

Marine Turtle Newsletter

Issue Number 112

April 2006



Green turtle hatchling produced from a nest laid on Réunion Island. See Ciccione & Bourjea, pp. 1-3.

IN THIS ISSUE:

Articles:

- Nesting of Green Turtles in Saint Leu, Réunion Island.....**S. Ciccione & J. Bourjea**
- Sea Turtles and Fishery Interactions in Brazil: Identifying and Mitigating Potential Conflicts....**M.A. Marcovaldi et al.**
- First Report of Leatherback Turtle Entanglement in Trap Lines in the Uruguayan Continental Shelf..**M. Laporta et al.**
- Loggerhead Turtle Nesting Activity in Kuriat Islands (Tunisia): Assessment of Nine Years Monitoring.....**I. Jribi et al.**
- Hawksbill Turtles on the Pacific Coast of Costa Rica**A. Gaos et al.**

Notes:

- Oceanic Movement of a Benthic Foraging Juvenile Hawksbill Turtle from The Cocos (Keeling) Islands.....**S. Whiting & A. Koch**
- Use of Marine Turtles in Zootherapy in Northeast Brazil.....**R. Romeu da Nóbrega Alves**

Meeting Reports

Announcements

News & Legal Briefs

Recent Publications

Loggerhead Turtle Nesting Activity in Kuriat Islands (Tunisia): Assessment of Nine Years Monitoring

Imed Jribi¹, Mohamed Nejmeddine Bradai² & Abderrhmen Bouain¹

¹Faculté des Sciences de Sfax BP 802, Sfax 3018, Tunisie (E-mail:imed.jribi@fss.rnu.tn)

²Institut National des Sciences et Technologie de la Mer (INSTM) BP1035, Sfax 3018, Tunisie
(E-mail:mednejmeddine.bradai@instm.rnrt.tn)

Introduction

The only sea turtle species known to nest in Tunisia is the loggerhead turtle (*Caretta caretta*). Nesting in the western Mediterranean is exceptional and almost all nests are laid in the eastern basin in Greece, Libya, Turkey and Cyprus (Margaritoulis *et al.* 2003). In Tunisia, nesting of *Caretta caretta* was first recorded in 1988 on the beach situated between Ras Dimas and Mahdia and on the island Great Kuriat (Laurent *et al.* 1990). In order to support conservation of this species, it was deemed necessary to launch a monitoring programme at Kuriat. This programme has been implemented since 1997 (Jribi *et al.* 2002). The main objectives of the programme were (a) to protect nesting sites, nesting females and hatchlings and (b) to document the nesting activity. This study presents, for the first time, the results of these surveys from 1997 until 2005 interpreted along with those recorded between 1993 and 1996 (Jribi *et al.* 2002).

Methods

Study area

The Kuriat islands (Figure 1) (35° 48' 05" N, 11° 02' 05" E) lie 18 km from the coast of Monastir and consist of two small islands: Little Kuriat (Kuria Sgira) which is *ca.* 0.7km² and the Great Kuriat (Kuria Kbira) which is *ca.* 2.7km² in area. Little Kuriat has a total of 800m of sandy beach situated in the north-eastern part of the island whereas the rest of the coastline is rocky or marshy. Almost one third of the Great Kuriat shoreline is rocky and large deposits of sea grass (*Posidonia oceanica*) detritus further restrict the accessible nesting sites particularly in the south and the south-western beaches. The principal nesting beach lies on the western coast and it is almost 900 m in length.

Field work and data collection

A full-time survey takes place yearly on Great Kuriat from the beginning of June to the end of August. Beaches of Little Kuriat are visited during this period once or twice a week. Numerous short visits are made in May to detect any early nesting and in September and October to excavate late hatching nests. A team of three to four persons (researchers, students and volunteers) is permanently present on Great Kuriat during the season, first to characterize female turtle tracks, imprinted on the beach sand, as "nesting" or "non-nesting" emergences; second, to locate egg chambers; third, to protect and relocate clutches; finally, to tag and measure nesting turtles. At the end of the nesting season, nests are excavated to assess hatching success.

