

Formal observation of the first nesting of the Loggerhead *Caretta caretta* (Linnaeus, 1758) in Algeria

Abstract

The Loggerhead *Caretta caretta* is a sea turtle of the Cheloniidae family and the subfamily of the Caretinae. It is found in the Pacific, Atlantic and Indian oceans and in the Mediterranean Sea and it is considered an endangered species and is protected by the International Union for Conservation of Nature. Its heritage status is Vulnerable. In the Mediterranean it is the most common species of sea turtle. The main nesting place is Greece with more than 3,000 nests per year, and loggerheads also nest on the Cypriot coasts and several other nesting places are known in the eastern Mediterranean for example in Turkey, Israel, Cyprus, the islands Ioniennes, in Tunisia, Libya, in Lebanon and in Sicily. For Algeria the Loggerhead is very often observed either alive or stranded but no egg-laying nest has been reported. In August an egg laying nest, from which small loggerheads came out, was observed at the Iftissen beach of Beni Fergane in the coast of El milia in the department of Jijel this is the first observation of nesting of this important species in Algeria.

Keywords: Loggerhead, seaturtle, Vulnerable, Mediterraneansea, nesting place, Algeria

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Introduction

Sea turtles have played an essential role in maintaining the health of the oceans for 100 million years and are considered key stone species because they are essential to the development of marine food webs. There are only seven species in the world: Loggerhead (*Caretta caretta*), leather back turtle (*Dermochelys coriacea*), olive ridley turtle (*Lepidochelys olivacea*), hawks bill turtle (*Eretmochelys imbricata*), flat back turtle (*Natator depressus*), green turtle (*Chelonia mydas*) and Kemp's turtle (*Lepidochelys kemp*). They consume prey such as jelly fish and sea sponges, allowing corals and lower trophic level fish to grow in abundance.¹ According to the IUCN Red List (International Union for Conservation of Nature -<https://www.iucnredlist.org/>) the 7 species are threatened: 3 species are Vulnerable VU (*C.caretta*, *D.coiacea* and *L. olivacea*), 1 Data Deficient DD species (*N.depressus*), 1 Endangered EN species (*C.mydas*) and 2 Critically Endangered CR species (*E.imbricata* and *L.kemp*).

The presence of sea turtles on the Algerian coast has been regularly reported since the end of the 18th century with many accidental or provoked stranding's, 70% are loggerhead turtles (*Caretta caretta*) and 30% leatherback turtles (*Dermochelys coriacea*) as well as an occasional presence of the green turtle (*Chelonia mydas*). This situation is accentuated by the proximity of the feeding zone located in the Alboran Sea and in the Algerian basin and data relating to the nesting of sea turtles in the Mediterranean basin show, during the last 20 years, an extension towards the western basin, and the result of the warming waters in the eastern basin. This new situation is an indicator of the possibility of nesting sea turtles on the Algerian coast.² This situation has led the Algerian authorities since 2012 to integrate the three species of sea turtles (*Caretta caretta*, *Dermochelys coriacea* and *Chelonia mydas*) to the list of protected animal species (Executive Decree No.12-235 of May 24, 2012 setting the list of protected non-domestic animal species).³

Laurent⁴ on doing the first work in relation to the nesting of sea turtles on the Algerian coast stipulated that no tracks were found during a 1989 survey of 16 beach samples, totaling 73,9 km distributed throughout the main sandy zones, and surveyed one to seven times. Benabdi, et al.⁵ reported in their publication that during their survey to detect nesting possibilities of sea turtles in Algeria that in August

11, 2017 a hatchling of loggerhead turtle *C. caretta* was accidentally discovered and captured by campers on the beach of Tamanart Beach (37°05'2488" N, 6°52'4658" E) at 4:00 AM in the department of Skikda in the eastern zone of Algeria (515 kilometers eastern of Algiers). The authors analyzed the captured specimen and noticed the presence of 5 vertebral scutes, 5 pairs of costal scutes and the nuchal scuteis in direct contact with the first pair of costal scutes. The specimen was released in the morning after photographs and videos were taken and with this observation they report the first occurrence of nesting activity on the Mediterranean coast of Algeria. This claim was made based on the capture of a new born loggerhead but they did not report the presence or sighting of a nest or nesting site. This important observation by not mentioning the presence of a nest can possibly suppose that the new born was brought back by the waves since it is only a single individual and that the loggerhead lays dozens of eggs in the same nest, or it may also come from a nest that has not been located. The authors analyzed the captured specimen and noticed the presence of 5 vertebral scutes, 5 pairs of costal scutes and the nuchal scutes in direct contact with the first pair of costal scutes confirming that the captured individual is a hatching of *C. caretta* as stipulated by Wyneken.⁶

