

# 2011 “YEAR OF THE TURTLE”

## Sea Turtles



*Kemp's Ridley Sea Turtle (Lepidochelys kempii)*  
Photo: Molly O'Connor – Jekyll Island GA



*Loggerhead hatchlings (Caretta caretta)*  
Photo: Molly O'Connor – Pensacola Beach, FL

EVERYONE LOVES SEA TURTLES... I mean seriously... who doesn't love sea turtles. They are everywhere these days – bumper stickers, light switch covers, cups, plates, shirts, steering wheel covers, and the list goes on. The folks at the Florida Turtle Conservation Trust love sea turtles as well, however they do not put a lot of energy and effort into the education and conservation of this group because there are SO many other organizations that do. The other 20 species of turtles rarely get the attention that this group does so we focus our energy on those. However... sea turtles are VERY cool ☺

There are five different sea turtles that are found in the waters of the northern Gulf of Mexico. Sea turtles have the widest geographic range of any reptile and those turtles found along the coast of northwest Florida can be found anywhere in the Gulf, the Atlantic, and some even in the Mediterranean. They are the largest turtles ranging in carapace size from 70 to 180-cm CL, and some weighing over 1000 pounds! Most have three phases to their lives: an open/surface pelagic life as a post-hatchling, a benthic coastal life as a juvenile, and then return to a more oceanic/pelagic life as an adult. They are relatively easy to distinguish from all other turtles. One, they are HUGE! ☺. Two, their limbs are more like flippers than webbed feet. Three, they are the only true *marine* turtles on the planet. They have been found in estuaries but it is rare to find any other species in the Gulf of Mexico. Most do not bask at the surface for very long, preferring to lie on the bottom and thus are more common over structures where they can sit and hide during these resting periods.

Two species of sea turtles in the northern Gulf of Mexico are the Loggerhead (*Caretta caretta*) and the Green Turtle (*Chelona mydas*). These two appear very similar at first. They both have a rusty-brownish color to their scales and a similar shaped carapace. In both species the scutes (scales) of the carapace do not overlap. They differ in that the Green Turtle is slightly larger (90-95cm- CL) than the Loggerhead (80-85cm- CL), the number of costal scales (along the flank of the carapace) is 5 in the Loggerhead and 4 in the Green Turtle, and there are 2 pairs of prefrontal scales (between the eyes) of the Loggerhead and only 1 pair in the Green Turtle (see photo at end of fact sheet). The two species have similar habits in that they are both nocturnal nesters, the hatchlings leave the nest at night and head for the open ocean, they feed on drifting plants and animals at sea, both species return as juveniles to coastal waters where they become benthic feeders. Here they differ; Green Turtles begin a vegetarian lifestyle feeding on seagrasses and algae where the Loggerhead will feed on benthic invertebrates. This is where the Green Turtle actually gets it's “Green” name; feeding on plants actually causes their internal muscle and fat to become green – so the name refers to their inside... not their outside. Their nest sights are also different. Loggerheads are more temperate and have a higher number of nests in the northern Gulf of Mexico and eastern shore of the Atlantic. The Green Turtles prefer to nest in more subtropical areas and are the most frequent nester in south Florida. The tracks left by the females also differ; the Loggerhead leaves an alternate pattern of flipper marks where the Green's flipper marks are parallel.

Another frequently encountered sea turtle along the northern Gulf is the Kemp's Ridley Sea Turtle (*Lepidochelys kempii*). This turtle puzzled Dr. Archie Carr, the "godfather" of sea turtle biology, for many years during his career. Kemp's Ridley's were observed and collected by biologists and commercial fishermen for years but no one was sure where they were nesting. Through a few connections, and some luck, Dr. Carr found the primary nesting area in Rancho Nuevo, Tamaulipas, MX. Here the Kemp's were nesting in the thousands – and during the daylight hours. Unfortunately they were preyed on heavily by the locals, both eggs and adults, and Dr. Carr was sure they would be extinct by the end of his life. At the time of his death (1987) their numbers were extremely low and they were the most endangered turtles in the Gulf, however since his death there has been an increase in their numbers. This is due to both more protection by the Mexican government and by the relocation of their eggs to national parks in Texas. Sea turtles have a strong site fidelity to their nesting beaches and, even though they may travel large areas of the Atlantic Ocean, they return to within 4-5 miles of their "birth-beach" to nest. This behavior has many turtles returning to Texas where protective laws are stronger. This is also the most frequently captured turtle in shrimp nets. Most turtles can hold their breath for hours but when stressed, as being entangled in a shrimp net, their metabolism is higher and they tend to drown before the shrimp net is brought back to the surface. The introduction of the *Turtle Excluder Device* (TEDS) on shrimp nets in U.S. waters has certainly helped this species population in the Gulf of Mexico. Kemps can be distinguished from the Loggerheads and Greens by their carapace; it is both much smaller (CL= 70cm) and more round than oval (as found in the others). It has 5 costal scutes (different from Green only), and as with both the Loggerhead and Green, the scutes of the carapace do not overlap. This turtle seems to be restricted to the Gulf of Mexico and the southwestern portion of the Atlantic. The few records of them near Europe are believed to be those who caught in the Gulf Stream and did not return to their nesting areas. Records of these turtles seem to be higher in Texas, where they are nesting, and the Big Bend area of Florida, presumably an important feeding area for them. Most records are associated with hard bottom habitat suggesting a more carnivorous diet; there is a need for more studies of this species habits.

