

Turtle nesting in the Maltese Islands



Signs of the times: the harvesting of green turtles at Ascension Island in the South Atlantic Ocean (reproduced with permission from the journal *Global Ecology and Biogeography*).

The rapidly increasing human population is placing pressure on many fragile ecosystems, especially coastal areas, which have high human densities and are popular tourist destinations. Human use of nesting beaches may include diurnal and nocturnal activities, vehicle use on beaches and artificial lighting effects from beachfront developments. These may later affect turtle behaviour and nesting substrates/surfaces so that conditions may become unfavourable to hatching and nesting, leading to increased nest predation levels.

Considering that just 2.4 per cent of the entire Maltese coastline is sandy and the tourist development along such shores (with hardly a light pollution-free corner) it is easy to see why it is virtually impossible to reintroduce nesting marine turtles to the islands.

The majority of turtle sightings around the Maltese Islands take place along the southeast of Malta, especially regularly during summer, when some of the turtles usually migrate to nest on the Libyan coast, which is very popular with turtles, especially loggerheads.

The loggerhead turtle is a long-living, slowly maturing marine species that inhabits tropical to warm temperate areas and is currently classified as globally endangered by the World Conservation Area (IUCN).

Upon sexual maturity, loggerhead turtles begin periodic migration from feeding grounds to the nesting beaches which may be separated by hundreds of kilometres.

A positive factor is the fact that populations of the green turtle (*Chelonia mydas*) in the Atlantic Ocean are recovering - in fact, green turtle populations at Ascension Island (a well-known breeding area for turtles, lying in the South Atlantic, between Brazil and West Africa) are estimated to have increased by 285 per cent since the 1970s.

Yet another positive factor is that loggerhead sea turtles have returned to nest on the beach of Sciacca, on the southern coast of Sicily, according to Bernardo Barone, project manager of the ongoing Italian LIFE-Nature project).

Unfortunately, while the turtles came to the beach to nest, they didn't manage to lay any eggs on this occasion. Nevertheless Mr Barone says this is encouraging news for the project team, as it indicates that this, and other Sicilian beaches, are potentially good nesting sites for this threatened species.

The LIFE-Nature project was launched in September 2003 and runs until May 2007. It focuses on the conservation of the loggerhead sea turtle in Sicily, an EU-priority species, which is threatened, not only by pollution, but also by commercial fishing.
(<http://europa.eu.int/comm/environment/life/news/index.htm>)

In the little Italian island of Lampedusa, to Malta's south, the Spiaggia dei Conigli (Rabbit Beach) is swamped in a nature reserve operated by Legambiente, since the beach is well known for the fact that marine turtles (mainly *Caretta caretta*) still lay their eggs on the beach between August and September, when part of the beach is cordoned off for bathers.

Loggerhead turtles nesting in the Mediterranean Sea are demographically isolated from the Atlantic rookeries and exhibit clear substructure, even among neighbouring nesting beaches. Despite such reproductive isolation, Atlantic juveniles are abundant in the Mediterranean Sea. These Atlantic turtles are believed to leave the basin before becoming sexually mature.

Data on the number of nests and characteristics of the nests themselves - including predation, development and hatching rates, microhabitat effects on hatching and annual reproductive output - can be determined without observing the female itself as large tracks identify both the location of nests and the species of turtle

In case you stumble upon one...

Malta Centre for Fisheries Sciences (MCFS) at San Lucjan - temporary depot for turtles injured through boat collisions or inadvertently captured by fishermen (especially by long lines) or entangled in plastic paraphernalia, after which the turtles are released back into the wild in the July period (tel. 2165-5525, 2165-8863).

Nature Trust Marine Rescue Team - this is a 24 hour service of volunteers, including biologists and veterinarians, who undertake rescues of injured dolphins and turtles. This expensive service saves at least three dolphins and a dozen turtles per year. NTM is collecting funds to set up a turtle rehabilitation centre at Xrobb I-Ghagin.

The rescue team makes frequent interventions after it is alerted to sightings or collections of injured specimens - the last of these took place on March 4, when an injured loggerhead was spotted by a police dinghy close to Popeye Village, Anchor Bay, and brought to shore after a few attempts to help the turtle swim back out to the open sea.

