NOAA Fisheries Service
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Threatened and Endangered Species Lists

The following list of species under NMFS jurisdiction, listed as threatened or endangered, for each state and territory. Click on the state, territory or areas below to view a list of Species:

1. Southeast Region (North Carolina to Texas and the Caribbean)
2. South Atlantic (North Carolina to Key West Florida)
3. Gulf of Mexico
4. Alabama
5. Florida - Atlantic Coast
6. Florida - Gulf Coast
7. Georgia
8. Louisiana
9. Mississippi
10. North Carolina
11. Puerto Rico
12. South Carolina
13. Texas
14. U.S. Virgin Islands

Last Updated: **February 2, 2010**

Species
- Marine Mammals
  - Cetaceans
  - Pinnipeds
- Marine Turtles
- Marine & Anadromous Fish
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Loggerhead Turtle *(Caretta caretta)*

Status | Taxonomy | Species Description | Habitat | Distribution | Population Trends | Threats | Conservation Efforts | Regulatory Overview | Key Documents | More Info

Status
ESA Threatened - throughout its range

Loggerhead turtle hatchling
(Caretta caretta)
Photo: Mary Wozny, Broward County Florida Sea Turtle Conservation Program

Taxonomy
Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Testudines
Family: Cheloniidae
Genus: *Caretta*
Species: *caretta*

Species Description
Loggerheads were named for their relatively large heads, which support powerful jaws and enable them to feed on hard-shelled prey, such as whelks and conch. The carapace (top shell) is slightly heart-shaped and reddish-brown in adults and sub-adults, while the plastron (bottom shell) is generally a pale yellowish color. The neck and flippers are usually dull brown to reddish brown on top and medium to pale yellow on the sides and bottom. Mean straight carapace length of adults in the southeastern U.S. is approximately 36 in (92 cm); corresponding weight is about 250 lbs (113 kg).

Loggerheads reach sexual maturity at around 35 years of age. In the southeastern U.S., mating occurs in late March to early June and females lay eggs between late April and early September. Females lay three to five nests, and sometimes more, during a single nesting season. The eggs incubate approximately two months before hatching sometime between late June and mid-November.

Hatchlings vary from light to dark brown to dark gray dorsally and lack the reddish-brown coloration of adults and juveniles. Flippers are dark gray to brown above with white to white-gray margins. The coloration of the plastron is generally yellowish to tan. At emergence, hatchlings average 1.8 in (45 mm) in length and weigh approximately 0.04 lbs (20 g).

Habitat
Loggerheads occupy three different ecosystems during their lives--the terrestrial zone, the oceanic zone, and the "neritic" zone. Loggerheads nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Immediately

Did You Know?

- Pacific loggerheads migrate over 7,500 miles (12,000 km) between nesting beaches in Japan and feeding grounds off the coast of Mexico!
- During the 3 months or so that a female loggerhead breeds, she will travel hundreds of miles to nest, lay 35 lbs (15.9 kg) of eggs or more, and swim back to her home foraging area, all without eating anything significant.
- From hatchling to adult, a loggerhead increases its weight more than 6000 times!
- Although they are good swimmers, loggerheads have callus-like traction scales beneath their flippers that allow them to "walk" on the

after hatchlings emerge from the nest, they begin a period of frenzied activity. During this active period, hatchlings move from their nest to the surf, swim and are swept through the surf zone, and continue swimming away from land for about one to several days.

ocean floor.

Loggerhead turtle
(Caretta caretta)
Photo: Marco Giuliano/
Fondazione Cetacea

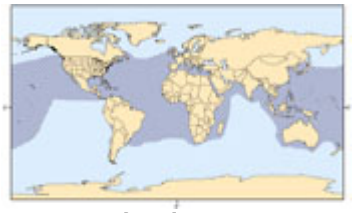
After this swim frenzy period, post-hatchling loggerheads take up residence in areas where surface waters converge to form local downwellings. These areas are often characterized by accumulations of floating material, such as seaweed (e.g., *Sargassum*), and, in the southeast U.S., are common between the Gulf Stream and the southeast U.S. coast, and between the Loop Current and the Gulf Coast of Florida. Post-hatchlings within this habitat are observed to be low-energy float-and-wait foragers that feed on a wide variety of floating items (Witherington 2002). As post-hatchlings, loggerheads may linger for months in waters just off the nesting beach or become transported by ocean currents within the Gulf of Mexico and North Atlantic. Work by Lohmann and Lohmann (1994b, 1996) and Lohmann et al. (1999) suggests that loggerheads may continue some oriented swimming in order to keep from being swept into cold North Atlantic currents.

Once individuals get transported by ocean currents farther offshore, they've entered the oceanic zone. Within the North Atlantic, juvenile loggerheads have been primarily studied in the waters around the Azores and Madeira (Bolten 2003). Other populations exist (e.g., in the region of the Grand Banks off Newfoundland), but data on these populations are limited. The juvenile turtles around the Azores and Madeira spend the majority of their time in the top 15 feet (5 m) of the water column.

Somewhere between the ages of 7 to 12 years, oceanic juveniles migrate to nearshore coastal areas (neritic zone) and continue maturing until adulthood. In addition to providing critically important habitat for juveniles, the neritic zone also provides crucial foraging habitat, inter-nesting habitat, and migratory habitat for adult loggerheads in the western North Atlantic. To a large extent, these habitats overlap with the juvenile stage, the exception being most of the bays, sounds, and estuaries along the Atlantic and Gulf coasts of the U.S. from Massachusetts to Texas, which are infrequently used by adults. However, adult loggerheads are present year-round in Florida Bay, an important feeding area, probably because of relatively easy access to open ocean and migratory routes. The predominate foraging areas for western North Atlantic adult loggerheads are found throughout the relatively shallow continental shelf waters of the U.S., Bahamas, Cuba, and the Yucatán Peninsula, Mexico. Migration routes from foraging habitats to nesting beaches (and vice versa) for a portion of the population are restricted to the continental shelf, while other routes involve crossing oceanic waters to and from the Bahamas, Cuba, and the Yucatán Peninsula. Seasonal migrations of adult loggerheads along the mid- and southeast U.S. coasts have also been documented.

Distribution

Loggerheads are circumglobal, occurring throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Loggerheads are the most abundant species of sea turtle found in U.S. coastal waters.



Loggerhead Range Map
(click for larger view PDF)

In the Atlantic, the loggerhead turtle's range extends from Newfoundland to as far south as Argentina.
During the summer, nesting occurs primarily in the subtropics. Although the major nesting concentrations in the U.S. are found from North Carolina through southwest Florida, minimal nesting occurs outside of this range westward to Texas and northward to southern Virginia. Adult loggerheads are known to make extensive migrations between foraging areas and nesting beaches. During non-nesting years, adult females from U.S. beaches are distributed in waters off the eastern U.S. and throughout the Gulf of Mexico, Bahamas, Greater Antilles, and Yucatán.

The majority of loggerhead nesting occurs in the western rims of the Atlantic and Indian Oceans. The loggerhead nesting aggregations in Oman, the U.S., and Australia account for about 88% of nesting worldwide. In the southeastern U.S., about 80% of loggerhead nesting occurs in six Florida counties (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties). In Brevard and Indian River Counties, a 20 mile (32.2 km) section of coastline from Melbourne Beach to Wabasso Beach comprises the Archie Carr National Wildlife Refuge (ACNWR). ACNWR is the most important nesting area for loggerhead turtles in the western hemisphere. Twenty-five percent of all loggerhead nesting in the U.S. occurs in the Refuge. Researchers have recorded nesting densities of 1,000 nests per mile (625 nests per km) within the ACNWR.

In the eastern Pacific, loggerheads have been reported as far north as Alaska, and as far south as Chile. In the U.S., occasional sightings are reported from the coasts of Washington and Oregon, but most records are of juveniles off the coast of California. The west coast of Mexico, including the Baja Peninsula, provides critically important developmental habitats for juvenile loggerheads. The only known nesting areas for loggerheads in the North Pacific are found in southern Japan.

Population Trends

The most recent reviews show that only two loggerhead nesting beaches have greater than 10,000 females nesting per year: South Florida (U.S.) and Masirah Island (Oman). The status of the Oman nesting colony has not been evaluated recently. Total estimated nesting in the U.S. is approximately 68,000 to 90,000 nests per year. Recent analyses of nesting data from the Index Nesting Beach Survey program in southeast Florida show the population is declining. Similarly, long-term nesting data show loggerhead nesting declines in North Carolina, South Carolina, and Georgia.

In the Eastern Atlantic, the Cape Verde Islands support an intermediately-sized loggerhead nesting assemblage. In 2000, researchers tagged over 1,000 nesting females on just 5 km (3.1 mi) of beach on Boavista Island (Ehrhart et al. 2003). In the Western Atlantic (excluding the U.S.), Brazil supports an intermediately-sized loggerhead nesting assemblage. Published and unpublished reports provide an estimate of about 4,000 nests per year in Brazil (Ehrhart et al. 2003). Loggerhead nesting throughout the Caribbean is sparse.

In the Mediterranean, loggerhead nesting is confined almost exclusively to the eastern portion of the Mediterranean Sea. The main nesting assemblages occur in Cyprus, Greece, and Turkey. However, small numbers of loggerhead nests have been recorded in Egypt, Israel, Italy, Libya, Syria, and Tunisia. Based on the recorded number of nests per year in Cyprus, Greece, Israel, Tunisia, and Turkey, loggerhead nesting in the Mediterranean ranges from about 3,300 to 7,000 nests per season (Margaritoulis et al. 2003).

Loggerheads nest throughout the Indian Ocean and, with the exception of Oman, the number of nesting females is small. Most trends in loggerhead nesting populations in the Indian Ocean are unknown.

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 incidental capture in fishing gear, directed harvest, coastal development, increased human use of nesting beaches, and pollution.

Threats

Loggerheads face threats on both nesting beaches and in the marine environment. The greatest cause of decline and the continuing primary threat to loggerhead turtle populations worldwide is incidental capture in fishing gear, primarily in longlines and gillnets, but also in trawls, traps and pots, and dredges. Directed harvest for loggerheads still occurs in many places (e.g., the Bahamas, Cuba, and Mexico) and is a serious and continuing threat to loggerhead recovery. For more

information, please visit our threats to marine turtles page.

