

SEA TURTLES

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The Maltese Islands are a small archipelago situated approximately in the centre of the Mediterranean Sea on a submarine elevation which connects Italy, Sicily and the African coast, and which divides the Mediterranean into two deep basins. By virtue of their situation, the Maltese archipelago serves as an excellent outpost for the study of Central Mediterranean sea animals including the sea-turtles.

Turtles are tortoises which have adapted to life in the sea. In common with other tortoises, their body is enclosed in a shell. They differ from all other tortoises in the shape of their limbs, which have developed into flat flippers. The shell of a turtle consists of a dorsal part (the carapace) and a ventral part (the plastron), connection on each side. Except in the Leatherback Turtle, the shell is strengthened by bones making it a much firmer structure. The bony part of the carapace is covered by horny shields called 'scutes', the shape of which changes during the growth of the animal. The number and pattern of the scutes are fairly constant within a species and hence form a good diagnostic character. The carapace of the Leatherback Turtle consists of a mosaic of bony platelets covered by a thick leathery skin.

Turtles are essentially animals of tropical and subtropical regions

where they find the correct temperature for the development of their eggs which are deposited in holes, dug into sandy beaches by the egg-laying females.

Turtles themselves are great migrants and travel over great distances across the open sea, even against fairly strong currents. However, in spite of detailed researches, the exact migration patterns for the various species have not been fully determined.

In all there have been seven species of sea-turtles described (from the world seas), four of which having been recorded in Maltese waters. These include the Loggerhead, the Kemp's Ridley, the Green and the Leatherback Turtles. The Hawksbill Turtle has not, to date, been found in Maltese waters but has been captured from the Mediterranean. All the seven species of sea-turtles suffer from exploitation resulting from the human population explosion and associated sea-side development projects.

LOGGERHEAD TURTLE —

Caretta caretta
(Linnaeus, 1758)

The Loggerhead is a highly adaptable animal much given to wandering and has a world-wide distribution. It is often met with in open

sea where it spends long periods of time floating, apparently asleep, on the surface. This turtle is not an important commercial species, but like all the species of sea-turtles suffers as a result of the human population explosion. The species is not at present in dire peril and is listed by the Red Data Book of the International Union for the Conservation of Nature and Natural Resources (IUCN) as status category 3 which reads as follows: "Depleted. Although occurring in numbers adequate for survival, the species has been heavily depleted and continues to decline at a rate substantially greater than can be sustained."

This large species often attaining a length of about two metres is usually reddish brown above streaked with darker brown in the young. The plastron is yellow. It is almost entirely carnivorous feeding on crabs and other crustaceans, shellfish, sponges, jellyfish and fish. It occasionally feeds on algae. The Loggerhead carapace is oval and elongated and has five pairs of costal scutes on either side. The plastron is generally attached to the carapace by three inframarginal scutes on either side, these not containing pores as in the Kemp's Ridley Turtle.

This turtle has been captured from around Maltese shores since time immemorial particularly during the summer months. It is used as an article of food by many of the Maltese and its shell is often to be seen on sale for ornamental purposes. Though the Maltese Islands have a few large sandy beaches which may be adequate for turtles to lay eggs, there is no record of these during

so presently. However in the past, the species has been recorded as using Maltese sandy beaches for nesting purposes. G. Despott (1915) wrote: "The Loggerhead Turtle is very common in our seas, and from August to November is taken in large numbers; in spring it also reappears, and has been known during that season to lay its eggs on our unfrequented sandy beaches, especially at Gozo. It is largely used as an article of food by the majority of the population." The abandoning of the Maltese nesting sites has been the result of the increased human activity near these beaches. The same is occurring in some important rookeries in the United States, Australia and the Mediterranean coast, particularly the Turkish south coast, in Italy and the Balearic Islands.

LEATHERBACK TURTLE —

Dermochelys coriacea
(Linnaeus, 1766)

The Leatherback is a truly pelagic species much given to wandering great distances at sea. It has been described as having a temperate range with tropical nesting habits indicating its enormous range of distribution. In spite of its widespread distribution this is probably the most threatened sea-turtle worldwide. The adult animal has no commercial value being inedible but its eggs are harvested as food in a number of its major rookeries. The species is listed by the IUCN Red Data Book as category 1 with a star-listing which means that the species is critically endangered. Category 1

listing reads "Endangered. Actively threatened with extinction. Continued survival unlikely without the implementation of special protective measures." The conservation measures being undertaken at Trengganu in East Malaya include a scheme whereby eggs are given protection until they hatch, the hatchlings being then liberated. In Fiji, total protection is afforded by legislation.

This very large turtle is readily distinguished from all other sea-turtles by its smooth relatively scaleless skin which is black spotted with white. There have been seven recorded captures from Maltese waters since 1970. The species is totally harmless and uncompetitive with man feeding on jellyfish, Portuguese Man-o'-War crabs and even vegetable material.

GREEN TURTLE —

Chelonia mydas
(Linnaeus, 1758)

The Green Turtle is the best known sea-turtle species since its flesh is most highly esteemed by people everywhere and is the basis of commercial turtle soup. In addition, its oil is used for the cosmetic industry and its skin for the leather trade. This turtle was once very numerous in all suitable areas particularly the tropical and subtropical seas. In most areas it has become severely depleted. However, there is no definite threat to the future of the species at the present time since in some areas, such as Australia, it is still present in substantial numbers. The IUCN Red Data Book lists

the species as category 3 status as the loggerhead.