Results and discussion

From 1993 until 2005, the number of nests on Great Kuriat ranged from 4 to 18 (mean: 9.5 nests/season). In Little Kuriat, no nests were detected between 1997 and 2003, although 3 nests were recorded in 2004 and 2 nests recorded in 2005. For this island the number of recorded nests

can be considered as an underestimate because some tracks may have been erased due to strong winds or heavy beach usage by tourists. The period between 1993 and 1999 shows the number of nests fluctuating with an apparent periodicity of two years (Figure 2). This trend ceased in 2000 and we tentatively suggest that the number of nests per season has increased slightly, possibly as a result of recruitment of new nesting females.

The nesting season in the Kuriat islands generally starts at the beginning of June and ends at the middle of August with duration averaging 46 days (range: 20-58; SD= 13.24; N=9; Table 1). Deposition of nests occurred in June and mainly in July, the nesting in August was observed only the last three years, from 2003 to 2005. Compared with some of the larger nesting sites in the Mediterranean (83.5 in Fethiye, Turkey (Türkozan 2000); 78.5 in Northern Cyprus (Broderick & Godley 1996) and 87.7 in Kyparissia Bay, Greece (Margaritoulis & Rees 2001)), this duration seems to be short and may simply be due to the small nesting population size. Over the nine seasons (1997-2005), the monthly distribution of nests in the Kuriat Islands was 34.7% in June, 58.9% in July and 6.3% in August. This situation is similar on the nesting beaches of Greece (Margaritoulis & Rees 2001) and different on beaches of Turkey, where the majority of loggerhead turtle nests are in June (Türkozan 2000). This parameter is crucial for the planning and the implementing conservation and management practices such as reducing the anthropogenic disturbance resultant from beach use.

Over nine consecutive nesting seasons we recorded mean clutch size of 92.9 eggs (range of means: 68.33-104.9; SD= 11.79; n=9), which is similar to those recorded in Cyprus and Turkey but less than those recorded in Greece (Margaritoulis *et al.* 2003). The hatching success and hatchling emergence success were 73% and 70% respectively, which reveals the suitability of the beaches of Great Kuriat.

Although most nesting of Mediterranean loggerhead turtles is localised in Greece, Cyprus, Turkey and Libya, "minor" nesting sites exist in other countries and their protection is desirable because they can give an appreciable contribution, both in number and in genetic diversity. We conclude that nesting numbers at Kuriat, although very small are stable or increasing and, at least in the nesting sites, subject to high levels of protection.

Acknowledgements: This work was carried out in the context of a project financed by the National Institute of Sea Sciences and Technologies (INSTM), the Regional Activity Centre for Specially Protected Areas (RAC/SPA) and the Agency of Protection and Management of the Littoral (APAL). We wish to thank all these organisations and all volunteers have participated on the field.