Loggerhead Turtle escaping a trawl net equipped with turtle excluder device (TED) *(Caretta caretta)* Photo: NOAA

Conservation Efforts

The highly migratory behavior of loggerheads makes them shared resources among many nations. Therefore, conservation efforts for loggerhead populations in one country may be jeopardized by activities in another. Protecting loggerhead sea turtles on U.S. nesting beaches and in U.S. waters alone is not sufficient to ensure the continued existence of the species.

Loggerhead turtles are protected by various international treaties and agreements as well as national laws. They are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which means that international trade of this species is prohibited. Loggerheads are listed in Appendices I and II of the Convention on Migratory Species (CMS) and are protected under the following auspices of CMS: the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA) and the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa. Loggerheads are also protected under Annex II of the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention. Additionally, the U.S. is a party to the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC), which is the only binding international treaty dedicated exclusively to marine turtles.

In the U.S., NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have joint jurisdiction for marine turtles, with NMFS having the lead in the marine environment and USFWS having the lead on the nesting beaches. Both federal agencies, and a number of state agencies, have promulgated regulations to eliminate or reduce threats to sea turtles. In the Atlantic and Gulf of Mexico, NMFS has required measures (e.g., gear modifications, changes to fishing practices, and time/area closures) to reduce sea turtle bycatch in pelagic longline, mid-Atlantic gillnet, Chesapeake Bay pound net, and southeast shrimp and flounder trawl fisheries.

NMFS has worked closely with the shrimp trawl fishing industry to develop turtle excluder devices (TEDs) to reduce the mortality of sea turtles incidentally captured in shrimp trawl gear. TEDs that are large enough to exclude even the largest sea turtles are now required in shrimp trawl nets. Since 1989, the U.S. has embargoed shrimp harvested in a manner that adversely affects sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs comparable to that of the U.S. (e.g., require and enforce the use of TEDs) or to nations where incidental capture in shrimp fisheries does not present a threat to sea turtles (e.g., nations that fish for shrimp in areas where sea turtles do not occur). The U.S. Department of State (DOS) is the principal implementing agency of this law, while NMFS serves as technical advisor. NMFS has provided extensive TED training throughout the world.

In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries (Strategy) to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico.

NMFS is currently involved in cooperative gear research projects designed to reduce sea turtle bycatch in the Gulf of Mexico and Atlantic pelagic longline fisheries, the Hawaii-based deep set longline fishery, the Atlantic sea scallop dredge fishery, the Chesapeake Bay pound net fishery, and non-shrimp trawl fisheries in the Atlantic and Gulf.

Regulatory Overview

The loggerhead turtle was listed under the Endangered Species Act (ESA) as threatened throughout its range on July 28, 1978.

In 2009, an updated status review [pdf] was published.

Loggerhead Turtle escaping a net equipped with turtle excluder device (TED)
(Caretta caretta)
Photo: NOAA

In December 2008, NMFS and USFWS finalized the second revision of the recovery plan for loggerheads in the U.S. Caribbean, Atlantic, and Gulf of Mexico. NMFS published the original recovery plan in September 1984 and completed the first revision in December 1991.

NMFS implements measures to reduce sea turtle interactions in fisheries by regulations and permits under the ESA and Magnuson-Stevens Fishery Conservation and Management Act. In 1992, NMFS finalized regulations to require TEDs in shrimp trawl fisheries to reduce interactions between turtles and trawl gear. Since then, NMFS has modified these regulations as new information became available on increasing the efficiency of TEDs (e.g., larger TEDs are now required to exclude larger turtles). Since the early 1990s, NMFS has implemented sea turtle conservation measures including, but not limited to, TEDs in trawl fisheries, large circle hooks in longline fisheries, time and area closures for gillnets, and modifications to pound net leaders. See more NMFS regulations to protect marine turtles.

Key Documents

(All documents are in PDF format.)

Title	*Federal Register*	Date
2009 Status Review		08/11/2009
Recovery Plan for the Northwest Atlantic Population, Second Revision	74 FR 2995	01/16/2009
Draft Recovery Plan for the Northwest Atlantic Population, Second Revision	73 FR 31066	05/30/2008
Memo: Loggerhead Turtle Expert Working Group Update	n/a	12/04/2007
90-Day Finding for a Petition to Reclassify the Loggerhead Turtle in the North Pacific Ocean as a "DPS" with Endangered Status and to Designate Critical Habitat	72 FR 64585	11/16/2007
Petition to Designate Western North Atlantic Loggerhead Sea Turtle as a "DPS" with Endangered Status	n/a	11/15/2007
5-Year Review	n/a	08/31/2007
Petition to Reclassify the Loggerhead Turtle in the North Pacific Ocean as a "DPS" with Endangered Status and to Designate Critical Habitat	n/a	07/12/2007
Virginia Pound Net Fishery Regulations	71 FR 36024	06/23/2006
Recovery Plan - U.S. Pacific	63 FR 28359	05/22/1998
Status Review of Sea Turtles Listed Under the Endangered Species Act of 1973	61 FR 17	01/02/1996
TED Regulations for Shrimp Trawls	57 FR 57348	12/04/1992
Recovery Plan - U.S. Caribbean, Atlantic, and Gulf of Mexico	n/a	10/29/1991
ESA Listing Rule	43 FR 32800	07/28/1978

More Information

- *Kids' Times*: Loggerhead Sea Turtle
- NOAA's National Marine Sanctuaries Encyclopedia
  - Florida Keys Sanctuary Loggerhead Species Card
  - Flower Garden Banks Sanctuary Loggerhead Species Card
  - Hawaiian Islands Humpback Whale Sanctuary Loggerhead Species Card
  - Northwestern Hawaiian Islands Sanctuary Loggerhead Species Card
- U.S. Fish and Wildlife Service Loggerhead Turtle Species Profile
- Sea Turtle Recovery Planning
- Marine Turtle Related Links

Literature Cited

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- Witherington, B.E. 2002. Ecology of neonate loggerhead turtles inhabiting lines of downwelling near a Gulf Stream front. Marine Biology 140:843-853.

Species
- Marine Mammals
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Green Turtle *(Chelonia mydas)*

Status | Taxonomy | Species Description | Habitat | Distribution | Population Trends | Threats | Conservation Efforts | Regulatory Overview | Key Documents | More Info | Photos

Status

ESA Endangered - breeding populations in Florida and on the Pacific coast of Mexico
ESA Threatened - all other populations

Green Turtle
(Chelonia mydas)
Photo: Andy Bruckner, NOAA

Taxonomy

Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Testudines
Family: Cheloniidae
Genus: *Chelonia*
Species: *mydas*

Did You Know?

- Hatchlings weigh about 0.055 lbs (25 g) and are about 2 in (50 mm) long.
- Adult green turtles are the only marine turtles to exclusively eat plants!

Species Description

Green turtles are the largest of all the hard-shelled sea turtles, but have a comparatively small head. While hatchlings are just 2 inches (50 mm) long, adults can grow to more than 3 feet (0.91 m) long and weigh 300-350 pounds (136-159 kg).

Adult green turtles are unique among sea turtles in that they are herbivorous, feeding primarily on seagrasses and algae. This diet is thought to give them greenish colored fat, from which they take their name. A green turtle's carapace (top shell) is smooth and can be shades of black, gray, green, brown, and yellow. Their plastron (bottom shell) is yellowish white.

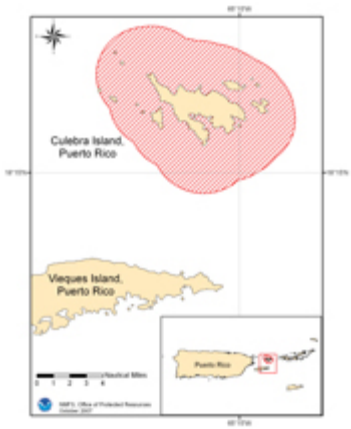
Scientists estimate green turtles reach sexual maturity anywhere between 20 and 50 years, at which time females begin returning to their natal beaches (i.e., the same beaches where they were born) every 2-4 years to lay eggs.

The nesting season varies depending on location. In the southeastern U.S., females generally nest between June and September, while peak nesting occurs in June and July. During the nesting season, females nest at approximately two week intervals, laying an average of five clutches. In Florida, green turtle nests contain an average of 135 eggs, which will incubate for approximately 2 months before hatching.

Habitat

Green turtles primarily use three types of habitat: oceanic beaches (for nesting), convergence zones in the open ocean, and benthic feeding grounds in coastal areas. Adult females migrate from foraging areas to mainland or island nesting beaches and may travel hundreds or thousands of kilometers each way. After emerging from the nest, hatchlings swim to offshore areas, where they are believed to live for several years, feeding close to the surface on a variety of

pelagic plants and animals. Once the juveniles reach a certain age/size range, they leave the pelagic habitat and travel to nearshore foraging grounds. Once they move to these nearshore benthic habitats, adult green turtles are almost exclusively herbivores, feeding on sea grasses and algae.

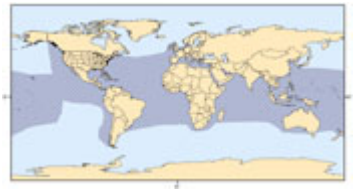


Green Turtle Critical Habitat
(click for larger view PDF)

Critical habitat was designated in 1998 for green turtles in coastal waters around Culebra Island, Puerto Rico.

Distribution

The green turtle is globally distributed and generally found in tropical and subtropical waters along continental coasts and islands between 30° North and 30° South. Nesting occurs in over 80 countries throughout the year (though not throughout the year at each specific location). Green turtles are thought to inhabit coastal areas of more than 140 countries.


Green Turtle Range Map
(click for larger view PDF)

In U.S. Atlantic and Gulf of Mexico waters, green turtles are found in inshore and nearshore waters from Texas to Massachusetts, the U.S. Virgin Islands, and Puerto Rico. Important feeding areas in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, Homosassa, Crystal River, Cedar Key, and St. Joseph Bay.

In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. In the central Pacific, green turtles occur around most tropical islands, including the Hawaiian Islands. Adult green turtles that feed throughout the main Hawaiian Islands undergo a long migration to French Frigate Shoals in the Northwest Hawaiian Islands, where the majority of nesting and mating occurs.

Population Trends

In a 2004 Green Turtle Assessment, the Marine Turtle Specialist Group (MTSG) of the IUCN classified green turtles as endangered globally. Analyses of historic and recent abundance information by the MTSG indicates that extensive population declines have occurred in all major ocean basins over approximately the past 100-150 years. The MTSG analyzed population trends at 32 index nesting sites around the world and found a 48-65% decline in the number of mature females nesting annually over the past 100-150 years.

