



# Endangered Marine Turtles of the Gulf Coast

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*Although man now dominates the earth, on the evolutionary time scale he is a newcomer, still in his infancy. If length of residence determined his right to rule, he would have to wait at the end of a very long line of less ambitious creatures.*

*But man, the newcomer, can have a tremendous impact on the destiny of his older neighbors because of his ability to drastically alter the world in which he lives. This publication focuses on just one of these "older neighbors:" the endangered marine turtles of the Gulf Coast.*

The Gulf Coastal Region boasts a wide variety of reptiles which ranges from the elegant Indigo snake to the innocuous Blind snake, from the colorful Green Anole to the Fleet Six-Lined Racerunner, from the inconspicuous Yellow Mud Turtle to the Alligator Snapping Turtle. Of the approximately 100 reptile species inhabiting the Gulf Coastal Region, 36 are turtles. These turtle species range from the terrestrial forms to the purely aquatic forms including both fresh and marine species.

Turtles represent an old group, older than the dinosaurs. They are, in fact, the most easily recognized reptile because of their shell. Probably due to their uniqueness, turtles played an important role in early mythology and cultured societies. Many peoples held the turtle as sacred and some believed the earth was supported on the back of a huge tortoise. Turtle shells were used as adornments, trinkets, cooking utensils and rattles by certain early Indian tribes. Additionally, turtles were regarded as a means of medicinal cures. Most of all, turtles have been used as a food source; today their flesh and eggs are considered a delicacy.

Turtles are best recognized by their shell. In most, the shell is hard, composed of bone covered by a cornified layer of scale-like structures or scutes; in others, the shell may be soft, covered by a smooth or leathery skin. Generally, marine turtles are identified by their shells and

associated structures. Figure 1 is a generalized turtle shell depicting characteristics which aid in identification. The top of the shell is referred to as the carapace; the underside of the shell is the plastron.

Marine turtles have a hard shell with the exception of the Leatherback whose shell appears very leather-like. In addition, marine turtles are streamlined for swimming. With the help of large flipper-like fore limbs, marine turtles can swim long distances in a relatively short time. Due to their adaptation for marine life, all are clumsy on land but they must return to land to lay their eggs.

The Office of Endangered Species of the U.S. Fish and Wildlife Service recognizes six of the seven species of marine turtles as being endangered or threatened species. The term *endangered species* implies that the species is in danger of extinction throughout all or a significant portion of its range. *Threatened species* are those which are likely to become endangered within the foreseeable future. Table 1 lists the marine turtles classified by the U.S. Fish and Wildlife Service as *endangered* or *threatened*. Four of the endangered marine turtles occur in the Gulf of Mexico — Green Turtle, Hawksbill, Atlantic Ridley and the Leatherback. The Loggerhead is a threatened species also occurring in the Gulf of Mexico.

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## GREEN TURTLE (*Chelonia mydas*)

### Description

Green Turtles generally are characterized as medium to large sized with shell lengths up to 55 inches and weights to 850 pounds. This species is most easily recognized by the broad, low, heart-shaped carapace. The carapace is smooth, lacking keels and with abutting scutes. Additionally, the carapace has four pairs of costal scutes.

Coloration of the Green Turtle may be variable. The greenish coloration of the body fat is the source of its common name. Carapacial coloration ranges from olive to brown and may have wavy or mottled markings. Plastral coloration is described as immaculate white or yellow. The skin is brown to black colored. Generally, the head scales are brown with a yellow outline between the scales.

Male Green Turtles are characterized by a long tail that is tipped with a heavy nail. Females have short tails which barely reach beyond the rear of the carapace.

### Range

The Green Turtle ranges throughout the Atlantic, Pacific and Indian oceans primarily in the tropical regions.

### Natural History

During daylight hours, Green Turtles browse in shallow water which supports large amounts of submerged vegetation. Seaweed and grasses are the preferred foods but molluscs, jellyfish and sponges are eaten also. At night, the turtle sleeps on the shallow bottom as well as out of the water on rocky ledges.

