



## Office of Protected Resources



NOAA FISHERIES

National Marine Fisheries Service

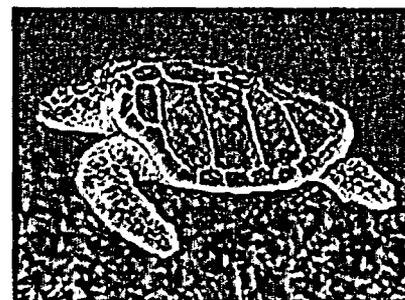


## Loggerhead Sea Turtles (*Caretta caretta*)

### Threatened Species

The loggerhead turtle was listed as threatened throughout its range on July 28, 1978 (43 FR 82808), and its status has not changed. Most recent evidence suggests that the number of nesting females in South Carolina and Georgia may be declining, while the number of nesting females in Florida appears to be stable.

**News and Updates:** On January 14, 2002, the National Marine Fisheries Service (NMFS) received a petition to reclassify the Northern and Florida Panhandle subpopulations of the loggerhead turtle as distinct population segments with endangered status and to designate critical habitat. NMFS published a 90-day finding stating the petition presented substantial information that the reclassification may be warranted and announcing the initiation of a status review.



Four nesting subpopulations of loggerheads in the western North Atlantic have been identified based on genetic research: (1) the Northern Subpopulation, producing approximately 6,200 nests/year from North Carolina to Northeast Florida; (2) the South Florida Subpopulation, occurring from just north of Cape Hatteras on the east coast of Florida and extending up to Naples on the west coast. The Northern Subpopulation declined through the mid 1980s and thereafter a trend is not detected. Recent surveys of South Carolina nesting beaches (where more than 30% of the nesting of the Northern Subpopulation occurs) indicate a downward trend and thus the subpopulation is stable or declining. The South Florida Subpopulation appears to have shown significant increases over the last 25 years, suggesting the population is recovering, although the trend could not be detected over the most recent 7 years of nesting. An increase in the numbers of adult loggerheads has been reported in recent years in Florida waters without a concomitant increase in benthic immatures. These data may forecast limited recruitment to South Florida nesting beaches in the future. Since loggerheads take approximately 20-30 years to mature, the effects of decline in immature loggerheads might not be apparent on nesting beaches for decades. The recovery team concluded that nesting trends for the loggerhead are generally declining. The most significant threats to the loggerhead populations is coastal development, commercial fisheries, and pollution.

Loggerhead populations in Honduras, Mexico, Colombia, Israel, Turkey, Bahamas, Cuba, Greece, Japan, and Panama have been declining. This decline continues and is primarily attributed to shrimp trawling, coastal development, increased human use of nesting beaches, and pollution. Loggerheads are the most abundant species in U.S. coastal waters, and are often captured incidental to shrimp trawling. Shrimping is thought to have played a significant role in the population declines observed for the loggerhead.

### Biology

Adults and sub-adults have a reddish-brown carapace. Scales on the top and sides of the head and top of the flippers are also reddish-brown, but have yellow borders. The neck, shoulders and limb bases are dull brown on top and medium yellow on the sides and bottom. The plastron is also medium yellow. Adult average size is 92 cm straight carapace length; average weight is 115 kg. Hatchlings are dull brown in color. Average size at hatching is 45 mm long; average weight is 20 g. Maturity is reached at between 16-40 years. Mating takes place in late March-early June, and eggs are laid throughout the summer.

## Distribution

Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. In the Atlantic, the loggerhead turtle's range extends from Newfoundland to as far south as Argentina. During the summer, nesting occurs in the lower latitudes. The primary Atlantic nesting sites are along the east coast of Florida, with additional sites in Georgia, the Carolinas, and the Gulf Coast of Florida. In the eastern Pacific, loggerheads are reported as far north as Alaska, and as far south as Chile. Occasional sightings are also reported from the coast of Washington, but most records are of juveniles off the coast of California. Southern Japan is the only known breeding area in the North Pacific.