Growing to a length of over one metre, this turtle is coloured olive or brown above spotted or marbled with yellow. The plastron is whitish to yellow. The green turtle is predominantly vegetarian except in the first year of life when it is carnivorous. As a result of their diet, adult green turtles are found in shallow seas where there is sufficient light on the sea-bed to ensure an abundant growth of marine grasses.

The species is said by some authors to have a nesting site in eastern Turkey at Yumurталik on the Bay of Iskendrun. However captures of this turtle from the Mediterranean waters are rare. G. Despott (1930) recorded the capture of two specimens of turtle taken at a distance of about two kilometers from the mouth of the Grand Harbour on the 12th October 1929. These he identified with the species of Green Turtle. A study of one specimen kept in the National Museum of Natural History at Mdina shows this to belong to the species of Kemp's Ridley Turtle. The remains of the second turtle have unfortunately been lost. This had a total length of 76 cm. From the photograph of the carapace which accompanies Despott's article, the specimen shows features common to the Green Turtle. The carapace is longer than it is broad and has four pairs of costal scutes on either side of the five vertebrals. The only additional note in Despott's article which relates to this specimen is that the flesh was found to be far superior to that of the loggerhead.

KEMP'S RIDLEY TURTLE —

Lepidochelys kempi
(Garman, 1880)

The Kemp's Ridley is known from the Gulf of Mexico, mostly in the northern portion, northward along the Atlantic coast to Massachusetts, whence it is carried with some frequency to England, Ireland, the Scilly Isles and the Azores. A specimen has also been captured from around the Maltese Islands in 1929. The species is extremely vulnerable because its entire breeding range appears to be restricted to a section of almost uninhabited coast of the State of Tamulipas in Mexico. Its eggs are collected by the inhabitants as an item of food and systematic patrols by Mexican soldiers are not sufficient to afford adequate protection. The Red Data Book lists the Kemp's Ridley as category 1 as the leatherback turtle. An attempt to introduce the species to a new nesting site on the coast of Florida has recently been attempted.

This small carnivorous species has an oval and very broad carapace which has five pairs of costal scutes on either side. The plastron is joined to the carapace by four inframarginal scutes each perforated by a hind pore. The carapace is dark grey to dark olive green marked slightly with darker streaks. The plastron is white to pale greenish yellow.

HAWKSBILL TURTLE —

Eretmochelys imbricata
(Linnaeus, 1766)

The Hawksbill Turtle is another

species which has been exploited on a world-wide basis for commercial reasons. It is the species from which "tortoise-shell" is taken and which is used for manufacturing combs and trinkets. Some people eat the adults and as with other sea-turtles, the eggs are eaten whenever located. Its skin is also in demand now and the calipee is being used successfully in the manufacture of "green turtle" soup. This continued exploitation has led the IUCN to list the status of the hawksbill as status category 1.

Being one of the smaller turtles, the hawksbill is characterized by a carapace containing four pairs of costal scutes which in the young adult overlap. Like other turtles, it starts its life as a carnivore but as an adult it becomes omnivorous feeding largely on molluscs, jellyfish, crustaceans, ascidians and marine algae.

The hawksbill is found circumglobally within the tropical range. It has never been recorded from Maltese waters but has been recorded from the Mediterranean, the oldest record being a capture from the coast of Marseilles by M. Mourgue in 1909.

PACIFIC RIDLEY —

Lepidochelys olivacea
(Eschscholtz, 1829)

The Pacific Ridley occurs in parts of the Indian Ocean, in the Pacific and parts of the Atlantic Ocean. Very little is known about this turtle and it was for a long time confused with the loggerhead. It has an almost circular carapace very nearly

as broad as it is long and covered by 6-9 costal scutes on either side. The colouration is fairly uniform olive without any distinctive markings. Little is known about its feeding habits but it is probably largely vegetarian. It is undergoing a very high rate of exploitation for the leather and oil industries and for its eggs. The Red Data Book lists this turtle as species category 2 which reads: "Rare. Not under immediate threat of extinction, but occurring in such small numbers and/or in such a restricted or specialized habitat that it could quickly disappear. Requires careful watching."

FLATBACK TURTLE —

Chelonia depressa
Garman, 1880)

Up till recently the Flatback was thought to be synonymous with the Green Turtle. It is readily distinguished from the green turtle by the much flatter carapace, by scalation differences and by its colour which is olive-green or olive brown with pronounced chestnut brown and/or black streaks and blotches.

Like the Kemp's Ridley, the flatback has a very limited geographical distribution being limited only to Australian waters. The flatback has

never been subject to any substantial exploitation in Australian waters and appears to be quite numerous in its limited distribution. Since Australia has legislated towards the protection of all turtle species, the main threat to this turtle appears to be land alienation of its nesting sites.

It would appear that all the seven species of sea-turtles are acutely threatened with extinction as a result of continual exploitation and sea-side developmental projects. The Maltese have also contributed towards this threat. The sandy beaches once forming a nesting site for the loggerhead have been developed to promote the tourist industry. The continuous capture of the loggerhead for food and for its shell also helps decrease the adult population in the Mediterranean. The irrational capture of the Leatherback is also detrimental to the survival of this greatly threatened species.

The contribution of the Maltese towards the conservation of sea-turtles can only be restricted to attempts towards limiting needless capture of adult specimens which visit Maltese waters. Other countries, particularly those which house important nesting sites, have much more to offer by protective legislation and turtle farming projects.

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