Adults reach sexual maturity between 5 and 13 years of age. Adults mate every 2 to 3 years during the nesting season just off of the nesting beaches. Nesting occurs in numerous places including the beaches of the Gulf of Mexico, the Caribbean and occasionally in Florida, Bermuda and the Cayman Islands from March to

October with the greatest activity in May and June. The females may nest several times during a season, laying as many as 150 soft, round white eggs per nest. Hatching usually occurs 6 weeks to 2 months after laying. The newly hatched turtles emerge from the nest at night and make their way to the nearby sea.

### Current Status

The U.S. Fish and Wildlife Service currently recognizes the Green Turtle as *threatened* over the entirety of its range, except Florida. In Florida waters it is considered endangered.

### Special Problems

The flesh and eggs of the Green Turtle have long been a source of food wherever available. Lesser developed countries still actively search for the turtle and its eggs. Exploitation of the nesting grounds either by human interference or pollution poses the greatest threat to the Green Turtle's future. Incidental catches by commercial fishing trawlers previously was a significant factor in mortality. Commercial fisheries now use techniques that reduce mortality due to fishing nets.

To better manage and develop a conservation program, all aspects of the biology and life history of the Green Turtle must be studied. There is little information concerning distribution and abundance, populational parameters, habitat quality, human-induced mortality as well as other things that would greatly enhance man's understanding of this species.





## HAWKSBILL (*Eretmochelys imbricata*)

### Description

The Hawksbill is a small to medium sized turtle with shell lengths up to 36 inches. Although similar to the Green Turtle, Hawksbills have a shield-shaped carapace with keels on the vertebral scutes. The scutes may overlap or abut each other depending on the animal's age. Carapacial coloration generally is dark greenish-brown and plastral coloration is yellow. The head scales are black to brown with the scale margins being somewhat lighter. The throat is yellow. The snout is long and narrow, hence the common name Hawksbill. Males are distinguished from females by their long tails which extend beyond the rear margin of the carapace and a concave plastron.

### Range

The Hawksbill is found principally in the warmer waters of the Atlantic, Pacific and Indian oceans from Japan to Australia and the British Isles to Southern Brazil. It frequently is found in southern waters of Florida, the Gulf of Mexico and the Caribbean.

### Natural History

The Hawksbill is an inhabitant of rocky marine environments and coral reef areas. Very little is known about the Hawksbill except that it is most active during the daytime. It eats anything but has a preference for invertebrates such as sponges, jellyfish, sea urchins, molluscs and crustaceans. Hawksbills are aggressive when handled and bite readily with their strong, sharp jaws.

Hawksbills become adults at about 3 years of age. Presumably, mating occurs off the nesting beaches during the nesting period from April through November. Nesting has been recorded on beaches in Florida, Jamaica, the Cayman Islands, Aves Islands, the Virgin Islands, Grenada, Tobago, Trinidad, Guyana, Surinam, French Guiana, Panama, Costa Rica, Mexico and off the

Central American coast. Females nest at night supposedly every 3 years and may lay 2 to 3 clutches over the nesting period. Approximately 160 hard, round white eggs are laid. Hatching occurs approximately 60 days after incubation.

### Current Status

The U.S. Fish and Wildlife Service lists the Hawksbill as being *endangered* over its entire range.

### Special Problems

The Hawksbill is the source of tortoise shell products, and harvest of the turtle for its shell poses the greatest immediate threat to its survival. Exploitation by man of its nesting beaches and pollution pose a long term threat to its survival. Its eggs and flesh frequently are hunted for food. Much more information on this little known species is needed to apply an effective conservation and management program.





## ATLANTIC RIDLEY (*Lepidochelys kempii*)

### Description

The Atlantic Ridley is a small turtle with carapace lengths up to 28 inches. The carapace is rounded, keeled and possesses five pairs of costal scutes. In adults, the carapace generally is wider than it is long. The carapace, head and limbs are grey colored; the plastron is white. Males have a concave plastron and long tails that extend beyond the rear of the carapace.

### Range

The Atlantic Ridley is found in temperate and tropical regions of the Atlantic Ocean ranging from Nova Scotia and England to Mexico and the Azores with adults being restricted primarily to the Gulf of Mexico.

