



MONITORING, TAGGING AND CONSERVATION OF MARINE TURTLES IN MOZAMBIQUE: 2008/09 ANNUAL REPORT

Edited and Compiled by

Marcos A M Pereira, Eduardo J S Videira & Dalila A Narane



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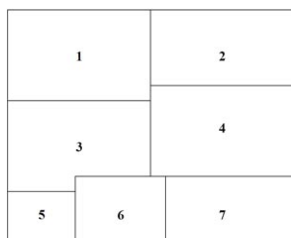
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Cover photos:



1 - Loggerhead turtle (*Caretta caretta*), Ponta Malongane (photo: Marcos A M Pereira).

2 - Leatherback turtle (*Dermochelys coriacea*) slaughtered by a local fishermen in Bilene (photo: Henriques Balidy).

3 - Loggerhead hatchling crawling to sea after surviving an attack by a ghost crab, Ponta Malongane (photo: Marcos A M Pereira).

4 - Loggerhead turtle nesting, Ponta Malongane (photo: Marcos A M Pereira).

5 - Leatherback hatchling crawling to the sea, Ponta Malongane (photo: Marcos A

M Pereira).

6 - Tagging a loggerhead turtle, Ponta Malongane (photo: Marcos A M Pereira).

7 - Shells of marine turtles killed by community members, Tofo beach (photo: Simon Pierce).

Back cover photo:

Loggerhead turtle crawling back to sea after nesting and being tagged and measured, Ponta Malongane (photo: Marcos A M Pereira).

The opinions, positions and points of view expressed in this document, are those of the authors and do not necessarily reflect those of the governmental institutions, private sector or civil society which contributed to the production of this document.

Maputo, August 2009

Summary

Marine turtle nesting data are presented for the 2008/09 season. A total of 626 nests were reported, with the majority (68.2%) of them being laid in southern Mozambique (Bazaruto Archipelago – Ponta do Ouro). The loggerhead turtle (*Caretta caretta*) was the dominant both in terms of number of nests (356), followed by the green turtle (*Chelonia mydas*, 189 nests) and the leatherback turtle (*Dermochelys coriacea*, 63).

The area between Inhaca Island and Ponta do Ouro, had the highest number of nests, and again confirmed its high value as a nesting site for *C. caretta* and *D. coriacea*. On the other hand, Vamizi and Rongui islands were important for nesting of *C. mydas*. In these areas, systematic monitoring and conservation activities are in place, demonstrating therefore, the importance of such long-term programs. It was also in these areas that the great majority of turtles were tagged (187 out of a total of 189).

In other areas information on nesting and mortality is not available (especially in north and central Mozambique). Only 18 mortalities were reported, this being a gross under-estimation of the real figures. Conservation areas or locations with marine turtle conservation projects, namely the Quirimbas and Bazaruto Archipelago National Parks, the Cabo de São Sebastião Total Protection Zone, and the Primeiras and Segundas Archipelago, the data was deficient or even non-existent. This suggests serious problems with the functioning and effectiveness of these conservation areas regarding the conservation of these protected species. Contrary to this trend, the Maputo Special Reserve has been showing good results from the monitoring program that has been running for two years.

Lastly, the need for higher coordination and information sharing within the different projects must be highlighted as well as the financial support for the conservation of marine turtles in the country. The participation of the private sector must be encouraged, taking the areas where successful monitoring programs are currently running (e.g. Ponta do Ouro, Malongane and Vamizi) as an example, where the role of the private sector is fundamental.

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Introduction

Five species of marine turtles occur and nest along the Mozambican coast. All of them are threatened worldwide and despite being protected in Mozambique for over 40 years, the mortality of nesting turtles or those caught at sea, and the collection of eggs is common, widespread and goes unpunished throughout the coast (Louro *et al.*, 2006; Videira *et al.*, 2008).

On the other side, the knowledge on the occurrence, feeding and nesting areas and other biological aspects of marine turtles in Mozambique is scarce. This in turns hinders the implementation of protection and conservation measures for these species.

In this report, the results of the monitoring, tagging and mortalities of marine turtles are presented for the 2008/09 season. As in the previous season (Videira *et al.*, 2008), the data are presented in Table form for an easy interpretation. These, however, must be interpreted and analysed *à posteriori* with caution. The data presented was extracted *as is* from the available sources, and there might exist errors in the data series, beyond the editors' control.

