Hands On Learning
with Reading Museum Service

READING MUSEUM SERVICE

HAWKSBILL TURTLE
(*Eretmochelys imbricata*)

Z132/A



Description

The hawksbill is a small to medium sea turtle. Adult hawksbills range in size from 30 to 36 inches (0.8-1.0 meters) carapace length, and weigh 100 to 200 pounds (45-90 kilograms). Its carapace (upper shell) is an attractive dark brown with faint yellow streaks and blotches. The scutes (plates) which make up the carapace overlap, which is the reason for its Latin name; *imbricata* means to overlap. Its under shell (plastron) is yellow. Its English name, 'hawksbill', refers to the turtle's prominent hooked beak. The lower jaw is V-shaped.

Young hawksbill turtles have a heart-shaped carapace. As they mature their carapaces become more elongated. In young turtles the edge of the carapace is quite spiky (serrated), but this feature tends to fade with age. This example, with a carapace of only about 11 inches (28cm) which has a distinctly serrated edge, must have been relatively young when it was killed. (It also seems to have had some sort of bean inserted into its eye sockets!) The normal lifespan of a hawksbill turtle is thought to be somewhere between 30 to 50 years, however biologists are not sure exactly how long they live.

Turtles are reptiles. That is, they are creatures whose temperature depends on their surrounding environment and which lay eggs. In comparison with tortoises, which have rather heavy shells, aquatic turtles have lighter shells that help them avoid sinking in water and to swim fast.

Sea turtles spend almost all their lives submerged, but must breathe air for the oxygen needed to meet the demands of vigorous activity. With a single explosive exhalation and rapid inhalation, sea turtles can quickly replace the air in their lungs. The lungs are adapted to permit a rapid exchange of oxygen and to prevent gasses from being trapped during deep dives. Sea turtles possess glands near their eyes that produce salty tears that rid their body of excess salt taken in from the water they drink.

Continued on next page.

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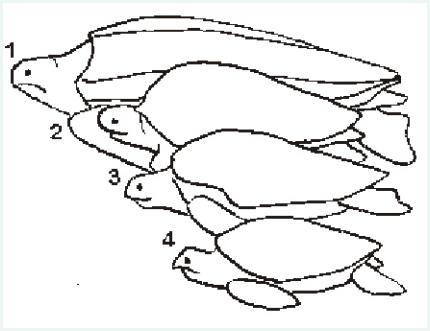
Turtles can rest or sleep underwater for several hours at a time, but submergence time is much shorter when they dive for food or to escape predators. Breath-holding ability is affected by activity and stress, which is why turtles drown in fishing gear within a relatively short time.



Because sea turtles are difficult to study in the open ocean, scientists are just beginning to learn about their life history. Today, radio transmitters, attached to nesting turtles, help track the sea creatures on their travels and provide valuable information

Above: Comparison of the overall length of marine turtles:
1. Leatherback turtle 120-210cm 2. Green turtle 80-120cm 3. Loggerhead turtle 70-110cm 4. Hawksbill turtle 55-100 cm

What do they eat?

Hawksbill turtles are omnivorous with a diet that consists primarily of sponges. They are selective feeders choosing only certain species of sponges, some of which are toxic to other animals. Sea jellies are also common prey for hawksbill turtles. They also sometimes eat molluscs, fish, marine algae, crustaceans, and other sea plants and animals. A preferred feeding ground of the hawksbill turtle is in shallow shoals with abundant brown algae.

Geographical range and habitat

Hawksbill turtles are found mainly in the tropical regions of the Atlantic and Pacific oceans. There has been only one confirmed record in UK and Irish waters, when a hawksbill was accidentally entangled in a herring net set off Cork Harbour in February 1983.

They are most commonly found in reef habitats where they can obtain sponges, their main food source. They also can be found in shoals, lagoons of oceanic islands, and continental shelves. In general, they are found in water no deeper than sixty feet (18.3 m). The young turtles are unable to dive into deep water, and are therefore forced to live in masses of floating sea plants, such as sargassum.

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Breeding



In captivity, adults reach sexual maturity between 3 and 5 years of age, although wild turtles may take much longer. Mating occurs roughly every 2-3 years mainly in shallow waters. Hawksbills leave the water only during the breeding season when females dig nests in the sand, typically near vegetation. The entire nesting process takes 1-3 hours. They clear the area and dig a pit in the sand. They lay their eggs in the pit then fill it with sand using their hindlimbs. After the eggs are laid and buried, they immediately return to the sea.

After about two months, the hatchling turtles emerge at night. The light reflected off the water from the sky guides them to the sea. These days, car headlights, street lamps, or lights on buildings near the beach cause some hatchlings to travel in the wrong direction. Waiting herons make fast meals of other hatchlings. Any hatchlings still on the beach in the morning are easily picked off by predators or die in the hot sun. It is thought that when the surviving hatchlings reach maturity, they return to the beach where they hatched to lay their eggs.

Above: Hawksbill hatchlings making a dash for the sea.
Below: Head of an adult hawksbill turtle.



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Threats

The hawksbill turtle is a critically endangered species according to the IUCN (World Conservation Union). The meat and eggs of the hawksbill have long been a source of food for people, but the main damage to the species is the result of killing the turtles for their shell. 'Tortoiseshell', the material which was widely used in the nineteenth and twentieth centuries to make spectacle frames, combs, mirror frames and so on, is made from the shell of the hawksbill turtle. With late twentieth century CITES (Convention on International Trade in Endangered Species) restrictions, international trade in tortoise-shell has significantly decreased, but harvesting the turtle for its shell is still a threat to its survival in some areas of the world, for example, the Philippines and Japan. In some places the scarcity of animals makes their shell even more valuable, even though its sale is officially banned. Sale of tortoiseshell is illegal in the UK and items supposedly made from it here are, in fact, made from a plastic substitute.

The other threat to the hawksbill turtle, as with many other endangered species, is destruction of habitat, particularly its breeding grounds. Tourism is widespread and profitable in the beautiful areas around the Caribbean, which is the heartland of this species, and many of the beaches where they would return to breed are now disturbed by human presence. These beaches are spread across many different states and it has proved impossible to reach general agreement on a unified conservation policy.

Below: Victorian tortoiseshell spectacles.





Above: Victorian tortoiseshell box.