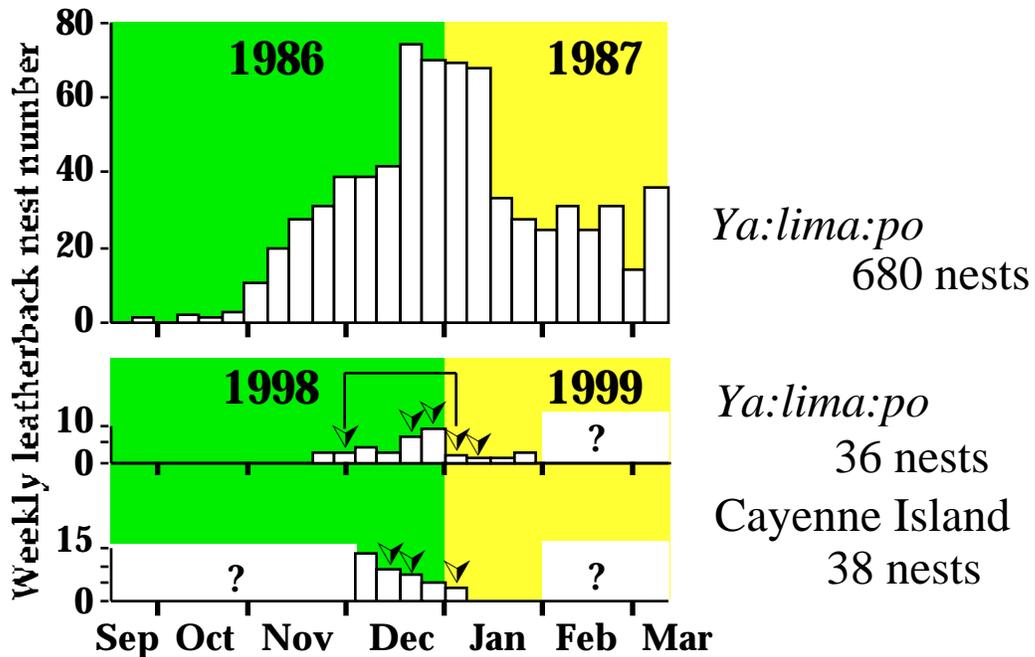


Figure 3 : Nesting beaches of French Guiana and East of Suriname during the 1998 main nesting season and number of leatherback nests based on the prospectons performed during the 1998-99 *small* nesting season.

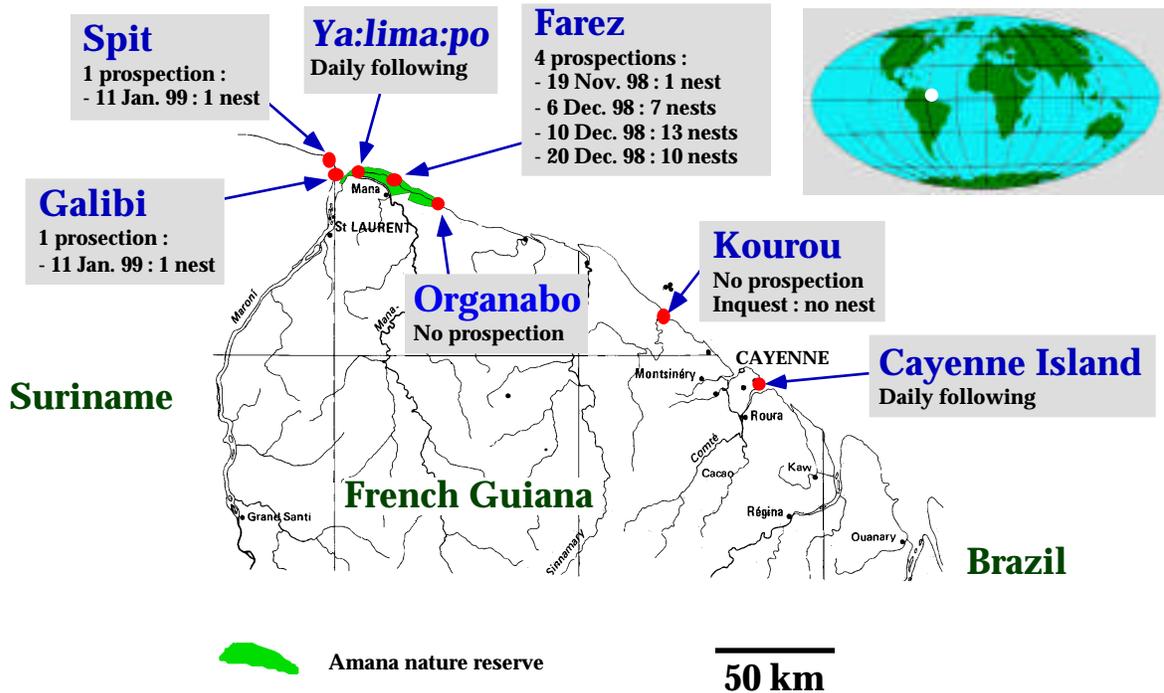


Figure 4 : Evolution of the leatherback nest number per year on *Ya:lima:po* beach. Histogram corresponds to the number of nests during the main nesting season. The upper panels present the mean number of leatherback nests from the 20th December to the 10th January for the three years with data.