### Natural History

Shallow waters are the preferred habitat for the Atlantic Ridley. Food of this species includes

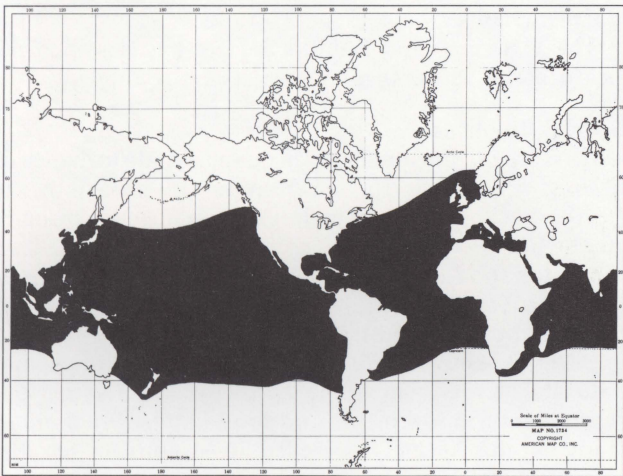
crustaceans, primarily crabs, snails, clams and some plants. Nesting occurs from April through August with courtship and mating occurring in waters off the nesting beaches. Nesting occurs on the Gulf of Mexico between Corpus Christi, Texas, and Veracruz, Mexico, usually during daylight hours. The females may nest alone or in large groups of up to 10,000 individuals. Approximately 100 soft, white eggs are laid which hatch 50 to 70 days later.

### Current Status

The Atlantic Ridley is classified as *endangered* over its entire range by the U.S. Fish and Wildlife Service.

### Special Problems

Because the Atlantic Ridley is a shallow water inhabitant, it is frequently caught in trawler nets that may drown or shock the turtle. The eggs and flesh are eaten in some areas as a supplemental source of protein. Pollution from heavy oil spills or waste products may affect the turtles. International efforts currently are underway to develop conservation and management programs. Very little is known about this animal.



Green Turtles, Hawksbill and Atlantic Ridley turtles are found in the darkened areas shown on this map.





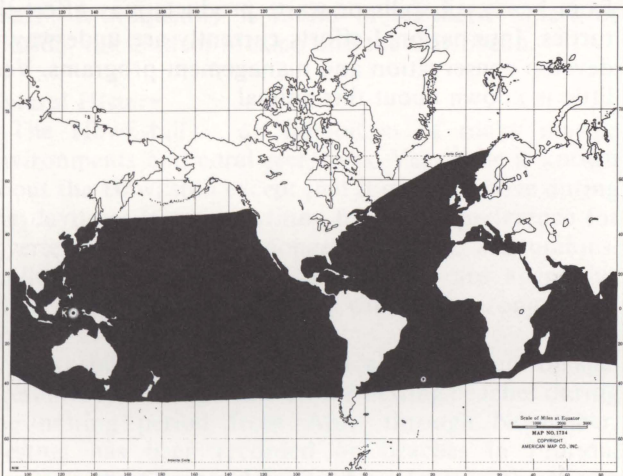
## LEATHERBACK (*Dermochelys coriacea*)

### Description

The Leatherback is the largest of all turtles reaching about 8 feet in carapace length. In accordance with its large size, weights to 1,300 pounds are not unusual. Unlike other marine turtles, the Leatherback has a shell composed of a leather-like covering that is smooth, scaleless and characterized by seven narrow ridges down the carapace. The plastron is characterized by five longitudinal ridges. The carapacial coloration generally is black with small white flecks; the plastral coloration is white. The head is black or dark brown with white or yellow blotches. Males are distinguished from females by their concave plastrons and long tails.

### Range

Leatherbacks occur in the tropical seas of the Atlantic, Pacific and Indian oceans; the Gulf of Mexico; the Mediterranean Sea; Sea of Japan; and the Caribbean Sea.



The darkened areas on this map indicate where the Leatherback turtle is found.

They have been seen as far north as Nova Scotia and as far south as Australia.

