French Guiana is located at 400 km north-west of the Amazon River estuary. It is the most important Leatherback turtle (*Dermochelys coriacea*) nesting zone of the world where 40% of the world’s leatherbacks are nesting (Spotila et al., 1996). During the last decade, all the other known major nesting beaches for *D. coriacea*, in Mexico, Irian Java or Malaysia have displayed a decline in the total number of nests laid during the nesting season (Spotila et al., 1996). Within this context, the trend of the nesting Leatherback population in French Guiana has strong implications for the long-term survival status of this species. Within French Guiana, 90% of all Leatherbacks nests are laid on Ya:lima:po beach near the other nesting beaches of French Guiana at the border with Suriname (Girondot et al., 1996). Thus the number of nests for Ya:lima:po beach is close to the global number of nests for the country. The yearly number of nests has been established since 1978 in Ya:lima:po beach, except for five years (1980-81, 1984-85, 1990) (Girondot et al., 1996; Chevalier and Girondot, in press). The missing data from these 5 seasons have impeded analysis of trends in the numbers of nests laid on Ya:lima:po beach in the last 30 years.

We looked for correlations between the yearly number of *D. coriacea* nests among three nesting zones: Ya:lima:po beach in French Guiana, and Galibi and Matapica beaches in Suriname (Reichart and Fretey, 1993, Schulz, 1975, and Biotopic, pers. comm.). Data for Matapica beaches include the nest number for all the minor beaches at the West of Galibi beach. However, a high level of autocorrelation exists in the data due to the common trend and such phenomenon impeds the use of direct correlations between nesting beaches. Particularly, the number of nests increases significantly more rapidly along years in Galibi when compared to Matapica (comparison of linear regression slope: Nest=Year.a+b; a=217.52 for Galibi and a=105.85 for Matapica, t=1.745, 36 ddl, p<0.05). The linear regression of the angular transformation of the relative number of nests laid in Matapica compared to all the nests in Suriname has been established and it is highly significant statistically (figure 1A). The residual of this equation is not significantly correlated with the total number of nests in Suriname (t=-0.234, 16 ddl, p=0.35). Therefore, a displacement from West (Matapica) to East (Galibi) of the location of the nests is sufficient to explain the changes in the number of nests on the different nesting beaches in Suriname since 1967. Using the equation 1, we were able to estimate the number of nests in Galibi and Matapica for the years 1979-83, in Galibi for 1990-92 and in Matapica for 1995. We then looked for a correlation between the number of nests for beaches within the Maroni and Mana rivers estuary (Galibi for Suriname and Ya:lima:po for French Guiana). A linear regression using the method of least rectangle with null constant term permitted us to obtain equation 2 which is also highly significant statistically (Figure 1B). This equation has been used to estimate the number of nests missing for Ya:lima:po beach or for Galibi beach. Estimates of the number of nests in Matapica beach from data-deficient seasons were based on the number of nests in

**Figure 1:** (A) Linear regression of the angular transform \(\text{AT}(\%Nests\ in\ Matapica/100) = 7.367 - 0.07\cdot\text{Year}\). \(r=0.913, 16\ DF, p<10^{-4}\) Estimate for the number of nests in Matapica beach for the years 1965-90. (B) Correlation in the number of Dermochelys coriacea nests between Galibi and Ya:lima:po beaches.

Galibi beach using equation 1.

A strong increase of the number of nests laid each year until around 1992 was observed (Figure 2). Since around...
1992, an important decline of the number of nests laid in Ya'lima:po beach and in Suriname has been observed. In French Guiana, the low incidence of poaching of eggs and females does not explain the recent negative trend of the overall number of nests. Almost no Leatherbacks are eaten and the only turtles killed by the local Amerindian villagers are those caught in the fishing nets. Although it is difficult to accurately estimate the level of occurrence of this slaughter, it is certainly not widespread enough to responsible for such a decline.

The shrimp fisheries of French Guiana have undergone important changes during the last decade. Whereas previously shrimp used to be fished by American and Japanese boats for export to U.S.A. and Japan until 1986, now almost all the shrimp fishing boats are French (Table 1). Since 1986, these French boats can obtained permit to fish closer to the coast to catch smaller-sized shrimp (Béné, 1996). Studies from other nesting beaches have shown that during the internesting interval within a nesting season Leatherback females tend to remain most of the time close to their nesting beach (Chan et al., 1991). Therefore, trawling for shrimp nearer to the coast might increase the incidence of capture of female Leatherbacks in fishing net. The shrimp fishing activity may be an important factor in the decline of the number of sea turtles in French Guiana. TEDs are not still used in French Guiana.

If confirmed, the decline of the number of nests in the Guianas would be a bad sign for this already endangered species. Defining more clearly the population dynamics and uncovering the cause(s) of the actual decline thus will be our priority. It is very important to work on the level of the nesting population, and we are working to improve collaboration among the researchers of Suriname, Guyana and northern Brazil, where perhaps there may be unmonitored nesting beaches used by Leatherbacks.

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**LITERATURE CITED**