The two largest nesting populations are found at Tortuguero, on the Caribbean coast of Costa Rica, and Raine Island, on the Great Barrier Reef in Australia, where an annual average of 22,500 and 18,000 females nest per season, respectively. In the U.S., green turtles nest primarily along the central and southeast coast of Florida; present estimates range from 200-1,100 females nesting annually.

Threats

The principal cause of the historical, worldwide decline of the green turtle is long-term harvest of eggs and adults on nesting beaches and juveniles and adults on feeding grounds. These harvests continue in some areas of the world and compromise efforts to recover this species. Incidental capture in fishing gear, primarily in gillnets, but also in trawls, traps and pots, longlines, and dredges is a serious ongoing source of mortality that also adversely affects the species' recovery. Green turtles are also threatened, in some areas of the world, by a disease known as fibropapillomatosis (FP). For more information, please

Green Turtle with fibropapillomatosis
(Chelonia mydas)
Photo: © Ursula Keuper-Bennett/Peter Bennett. *Copyright Information*

visit our threats to marine turtles page.

Conservation Efforts

Green turtles are protected by various international treaties and agreements as well as national laws. Green turtles are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which means that international trade of this species is prohibited. Green turtles are listed in Appendices I and II of the Convention on Migratory Species (CMS) and are protected under the following instruments of CMS: the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA) and the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa. Green turtles are protected under Annex II of the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention. The U.S. is a party to the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC), which is the only binding international treaty dedicated exclusively to marine turtles. Additionally, green turtles are protected by the Memorandum of Understanding on ASEAN Sea Turtle Conservation and Protection and the Memorandum of Agreement on the Turtle Islands Heritage Protected Area (TIHPA).

In the U.S., NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have joint jurisdiction for green turtles, with NMFS having the lead in the marine environment and USFWS having the lead on the nesting beaches. Both federal agencies, and a number of state agencies, have promulgated regulations to eliminate or reduce threats to sea turtles. In the Atlantic and Gulf of Mexico, NMFS has required measures (e.g., gear modifications, changes to fishing practices, and time/area closures) to reduce sea turtle bycatch in pelagic longline, mid-Atlantic gillnet, Chesapeake Bay pound net, and southeast shrimp and flounder trawl fisheries.

NMFS has worked closely with the shrimp trawl fishing industry to develop turtle excluder devices (TEDs) to reduce the mortality of sea turtles incidentally captured in shrimp trawl gear. TEDs that are large enough to exclude even the largest sea turtles are now required in shrimp trawl nets. Since 1989, the U.S. has embargoed shrimp harvested in a manner that adversely affects sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs comparable to that of the U.S. (e.g., require and enforce the use of TEDs) or to nations where incidental capture in shrimp fisheries does not present a threat to sea turtles (e.g., nations that fish for shrimp in areas where sea turtles do not occur). The U.S. Department of State (DOS) is the principal implementing agency of this law, while NMFS serves as technical advisor. NMFS has provided extensive TED training throughout the world.

In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries (Strategy) to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico.

NMFS is currently involved in cooperative gear research projects designed to reduce sea turtle bycatch in the Gulf of Mexico and Atlantic pelagic longline fisheries, the Hawaii-based deep set longline fishery, the Atlantic sea scallop dredge fishery, the Chesapeake Bay pound net fishery, and non-shrimp trawl fisheries in the Atlantic and Gulf.

Regulatory Overview

The green turtle was listed under the ESA on July 28, 1978. The breeding populations in Florida and the Pacific coast of Mexico are listed as endangered; elsewhere the species is listed as threatened.

In 1992, NMFS finalized regulations to require turtle excluder devices (TED)s in shrimp trawl fisheries to reduce interactions between turtles and trawl gear. Since then, NMFS has modified these regulations as new information became available on increasing the efficiency of TEDs (e.g., larger TEDs are now required to exclude larger turtles).

Green Turtle
(Chelonia mydas)
Photo: © Caroline S. Rogers, USGS

In 1998, NMFS designated critical habitat for green turtles to include the coastal waters around Culebra Island, Puerto Rico.

NMFS implements measures to reduce sea turtle interactions in fisheries by regulations and permits under the ESA and Magnuson-Stevens Fishery Conservation and Management Act. Since the early 1990s, NMFS has implemented sea turtle conservation measures including, but not limited to, TEDs in trawl fisheries, large circle hooks in longline fisheries, time and area closures for gillnets, and modifications to pound net leaders. Click here for a list of NMFS regulations to protect marine turtles.

Key Documents

(All documents are in PDF format.)

Title	*Federal Register*	Date
5-Year Review	n/a	08/31/2007
Virginia Pound Net Fishery Regulations	71 FR 36024	06/23/2006
IUCN Red List 2004 Green Turtle Assessment	n/a	04/2004
Critical Habitat - Culebra Island, Puerto Rico	63 FR 46693	09/02/1998
Recovery Plan - East Pacific Green Turtle	63 FR 28359	05/22/1998
Recovery Plan - Pacific Green Turtle	63 FR 28359	05/22/1998
TED Regulations for Shrimp Trawls	57 FR 57348	12/04/1992
Recovery Plan - Atlantic Green Turtle	n/a	10/29/1991
ESA Listing Rule	43 FR 32800	07/28/1978

More Information

- *Kids' Times*: Green Sea Turtle [pdf]
- NOAA's National Marine Sanctuaries Encyclopedia
  - Hawaiian Islands Humpback Whale Sanctuary Green Turtle Species Card
  - Northwestern Hawaiian Islands Sanctuary Green Turtle Species Card
- NOAA's NMFS Southwest Fisheries Science Center Green Turtle DNA Sequence
- U.S. Fish and Wildlife Service Green Turtle Species Profile
- Sea Turtle Recovery Planning
- Marine Turtle Related Links

Leatherback Turtle *(Dermochelys coriacea)*

Status | Taxonomy | Species Description | Habitat | Distribution | Population Trends | Threats | Conservation Efforts | Regulatory Overview | Key Documents | More Info | Photos

Status

ESA Endangered - throughout its range

Leatherback turtle
(Dermochelys coriacea)
Photo: Scott R. Benson, NMFS Southwest Fisheries Science Center

Taxonomy

Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Testudines
Family: Dermochelyidae
Genus: *Dermochelys*
Species: *coriacea*

Species Description

The leatherback is the largest turtle and the largest living reptile in the world. Mature males and females can be as long as six and a half feet (2 m) and weigh almost 2000 lbs. (900 kg). The leatherback is the only sea turtle that lacks a hard, bony shell. A leatherback's carapace is approximately 1.5 inches (4 cm) thick and consists of leathery, oil saturated connective tissue overlaying loosely interlocking dermal bones. The carapace has seven longitudinal ridges and tapers to a blunt point. Adult leatherbacks are primarily black with a pinkish white mottled ventral surface and pale white and pink spotting on the top of the head. The front flippers lack claws and scales and are proportionally longer than in other sea turtles; back flippers are paddle-shaped. The ridged carapace and large flippers are characteristics that make the leatherback uniquely equipped for long distance foraging migrations.

Did You Know?

- The largest leatherback on record (a male) stranded on the coast of Wales in 1988 and weighed almost 2020 lbs (916 kg).
- Leatherbacks can dive deeper than 3900 ft (1200 m)!

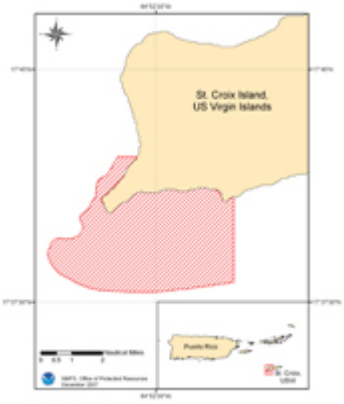
Female leatherbacks lay clutches of approximately 100 eggs on sandy, tropical beaches. Females nest several times during a nesting season, typically at 8-12 day intervals. After 60-65 days, leatherback hatchlings with white striping along the ridges of their backs and on the margins of the flippers emerge from the nest. Leatherback hatchlings are approximately 50-77 cm (2-3 inches) in length, with fore flippers as long as their bodies, and weigh approximately 40-50 grams (1.4-1.8 ounces).

Video: Leatherback Turtles-Pacific Upwelling & Jellyfish
NMFS Southwest Fisheries Science Center

Leatherbacks lack the crushing chewing plates characteristic of sea turtles that feed on hard-bodied prey (Pritchard 1971). Instead, they have pointed tooth-like cusps and sharp edged jaws that are perfectly adapted for a diet of soft-bodied pelagic (open ocean) prey, such as jellyfish and salps. A leatherback's mouth and throat also have backward-pointing spines that help retain such gelatinous prey.

Habitat

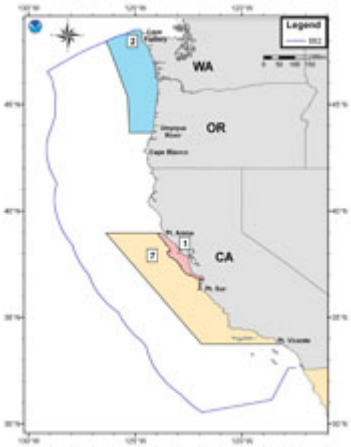
Leatherbacks are commonly known as pelagic animals, but also forage in coastal waters. In fact, leatherbacks are the most migratory and wide ranging of sea turtle species. Thermoregulatory adaptations such as a counter-current heat exchange system, high oil content, and large body size allow them to maintain a core body temperature higher than that of the surrounding water, thereby allowing them to tolerate colder water temperatures. Nesting female leatherbacks tagged in French Guiana have been found along the east coast of North America as far north as Newfoundland. Atlantic Canada supports one of the largest seasonal foraging populations of leatherbacks in the Atlantic. Leatherbacks tagged with satellite transmitters at sea off Nova Scotia were tracked to waters adjacent to nesting beaches along the northeast coast of South American, the Antilles, Panama and Costa Rica (James et al., 2005).