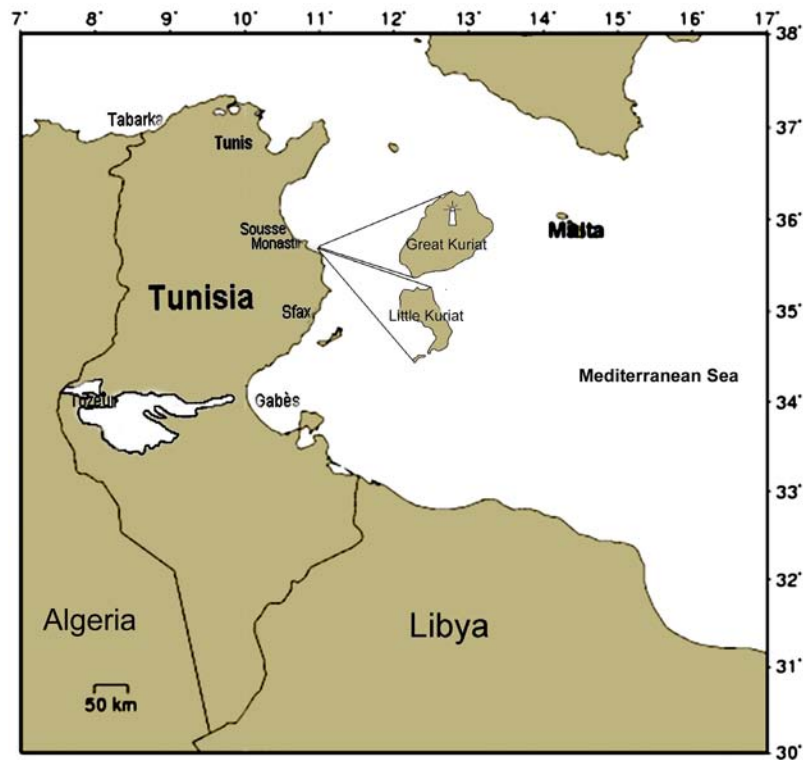


Figure 1. Geographic position of Kuriat islands off the coast of Tunisia.

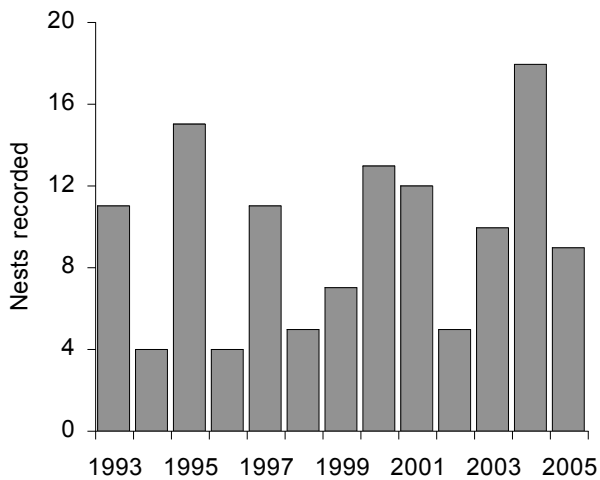


Figure 2. Annual number of nests recorded over thirteen seasons (1993-2005) on Great Kuriat

Season	First nest	Last nest	Duration (days)
1997	01 June	25 July	55
1998	01 July	31 July	31
1999	15 June	31 July	47
2000	01 June	13 July	43
2001	12 June	26 July	45
2002	04 July	23 July	20
2003	10 June	05 Aug	57
2004	18 June	14 Aug	58
2005	14 June	10 Aug	58
Mean			46

Table 1. Dates of nesting seasons at Great Kuriat (1997-2005).

BRODERICK, A.C. & B.J. GODLEY. 1996. Population and nesting ecology of the green turtle, *Chelonia mydas*, and the loggerhead turtle, *Caretta caretta*, in northern Cyprus. *Zoology in the Middle East* 13: 27-46.

JRIBI, I., M.N. BRADAI & A. BOUAIN, 2002. Marine turtle nesting in Kuriat Island (Tunisia) in 2000. *Marine Turtle Newsletter* 96: 4 - 6.

LAURENT, L., S. NOUIRA, A. JEUDY DE GRISSAC & M.N. BRADAI. 1990. Les tortues marines de Tunisie : Premières données. *Bulletin de la Société Herpétologique de France* 53: 1-17.

MARGARITOU LIS, D. & A. REES. 2001. The loggerhead turtle, *Caretta caretta*, population nesting in Kyparissia Bay, Peloponnesus, Greece: Results of beach surveys over seventeen seasons and determination of the core nesting habitat. *Zoology in the Middle East* 24: 75-90.

MARGARITOU LIS, D., R. ARGANO, I. BARAN, F. BENTIVEGNA, M.N. BRADAI, J. A. CAMINAS, P.CASALE, G. DE METRIO, A. DEMETROPOULOS, G. GEROSA, B.J. GODLEY, D.A. HADDOUD, J. HOUGHTON, L. LAURENT & B. LAZAR. 2003. Loggerhead turtles in the Mediterranean Sea: Present knowledge and conservation perspectives. In: A. Bolten & B.E. Witherington. *Ecology and Conservation of Loggerhead Sea Turtle*. pp. 175-198. Smithsonian Institution Press. Washington D.C., USA.

TÜRKOZAN, O. 2000. Reproductive ecology of the loggerhead turtle, *Caretta caretta*, on Fethiye and Kizilot beaches, Turkey. *Chelonian Conservation and Biology* 3:686-692.