Fourth on the list of probable local encounters would be the giant of the sea turtle world; the Leatherback (*Dermichelys coriacea*). This turtle can reach the enormous size of 180cm carapace length and over 1000 pounds – easily the largest turtle on earth today. Because of its large size and the fact that the skin of their carapace is more fatty tissue than hard bony scales makes this turtle easy to recognize. Their distribution is truly worldwide but they prefer to nest in the tropics. Their large size allows them to survive in relatively cold waters; they have been reported in the northern reaches of the Gulf Stream area (71° North!). They spend almost all of their time at the surface feeding on jellyfish, though there is evidence that they dive with the Deep Scattering Layer (a layer of plankton that migrates up and down each day in the open sea) following these jellies. Their surface behavior has caused problems with boat hits and entanglement with fishing line and other plastics. There are few records of this animal nesting in southeast Florida and recently reports of a couple of individuals nesting in the northern Gulf. This species does not appear to have the site fidelity of nesting found in other sea turtles. I have personally seen one of these giants while a student at Dauphin Island Sea Lab, they are truly impressive animals.

The rarest sea turtle encounter in the northern Gulf would be with the Hawksbill Turtle (*Eretmochelys imbricate*). This turtle prefers to feed on sponges and so is more common in the southern Gulf near coral reefs. It is the most tropical of the sea turtles, rarely found north or south of 30° latitude. This turtle can be distinguished from the others by the overlapping of its carapace scutes and it's extremely hooked beak. The carapace is absolutely beautifully colored and is the source of the famous "tortoise shell jewelry" found in stores around the world. The carapace is more aerodynamically shaped and is more serrated along the posterior end. Nesting is restricted to southern Texas and Florida, though there are some records of them in the Port St. Joe / Panama City area.

Sea turtles are on the decline all over their range. The current status for each species is as follows:

Loggerhead	"threatened"
Green Turtle	"endangered"
Kemp's Ridley	"endangered"
Leatherback	"endangered"
Hawksbill	"endangered"

There are several reasons for their decline. One – coastal development where seawalls and beach renourishment projects are ongoing. Seawalls prevent access to their nesting areas and renourishment projects have killed both adults (during dredging) and smothered nests. Two – commercial fishing activity; both shrimp nets and longline gear offshore have taken sea turtles. Three – light pollution caused by coastal development; the hatchlings are programmed to move towards the brightest spot on the horizon... these days that is a parking lot or condo unit... many hatchlings never find the ocean,

are taken by predators while wandering, or are run over on beach highways. Four – boat impacts offshore; many stranded or dead sea turtles on Gulf beaches show signs of propeller impacts. Five – oil; both natural and man released oil in the ocean finds its way into currents where food and turtles can be found. Many dead turtles have had oil product both on their bodies and within them. Six – the jewelry trade; this impact’s only the Hawksbill turtle.

Sea turtles do have their natural predators as well. The same animals that raid other turtle nest and hatchlings certainly prey on sea turtle nests, hatchlings, and young turtles as well. Many adults have been found with shark bites on them; and some attacks by Tiger and Hammerhead sharks have been witnessed. It is not certain whether the attacks on adults are true attacks or more of a “scavenger” response to a sick or dead turtle. Loggerheads and Green Turtles have been found with a virus called *Fibropapillomatosis* which causes large tumors both the outside and inside of these turtles. Hawksbills rarely have this and the cause is still unknown.



*Loggerhead Sea Turtle (Caretta caretta)*  
Photo: Molly O’Connor – Mote Marine Lab; Sarasota FL



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