Leatherback Turtle Critical Habitat
(click for larger view PDF)

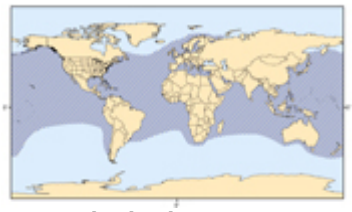
Leatherbacks mate in the waters adjacent to nesting beaches and along migratory corridors. After nesting, female leatherbacks migrate from tropical waters to more temperate latitudes, which support high densities of jellyfish prey in the summer.

Critical habitat was designated in 1998 for leatherback turtles in coastal waters adjacent to Sandy Point, St. Croix, U.S. Virgin Islands. In 2007, NMFS received a petition to revise the critical habitat designation [pdf]. NMFS published a 90-day finding on the petition [pdf] in December 2007.



Leatherback Turtle PROPOSED Critical Habitat
(click for larger view PDF)

In 2009, NMFS proposed to revise the critical habitat to include areas off of the U.S. west coast. Public hearings [pdf] were held in California in February.



Leatherback Range Map
(click for larger view PDF)

Distribution

Leatherback turtle nesting grounds are located around the world, with the largest remaining nesting assemblages found on the coasts of northern South America and west Africa. The U.S. Caribbean, primarily Puerto Rico and the U.S. Virgin Islands, and southeast Florida support minor nesting colonies, but represent the most significant nesting activity within the United States. Adult leatherbacks are capable of tolerating a wide range of water temperatures, and have been sighted along the entire continental coast of the United States as far north as the Gulf of Maine and south to Puerto Rico, the U.S. Virgin Islands, and into the Gulf of Mexico.

The distribution and developmental habitats of juvenile leatherbacks are poorly understood. In an analysis of available sightings (Eckert 2002), researchers found that leatherback turtles smaller than 100 cm carapace length were only sighted in waters 26°C or warmer, while adults were found in waters as cold as 0 to 15°C off Newfoundland (Goff and Lean 1988).

Population Trends

The Pacific Ocean leatherback population is generally smaller in size than that in the Atlantic Ocean. Because adult female leatherbacks frequently nest on different beaches, nesting population estimates and trends are especially difficult to monitor. In the Pacific, the IUCN notes that most leatherback nesting populations have declined more than 80%. In other areas of the leatherback's range, observed declines in nesting

Videos: Leatherback Turtles in the Pacific Ocean

populations are not as severe, and some population trends are increasing or stable. In the Atlantic, available information indicates that the largest leatherback nesting population occurs in French Guyana, but the trends are unclear. Some Caribbean nesting populations appear to be increasing, but these populations are very small when compared to those that nested in the Pacific less than 10 years ago. Nesting trends on U.S. beaches have been increasing in recent years.

NMFS Southwest Fisheries Science Center

Videos: Leatherback Turtles in the Solomon Islands
NMFS Southwest Fisheries Science Center

Threats

Leatherback turtles face threats on both nesting beaches and in the marine environment. The greatest causes of decline and the continuing primary threats to leatherbacks worldwide are long-term harvest and incidental capture in fishing gear. Harvest of eggs and adults occurs on nesting beaches while juveniles and adults are harvested on feeding grounds. Incidental capture primarily occurs in gillnets, but also in trawls, traps and pots, longlines, and dredges. Together these threats are serious ongoing sources of mortality that adversely affect the species' recovery. For more information, please visit our threats to marine turtles page.

Conservation Efforts

Because leatherbacks are highly pelagic animals and make long migrations, they come into contact with people of many nations. Therefore, conservation efforts for leatherback populations in one country may be jeopardized by activities in another. Protecting leatherback turtles on U.S. nesting beaches and in U.S. waters alone, therefore, is not sufficient to ensure the continued existence of the species.

Leatherback turtle hatchling
(Dermochelys coriacea)
Photo: S.R. Livingstone, University of Glasgow

Leatherback turtles are protected by various international treaties and agreements as well as national laws. They are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which means that international trade of this species is prohibited. Leatherbacks are listed in Appendices I and II of the Convention on Migratory Species (CMS) and are protected under the following auspices of CMS: the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA) and the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa. Leatherbacks are protected under Annex II of the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention. The U.S. is a party of the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC), which is the only international treaty dedicated exclusively to marine turtles.

In the U.S., NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have joint jurisdiction for leatherback turtles, with NMFS having the lead in the marine environment and USFWS having the lead on the nesting beaches. Both federal agencies, and a number of state agencies, have promulgated regulations to eliminate or reduce threats to sea turtles. In the Atlantic and Gulf of Mexico, NMFS has required measures (e.g., gear modifications, changes to fishing practices, and time/area closures) to reduce sea turtle bycatch in pelagic longline, mid-Atlantic gillnet, Chesapeake Bay pound net, and southeast shrimp and flounder trawl fisheries.

Leatherback turtle
(Dermochelys coriacea)
Photo: Scott R. Benson, NMFS Southwest Fisheries Science Cente

NMFS has worked closely with the shrimp trawl fishing industry to develop turtle

excluder devices (TEDs) to reduce the mortality of sea turtles incidentally captured in shrimp trawl gear. TEDs that are large enough to exclude leatherback turtles are now required in shrimp trawl nets. Since 1989, the U.S. has embargoed shrimp harvested in a manner that adversely affects sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs comparable to that of the U.S. (i.e., require and enforce the use of TEDs) or to nations where incidental capture in shrimp fisheries does not present a threat to sea turtles (e.g., nations that fish for shrimp in areas where sea turtles do not occur). The U.S. Department of State (DOS) is the principal implementing agency of this law, while NMFS serves as technical advisor. NMFS has provided extensive TED training throughout the world.

In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries (Strategy) to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico.

NMFS is currently involved in cooperative gear research projects designed to reduce sea turtle bycatch in the Gulf of Mexico and Atlantic pelagic longline fisheries, the Hawaii-based deep set longline fishery, the Atlantic sea scallop dredge fishery, the Chesapeake Bay pound net fishery, and non-shrimp trawl fisheries in the Atlantic and Gulf.

Regulatory Overview

The leatherback turtle was listed under the Endangered Species Act as endangered in 1970.

Leatherback turtle esophagus
(Dermochelys coriacea)
Photo: Karumbé, Sea Turtles of Uruguay

In 1992, NMFS finalized regulations to require TEDs in shrimp trawl fisheries to reduce interactions between turtles and trawl gear. Since then, NMFS has modified these regulations as new information became available on increasing the efficiency of TEDs (e.g., larger TEDs are now required to exclude larger turtles).

NMFS initially designated critical habitat in 1998, NMFS designated critical habitat for leatherback turtles to include the coastal waters adjacent to Sandy Point, St. Croix, U.S. Virgin Islands. In 2007, NMFS received a petition to revise the critical habitat designation [pdf]. NMFS published a 90-day finding on the petition [pdf] in December 2007. In 2009, NMFS proposed to revise the critical habitat to include areas off of the U.S. west coast. You may submit public comments online or via fax or mail, as described in the FR notice (75 FR 319 [pdf]), until March 8, 2010.

NMFS implements measures to reduce sea turtle interactions in fisheries by regulations and permits under the ESA and Magnuson-Stevens Fishery Conservation and Management Act. Since the early 1990s, NMFS has implemented sea turtle conservation measures including, but not limited to, TEDs in trawl fisheries, large circle hooks in longline fisheries, time and area closures for gillnets, and modifications to pound net leaders. Click here for a list of NMFS regulations to protect marine turtles.

Key Documents

(All documents are in PDF format.)

Title	*Federal Register*	Date
Proposed Rule to Revise Critical Habitat Designation *Comment Period Extended through April 23, 2010	75 FR 319 75 FR 7434	01/05/2010 02/19/2010
▪ Public Hearings Presentation ▪ List of References	75 FR 5015	02/01/2010

- Economic Analysis
- ESA Section 4(b)(2) Report
- Biological Report
- Map of Proposed Critical Habitat Area
- Map of Petitioned Area and Excluded Areas

90-Day Finding on a Petition to Revise Critical Habitat Designation for the Leatherback Sea Turtle	72 FR 73745	12/28/2007
Petition to Revise the Critical Habitat Designation for the Leatherback Sea Turtle	n/a	09/26/2007
5-Year Review	n/a	08/31/2007
Virginia Pound Net Fishery Regulations	71 FR 36024	06/23/2006
Recovery Plan - U.S. Pacific	63 FR 28359	05/22/1998
Status Review of Sea Turtles Listed Under the Endangered Species Act of 1973	61 FR 17	01/02/1996
TED Regulations for Shrimp Trawls	57 FR 57348	12/04/1992
Recovery Plan - U.S. Caribbean, Atlantic, and Gulf of Mexico	n/a	10/29/1991
Critical Habitat - Sandy Point, St. Croix, U.S. Virgin Islands	44 FR 17710	03/23/1979
○ Proposed Critical Habitat	43 FR 12050	03/23/1978
ESA Listing Rule	35 FR 8491	06/02/1970

More Information

- *Kids' Times*: Leatherback Sea Turtle [pdf]
- NMFS Southwest Fisheries Science Center Videos: Leatherback Turtles
- NMFS Sea Turtle Recovery Planning
- NOAA's National Marine Sanctuaries Encyclopedia
  - Cordell Bank Sanctuary Leatherback Species Card
  - Hawaiian Islands Humpback Whale Sanctuary Leatherback Species Card
  - Northwestern Hawaiian Islands Sanctuary Leatherback Species Card
- U.S. Fish and Wildlife Service Leatherback Turtle Species Profile
- Marine Turtle Related Links

Literature Cited

- Eckert, S.A. 2002. Distribution of juvenile leatherback sea turtle, *Dermochelys coriacea*, sightings. Marine Ecology Progress Series 230: 289-293.
- Goff, G.P. and J. Lien. 1988. Atlantic leatherback turtles (*Dermochelys coriacea*) in cold water off Newfoundland and Labrador. Canadian Field Naturalist 102 (1):1-5.
- James, M.C., C.A. Ottensmeyer and R.A. Myers. 2005. Identification of high-use habitat and threats to leatherback sea turtles in northern waters: new directions for conservation. Ecology Letters 2005(8):195-201.