### Natural History

The natural history of the Leatherback is not fully understood. It is known as an open sea turtle that occasionally enters shallow bays and estuaries. It often sleeps floating on the surface. The Leatherback probably eats anything but has a preference for jellyfish. Courtship and mating occur off the coast of the nesting beaches. Nesting occurs at night from April through November and has been reported on the coasts of Florida, Jamaica, St. Kitts, Nevis, Barbados, St. Croix, Tortola, Trinidad, Tobago, French Guiana, Surinam, Guyana, Costa Rica, Nicaragua and Liberia. Females may nest six to eight times a season. As many as 170 soft, round, white eggs may be laid per clutch. Hatching occurs after 50 to 70 days in incubation.

### Current Status

The U.S. Fish and Wildlife Service has classified the Leatherback as *endangered* over its entire range.

### Special Problems

As is true in most marine turtle species, disturbance of nesting grounds is the most important threat to the Leatherback. This is due mainly to egg collecting by man. As the flesh is considered inedible, few Leatherbacks are killed for food. In some countries, however, the turtles are eaten. Others may kill the turtles for sport or through incidental captures in trawlers.

Little is known of the Leatherback's biology and natural history including growth, courtship and reproduction, movements and food habits. Much more study of this species is needed to establish a feasible conservation program.

**Table 1. List of the marine turtles classified by the U.S. Fish and Wildlife Service as endangered or threatened.**

Common name	Scientific name	Range	Status
*Green Turtle	<i>Chelonia mydas</i>	Circumglobal in tropical and temperate seas and oceans	Endangered — Breeding colonies in Florida and on the Pacific coast of Mexico Threatened — Everywhere except where listed as endangered
*Hawksbill Turtle	<i>Eretmochelys imbricata</i>	Tropical seas	Endangered — Over the entire range
Loggerhead Turtle	<i>Caretta caretta</i>	Circumglobal in tropical and temperate seas and oceans	Threatened — Over the entire range
*Atlantic Ridley Turtle	<i>Lepidochelys kempii</i>	Tropical and temperate seas	Endangered — Over the entire range
Olive Ridley Turtle	<i>Lepidochelys olivaceus</i>	Circumglobal in tropical and temperate seas and oceans	Endangered — Breeding colony populations on Pacific coast of Mexico Threatened — Everywhere except where listed as endangered
*Leatherback Turtle	<i>Dermochelys coriacea</i>	Tropical, temperate and subpolar seas	Endangered — Over the entire range

\*Endangered marine turtles found in the Gulf of Mexico.

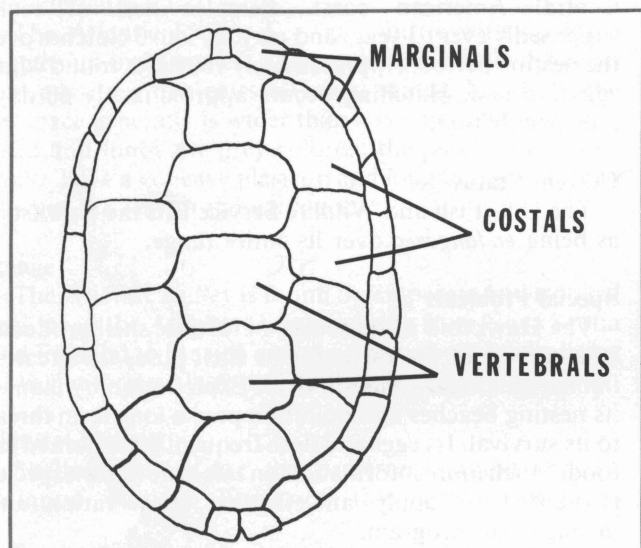


Figure 1. Generalized turtle carapace denoting characteristics that aid in identification.

### General Recommendations

As all marine turtles are protected to some extent, it is imperative that concern and awareness of the existing problems dealing with marine turtles be emphasized. Pollution, development and other forms of human interference are causing the slow disappearance of marine turtles' nesting sites. For marine turtles to cope with nature under these conditions, man must know all

aspects of their biology to better understand their needs and to develop a stronger management program.

Individuals may help by reporting sightings of turtles to a local game warden, Extension Service representative or the Office of Endangered Species. Frequently, dead or dying turtles may be encountered stranded on the beaches. These should be left undisturbed as federal law prohibits molesting, collecting or salvaging protected species without appropriate federal permits.

Information concerning marine turtles can be obtained from:

U.S. Fish and Wildlife Service  
Washington, D.C. 20240

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