Methodology

In the reporting season, the monitoring programs followed in general, a similar methodology: on-foot night or day patrols covering about 5 km per sampler. Table 1 shows the monitoring period and methods per area covered. Videira *et al.* (2008) provided more details on the methodology. No data were available for the Cabo de São Sebastião Total Protection Zone, the Primeiras and Segundas Archipelago and Santa Maria. Two new monitoring areas were established – Xai-Xai (Gaza) and Tofo (Inhambane).

Table 1. Methods and monitoring period per monitoring area.

Area	Method	Km of beach monitored	Monitoring period
Ponta do Ouro	On foot patrol	8	Oct 2008 – Mar 2008
Malongane	Vehicle patrol	32	Dec 2008 – Jan 2009
Milibangalala	On foot patrol	10	Oct 2008 – Mar 2008
Inhaca	On foot patrol	12	Oct 2008 – Mar 2009
Macaneta	On foot patrol	15	Nov 2008 – Mar 2009
Manhiça	On foot patrol	10	Nov 2008 – Mar 2009
Bilene	On foot patrol	10	Nov 2008 – Mar 2009
Xai-Xai	On foot patrol	10	Nov 2008 – Mar 2009
Tofo	On foot patrol	10	Nov 2008 – Jan 2009
PNA Bazaruto	On foot patrol	50	Oct 2008 – Mar 2009
PN Quirimbas	On foot patrol	30	Aug 2008 – Mar 2009
Vamizi/Rongui	On foot patrol	12	Jan 2008 – Dec 2008

Results

Table 2. Marine turtle emergencies per species per area (NI = not identified).

Area	<i>Caretta caretta</i>	<i>Chelonia mydas</i>	<i>Dermochelys coriacea</i>	<i>Eretmochelys imbricata</i>	<i>Lepidochleys olivacea</i>	NI	Total
Ponta do Ouro	73	-	2	-	-	-	75
Malongane	287	-	25	-	-	-	312
Milibangalala	240	-	16	-	-	-	256
Inhaca	29	-	13	-	-	-	42
Macaneta	-	-	-	-	-	4	4
Manhiça	2	-	8	-	-	2	12
Bilene	2	-	8	-	-	-	10
Xai-Xai	4	-	-	-	-	-	4
Tofo	4	-	-	-	-	-	4
PNA Bazaruto	1	-	-	-	1	1	3
PN Quirimbas	-	1	-	1	-	64	66
Vamizi/Rongui	-	241	-	3	-	-	244
Total	645	242	72	4	1	68	1032

Table 3. Number of nest per species per area (NI= not identified).

Area	<i>Caretta caretta</i>	<i>Chelonia mydas</i>	<i>Dermochelys coriacea</i>	<i>Eretmochelys imbricata</i>	<i>Lepidochleys olivacea</i>	NI	Total
Ponta do Ouro	59	-	2	-	-	-	61
Malongane	117	-	22	-	-	-	139
Milibangalala	141	-	10	-	-	-	151
Inhaca	28	-	13	-	-	-	41
Macaneta	-	-	-	-	-	4	4
Manhiça	2	-	8	-	-	2	12
Bilene	2	-	8	-	-	-	10
Xai-Xai	2	-	-	-	-	-	2
Tofo	4	-	-	-	-	-	4
PNA Bazaruto	1	-	-	-	1	1	3
PN Quirimbas	-	1	-	1	-	8	10
Vamizi/Rongui	-	188	-	1	-	-	189
Total	356	189	63	2	1	15	626

Table 4. Loggerhead turtle (*Caretta caretta*): nests laid per area.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ponta do Ouro	5	-	-	-	-	-	-	-	-	2	28	24
Malongane	52	-	-	-	-	-	-	-	-	-	-	65
Milibangalala	33	-	-	-	-	-	-	-	-	-	41	67
Inhaca	6	-	2	-	-	-	-	-	-	-	12	8
Manhiça	-	-	-	-	-	-	-	-	-	-	1	1
Bilene	1	-	-	-	-	-	-	-	-	-	1	-
Xai-Xai	-	-	-	-	-	-	-	-	-	-	-	2
Tofo	-	-	-	-	-	-	-	-	-	-	2	2
PNA Bazaruto	-	-	-	-	-	-	-	-	-	-	1	-
Total	97	-	2	-	-	-	-	-	-	2	86	169