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Hawksbill Turtle *(Eretmochelys imbricata)*

Status | Taxonomy | Species Description | Habitat | Distribution | Population Trends | Threats | Conservation Efforts | Regulatory Overview | Key Documents | More Info | Photos

Status
ESA Endangered - throughout its range

Hawksbill Turtle
(Eretmochelys imbricata)
Photo: Johan Chevalier

Taxonomy
Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Testudines
Family: Cheloniidae
Genus: *Eretmochelys*
Species: *imbricata*

Species Description
The hawksbill turtle is small to medium-sized compared to other sea turtle species. Adults weigh 100-150 lbs (45 to 68 kg) on average, but can grow as large as 200 lbs (91 kg). Hatchlings weigh about 0.5 oz (14 g).

The carapace (top shell) of an adult ranges from 25 to 35 inches (63 to 90 cm) in length and has a "tortoiseshell" coloring, ranging from dark to golden brown, with streaks of orange, red, and/or black. The shells of hatchlings are 1-2 inches (about 42 mm) long and are mostly brown and somewhat heart-shaped. The plastron (bottom shell) is clear yellow. The rear edge of the carapace is almost always serrated, except in older adults, and has overlapping "scutes".

Did You Know?

- In the Caribbean, an adult hawksbill eats an average of 1200 lbs (544 kg) of sponges a year!
- Hawksbills are capable of nesting faster than any other species of sea turtles and can complete the entire process in less than 45 minutes.

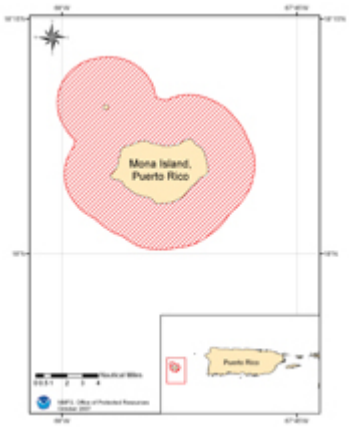
The hawksbill turtle's head is elongated and tapers to a point, with a beak-like mouth that gives the species its name. The shape of the mouth allows the hawksbill turtle to reach into holes and crevices of coral reefs to find sponges, their primary food source as adults, and other invertebrates. Hawksbill turtles are unique among sea turtles in that they have two pairs of prefrontal scales on the top of the head and each of the flippers usually has two claws.

Male hawksbills mature when they are about 27 inches (69 cm) long. Females mature at about 31 inches (78 cm). The ages at which turtles reach these lengths are unknown.

Female hawksbills return to their natal beaches every 2-3 years to nest at night approximately every 14-16 days during the nesting season. A female hawksbill generally lays 3-5 nests per season, which contain an average of 130 eggs. Hawksbill turtles usually nest high up on the beach under or in the beach/dune vegetation on both calm and turbulent beaches. They commonly nest on pocket beaches, with little or no sand.

Habitat
Hawksbill turtles use different habitats at different

stages of their life cycle, but are most commonly associated with healthy coral reefs. Post-hatchlings (oceanic stage juveniles) are believed to occupy the "pelagic" environment, taking shelter in floating algal mats and drift lines of flotsam and jetsam in the Atlantic. In the Pacific, the pelagic habitat of hawksbill juveniles is unknown. After a few years in the pelagic zone, small juveniles recruit to coastal foraging grounds; their size at recruitment is approximately 8-10 inches (20-25 cm) in carapace length in the Atlantic and about 15 inches (38 cm) in carapace length in the Pacific. This shift in habitat also involves a shift in feeding strategies, from feeding primarily at the surface to feeding below the surface primarily on animals associated with coral reef environments. Here, juveniles begin feeding on a varied diet. In the Caribbean, as hawksbills grow they begin exclusively feeding on only a few types of sponges. However, in the Indo-Pacific, hawksbills continue eating a varied diet that includes sponges, other invertebrates, and algae.



Hawksbill Turtle Critical Habitat
(click for larger view PDF)

The ledges and caves of coral reefs provide shelter for resting hawksbills both during the day and at night. Hawksbills are known to inhabit the same resting spot night after night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. They are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent.

Critical habitat was designated in 1998 for hawksbill turtles in coastal waters surrounding Mona and Monito Islands, Puerto Rico.

Distribution

Hawksbill turtles are circumtropical, usually occurring from 30° N to 30° S latitude in the Atlantic, Pacific, and Indian Oceans and associated bodies of water. Hawksbills are widely distributed throughout the Caribbean Sea and western Atlantic Ocean, regularly occurring in southern Florida and the Gulf of Mexico (especially Texas), in the Greater and Lesser Antilles, and along the Central American mainland south to Brazil. Hawksbills do not occur in the Mediterranean Sea.

Hawksbill Range Map
(click for larger view PDF)

Within the U.S., hawksbills are most common in Puerto Rico and its associated islands and in the U.S. Virgin Islands. In the continental U.S., the species is recorded from all the Gulf States and along the east coast as far north as Massachusetts, but sightings north of Florida are rare. Hawksbills are observed in Florida on the reefs off Palm Beach, Broward, Miami-Dade, and Monroe Counties. Texas is the only other U.S. state where hawksbills are sighted with any regularity. Most sightings involve post-hatchlings and juveniles. These small turtles are believed to originate from nesting beaches in Mexico.

Along the Pacific Rim, hawksbills nest sporadically in the southern part of the Baja peninsula, while sightings of juveniles and sub-adults foraging along the coast occur more regularly. Hawksbills rarely occur along the Pacific Central American coast; limited nesting has been documented on the Pacific coast of Costa Rica (Gaos et al. 2006).

Within the Central Pacific, nesting is widely distributed, though scattered and in very low numbers. The largest concentrations of nesting hawksbills in the Pacific occur on remote oceanic islands of Australia and in the Indian Ocean (e.g., Republic of Seychelles). Foraging hawksbills have been reported from virtually all of the island groups of Oceania and from the Galapagos Islands in the eastern Pacific to the Republic of Palau in the western Pacific (Witzell 1983, Prichard 1982a, b). Along the

far western and southwestern Pacific, hawksbills nest on islands and mainland Asia from China and Japan, through the Philippines, Malaysia, and Indonesia to Papua New Guinea, the Solomon Islands (McKeown 1977), and Australia (Limpus 1982).

Research indicates adult hawksbill turtles are capable of migrating long distances between nesting beaches and foraging areas, which are comparable to migrations of green and loggerhead turtles. In the Atlantic, a female hawksbill tagged at Buck Island Reef National Monument in the U.S. Virgin Islands traveled 1,160 miles (1,866 km) to the Miskito Cays in Nicaragua (Spotila 2004).

Population Trends

Hawksbills are solitary nesters and, thus, determining population trends or estimates on nesting beaches is difficult. The largest populations of hawksbills are found in the Caribbean, the Republic of Seychelles, Indonesia, and Australia.

The most significant nesting within the U.S. occurs in Puerto Rico and the U.S. Virgin Islands, specifically on Mona Island and Buck Island, respectively. Each year, about 500-1000 hawksbill nests are laid on Mona Island, Puerto Rico (Diez and van Dam 2006) and another 100-150 nests on Buck Island Reef National Monument off St. Croix in the U.S. Virgin Islands (Z. Hillis-Starr. pers. comm.). Nesting also occurs on other beaches in St. Croix and on St. John, St. Thomas, Culebra Island, Vieques Island, and mainland Puerto Rico. Within the continental U.S., nesting is restricted to the southeast coast of Florida and the Florida Keys, but nesting is rare in these areas. No nesting occurs on the west coast of the U.S. mainland. In the U.S. Pacific, hawksbills nest only on main island beaches in Hawaii, primarily along the east coast of the island of Hawaii. Hawksbill nesting has also been documented in American Samoa and Guam.

In addition to nesting beaches in the U.S. Caribbean, hawksbills nest at numerous other sites throughout the Caribbean, with the majority of nesting occurring in Mexico and Cuba. In Mexico, about 2,800 hawksbills nest in Campeche, Yucatán, and Quintana Roo each year (Spotila 2004). Lutz et al. estimate the number of adult hawksbills living in the Caribbean today is 27,000 (2003).

The largest nesting population of hawksbills appears to occur in Australia. Approximately 2,000 hawksbills nest on the northwest coast of Australia and about 6,000 to 8,000 off the Great Barrier Reef each year (Spotila 2004). Additionally, about 2,000 hawksbills nest each year in Indonesia and 1,000 in the Republic of Seychelles (Spotila 2004).

Threats

Hawksbills face threats on both nesting beaches and in the marine environment. The primary global threat to hawksbills is habitat loss of coral reef communities. Coral reefs are vulnerable to destruction and degradation caused by human activities. Humans can alter coral reefs either gradually (i.e., pollution can degrade habitat quality) or catastrophically (e.g., toxic spills and vessel groundings). Recent evidence suggests that global climate change is negatively impacting coral reefs by causing higher incidences of coral diseases, which can ultimately kill entire coral reef communities. Hawksbill turtles rely on coral reefs for food resources and habitat. As these communities continue to decline in quantity and quality, hawksbills will have reduced foraging opportunities and limited habitat options.

Hawksbill Turtle
(Eretmochelys imbricata)
Photo: Michelle T. Scharer

Historically, commercial exploitation was the primary cause of the decline of hawksbill sea turtles. There remains a continuing demand for the hawksbill's shell as well as other products, including leather, oil, perfume, and cosmetics. The British Virgin Islands, Cayman Islands, Cuba, Haiti, and the Turks and Caicos Islands (U.K.) all permit some form of legal take of hawksbill turtles. In the northern Caribbean, hawksbills are directly harvested primarily for their carapace, which is often carved into hair clips, combs, jewelry, and other trinkets. Additionally, hawksbills are

harvested for their eggs and meat while whole stuffed turtles are sold as curios in the tourist trade. Hawksbill products are openly available in the Dominican Republic and Jamaica despite a prohibition on harvesting hawksbills and eggs (Fleming 2001).

In the Pacific, directed harvest of nesting females and eggs on the beach and hawksbills in the water is still widespread. Directed take is a major threat to hawksbills in American Samoa, Guam, the Republic of Palau, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, and the Republic of the Marshall Islands (NMFS and USFWS 1998). In addition to directed harvest, increased human presence is a threat to hawksbills throughout the Pacific. In particular, increased recreational and commercial use of nesting beaches, beach camping and fires, litter and other refuse, general harassment of turtles, and loss of nesting habitat from human activities negatively impact hawksbills.

Incidental capture in fishing gear, primarily gillnets, and vessel strikes also adversely affect this species' recovery. For more information, please visit our threats to marine turtles page.

