



NATIONAL AQUARIUM IN BALTIMORE.

Conservation Education Department
Pier 3, 501 East Pratt Street
Baltimore, MD 21202

Fast Facts

- ❑ The largest sea turtle is the leatherback, which reaches 725 kilograms (1600 pounds) and more than 2 meters (7 feet) long.
- ❑ Females often return and lay their eggs in the same beach where they themselves hatched.
- ❑ The temperature of the nest determines the gender of the hatchlings.

Key Terms

Carapace - The turtle's upper shell.

Plastron - The bottom shell or underside of a turtle.

Scutes - Scales that cover the shell.

Turtle exclusion devices (TEDs) - Special boxes that allow turtles to escape from shrimp nets.

Ask the Aquarium

Fact Sheets from the
Conservation Education Department

Sea Turtles

The heaviest aquatic turtles alive today are sea turtles. Most scientists recognize seven species of these special turtles: Kemp's ridley, olive ridley, loggerhead, hawksbill, leatherback, green, and flatback. Like all reptiles, sea turtles are ectothermic, or cold-blooded, and have scales on their skin. Most reptiles, including sea turtles, also lay leathery eggs. Sea turtles have protective shells like land turtles. The upper shell, or carapace, is made of bone. Scales called scutes, which are made of keratin, a type of protein, cover the bone and give the shell a shiny look. Side bridges connect the carapace to a smooth plastron, or bottom shell, on the underside of the animal. The turtle's backbone and ribs are attached to the carapace. This means the turtle cannot come out of its shell or bend its back; only the legs, neck, and tail move.

How Large are Sea Turtles?

The smallest sea turtle is the Kemp's ridley, which weighs up to 55 kilograms (120 pounds) and has a carapace length of 76 centimeters (26 inches). The largest sea turtle is the leatherback, which reaches 725 kilograms (1600 pounds) and more than 2 meters (7 feet) long. It is the heaviest reptile on earth today. The leatherback's shell is not solid bone. Instead, the turtle's leathery skin covers 5 bony ridges, hence the name "leatherback". Large leatherbacks, like some oceanic fish, retain excess heat from their muscles while swimming. This is because their body is very large and



Calypto, a green sea turtle, was rescued and brought to the Aquarium. Sadly, an injury prevents its re-release.

only a small amount of skin is exposed to release the heat, which allows leatherbacks to remain active in cold water.

Life in the Water

Sea turtles spend nearly their whole lives in the water. They have adaptations that are very different from land or freshwater turtles. Sea turtles have rather flat, streamlined carapaces that move easily through the water. Instead of stumpy feet with claws for walking, they have flippers to help them swim.

The Lost Year

On land, however, flippers are not very useful, and the turtles' large size and weight make them awkward out of water. Male sea turtles may never come ashore after hatching, but adult females must do so in order to lay eggs. Every two to four years they return to shore, usually to the same area where they themselves hatched. The female will struggle to dig a deep nest and lays about one hundred ping-pong ball-

sized eggs. After she is finished, the exhausted female will cover the eggs with sand and return to the water.

About sixty days later, the young begin to hatch. The temperature of the nest determines the gender of the hatchlings. If the nests' temperature was below 28° C (82° F), most of the young will be male. If the temperature was above 29.5° C (85° F), the majority will be female. At temperatures in between, there will be a mixture of sexes. Usually under the cover of darkness, the hatchlings scramble up through the sand nest and dash instinctively toward the brightest horizon. Traditionally this has been the reflection of the moon on the ocean, but light pollution from hotels, streetlights, and other sources may confuse the hatchlings, preventing them from ever reaching the ocean. Most hatchlings are less than 5 cm (2 in) long. Because these small turtles are not seen for the first year or so of their lives, this period is known as the "lost year". Some scientists believe that some of the young turtles may get caught in ocean currents, ending up in calm areas where seaweed and some small animals collect, like the Sargasso Sea. When older and larger, the turtles may leave the nursery areas to feed in the open water or closer to shore.

Turtle Trouble

Most sea turtles never make it to adulthood. High tides, beach erosion, and plant roots can destroy nests. Many predators, such as raccoons, crabs, and foxes, prey upon the turtle eggs. Upon hatching, the young turtles face these and other predators, such as sea birds. They might also get stranded on the beach and die. Scientists believe that only one out of one thousand eggs live to reproduce. Even adult females laying eggs on the beach

may get stuck or die from exhaustion.

Humans pose the biggest threat to sea turtles. Modern sea turtles have existed for 180 million years. As human populations have increased in the last few decades, sea turtle numbers have dropped drastically; some may soon become extinct. People have depended on sea turtles for centuries, using their meat and eggs for food, their skin for leather, and their shells for jewelry- the beautiful scutes of the hawksbill are especially popular for that for tortoiseshell jewelry. Unfortunately sea turtles have been over-hunted for these products, and others, such as face creams, soaps, cosmetics, and tourist souvenirs. Females are easy to catch when they return to the beaches to lay eggs. They also leave a tractor-like trail from their nests to the beach for poachers to follow and find the buried eggs. People compete with turtles for the beaches on which they lay their eggs. Bright lights from hotels and highways will also attract both hatchlings and adult females away from the ocean. Vehicles on the beach can crush buried nests and leave deep ruts for hatchlings to fall into. Sometimes shrimpers and other fishermen accidentally catch and drown sea turtles in their nets.

Turtle Conservation

We do not know if sea turtles can survive under human pressures. It is difficult to protect them when we know so little about their habits. However, current research can tell more about how the animals spend their time, both at sea and on land. Protective laws, which are important for the sea turtle's survival, can be more focused as a result of this research. Beaches that sea turtles are known to inhabit can be made safer by dimming lights during breeding and nesting periods.

Scientists are also helping hatchlings by marking or moving nests to safer areas; although it is illegal to do this without a federal permit.

In 1973, the Convention on International Trade in Endangered Species (CITES) was signed by many countries, making it illegal to bring a sea turtle, or anything made from one, into those nations. In 1992, laws were passed requiring shrimp trawlers on the southeastern United States and Gulf of Mexico to use turtle exclusion devices (TEDs). These special boxes allow turtles to escape from shrimp nets through a hatch without releasing the caught shrimp.

Protective measures like these may help the world's sea turtles survive in the future.