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One hopes that the long-term viability of The Central Mediterranean Naturalist journal, a showcase of local natural history records, is ensured through adequate funding from the University of Malta and other sources.

A report of nesting on a Maltese beach by the Loggerhead Turtle

This article was carried in the latest issue of The Central Mediterranean Naturalist and was written by Alan Deidun and Patrick J. Schembri (Department of Biology, University of Malta)

Of the seven species of marine turtles in the world, five occur in the Mediterranean: the Loggerhead (*Caretta caretta*), Green (*Chelonia mydas*), Kemp's Ridley (*Lepidochelys kempi*), Hawksbill (*Eretmochelys imbricata*) and Leatherback (*Dermochelys coriacea*).

Of these, only the first two listed now breed in the Mediterranean. The Leatherback is mainly an Atlantic species that regularly enters the Mediterranean in small numbers and apparently used to occasionally breed there, although there are no recent records of it doing so; the Hawksbill is a tropical species that only very rarely enters the Mediterranean, while Kemp's Ridley is an Atlantic species for which there is only a single record from the Mediterranean.

All the five species recorded from the Mediterranean have also been recorded from Maltese waters and indeed the only Mediterranean record of Kemp's Ridley is from Malta. However, all, apart from the Loggerhead, may be considered as either vagrants (Leatherback and Green turtles) or as accidental (Hawksbill and Kemp's Ridley).

On the other hand, the loggerhead forms part of the Maltese fauna since it is relatively common in Maltese waters and, until it was declared a protected species in 1992 (Legal Notice 76 of 1992), it was regularly landed and offered for sale at the fish market in Valletta. Both Gulia (1890) and Despott (1915) reported that the loggerhead also used to breed in the Maltese Islands. The former author makes a general statement that loggerheads came ashore on sandy beaches to breed, but the latter states that "it has been known during that season (spring) to lay its eggs on our unfrequented sandy beaches, especially at Gozo".

There are no other records of turtles nesting in the Maltese Islands following Despott's and it has been assumed that the Maltese beaches have been abandoned as nesting grounds for at least 75 years.

In August 2005, one of us had occasion to interview a person (who wishes to remain anonymous) who described in great detail a turtle emerging from the sea, crawling up the sandy beach at Ir-Ramla tal-Mixquqa (Golden Bay), to excavate a nest in the sand and deposit a clutch of eggs. This event happened in the first half of July 1960 (our informant does not remember the exact date), while he formed part of the 11th Regiment of the Royal Malta Artillery (popularly known as the 'Territorials') and was stationed at the then army barracks at Ghajn Tuffieha. Our informant witnessed the event while he and four others were relaxing on the beach in the evening.

At around 9.30 p.m. a turtle, described to us as some 50-60 cm long, some 40 cm wide, and with a light brown carapace and a yellow plastron, swam to the water's edge and then crawled up the beach for some 150 m until it reached the reed bed fringing the Ramla tal-Mixquqa dune, behind the position of the catering establishment that is now sited in front of this dune. The turtle then excavated a nest and deposited its eggs.

When egg-laying was over, the observers approached the nest and dug out the eggs, of which there were between 50 and 100. The eggs and turtle were collected and eventually consumed. Our informant also remarked that the beach was completely dark in those days and was only lit up when necessary by means of a generator.

This report of nesting by what is most likely to have been the Loggerhead Turtle (*Caretta caretta*) on a local beach in 1960 is important since it suggests that turtles may have still been nesting in the Maltese Islands up to about 45 years ago, immediately before the local tourism industry took off in the early 1960s and Maltese beaches became much more frequented, and their hinterland developed and well lit.

At present the loggerhead nests in the central and eastern part of the Mediterranean basin, mainly in Libya, Greece, Cyprus, Turkey, Syria, Lebanon, Israel and Egypt, but small populations also nest in Tunisia, Sicily, and Lampedusa. In the past this species also nested in southern Italy and Corsica, apart from Malta. Thus, there are several potential sources in the central Mediterranean from where a local breeding population may be founded.

However, it is not likely that local beaches will once again start being used as nesting sites, given the high level of disturbance, including human activity and bright illumination at all hours of the evening and night that now occurs on the beaches where nesting has been recorded, especially during the nesting period (in the Mediterranean, from the end of May until the end of August and sometimes early September).