Conservation Efforts

The highly migratory behavior of hawksbills makes them shared resources among many nations. Conservation efforts for hawksbill populations in one country may be jeopardized by activities in another. Therefore, protecting hawksbill sea turtles on U.S. nesting beaches and in U.S. waters alone is not sufficient to ensure the continued existence of the species.

Hawksbill turtles are protected by various international treaties and agreements as well as national laws. They are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which means that international trade of this species is prohibited. The IUCN classifies hawksbills as critically endangered. Hawksbills are listed in Appendices I and II of the Convention on Migratory Species (CMS) and are protected under the following auspices of CMS: the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA) and the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa. Hawksbills are also protected under Annex II of the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention. Additionally, the U.S. is a party to the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC), which is the only binding international treaty dedicated exclusively to marine turtles.

In the U.S., NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have joint jurisdiction for marine turtles, with NMFS having the lead in the marine environment and USFWS having the lead on the nesting beaches. Both federal agencies, and a number of state agencies, have promulgated regulations to eliminate or reduce threats to sea turtles. In the Atlantic and Gulf of Mexico, NMFS has required measures (e.g., gear modifications, changes to fishing practices, and time/area closures) to reduce sea turtle bycatch in pelagic longline, mid-Atlantic gillnet, Chesapeake Bay pound net, and southeast shrimp and flounder trawl fisheries.

NMFS has worked closely with the shrimp trawl fishing industry to develop turtle excluder devices (TEDs) to reduce the mortality of sea turtles incidentally captured in shrimp trawl gear. TEDs that are large enough to exclude even the largest sea turtles are now required in shrimp trawl nets. Since 1989, the U.S. has embargoed shrimp harvested in a manner that adversely affects sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs comparable to that of the U.S. (e.g., require and enforce the use of TEDs) or to nations where incidental capture in shrimp fisheries does not present a threat to sea turtles (e.g., nations that fish for shrimp in areas where sea turtles do not occur). The U.S. Department of State (DOS) is the principal implementing agency of this law, while NMFS serves as technical advisor. NMFS has provided extensive TED training throughout the world.

In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries (Strategy) to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico.

NMFS is involved in cooperative gear research projects designed to reduce sea turtle bycatch in the Gulf of Mexico and Atlantic pelagic longline fisheries, the Hawaii-based deep set longline fishery, the Atlantic sea scallop dredge fishery, the Chesapeake Bay pound net fishery, and non-shrimp trawl fisheries in the Atlantic and Gulf.

Regulatory Overview

The hawksbill turtle was listed under the Endangered Species Act (ESA) as endangered in 1970.

In 1998, NMFS designated critical habitat for hawksbill turtles to include the coastal waters surrounding Mona and Monito Islands, Puerto Rico.

Key Documents

(All documents are in PDF format.)

Title	*Federal Register*	Date
5-Year Review	n/a	08/31/2007
TRAFFIC Report - Turning the Tide: Exploitation, Trade and Management of Marine Turtles in the Lesser Antilles, Central America, Colombia and Venezuela	n/a	2006
Critical Habitat - Mona and Monita Islands, Puerto Rico	63 FR 46693	06/02/1998
Recovery Plan - U.S. Pacific	63 FR 28359	05/22/1998
Status Review of Sea Turtles Listed Under the Endangered Species Act of 1973	61 FR 17	01/02/1996
TED Regulations for Shrimp Trawls	57 FR 57348	12/04/1992
Recovery Plan - U.S. Caribbean, Atlantic, and Gulf of Mexico	57 FR 38818	08/27/1992
ESA Listing Rule	35 FR 8491	06/02/1970

More Information

- *Kids' Times*: Hawksbill Sea Turtle [pdf]
- NOAA's National Marine Sanctuaries Encyclopedia
  - Florida Keys Sanctuary Hawksbill Species Card
  - Flower Garden Banks Sanctuary Hawksbill Species Card
  - Hawaiian Islands Humpback Whale Sanctuary Hawksbill Species Card
  - Northwestern Hawaiian Islands Sanctuary Hawksbill Species Card
- NOAA Tech. Memo. NMFS-OPR-5: Evaluation of a Fisheries Model for the Harvest of Hawksbill Sea Turtles, *Eretmochelys imbricata*, in Cuba [pdf] [7.0 MB]
- TRAFFIC North America
- U.S. Fish and Wildlife Service Hawksbill Turtle Species Profile
- Sea Turtle Recovery Planning
- Marine Turtle Related Links

Literature Cited

- Clifton, K., D.O. Cornejo, and R.S. Felger. 1982. Sea turtles of the Pacific Coast of Mexico. Pages 199-209 *in* K.A. Bjorndal (ed.), Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington, D.C.
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- Gaos, A., R. Arauz, and I. Yañez. 2006. Hawksbill turtles on the Pacific coast of Costa Rica. Marine Turtle Newsletter 112:14.
- Limpus, C.J. 1982. The status of Australian sea turtle populations. Pages 297-303 *in* K.A. Bjorndal (ed.), Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington, D.C.

Kemp's Ridley Turtle *(Lepidochelys kempii)*

Status | Taxonomy | Species Description | Habitat | Distribution | Population Trends | Threats | Conservation Efforts | Regulatory Overview | Key Documents | More Info

Status

ESA Endangered - throughout its range

Kemp's Ridley Turtle
(Lepidochelys kempii)
Photo: NOAA

Taxonomy

Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Testudines
Family: Cheloniidae
Genus: *Lepidochelys*
Species: *kempii*

Species Description

Adult Kemp's ridleys, considered the smallest marine turtle in the world, weigh on average around 100 pounds (45 kg) with a carapace (top shell) measuring between 24-28 inches (60-70 cm) in length. The almost circular carapace has a grayish green color while the plastron (bottom shell) is pale yellowish to cream in color. The carapace is often as wide as it is long and contains 5 pairs of costal "scutes". Each of the front flippers has one claw while the back flippers may have one or two.

Similar to olive ridleys, Kemp's ridleys display one of the most unique synchronized nesting habits in the natural world. Large groups of Kemp's ridleys gather off a particular nesting beach near Rancho Nuevo, Mexico, in the state of Tamaulipas. Then wave upon wave of females come ashore and nest in what is known as an "arribada," which means "arrival" in Spanish.

There are many theories on what triggers an arribada, including offshore winds, lunar cycles, and the release of pheromones by females. Scientists have yet to conclusively determine the cues for ridley arribadas. Arribada nesting is a behavior found only in the genus *Lepidochelys.*

Female Kemp's ridleys nest from May to July, laying two to three clutches of approximately 100 eggs, which incubate for 50-60 days. After incubation, hatchlings emerge weighing about half an ounce (14 g) and measuring about 1.5 inches (3.8 cm).

Did You Know?

- The species is named after Richard M. Kemp, a fisherman from Key West, FL, who first submitted the species for identification in 1906.
- The Kemp's ridley is only one of two species of sea turtles that nest in arribadas (the other is the olive ridley).
- Kemp's ridleys are the only sea turtle species that nests predominantly during daylight hours.

Habitat

Adult Kemp's primarily occupy "neritic" habitats. Neritic zones typically contain muddy or sandy bottoms where prey can be found. Their diet consists mainly of swimming crabs, but may also include fish, jellyfish, and an array of mollusks.

Depending on their breeding strategy, male Kemp's ridleys appear to occupy many different areas within the Gulf of Mexico. Some males migrate annually between feeding and breeding grounds, yet others may not migrate at all, mating with females opportunistically encountered.

Kemp's Ridley Turtle
(Lepidochelys kempii)
Photo: National Park Service

Female Kemp's have been tracked migrating to and from nesting beaches in Mexico. Females leave breeding and nesting areas and continue on to foraging zones ranging from the Yucatán Peninsula to southern Florida. Some females take up residence in specific foraging grounds for months at a time, leading scientists to suggest that females have a goal-oriented migration, opposed to the suggested wandering strategy employed by olive ridleys. Kemp's ridleys rarely venture into waters deeper than 160 ft (50 m) (Byles and Plotkin, 1994).

Newly emerged hatchlings inhabit a much different environment than adult turtles. After emerging from the nest, hatchlings enter the water and must swim quickly to escape near shore predators. There is strong evidence that many sea turtle species employ an open ocean developmental stage because encounters with healthy, neonate sea turtles are extremely rare in near shore waters. Some hatchlings remain in currents within the Gulf of Mexico while others may be swept out of the Gulf, around Florida, and into the Atlantic Ocean by the Gulf Stream.

Juveniles of many species of sea turtles have been known to associate with floating sargassum seaweed, utilizing the sargassum as an area of refuge, rest, and/or food. This developmental drifting period is hypothesized to last about two years or until the turtle reaches a carapace length of about 8 inches (20 cm). Subsequently, these sub-adult turtles return to neritic zones of the Gulf of Mexico or northwestern Atlantic Ocean to feed and develop until they reach adulthood (Collard and Ogren, 1990).

Distribution

Kemp's ridleys are distributed throughout the Gulf of Mexico and U.S. Atlantic seaboard, from Florida to New England. A few records exist for Kemp's ridleys near the Azores, waters off Morocco, and within the Mediterranean Sea.

Kemp's Ridley Range Map
(click for larger view PDF)

There is only one confirmed Kemp's ridley arribada in the state of Tamaulipas, Mexico, where nearly 95% of worldwide Kemp's ridley nesting occurs. The three main nesting beaches in Tamaulipas, Mexico are Rancho Nuevo, Tepehuajes, and Barra del Tordo. Nesting also occurs in Veracruz, Mexico, and Texas, U.S., but on a much smaller scale. Occasional nesting has been documented in North Carolina, South Carolina, and the Gulf and Atlantic coasts of Florida.

Kemp's Ridley Turtle
(Lepidochelys kempii)
Photo: Kim Bassos-Hull, Mote Marine Laboratory

Population Trends

The Kemp's ridley has experienced a historical, dramatic decrease in arribada size. An amateur video from 1947 documented an extraordinary Kemp's ridley arribada near Rancho Nuevo. It has been estimated that approximately 42,000 Kemp's ridleys nested during that single day! The video also provided evidence of Kemp's ridley egg collection. Dozens of villagers are seen on the beach excavating the nests and subsequent interviews have suggested that 80% of the nests, about 33,000, were collected and transported to local villages (Hildebrand, 1963).

