

National Training Session on monitoring techniques of marine turtles

Tyre Coast Nature Reserve (Lebanon), 3-7 July 2018

FINAL REPORT

INTRODUCTION

In the context of the EcAp-MED II and MAVA marine turtles' projects, the UN Environment/MAP Regional Activity Centre for Specially Protected areas (SPA/RAC) has organized a "National training on monitoring techniques of marine turtles" aiming to build national capacities in Lebanon and exchange of specific best practices.

The national training was held from 3 to 7 July 2018 in Tyre Coast Nature Reserve (TCNR), as one of the selected potential sites for the implementation of the national Integrated Monitoring and Assessment Programme (IMAP) on biodiversity. In order to ensure a coherent and successful implementation of the IMAP particularly during the second cycle of the Ecosystem Approach (EcAp) process (2019-2021), 14 participants were designated to attend the training. This event is specifically targeted to marine protected areas officers, scientists and stakeholders involved in the implementation of the IMAP and following the Marine Turtle MAVA project. Representatives of the Lebanese Ministry of the Environment also took part in the training. (See Attachment 1: List of participants)

The training meant to share and spread out the basic knowledge on sea turtles and provide methods for sea turtles monitoring in Lebanon. It was structured in theoretical and practical sessions. (See Attachment 2)

In the theoretical session, basic information on marine turtles, especially on their reproductive characteristics, was provided together with basic instructions on how to proceed and what to consider, according to the International protocols, while monitoring a beach in search for nesting sites. It was also cleared that monitoring cannot be limited to the finding of nesting sites and must continue till the hatching phase. To this purpose, specific indications on how to assess the nest contents and the relative hatching success were given.

The practical session was structured as follows:

1. several monitoring activities on the beaches of Tyre Coast Nature Reserve and Byblos;
2. development of specific team exercises;
3. measurement of marine turtles' specimens;
4. necropsy of marine turtles' carcasses.

The last activity was included in the training because deemed necessary in terms of collection of useful information on the status of local population and for the identification of the main causes of their mortality. This information is in line with the EcAp Common Indicators (CI) as the distributional range (CI3), the population abundance (CI4) and the population demographic characteristics (CI5).

TRAINING

➤ DAY 1 – 3 July 2018

The session began with the welcome speech of Ms. Asma Yahyaoui, associate Project officer EcAp-Med at SPA/RAC, and Ms. Lara Samaha, representative of the Lebanese Ministry of Environment.

Then, Ms. Asma briefly introduced the content and objectives of the training and presented the Ecosystem Approach (EcAp) strategy and its implementation in the Mediterranean. Specific focus was made on the EcAp-Med II project and the National IMAP in Lebanon. A round table introduction of each participant followed. Mrs. Nabigha Dakik, TCNR officer, finally gave a welcome presentation explaining the main achieved and planned activities in the Tyre Coast Nature Reserve.

The welcome session was followed by a short general introduction on marine turtles and their biology and physiology. A session specifically dedicated to the peculiar characteristics of *Caretta caretta* and *Chelonia mydas*, the two species of marine turtles living and reproducing in the Mediterranean, with key elements to identify adults, sub-adults and hatchlings, followed. During the session, rich photo documentation showed that it is possible to recognize the species of the female turtle nesting, among the said two Mediterranean species, by observing the traces left on the beach and the size and depth of the pit done for the nesting.

In the afternoon session, the reproduction and nest biology themes were discussed. After a short introduction general to all marine turtles' species, relevant information on how to conduct an effective monitoring, as "nesting periodicity" and "eggs and clutch size", was provided, with specific reference to the said two Mediterranean species.

Before the closure of day 1, in view of the night patrol experience on the beach, instructions on how to conduct a night patrol and what type of data to collect, were given, besides precise recommendations on how to behave and what equipment to have during the monitoring activity. The night patrol was carried out from 22.00 to 00.00 on a part of the TCNR beach called "conservation zone" which is bordered, on the south, by the Palestinian camp (Rachidiedh Palestinian Refugee camp area) and, on the north, by the touristic area full of night and day kiosks.

➤ DAY 2 – 4 July 2018

The session was introduced by a brief presentation, by Ms. Lobna Ben Nakhla, Species programme Officer at SPA/RAC, of the main activities of the Mediterranean Action Plan for the conservation of marine turtles as well as of the MAVA marine turtle project and its main objective related to its implementation in Lebanon.

The “Population and habitat assessment” session focused on the ways to identify and characterize potential nesting beaches and foraging grounds without observing gravid or resident turtles. Particular attention was, therefore, paid to the techniques to apply in order to monitor a nesting beach, detect a nest and report data on the Day Report Form.

The “eggs handling and hatching” session was organized given that wrong eggs handling seriously jeopardize the embryonic development of the whole clutch. During the session, the delicate and sometimes necessary techniques to move a nest, which is too close to the shore and therefore more subject to flooding, were explained, together with the current used techniques to monitor the temperature of the nest during its development. Basic information on how to make the nest inventory after the hatching, namely classify and define the nest contents in order to assess the hatching success, was provided. To this regard, the “Bolten model” (1999), as described in “Research and Management Techniques for Conservation of Sea Turtles”, was proposed.