Table 5. Leatherback turtle (*Dermochelys coriacea*): nests laid per area.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ponta do Ouro	-	-	-	-	-	-	-	-	-	-	1	1
Malongane	12	-	-	-	-	-	-	-	-	-	-	10
Milibangalala	-	-	-	-	-	-	-	-	-	-	4	6
Inhaca	-	-	1	-	-	-	-	-	-	-	7	5
Manhiça	-	-	-	-	-	-	-	-	-	1	3	4
Bilene	5	1	-	-	-	-	-	-	-	-	-	2
Total	17	1	1	-	-	-	-	-	-	1	15	28

Table 6. Green turtle (*Chelonia mydas*): nests laid per area.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PN Quirimbas	-	1	-	-	-	-	-	-	-	-	-	-
Vamizi/Rongui	16	14	23	16	20	19	14	12	12	15	14	13
Total	16	15	23	16	20	19	14	12	12	15	14	13

Table 7. Hawksbill turtle (*Eretmochelys imbricata*): nests laid per area.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PN Quirimbas	1	-	-	-	-	-	-	-	-	-	-	-
Total	1	-	-	-	-	-	-	-	-	-	-	-

Table 8. Olive Ridley turtle (*Lepidochelys olivacea*): nests laid per area.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PNA Bazaruto	1	-	-	-	-	-	-	-	-	-	-	-
Total	1	-	-	-	-	-	-	-	-	-	-	-

Table 9. Unidentified turtle species: nests laid per area.

Area	Jan	Feb	Mar	Apr	Mai	Jun	Jul	Ago	Set	Out	Nov	Dez
Macaneta	-	-	-	-	-	-	-	-	-	-	3	1
Manhiça	1	-	-	-	-	-	-	-	-	-	1	-
PNA Bazaruto	-	-	-	-	-	-	-	-	-	-	1	-
PN Quirimbas	1	-	-	2	-	-	1	1	-	-	-	4
Total	2	-	-	2	-	-	1	1	-	-	5	5

Table 10. Number of hatchlings and eggs laid of *C. caretta* and *D. coriacea*.

Area	<i>Caretta caretta</i>				<i>Dermochelys coriacea</i>			
	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs
Milibangalala	8990	633	117	-	-	-	-	-
Inhaca	2486	-	-	-	1186	-	-	-
Bilene	171	43	0	-	189	64	0	3
Xai-Xai	-	-	1	-	-	-	-	-
PNA Bazaruto	-	-	-	1	-	-	-	-
Total	11647	676	118	1	1375	64	0	3

Table 11. Number of hatchlings and eggs laid of *L. olivacea* and an unidentified species.

Area	<i>Lepidochelys olivacea</i>				NI			
	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs
PNA Bazaruto	23	45	2	-	-	-	-	1
PN Quirimbas	-	-	-	-	254	113	107	-
Total	23	45	2		254	113	107	1

Table 12. Number of hatchlings and eggs laid of *C. mydas* and *E. imbricata*.

Area	<i>Chelonia mydas</i>				<i>Eretmochelys imbricata</i>			
	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs	Nº Live hatchlings	Nº Un-hatched eggs	Nº dead hatchlings	Cases stolen eggs
PN Quirimbas	60	5	-	-	-	-	-	-
Total	60	5						

Table 13. Number of nests per species destroyed by natural causes.

Area	<i>C. caretta</i>	<i>D. coriacea</i>	<i>C. mydas</i>	<i>E. imbricata</i>	<i>L. olivacea</i>
Bilene	-	3	-	-	-
Total		3			

Table 14. Reported mortalities of adult marine turtles.

Area	Species / Causes	Total
Malongane	1 hawksbill, found dead, probably for natural causes	1
Manhiça	1 unidentified turtle (probably loggerhead), killed in 23 Nov 2008	1
Bilene	1 leatherback killed on the beach by fishermen in 15 Jan 2009	1
Xai-Xai	1 green turtle (?), caught on handline and killed 5 km north of Hotel Chongoene	1
Tofo	13 turtle shells (10 green, 1 loggerhead and 2 unidentified) found on the beach	13
Pemba	1 green turtle killed and sold on the beach by local fishermen	1
Total		18

Table 15. Number of marine turtles tagged, per species.

Area	<i>C. caretta</i>	<i>D. coriacea</i>	<i>C. mydas</i>	<i>E. imbricata</i>	<i>L. olivacea</i>
Ponta do Ouro	10	1	-	-	-
Malongane	65	6	-	-	-
Milibangalala	10	-	-	-	-
Tofo	1	-	-	-	-
PNA Bazaruto	-	-	1	-	-
Vamizi/Rongui	-	-	35	60	-
Total	86	7	36	60	-

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