This video has also served to measure the species' collapse. Twenty years after the video was filmed, the largest arribada measured was just 5,000 individuals. Between the years of 1978 and 1991 only 200 Kemp's ridleys nested annually. Today the Kemp's ridley population appears to be in the early stages of recovery. Nesting has

increased steadily over the past decade. During the 2000 nesting season, an estimated 2,000 females nested at Rancho Nuevo, a single arribada of 1,000 turtles was reported in 2001, and an estimated 3,600 turtles produced over 8,000 nests in 2003. In 2006, a record number of nests were recorded since monitoring began in 1978; 12,143 nests were documented in Mexico, with 7,866 of those at Rancho Nuevo.

On the Texas coast, 251 Kemp's ridley nests were recorded from 2002-2006. For the 2007 nesting season, 127 nests have been recorded in Texas, with 73 of those nests documented at Padre Island National Seashore. Those 127 nests are a record for the Texas coast, passing the 2006 record of 102 nests.

Threats

Kemp's ridleys face threats on both nesting beaches and in the marine environment. The greatest cause of decline and the continuing primary threat to Kemp's ridleys is incidental capture in fishing gear, primarily in shrimp trawls, but also in gill nets, longlines, traps and pots, and dredges in the Gulf of Mexico and North Atlantic. Egg collection was an extreme threat to the population, but since nesting beaches were afforded official protection in 1966, this threat no longer poses a major concern.

For more information, please visit our threats to marine turtles page.

Conservation Efforts

Kemp's ridley turtles are protected by various international treaties and agreements. They are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which means that international trade of this species is prohibited. Kemp's ridleys are listed in Appendices I and II of the Convention on Migratory Species (CMS). Kemp's ridleys are also protected under Annex II of the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention. Additionally, the U.S. is a party to the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC), which is the only binding international treaty dedicated exclusively to marine turtles.

In the U.S., NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have joint jurisdiction for marine turtles, with NMFS having the lead in the marine environment and USFWS having the lead on the nesting beaches. Both federal agencies, and a number of state agencies, have promulgated regulations to eliminate or reduce threats to sea turtles. In the Atlantic and Gulf of Mexico, NMFS has required measures (e.g., gear modifications, changes to fishing practices, and time/area closures) to reduce sea turtle bycatch in mid-Atlantic gillnet, Chesapeake Bay pound net, and southeast shrimp and flounder trawl fisheries.

NMFS has worked closely with the shrimp trawl fishing industry to develop turtle excluder devices (TEDs) to reduce the mortality of sea turtles incidentally captured in shrimp trawl gear. TEDs that are large enough to exclude even the largest sea turtles are now required in shrimp trawl nets. Since 1989, the U.S. has embargoed shrimp harvested in a manner that adversely affects sea turtles. The import ban does not apply to nations that have adopted sea turtle protection programs comparable to that of the U.S. (e.g., require and enforce the use of TEDs) or to nations where incidental capture in shrimp fisheries does not present a threat to sea turtles (e.g., nations that fish for shrimp in areas where sea turtles do not occur). The U.S. Department of State (DOS) is the principal implementing agency of this law, while NMFS serves as technical advisor. NMFS has provided extensive TED training throughout the world.

In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries (Strategy) to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico.

NMFS is currently involved in cooperative gear research projects designed to reduce

sea turtle bycatch in the Atlantic sea scallop dredge fishery, the Chesapeake Bay pound net fishery, and non-shrimp trawl fisheries in the Atlantic and Gulf.

In 1991, NMFS and USFWS finalized the recovery plan for Kemp's ridleys in the U.S. Caribbean, Atlantic, and Gulf of Mexico. Since that time, a wealth of new information has been gained regarding Kemp's biology, distribution, and population status as well as threats to the species. Therefore, NMFS and USFWS have initiated a revision of the Kemp's ridley recovery plan for the U.S. Caribbean, Atlantic, and Gulf of Mexico. For more information on this process, please visit the joint USFWS/NMFS website on the Kemp's ridley recovery plan revision.

The Mexican government has played a vital role in the conservation of the Kemp's ridley. The Kemp's ridley has benefited from legal protection by Mexico since the 1960s. In 1977, a refuge was established at the only known nesting beach and included the Rancho Nuevo nesting beach as part of a system of reserves for sea turtles. On May 28, 1990, a complete ban on taking any species of sea turtle was implemented by the Mexican government. In 2002, the beach at Rancho Nuevo was designated as a Natural Protected Area under the category of Sanctuary; and in February 2004, it was included on the list of RAMSAR sites.

Regulatory Overview

The Kemp's ridley turtle was first listed under the Endangered Species Conservation Act of 1970 on December 2, 1970, and subsequently under the Endangered Species Act (ESA) of 1973.

NMFS implements measures to reduce sea turtle interactions in fisheries by regulations and permits under the ESA and Magnuson-Stevens Fishery Conservation and Management Act. In 1992, NMFS finalized regulations to require TEDs in shrimp trawl fisheries to reduce interactions between turtles and trawl gear. Since then, NMFS has modified these regulations as new information became available on increasing the efficiency of TEDs (e.g., larger TEDs are now required to exclude larger turtles). Since the early 1990s, NMFS has implemented sea turtle conservation measures including, but not limited to, TEDs in trawl fisheries, large circle hooks in longline fisheries, time and area closures for gillnets, and modifications to pound net leaders. Click here for a list of NMFS regulations to protect marine turtles.

Key Documents

(All documents are in PDF format.)

Title	*Federal Register*	Date
5-Year Review	n/a	08/31/2007
Virginia Pound Net Fishery Regulations	71 FR 36024	06/23/2006
Status Review of Sea Turtles Listed Under the Endangered Species Act of 1973	61 FR 17	01/02/1996
Review of the Kemp's Ridley Sea Turtle Headstart Program (NOAA Tech Memo NMFS-OPR-3)		08/1994
TED Regulations for Shrimp Trawls	57 FR 57348	12/04/1992
Recovery Plan - U.S. Caribbean, Atlantic, and Gulf of Mexico	56 FR 38424	08/13/1991
ESA Listing Rule	35 FR 18319	12/02/1970

More Information

- *Kids' Times*: Kemp's Ridley Sea Turtle [pdf]
- Sea Turtle Recovery Planning
  - Recovery Plan Revision for Kemp's Ridley
- U.S. Fish and Wildlife Service Kemp's Ridley Turtle Species Profile

- Kemp's Ridley Sea Turtle at Padre Island National Seashore
- Marine Turtle Related Links

Literature Cited

- Byles, R.A., and Plotkin, P.T. 1994. Comparison of the migratory behavior of the congeneric sea turtles *Lepidochelys olivacea* and *L. kempii*. In Schroeder, B.A., and Witherington, B.E. (compilers). *Proceedings of the Thirteenth Annual Symposium on Sea Turtle Biology and Conservation*. NOAA Technical Memorandum NMFS-SEFSC-341, p. 39.
- Collard, S.B., and Ogren, L.H. 1990. Dispersal scenarios for pelagic post-hatchling sea turtles. *Bulletin of Marine Science* 47:233-243.
- Hildebrand, H.H. 1963. Hallazgo del área de anidación de la tortuga lora *Lepidochelys kempii* (Garman), en la costa occidental de Golfo de Mexico (Rept., Chel.). *Ciencia, México 22: 105-112.*

Padre Island National Seashore

Current Sea Turtle Nesting Season

Sea Turtle Nesting in Texas

All five sea turtle species that occur in the Gulf of Mexico have been documented nesting at Padre Island National Seashore in recent decades. Padre Island National Seashore is the only area in Texas where nests from all five species have been documented. Many more Kemp's ridley sea turtle nests have been documented in Texas compared to the other sea turtle species.

NPS PHOTO

A Kemp's ridley returns to the Gulf of Mexico after only about 45 minutes of nesting. She will remain in her marine home until she returns to nest again.

How Sea Turtle Nests are Found

Sea turtle nests are found in Texas during directed searches (turtle patrols) and as a result of reports from others working or recreating on the beach. Sightings of nesting turtles, tracks that nesting turtles have left in the sand, hatchlings emerging from previously undetected nests, and eggshells at predated nests are all important leads in documenting nesting.

Turtle patrols to detect and protect nesting sea turtles and sea turtle nests are now conducted on all Texas Gulf beaches to some extent from April through July. This encompasses the nesting season documented for Kemp's ridley sea turtles in Texas to date. It also encompasses when most sea turtle nests are found and documented. However, a few nests are sometimes found in August and September and some areas also patrol then in hopes of finding additional nesting by Kemp's ridleys and other sea turtles. Most patrols are conducted during daylight hours, since Kemp's ridleys mostly nest mostly during the day. However, some Kemp's ridleys nest at night and other sea turtle species typically nest at night.

The National Park Service conducts the patrol program to detect, study, and protect nesting Kemp's ridley sea turtles and sea turtle nests on North Padre Island, including Padre Island National Seashore. This program is made possible due to funding from the federal government, Texas Parks and Wildlife Department, and a variety of partners and donors, and the aid of over 100 volunteers. Repeated patrols are conducted daily from April through mid-July, from about 6:30 am – 6:30 pm. Turtle patrol coverage is greatly reduced at other times of the year.

Nests Documented in 2009

The Padre Island National Seashore Chief of the Division of Sea Turtle Science and Recovery maintains the records of sea turtle nests recorded in Texas. Numbers documented during 2009 are posted below.

Kemp's ridley sea turtle nests documented on the Texas coast during 2009

Location Found (north to south)	Number of nests
Bolivar Peninsula	1
Galveston Island	3
Brazoria County, N. of Surfside	3
Surfside Beach	0
Quintana Beach	2
Bryan Beach	2
Brazoria County, N. of Sargent Beach	1
Sargent Beach	1
Matagorda Peninsula	3
MatagordaIsland	8
San Jose Island	4
Mustang Island	2
Corpus Christi Bay	1
North Padre Island, N. of PAIS	7
Padre Island National Seashore (PAIS)	117
South Padre Island	33
Boca Chica Beach	9

*Total (as of August 4, 2009)	**197**

This sets a new record for the number of Kemp's ridley nests found on the Texas coast during a single year since record keeping efforts began on the Texas coast in the early 1980s. The previous record was 195, set in 2008.

***Follow this link** to see a map along with pertinent data on the Kemp's ridley turtles found on the Texas cost.

Green sea turtle nests documented on the Texas coast during 2009

Location Found	Number of Nests
Padre Island National Seashore	1

Sea turtle nests were documented in Texas through programs led by the following:

Animal Rehabilitation Keep (ARK)

National Park Service, Padre Island National Seashore

NOAA – Fisheries Laboratory at Galveston Texas

Sea Turtle Restoration Project

Sea Turtle, Inc.

