OUR ENVIRONMENT OUR HERITAGE

MARINE TURTLES

WHAT ARE MARINE TURTLES?

Marine turtles are large reptiles that inhabit the tropical and subtropical seas throughout the world. They have inhabited the oceans for over 100 million years and are believed to have evolved from an ancient lineage of terrestrial reptiles that developed paddle-like limbs as they adapted to life in the sea. They are highly migratory and travel vast expanses of oceans between feeding and breeding grounds.

MARINE TURTLE SPECIES

There are 7 known marine turtle species worldwide.

Hawksbill turtle (*Eretmochelys impricata*),

Green turtle (*Chelonia mydas),* Kemp's

Ridley turtle (*Lepidochelys kempi*),

Olive Ridley turtle (*Lepidochelys olivacea*),

Loggerhead turtle (*Caretta caretta*),

Flatback turtle (*Chelonia depressa*)

Leatherback turtle (*Dermochelys coriacea*).

The Hawksbill turtle, *Eretmochelys imbricata* and Green turtle, *Chelonia mydas* are native to Samoa. The Leatherback turtle (*Dermochelys coriacea*) is rare and is occasionally caught in offshore fishing operations.

GENERAL BIOLOGY OF MARINE TURTLES

Physical Features:

As reptiles, marine turtles are cold-blooded, breathe air and have scaly skins. They vary in shape, size and colour and possess a bony outer shell which is mainly for protection. The shell covers both the dorsal (back) and ventral (belly) surfaces and is considered the most highly developed protective armour. The dorsal portion of the shell is known as the carapace and is covered with large scale-like structures called scutes. The ventral portion of the shell is known as the plastron. The carapace and plastron are connected at the sides by hard-shelled plates known as lateral bridges. The arrangement and number of scutes can be used to differentiate the different species. Openings exist between the carapace and plastron for the head, tail, and limbs.

Turtles lack teeth but have modified beak-like jaws adapted to their specific diets. They have two pairs of flippers to propel and steer themselves in the water. These are also used by females as limbs to crawl back on land and dig/cover nests during the nesting periods.

Difference between a female and a male turtle:

Generally, a female turtle possesses a slightly convex bottom shell and a short tail. A male has a concave stomach and usually have longer nails and a longer, thicker tail that extends well beyond the tip of the carapace. Sex determination can be made easier from comparing the sides of the animal.

Reproduction:

Adult males and females during the breeding season migrate from feeding grounds and undergo mating in areas near nesting beaches. During this stage a female turtle can mate with more than one male turtle. After mating, adult males return to foraging grounds while females wait in the shallow waters adjacent to nesting beaches. Nesting occurs approximately 4 weeks after successful copulation. After a female lays eggs, she moves to nearby areas but after 2 weeks returns to the same beach to lay a second clutch. Female turtles can lay more than one clutch of eggs in a season, but do not nest every year. After the nesting season (normally from October to June), females return to foraging areas and will not nest again for about 2-8 years. Hatching occurs after 7-12 weeks of incubation and the cycle begins again.

Feeding:

Jaws of marine turtles have been modified according to their various diets and feeding behaviours. Those with powerful jaws for crushing and grinding food feed on tough shelled shellfish and crustaceans like clams, mussels and crabs. Species with very delicate scissor-like jaws feed almost exclusively on jellyfish and other soft bodied organisms. Carnivorous species (e.g. flat back turtle) feed mainly on soft-bodied organisms such as sea cucumbers, jellyfish and sometimes prawns and soft corals.

Habitats:

Hatchlings inhabit the masses of floating seaweeds that drift with the ocean currents. Sub-adults and matured turtles [with the exception of the Leatherback species] enter shallow coastal waters and live around feeding areas. Some species are usually found in seagrass pastures while others inhabit the reefs and the offshore waters.

Life Cycle:

Marine turtles start off as hatchlings weighing less than 0.5 ounce and having a carapace length of 1 to 1.5 inches. At sexual maturity a female turtle typically weighs around 130 pounds, with a carapace length averaging 2.5 feet long.

Marine turtles begin their life cycle on land. During the nesting season, breeding females emerge out of the sea and find suitable nesting sites on the beaches. Using their flippers they dig a tunnel called the 'egg chamber' in which they deposit their eggs [usually around 120] and cover them with sand until they hatch. Eggs incubate in the sand for about 7-12 weeks before hatching. Hatchlings usually dig themselves out of the nest during the night when it is cool, and make their way towards the sea. Upon reaching the water, hatchlings adjust to swimming and breathing as they move across the reef to the deeper waters where they spend a number of their early years (about 20 years also known as the 'lost years') floating with the seaweed carried around by the ocean currents. After 30-50 years, they develop into sub-adults and moved to feeding zones in the shallow waters. This is where they complete their development into matured adults, capable of reproducing.

HABITAT DESTRUCTION / DEGRADATION

The destruction of potential nesting and feeding grounds has been a major threat to marine turtles let alone other marine organisms. Erosion from land-based activities smothers seagrass pastures and coral reefs which are home to many species. Coastal and on-shore developments, removal of sand and clearance of vegetation destroy the beaches which are very suitable nesting grounds for turtles. Since turtles use natural light sources (moon and stars) from the surrounding to navigate their way to and from the sea, the artificial lighting from beachfront properties often disorient nesting females approaching land as well as hatchlings emerging from their nests. In addition, the disposal into rivers and the sea of non-biodegradable products, toxic substances, disregarded fishing nets and other garbage is another common reason for turtle mortality.

HOW CAN YOU HELP SAVE THE MARINE TURTLES

- Reporting turtle tracks, nesting activities, turtles basking on land, or injured or dead marine turtles.
- Avoiding walking through sand dunes and nesting beaches especially during the nesting seasons as this disturbs nests and can cause dune erosion, etc.
- Complying with the Regulations regarding turtles at all times

For more information contact our Environment & Conservation Division - Level 5 - DBS building - 23800

Produced by the Ministry of Natural Resources and Environment

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