



AFRICAN SEA TURTLE NEWSLETTER



In Morocco, turtle bycatch is recorded by fishermen collaborating with ATOMM, the Moroccan sea turtle project.

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Celebrating 20 Years of Marine Turtle Tagging and Monitoring in Southern Mozambique

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The Ponta do Ouro Partial Marine Reserve (POPMR), located in southern Mozambique, is part of the Lebombo Transfrontier Conservation Area (Fig.1) and is an important nesting area, from October to March, for loggerhead (*Caretta caretta*) and leatherback (*Dermochelys coriacea*) turtles (Louro *et al.* 2006; Costa *et al.* 2007; Videira *et al.* 2008).

A monitoring and tagging program using titanium flipper tags was initiated in 1994. Initially restricted to a 30-km stretch of beach (from Ponta Malongane to Ponta Dobela), the programme was spearheaded by Mr. Pierre Lombard and his family (Fig. 2) with support from Dr. George Hughes, who then supervised the South African turtle monitoring programme.



Figure 1. Schematic map of the Ponta do Ouro Partial Marine Reserve (POPMR). Map courtesy of the Peace Parks Foundation.



Figure 2. Pierre and Yvone Lombard handling a loggerhead turtle, Ponta do Ouro Partial Marine Reserve (Photo: Marcos A. M. Pereira).

The monitoring programme consists of night patrols during the low tide using a 4x4 vehicle, where turtles are identified, checked for tags and the nesting activity recorded (nest/false crawl). Throughout the earlier years the monitoring effort per season varied and typically covered two months (December and January), with longer periods in recent years. Since 2007, the whole coast from Ponta do Ouro to Ponta Abril has been monitored for the entire duration of the nesting season (October-March) using on-foot patrols at the beginning and end of the season, to complement the 4x4 patrols conducted during the peak of the season.

The area between Ponta Malongane and Ponta Dobela is the most important nesting section within POMPR. For loggerheads, during the last five seasons, approximately 50% of the total nests from POMPR were laid in this section (Videira *et al.* 2010; 2011; Louro *et al.* 2012; Louro and Fernandes 2013; Fernandes *et al.* 2014). Figure 3 shows the number of tracks (i.e. crawls which might have resulted in a nest or not) recorded per species since 1994 on this section (total of 5,811 tracks from loggerheads and 410 from leatherbacks). An increase in the number of tracks recorded for both species in the last seven years is likely the result of increased human effort to cover the monitoring season, both temporally and spatially. From 2007 to 2014, loggerheads have laid an average of 296 nests (SD = 118) per season, while for leatherbacks, 28 nests (SD = 11) were recorded on average per season.

A total of 1,457 turtles were tagged, with the great majority being loggerheads (89.6%). As shown in Figure 4, the number of loggerhead turtles tagged per season has been steadily increasing, with a record 197 turtles tagged in 2013/14, and an average of 68.7 (SD = 49.1) turtles tagged per season. The number of

leatherbacks tagged per season has seen little variability throughout the years with an average of 8.0 (SD = 3.2) turtles tagged per year. These trends were previously reported by South African colleagues (Nel *et al.* 2013), working on a much larger data set of the same population.

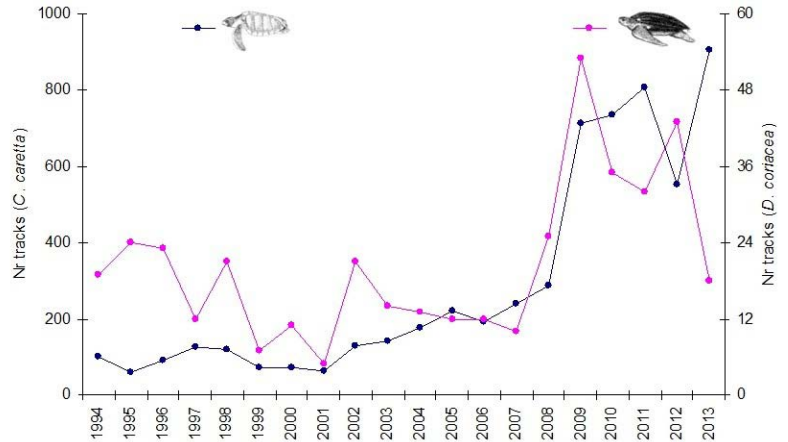


Figure 3. Number (Nr) of tracks recorded for loggerhead and leatherback turtles between Ponta Malongane and Ponta Dobela.

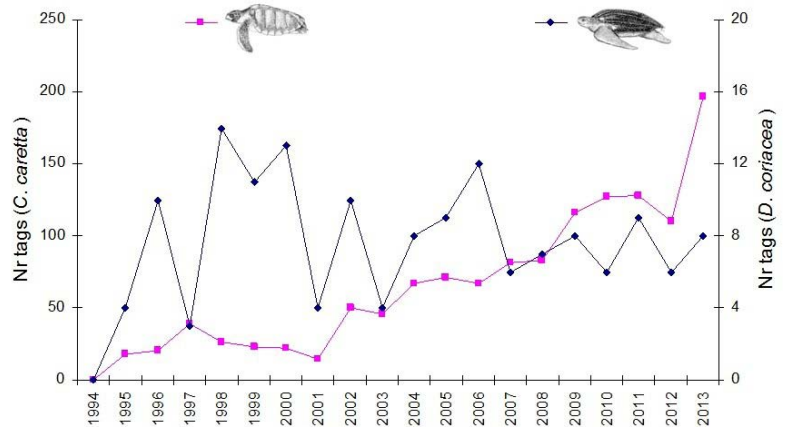


Figure 4. Number (Nr) of loggerhead and leatherback turtles tagged between Ponta Malongane and Ponta Dobela.

Apart from tagging and monitoring, recent research activities in the area include a study on loggerhead population connectivity and structure using mitochondrial DNA and microsatellites markers (Fernandes, *in prep.*), satellite telemetry (Pereira *et al.* 2014), and monitoring of nest temperatures and assessment of sex ratios of loggerhead and leatherback hatchlings (Pereira *et al.* 2013).

Twenty years later, the Ponta do Ouro Partial Marine Reserve has a consistent and functional marine turtle monitoring programme with well-trained and committed monitors, drawn from local communities. The area is considered a nesting hotspot for both loggerhead and leatherback turtles in Mozambique; in the last five seasons, more than 80% (loggerhead) and 90% (leatherback) of nests recorded in Mozambique were located in the POPMR (Videira *et al.* 2010, 2011; Louro *et al.* 2012; Louro and Fernandes, 2013; Fernandes *et al.* 2014). The presence of this well established programme is clearly contributing to the conservation of loggerhead and leatherback turtles, as the number of mortalities caused by humans are null or very rare. Further studies should be conducted and include analysis of nesting success and tag-recapture data. Finally, there is a pressing need for improved integration and information sharing at a regional level.

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