Finally, it was explained how to weigh and measure the hatchlings before releasing them back on the sand, how to behave in case of day emergence and how to breed them stressing that the head starting practice is controversial for marine turtles’ conservation and can be applied just in exceptional cases.

➤ DAY 3 – 5 July 2018

The group left at 6.30 to monitor the TCNR “Conservation zone”, the same visited in the night patrol, and a real nest was found. By following and observing the footprints on the sand it was possible to find the nest and the “body pit” as well as to define that the nest had been left by a female of *Caretta caretta*. The description of the nest was done based on measuring some parameters such as the distance from the sea, the depth and the width of the chamber, while a data logger provided by the MAVA project and placed within the nest will allow monitoring the temperature of the nest during the incubation period. A specific system used by the TCNR officers to protect the nest from predators was presented by Mr. Mounir Karanbash. It consists in placing a large mesh metal net on the top of the eggs chamber close by the open side of the nest and cover it with sand. The nesting area was bordered with poles and signs.

Back in the classroom, participants were involved in the activity of sea turtles’ measurement, as learnt during the theoretical session, by using a frozen species of *Caretta caretta* made available by the TCNR staff.

Each participant could take the main measures (CCL and CCW) by using a flexible meter and annotate them on a sheet.

The afternoon session was dedicated to team exercises focused on the main risks incurred by sea turtles. In the first exercise, each group had to write down on post-it notes ideas on the main reasons for sea turtles decrease and post them on a wall. The main causes of damage were finally identified.

The second exercise focused on the main threats met by sea turtles in nesting and foraging habitats. For this activity, three groups with a coordinator each, were identified. Each coordinator had the task to organize the ideas of its group and present them to all participants. After a long general discussion, the main threats met by sea turtles were identified and recognized. Unfortunately, the last exercise on “the ways to avoid the threats” couldn’t be carried out because participants were very tired.

➤ *DAY 4 – 6 July 2018*

The day started with another monitoring activity involving, not only the “conservation zone”, as in the day before, but also the “touristic zone”, with the aim to find new hints of possible nests. The patrol was also an occasion to further discuss the key issues on nesting.

A session on “Sea Turtle Necropsy” followed in which a short introduction on anatomy and the methodologies to apply for an effective necropsy was provided together with the development of practical dissections. To this purpose, a special table together with the necessary tools were provided and two species of sea turtles (a giant *Caretta caretta* and a small size *Chelonia mydas*), which had been previously frozen, were used. These specimens had been found dead on the beach of TCNR and kept frozen in view of this activity. All the steps to follow during the animal dissection, starting from the external towards the inside part of the body, after removing the plastron, to carefully assess the condition of the internal organs, were tested. Some useful samples for further and more accurate analysis, mainly genetic analysis and heavy metals, were collected from these organs.

By observing both the external part of the body and the inner organs of the two species, it was possible to assess that the *Caretta caretta* had died following a ship strike (deep fractures in the carapace close by the completely collapsed left lung) while the *Chelonia mydas* had died by fishing gear entanglement (explosion of the heart and foam inside the trachea). Particular attention was, finally, paid to sea turtles’ gastrointestinal tract in order to show how to proceed with the monitoring of marine litter presence in sea turtles.

➤ *DAY 5 – 7 July 2018*

The group left TCNR to Byblos for a field trip to its beaches. Before starting the monitoring activity, the group was welcomed by Ms. Zeineb Farhat, from the European Institute of Cooperation, for a preliminary

presentation of the city and the status of its public beaches. Afterwards, the group was taken both to the first big beach of Byblos and the small one. Once back to the meeting room, the main problems linked to excessive tourism pressures were explained.

After lunch a general discussion on the training was conducted through the “evaluation sheet” prepared by SPA/RAC for each participant. During the discussion, interesting feedbacks from participants were collected. A certificate of participation was distributed to all participants.

OBSERVATIONS AND RECOMMENDATIONS

Hereby, some personal observations and suggestions on the following phases of the training:

a) Theoretical sessions

During the theoretical sessions, the participants interacted actively by asking questions and looking for more information. This meant that not everyone was already aware of all the aspects linked to sea turtles and that preliminary information was needed.

The “evaluation sheets” filled up by the participants showed that both the theoretical and practical sessions as well as the documentation provided, including the brief session reports circulated during the whole training, were deemed very useful. As requested by the participants, the presentations given during the training are available on the SPA/RAC website (<http://www.rac-spa.org/node/1671/>).

Most of the participants declared that the information given during the training will definitely help them in their work, in general, and, in particular, for the analysis of data already collected or for conducting effective and useful monitoring for the collection of better data. Some of them considered the training as a driver for initiating such a job. What I appreciated more, because it reflects my way of teaching, is their positive comments on the fact that the information was provided in a very simple and clear way and therefore easy to remember and apply.

In general, I found a very good and friendly environment. The participants could speak in different languages and the discussions were very exciting thanks also to the presence of representatives from SPA/RAC and the Ministry for Environment of Lebanon. Also, my efforts as “trainer” were positively assessed by all participants and that really touched me because I’ve always devoted my “teaching career” in transferring to the new generation my determination and commitment on sea turtles’ conservation.