## Human Impacts on Loggerhead Sea Turtles

### I) Impacts in the nesting environment

1. In the United States, killing of nesting loggerheads is infrequent. However, in a number of areas, egg poaching is common.
2. Erosion of nesting beaches can result in loss of nesting habitat.
3. Development of beachfronts results in fortification to protect property from erosion, resulting in loss of a dry nesting beach. It can also prevent females from getting to nesting sites and wash out nests.
4. Beach nourishment impacts turtles by burial of nests, disturbance to nesting turtles, and changes in sand compaction and temperature which may affect embryo development.
5. Artificial lighting can cause disorientation or misorientation of both adults and hatchlings. Turtles are attracted to light, ignoring or coming out of the ocean to go towards a light source, increasing their chances of death or injury. In addition, as nesting females avoid areas with intense lighting, highly developed areas may cause problems for turtles trying to nest.
6. Repeated mechanical raking of nesting beaches by heavy machinery can result in compact sand and causes tire ruts which may hinder or trap hatchlings. Rakes can penetrate the surface and disturb or uncover a nest. Disposing of debris on the high beach can cover nests and may alter nest temperature.
7. A serious threat of nighttime use of a beach is the disturbance of nesting females. Heavy utilization of nesting beaches by humans may also result in lowered hatchling success due to sand compaction.
8. The placement of physical obstacles on a beach can hamper or deter nesting attempts as well as interfere with incubating eggs and the sea approach of hatchlings.
9. The use of off-road vehicles on beaches is a serious problem in many areas. It may result in decreased hatchling success due to sand compaction, or directly kill hatchlings. Tire ruts may also interfere with the ability of hatchlings to get to the ocean.
10. The invasion of a nesting site by non-native beach vegetation can lead to increased erosion and destruction of a nesting habitat. Trees shading a beach can also change nest temperatures, altering the natural sex ratio of the hatchlings.

### II) Impacts in the marine environment

1. Dredging can destroy resting or foraging habitats. The use of hopper dredges can also kill turtles caught in dragheads.
2. Loggerhead turtles eat a wide variety of marine debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and raw plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts. NMFS is currently analyzing stranding data and available necropsy information to determine the magnitude of debris ingestion and entanglement.
3. Commercial Fishing:
  1. 5,000-50,000 loggerheads each year. Most turtles killed are juveniles and sub-adults. Inshore catch and mortality for shrimp trawlers is not known, but is thought to be significant. Bluefish, croaker and flounder trawl fishing are also a serious threat.
  2. Turtles are taken by gillnet fisheries in the Atlantic and Gulf of Mexico, but the number is currently not known.
  3. Several thousand vessels are involved in hook and line fishing for various coastal species. The capturing of turtles is not uncommon, but the number is currently not known.
  4. Pound net fisheries are primarily a problem in waters off of Virginia and North Carolina, however generally turtles are released alive.
  5. From 1978-1981, 330 turtles were captured in the Atlantic and Gulf of Mexico EEZ in the Japanese tuna longline fishery. Due to expansion of this fishery, it may have a large impact on turtle recovery.
  6. Loggerhead turtles are vulnerable to entanglement in trap fishery lines, and subsequent drowning. The impact on the population has not been determined.
4. In areas where recreational boating and ship traffic is intense propeller and collision injuries are not

uncommon.

5. Sea turtles are at risk when encountering an oil spill. Respiration, skin, blood chemistry and salt gland functions are affected.
6. Pesticides, heavy metals and PCB's have been detected in turtles and eggs, but the effect on them is unknown.
7. Marina and dock development can cause foraging habitat to be destroyed or damaged. It also leads to increased boat traffic, increasing the risk of turtle/vessel collisions.
8. Turtles have been caught in saltwater intake systems of coastal power plants. The mortality rate is estimated at 2%.
9. Underwater explosions can kill or injure turtles, and may destroy or damage habitat.
10. The effects of offshore lights are not known. They may attract hatchlings and interfere with proper offshore orientation, increasing the risk from predators.
11. Turtles get caught in discarded fishing gear. The number affected is unknown, but potentially significant.
12. Illegal harvesting of loggerhead turtles is uncommon in the U.S. and Caribbean. No estimates of take exist.

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