

PROGRESS OF WORK FOR MONITORING MARINE TURTLES ALONG THE EGYPTIAN MEDITERRANEAN COAST

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Since 2016 steps towards the monitoring and conservation of marine turtles along the Egyptian Mediterranean coast were taken, to determine other possible nesting sites. A survey was implemented with the relevant stakeholders to identify possible nesting areas along the Egyptian Mediterranean coast from Port Said to El-Sallum. By the adoption of the National Action Plan for the Conservation of Marine Turtles in the Egyptian Mediterranean Coast, activities related to category (ii): management action, category (iii): research, and category (iv): capacity building were implemented. Monitoring and tagging programmes were established; protocols for sampling and genetic analyses were established, in addition to a survey of the relevant stakeholders. Training programmes were conducted at regional and national levels and then the national team was identified.

Key words: marine turtles, Egyptian Mediterranean coast, national action plan, loggerhead (*Caretta caretta*), green turtle (*Chelonia mydas*), conservation

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Od 2016. poduzimaju se duž egipatske obale Mediterana koraci prema monitoringu i zaštiti morskih kornjača da bi se identificirala ostala moguća mjesta za gniježđenje. Poduzeto je istraživanje koje je uključivalo sve zainteresirane strane, a u svrhu identificiranja mogućih mjesta za gniježđenje duž egipatske obale Mediterana između Port Saida do El-Salluma. Usvajanjem Nacionalnog akcijskog plana za zaštitu morskih kornjača na egipatskoj obali Mediterana, određene su aktivnosti u kategoriji (ii): akcijsko upravljanje; (iii): istraživanje, i (iv): jačanje sposobnosti. Uspostavljeni su programi za monitoring i označavanje životinja; protokoli za prikupljanje i genetičke analize; te ispitivanje relevantnih zainteresiranih strana. Provedeni su treninzi na regionalnoj i nacionalnoj razini te je uspostavljen nacionalni tim sudionika.

Ključne riječi: morske kornjače, egipatska obala Mediterana, nacionalni akcijski plan, glavata želva (*Caretta caretta*), zelena želva (*Chelonia mydas*), zaštita

INTRODUCTION

Egypt's Mediterranean coastline extends for 1,050 km and is considered a significant area for the nesting and foraging of the Loggerhead turtle (*Caretta caretta*) and the Green turtle (*Chelonia mydas*); there are also sporadic records for the Leatherback turtle (*Dermochelys coriacea*), referring to stranding but not to nesting activity (LAURENT *et al.*, 1996;

CLARKE *et al.*, 2000; BRODERICK *et al.*, 2007; REES *et al.*, 2008; NADA & CASALE, 2011; NADA *et al.*, 2013; SCHOFIELD *et al.*, 2013; STOKES *et al.*, 2015; SNAPE *et al.*, 2016).

Monitoring and conservation of marine turtles have always focused on Zaranik Protected area (El-Arish beach), where nests for Loggerhead and Green turtles were recorded from 1998 until 2012 (CLARKE *et al.*, 2000; CAMPBELL *et al.*, 2001, RABIA & ATTUM, 2015); KASPAREK (1993 a,b) identified nests for the loggerhead in El Salloum. Green turtles are most frequent in the region from Port Said to Rhafa, while Loggerhead turtles are typically found in the area between Alexandria and Port Said.

Through the last 10 years, there was a significant increase in tourism development activities along the Egyptian Mediterranean coast which might adversely affect both species and habitat, in addition to interaction with fisheries characterised by bycatch and other threats. In 2017, the National Action Plan for the Conservation of Marine Turtles in the Egyptian Mediterranean Coast was adopted and a regional action plan implemented. The national action plan has five broad categories: category (i): legislative actions, category (ii): management action, category (iii): research, category (iv): capacity building and category (v): awareness and education.

This paper constitutes a brief on the progress made by international and national experts in cooperation with the relevant stakeholders in the field of conservation of marine turtles along Egyptian Mediterranean coast.

MATERIAL AND METHODS

A survey was done from Port Said (the eastern part of the Mediterranean coast in Egypt) to El-Sallum (the western part of the Mediterranean coast in Egypt), in collaboration with the relevant stakeholders (Nature Conservation Sector, National Institute for Oceanography & Fisheries – Alexandria, scouts, Faculty of Agriculture – Cairo University) to report possible locations for nesting areas from Port Said to El-Sallum through meetings and a rapid field survey. In addition, steps were taken in order to implement certain activities in line with the national action plan for marine turtle conservation on the Egyptian Mediterranean coast, in line with the following:

Capacity building at the institutional and individual level for representatives of the relevant stakeholders, NGOs, management bodies of existing MPAs, universities and research institutions in line with category (iv). Monitoring and tagging programme were established, in line with category (ii).

Meetings with stakeholders were organized to prioritize points for the research programme, such as studying interaction with fisheries, genetic studies programme, microbiological studies, diseases & medical studies and ecological studies; in line with category (iii).

RESULTS AND DISCUSSION

By the end of the survey that was conducted in 2017 (Fig. 1) it was estimated that there had been no change in nesting activity for either loggerhead or green turtles from the situations recorded by CLARKE *et al.* (2000), NADA & CASALE (2008, 2010), NADA *et al.* (2013), and RABIA & ATTUM (2015) in the eastern part of the Egyptian Mediterranean coast and on top of that new potential nesting sites along the western part was identified and a monitoring programme planned.