As for the question on possible improvements to the training, many of them stressed the need for another training with more practical sessions to be carried out in another Lebanon site.

b) Practical sessions/nesting beach monitoring

The continuity of the TCNR beach, between the rural area, the strictly protected zone and the touristic area is interrupted for 1km by the Palestinian Refugee camp of Er Rachidiedh where nesting sites cannot be excluded. Being perfectly aware that monitoring activities in this area are not feasible for evident reasons, local young people living there could be involved in this seasonal activity after a simple and focused training. This idea seems utopian at the moment, but it cannot be excluded in the next future.

The night and day patrol have always been conducted on the same beach of the Reserve even if the Ras El Ain beach, in the rural area stretching for 2km southward the refugee camp, would have been interesting to be visited given the presence of frequent nests. During my last mission to Tyre, in June 2015, I had the chance to find on that beach three nests, which had been left during the same night.

During one the two “day patrol”, the beach in the touristic zone of the Reserve, right next to a strictly protected area, was explored. This area is used for tourism purposes and is covered of about 49 wooden kiosks during the summer. These kiosks cause the destruction and degradation of the sandy dunes and interfere largely on marine turtles nesting activities. Nonetheless, as recently reported, nests can occur. Therefore, it is necessary in the future not to underestimate the inspection to this beach by strengthening monitoring activities in this area.

However, it was incredible to notice that, since the early morning, the TCNR beaches, also the conservation zone, are full of people, not mentioning the touristic zone where the anthropogenic pressure is very high, day and night. In my opinion, in the strictly protected zone, regulations and their compliance should be better ensured. In the touristic zone, on the other side, strong and continuous awareness raising campaigns are extremely needed because the visitors to the kiosks are totally unaware of the problems that they may cause to sea turtles (see my previous report on the mission to Lebanon 8-15 June 2015).

Further, given most of the coast is covered with pollution, mainly marine litter, it should be necessary to develop awareness raising campaigns, addressed to the visitors of these areas, on the damages caused by pollution not only to marine fauna but also to humans and their health, and for more conscious waste management.

c) Practical session - Sea Turtle necropsy

This session was pretty difficult to carry out because the dissection tools were not appropriate (as reported by participants in the evaluation sheet). As mentioned above, specific care and attention were paid to the exam of the digestive content of the sea turtles. In particular, the stomach of the *Caretta caretta* was found full of rests of crab exoskeleton, vertebra and opercula bones of small fishes and threadlike plastics as

nylon line. The *Chelonia mydas* stomach instead, was full of rests of red algae and *Cymodocea* as well of numerous fragments of blue colour hard plastics.

Therefore, a more active involvement of the TCNR personnel into the MED Marine litter Project is strongly recommended also in view of a more effective contribution to the assessment of the marine litter ingested by sea turtles in the Mediterranean.

d) Visit to Byblos public beach

The first part of the beach seems to be the perfect site for nesting thanks to its fine sand with gently rising slopes even if mostly covered with sunbeds, umbrellas, tables and chairs and enterprise facilities for daily use, which are also open at night with lights illuminating the beach. Nonetheless, *Chelonia mydas* and *Caretta caretta* nests have been found in that area by fishermen.

According to my experience, occasional nests of *Caretta caretta*, in Italy, are always found in beaches with a high tourism pressure and are often discovered by tourists. Since it is not excluded that nests may be found in the touristic beach of Byblos, monitoring and raising awareness campaigns addressed to fishermen, visitors and hotels and holiday facilities must be strengthened. Further, it would be essential to set a dedicated area open to the public, and in particular, to young people, where talking and sharing information on sea turtles, displaying images and, where possible in the future, eventually hosting injured turtles for rehabilitation and dead turtles for analysis on their death causes.

I believe such an initiative, to be developed in such an interesting and threatened area, is extremely needed and Mrs. Zeinab Farhat, that I had the chance to meet during the training, may be the ideal person to carry out the said conservation activities.

The second part of the Byblos public beach is, on the opposite, very small, more crowded, rocky and therefore not easy to access from the sea. For these reasons, I would not classify it as a nesting area.

FINAL REMARKS

In general, the training days have been very intense and stimulating. All participants showed high interest and enthusiasm in the activities while developing good relationships, which can definitely be considered as a starting point for a Lebanon “expert network” where sharing data and creating a central database on turtle nesting.

The reasons for continuing with this kind of activities in the future and keep this little group united are multiples as, first of all, maintaining the work undertaken by SPA/RAC particularly in the framework of the EcAp-MED II and MAVA marine turtles’ projects. An effective implementation of the capacity-building activity in Lebanon can be ensured only by strengthening the training activities addressed to these young

people. Therefore, I strongly wish this training will not be unique but a starting point for a new conservation policy on marine turtles in Lebanon.

I wish to thank the SPA/RAC officers, Ms. Lobna Ben Nakhla and Ms. Asma Yahyaoui, for supporting and advising me during all the phases of the training by guarantying its success, and Ms. Nabigha Dakkik of TCNR who really dedicated herself to the successful development of the training.