And in 2019 there was the launch of other surveys initiated by the Ministry of the Environment as part of the project 'conservation of sea turtles in the Mediterranean' to detect the possibilities of nesting sea turtles on the Algerian coast and no formal observation of a nest has been reported. To protect sea turtles and especially to search for nesting sites, Algeria has commissioned two state structures for this mission. The first is the CNL (Commissariat National du littoral - National Coastal Commission) and the National Center for Fisheries and Aquaculture Development and Research (CNRDPA).²

On July 5, 2021, CNL (National Coastal Commission) staff reported an attempted nesting Loggerhead observed by a family on the beach of El Hamdaniain the Department of Tipaza, 70kilometerswest of Algiers. Unfortunately the turtle has not finished digging its nest and has returned to the water without laying its eggs. They report that there may be other calving possibilities in the beaches of El Hamdania, Sekhra el Beida, El Belaa and Tizirine. Awareness work with local residents and summer visitors has been done to avoid disturbing the turtles.⁷

Material and methods

The Algerian coast covers 2148 km of the southwest Mediterranean coast line from the Moroccan to the Tunisian borders, of which approximately 180 km is facing the Alboran Sea. The Algerian littoral is characterized by a narrow shelf with an extended rocky bottom and the western part is under the Alboran Sea conditions directly influenced by the Atlantic currents.⁸ This coastline presents a variety of habitats, from dominant rocky shores, sometimes with high cliffs, to sandy beaches and dunes in most of the bays. The beaches occupy

a large part of the Algerian coast, of which the large stones are located on the eastern part of the country.

On 5 August 2023, in the Iftissenbeach of Beni Fergane in the coast of El Milia (36°90'61202" N, 6°21'76295" E) in the department of Jijel located at 394 kilometers east of Algiers, at 5am a group of hikers from the Volunteer Ecologists of Settara (Jijel) who were camping on the beach observed newborn turtles emerging from a nest located on the beach and Rachid Boutbibatook a video and photos with his mobile phone (Samsung Redmi 9) (Figure 1).



Figure 1 Location of leix where hatchlings of *Caretta caretta* were observed (A: Hatchling at Tamanart Beach, B: Nest and hatchlings of *C. caretta* at Iftissen Beach - Red line: borders between the two departments).

Results and discussion

Approximately forty (40) hatchlings of *C. caretta* were observed emerging from their nest and heading towards the sea. The nestis located on a coarse sandybeach about 15 metres from the water and the turtles emerge in small groups of 4 to 6 individuals (Figure 2). The campers helped the newborns who were on their backs to straighten up and they reached the sea where a large Logger head turtle (probably the mother) was waiting for them. After the release of all the hatchlings

there was an attempt to measure the depth of the nest, unfortunately it was quite deep and it exceeded 1.5 metres deep approximately. In agreement with Benabdi, et al.⁵ who cite Margaritoulis et al.⁹ the incubation time of *C. caretta* is from 47.3 to 62.3days we estimate the date of nesting of Iftissen Beach between 1 to 15 June 2023 because during this period the beaches are not yet frequented and the turtle has had all the time to lay her eggs undisturbed. This observation formally confirms the presence of a *C. caretta* nest on the Algerian coast and is the first of its kind.



Figure 2 Continued...



Figure 2 Photos of the Loggerhead's nest on Iftissen beach and the hatchlings heading out to sea.

(Photos: Rachid Boutebiba).

Conclusion

Many authors estimate that the nesting of sea turtles constitutes a new colonization of the western basin, currently revealing new nesting sites in the western part of the Mediterranean basin and they estimate that the Algerian coast should shelter a significant number of nests which are not yet detected due to the absence of a monitoring process and the nocturnal specificity of the nesting of turtles. A predictability model of the coasts sheltering favorable habitats for the nesting of logger head turtles in the Mediterranean, which is based on climatic data, classifies the major part of the Algerian coast in the categories of very favorable areas for their nesting. Our present observation can serve as a pilot site to observe the behavior of the Loggerhead and get an idea of its ecology and will help the CNL and the CNDRP to more easily locate the nests on the Algerian coast which is 2148 kilometers.

Acknowledgments

None.

Conflicts of Interest

None.

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