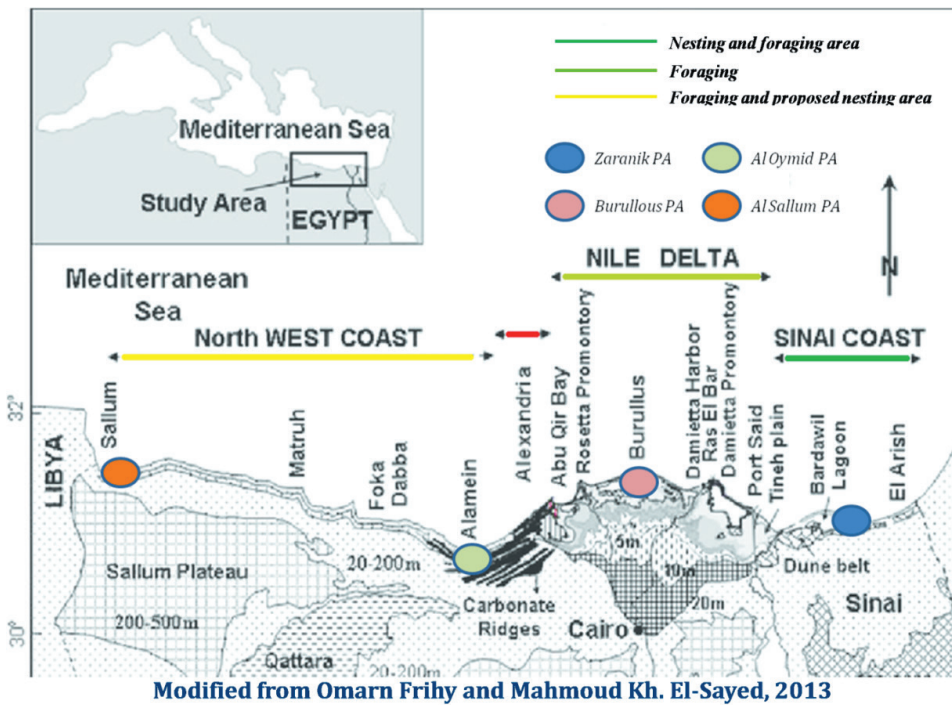


Fig. 1. Location of nesting and foraging areas

During this survey, sequential meetings with the relevant stakeholders were organized to prioritize points for research programmes, such as interaction with fisheries, a genetic studies programme, microbiological studies, diseases & medical studies and ecological studies.

The National Team (21 participants representing different stakeholders governmental, research, universities, NGOs, fishermen, and Scouts) was determined and trained at national and at international level on the rescue & rehabilitation of marine turtles, monitoring, necropsies, sample collection and data analysis supported by SPA-RAC (Special Protected Areas—Regional Activity Center). Network among stakeholders and implementing bodies was established.

Monitoring and tagging programmes were established, in concert with the implementation of a limited monitoring survey. Loggerhead and green turtle individuals were recorded from Marsa Matrouh and El-Sallum. In addition stranded turtles along the Egyptian Mediterranean coast were reported by fishermen especially in Damietta and Burullus (Fig. 1). More than 10 turtles were released by scouts, NGOs and EEAA in the last 2 years in cooperation with the National Institute of Oceanography and Fisheries with two newly tagged turtles. Fishermen observed loggerhead and green turtles in Marsa Matroh and El-Salum, which indicates that these areas could well be considered as nesting sites. Strandings were reported in Port Said, Alexandria and El-Salum.

Sample collection started in 2017 for both the Loggerhead turtle (*Caretta caretta*) and the Green turtle (*Chelonia mydas*) for the purpose of establishing a tissue bank for marine turtles in Egypt, and protocol was prepared for genetic analyses.

CONCLUSION

Along the Egyptian Mediterranean coast, the monitoring and conservation of marine turtles has always focused on the Zaranik Protected Area, neglecting the other possible nesting sites. Over the last 10 years, there was significant increase in water pollution along the Egyptian Mediterranean coastline that might affect both species and habitat. A survey was established in 2017 to report possible locations for nesting areas from Port Said to El-Salum, and by the end of this survey the National Action Plan for the Conservation of Marine Turtles in the Egyptian Mediterranean Coast had been adopted.

The survey emphasized that despite the presence of several hundred kilometers of seemingly suitable nesting beaches nesting activity is considered low compared to other Mediterranean sites. Interviews with fishermen and local communities tended to support the hypothesis that the region from north Sinai to Alexandria (Fig.1) offers foraging habitats for green turtles and loggerheads. Some observations by fishermen and local communities suggest a possible site for loggerheads in El-Salloum.

Furthermore, identification of the national team representing different stakeholders governmental, research, universities, NGOs, fishermen, and Scouts. Sample collection started in last 2 years for both the Loggerhead turtle (*Caretta caretta*) and the Green turtle (*Chelonia mydas*) for the purpose of establishing a tissue bank for marine turtles in Egypt, a system was established for tagging and a protocol was prepared for genetic analysis. Two training programmes were conducted supported by SPA-RAC and funded by the MAVA foundation: a regional training in Turkey and a national one in Egypt. More than 10 turtles were released by scouts, NGOs and EEAA in the last 2 years in cooperation with the National Institute of Oceanography and Fisheries with 2 tagged individuals. Fishermen observed loggerhead and green turtles in Marsa Matroh and El-Salum. Stranded turtles were reported in Port Said, Alexandria and El-Salum. The National Programme is managing the monitoring marine turtles in the rest of Egyptian Mediterranean coast, with supporting programmes for necropsies and sample analyses (medical, microbiological and genetic analyses).

The monitoring programme will continue for 3 years to be able to assess the newly proposed nesting sites in parallel with raising public awareness.

Challenges during the implementation of the national action plan:

- Difficulties in obtaining the right samples at the right time
- Costs
- Overlap of responsibilities among stakeholders
- Overlapping between researchers and those working in field and/or NGOs.

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