

Chelonia mydas (Green Turtle)

Family: Cheloniidae (Sea Turtles)

Order: Testudines (Turtles and Tortoises)

Class: Reptilia (Reptiles)



Fig.1. Green turtle, *Chelonia mydas*.

[<http://animals.nationalgeographic.com/animals/reptiles/green-turtle.html>,
downloaded on 15 October 2011]

TRAITS. The green sea turtle is one of the larger turtles in the family Cheloniidae and in the genus *Chelonia* it is the only known species (Wikipedia, 2011). Like cows, they depend on bacteria in their guts to digest the food that they eat as they are herbivorous. The green sea turtles are therefore not dangerous to any other animal in the marine habitat. Although the lifespan of *Chelonia mydas* is not known, the turtles are known to weigh up to five hundred pounds. The males tend to have lengthy tails that are thick and the females usually have a shorter more stubby tail. The turtle lives in a shell which covers its back and belly. The part which covers its back is recognized as the carapace and it is usually covered with huge scales known as the scutes. The shell protecting the belly of the *Chelonia mydas* is called the plastron. The plastron and the carapace join at the sides of the turtle. This is called the lateral bridges. The space between the lateral bridges is where the tail, head and limbs are found. Unlike other turtles, the *Chelonia mydas* cannot retract their heads into the shell (National Geographic, 2011).

ECOLOGY. There are many nesting areas in the ocean for the *Chelonia mydas*. There is some found in Hawaii, in Australia and some nest in Ascension Island. Those that nest in Ascension exhibit an extraordinary migratory pattern. They nest in Ascension Island in the south-central Atlantic Ocean and then migrate to the coast of Brazil to feed. This is a two thousand (2000) kilometre journey. According to the Carr-Coleman hypothesis, it is said that this behaviour developed after thousands of years due to continental drift and sea-floor spreading. The coast of Brazil and Ascension Island, according to Carr-Coleman hypothesis, moved apart at a rate of two centimetres per year while the green turtles nest on surf-built beaches and feed in protected shallow water marine pastures. These are separated by a large amount of space and therefore seasonal migration between the both areas take place (Avisé, 2010).

SOCIAL ORGANISATION. *Chelonia mydas* do not show any type of family bonding or pair bonds (Pearse & Avisé, 2011). An example of this could be that the females simply lay their eggs on the beach, cover the eggs and then leave them to hatch about two months later on. From there the infant turtles have to journey to the sea on their own, facing their own dangers (National Geographic, 2011).

ACTIVITY. On a daily basis, turtles are not usually active unless in danger. Their only activity is to seek for food in the shallower coastal areas and resting on and off. They tend to migrate hundreds and sometimes thousands of miles when they are not mating or going to nest, to their feeding grounds.

FORAGING BEHAVIOUR. *Chelonia mydas* usually migrate to shallower waters in search of food. Although they keep to a shallower depth range, *Chelonia mydas* tends to be more active in the day rather than the night. This fact is known due to the length of time that they take during their dives. During the day the dives that *Chelonia mydas* take are usually shorter and more consistent than that of the dives in the night. The dives tend to be shorter because there is more activity involved due to seeking and consuming forage. They therefore return to the surface of the water more frequently for respiration (Hazel et al., 2009). At night *Chelonia mydas* usually rest on the reef slope. They only feed at night when the night light is high (Taquet, 2006)

COMMUNICATION. As the baby green sea turtles enter the sea, they then begin to use their navigational ability. They are able to sense the Earth's magnetic field which helps them to keep to their intended route which is safe areas that they can feed (Lohmann, 2007). They can also tell the difference in magnetic field leaning and magnetic field strength and these characteristics changes across the exterior of the Earth. These features can also present information on where they are on the Earth (Lutz and Musick, 1997). The species is otherwise known to communicate through a ritual mating behaviour (Ernst et al., 1994).

SEXUAL BEHAVIOUR. Mating occurs near the beach where the females choose to lay their eggs, in the shallow waters. Generally, the females tend to choose the beach shore where their mothers had laid their eggs (National Geographic, 2011). The male's input to the offspring is typically restricted to fertilization and genetic effects. The time that the female chooses to mate, the quality of the genes of the mate that was chosen and the fitness outcome of a long reproductive life determines the length of the return of the mating period (Pearse & Avisé, 2011). They then head towards the beach to lay their eggs, digging a pit with her flippers deep enough to hold 100 to 200 eggs.

JUVENILE BEHAVIOUR. Juveniles are sea turtles that leave the nest as babies and then return some years later to the coastal areas. The juveniles, after birth, spend up to ten years out in the sea foraging food as they are carnivores in their juvenile age. There is usually an abundance of food where the ocean currents meet. The green sea turtles then return near the coast to grow and mature. They are frequently around the size of dinner plates and they tend to feed on their prey around an enormous area near the coast. The ten years is usually referred to “The Lost Years” by scientists. The gender of the juvenile green sea turtles is usually difficult to be determined from their external features as their tails are not fully developed.

ANTIPREDATOR BEHAVIOUR. When the turtles that lay their eggs, they usually cover the eggs then head back into the water. The eggs are protected from predators by the layers of sand that their mothers cover them up with after laying. After birth, their journey from the sand to the sea is very dangerous as there is no cover or form of protection from sea birds and other animals that hunt on the beach. The green sea turtle actively swim towards the ocean in an action that can be described as frenzy. They do this for a period of time between 24-48 hours. At nights, they usually rest on sargassum and they are usually more active during the day. They usually rest on the sargassum at night as it provides protection in the night from their predators. During the day, the green sea turtles actively swim away from their predators using their flippers (Mellgren et al., 2003).

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