Texas A&M University at Galveston

U.S. Fish and Wildlife Service, Aransas NWR

U.S. Fish and Wildlife Service, Lower Rio Grande NWR

U.S. Fish and Wildlife Service, Laguna Atascosa NWR

U.S. Fish and Wildlife Service, San Bernard NWR

University of Texas, Pan American Coastal Studies Laboratory

Did You Know?
Metal detecting is prohibited at Padre Island National Seashore as well as at all other units of the National Park Service?
more...

Last Updated: August 26, 2009 at 10:16 EST

Sea Turtle Stranding and Salvage Network (STSSN)

The Sea Turtle Stranding and Salvage Network (STSSN) was formally established in 1980 to collect information on and document strandings of marine turtles along the U.S. Gulf of Mexico and Atlantic coasts. The network encompasses the coastal areas of the eighteen state region from Maine through Texas, and includes portions of the U.S. Caribbean. Data are compiled through the efforts of network participants who document marine turtle strandings in their respective areas and contribute those data to the centralized STSSN data base.
(This site was updated 9/2009)

- **Online Stranding Reports Using the online reports, one may obtain basic summarized stranding information for the years 1986 through 2007, additional years will be added once available. The data used to generate the reports have been verified from 1998- 2005, however they are subject to change as additional data are received. The data from 1986-1997, 2006 and 2007 are preliminary and are in the process of being verified, beginning with the most current years. Queries may include Year, Month, Region, Zone, State, County, and species.** ***Note:Check the box to accept the Data Access and Release Policy***
- **Public Data Access and Release Policy**
- **STSSN State Coordinators** (also see links toward bottom of page)
- **Regional statistical zone maps for U.S. Gulf of Mexico , Southeast U.S. Atlantic and Northeast U.S. Atlantic .**
- **Current STSSN form front and back , along with instructions.**

Weekly Reports

The 2008 and 2009 Weekly Reports are in a new format which allow for more specific near real-time queries. These data are reported directly by the STSSN State and National Coordinators. These Weekly Reports are preliminary and subject to change, therefore they are not recommended for use in publications/analyses. It may take a few minutes to execute a large query.

- 2008 and 2009 Sea Turtle Strandings by Zone
- 2008 and 2009 Sea Turtle Strandings Narrative

Useful Reference Materials

Wolke, R.E. and George, A. 1981. Sea turtle necropsy manual. NOAA Technical Memorandum NMFS-SEFC-24, 20p.

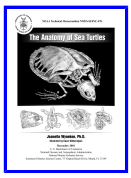
Rainey, W. 1981. Guide to sea turtle visceral anatomy. NOAA Technical Memorandum NMFS-SEFC-82. This reference can also be found at http://www.aoml.noaa.gov/general/lib/turtles.htm

Wyneken, J. 2001. The Anatomy of Sea Turtles. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470, 172 pp. This reference can also be found at http://courses.science.fau.edu/~jwyneken/sta/. **See supplemental videos below.**

Wyneken, J. 2004. La Anatomia de las Tortugas Marinas. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470, 172 pp. [Version en espanol de Wyneken, J. 2001. The Anatomy of Sea Turtles. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470, 172 pp.] **Ver videos complementarios citados.**

The Anatomy of Sea Turtles

To view these videos you will need QuickTime. You may download a free copy of QuickTime . These files are very large and may take several minutes to download.

 The Anatomy of Sea Turtles	**Videos.** This four part video series is supplemental to the manual. Part 1:Introduction, Terminology and Species Identification (63.5MB, 6 min) Part 2:Dissection, Preparation, Standard Measurements, Dissection Tools, Anatomy, Opening the Body (65.7MB, 5.5 min) Part 3:Ventral Anatomy, Internal Anatomy and Landmarks, and GI Tract (103.2MB, 9 min) Part 4:Dorsal Anatomy, Sexual Dimorphism, Lungs and Airways, Exposing the Brain, Summary, and Credits (68.2MB, 6 min)

La Anatomia de las Tortugas Marinas

Para ver lo siguientes videos usted necesitara bajar el programa de QuickTime. Estos archivos son pesados y le tomara algunos minutos bajarlos.

La Anatomia de las Tortugas Marinas	**Videos.** Esta serie de cuatro videos es comlementaria el manual. Parte 1:Introduccion, Terminologia, Identificacion de Especies (5.5 min) Parte 2:Preparacion para la Diseccion, Medidas Estandar, Equipo de Diseccion, Anatomia, Abriendo el Cuerpo (5.5 min) Parte 3:Anatomia Ventral, Anatomia Interna y Marcadores de Lugar, Via Gastrointestinal (8.5 min) Parte 4:Anatomia Dorsal, Dimorfismo Sexual, Pulmones y Vias Respiratorias, Abriendo el Cerebro, Resumen y Creditos (6 min)

Links to STSSN coordinator agencies

The following links provide additional information on marine turtles and the organizations who coordinate the STSSN. Please note that references leaving the SEFSC web page are indicated with this icon; and does not constitute an endorsement by the SEFSC of any information, products, or services found on external web sites.

- National Parks Service- Padre Island National Seashore
- McNeese State University
- National Parks Service- Gulf Islands National Seashore
- USFWS- Bon Secour National Wildlife Refuge
- Florida Fish and Wildlife Conservation Commission-Florida Marine Research Institute
- Georgia Department of Natural Resources- Coastal Resources Division
- South Carolina Department of Natural Resources- Marine Turtle Conservation Program
- North Carolina Wildlife Resource Conservation
- Virginia Institute of Marine Science
- Virginia Aquarium and Marine Science Center
- Maryland Department of Natural Resources
- National Aquarium in Baltimore
- MERR Institute, Inc
- Mystic Aquarium

- Marine Mammal Stranding Center
- Riverhead Foundation for Marine Research & Preservation
- New England Aquarium
- College of the Atlantic
- USVI- Division of Fish and Wildlife

Other related Links

- NOAA's Northeast Region Sea Turtle Stranding and Disentanglement Program
- WIDECAST- Sea Turtle Care and Medicine
- What to do if you find a dead or injured sea turtle- Florida

Wallpaper used with permission of Turtle Time, Inc., Ft. Myers Beach, FL. The Turtle Time, Inc. link is provided.

Contact

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Endangered and Threatened Species Links:

- Mammals
- Fish
- Reptiles and Amphibians
- Plants
- Birds
- Invertebrates

Additional Links

- Federal Endangered Species Act
- Texas Threatened and Endangered Species Regulations
- Rare, Threatened, and Endangered Species of Texas by County
- **Map of Texas Ecoregions**
  - Natural Subregions of Texas (PDF 198.6 KB)
  - Natural Subregions of Texas (JPG, 147.8 KB)
- Coordination and Review Requests (Including Threatened and Endangered Species) (Word 168.5 KB)

Leatherback Sea Turtle

(Dermochelys coriacea)

Date of Listing: Endangered, 1970

The Leatherback Sea Turtle is considered an endangered species throughout its worldwide range. It is listed in Appendix 1 of the CITES (Convention on International Trade in Endangered Species), a list of the most highly endangered animals worldwide. In the majority of countries, this turtle is fully protected by law, however, enforcement of this protection is difficult in many areas. Indiscriminate poaching of eggs and capture of adults at sea or in nesting areas is still widespread. Although captive breeding has been attempted, it has been largely unsuccessful.

Note: Special thanks to the photographers for providing images of Texas endangered and threatened plants. All rights to these images are reserved. Educational use permitted.

Reason for Concern:

Disturbance of the nesting grounds is the most serious threat to the Leatherback. Although the flesh of this sea turtle is not eaten, the population has been threatened by egg- harvesting in countries such as Malaysia, Surinam, the Guianas, the west coast of Mexico, Costa Rica, and in several Caribbean islands. Leatherbacks were killed in the past for the abundant oil they yield, which was used for oil lamps and for caulking wooden boats. Ingesting plastic bags and other plastic wastes are another cause of death for Leatherbacks. The turtles confuse plastic wastes with one of their favorite foods - jellyfish. When swallowed, plastics can clog a turtle's throat, esophagus, and intestines.

Size:

Wildlife Fact Sheets

Amphibians | Birds | Fish | Invertebrates | Mammals | Plants | Reptiles |

Amphibians typically are "cold-blooded" vertebrates which change from an aquatic, water-breathing, limbless larva (or tadpole) to a terrestrial or partially terrestrial, air-breathing, four-legged adult. This group includes: frogs and toads, salamanders and newts, and caecilians (limbless amphibians). Learn more about amphibians.

- Barred Tiger Salamander *(Ambystoma tigrinum mavortium)*
- Barton Springs Salamander *(Eurycea sosorum)*
- Black-spotted Newt *(Notophthalmus meridionalis)*
- Blanco Blind Salamander *(Eurycea robusta)*
- Bronze Frog *(Rana clamitans clamitans)*
- Cascade Caverns Salamander *(Eurycea latitans)*
- Comal Blind Salamander *(Eurycea tridentifera)*
- Houston Toad *(Bufo houstonensis)*
- Marbled Salamander *(Ambystoma opacum)*
- Mexican Burrowing Toad *(Rhinophrynus dorsalis)*
- Mexican Treefrog *(Smilisca baudinii)*
- San Marcos Salamander *(Eurycea nana)*
- Sheep Frog *(Hypopachus variolosus)*
- South Texas Siren (large Form) *(Siren sp. 1)*
- Southern Leopard Frog *(Rana sphenocephala)*
- Texas Blind Salamander *(Eurycea rathbuni)*
- White-lipped Frog *(Leptodactylus labialis)*

Birds are warm-blooded, air-breathing vertebrates. Their body is covered with feathers. Birds have beaks, wings and scale covered legs. All birds lay eggs that are covered with a calcium carbonate shell.

- American Avocet *(Recurvirostra americana)*
- American Kestrel *(Falco sparverius)*
- American Oystercatcher *(Haematopus palliatus)*
- American Peregrine Falcon *(Falco peregrinus anatum)*
- Arctic Peregrine Falcon *(Falco peregrinus tundrius)*
- Attwater's Prairie Chicken *(Tympanuchus cupido attwateri)*
- Bald Eagle *(Haliaeetus leucocephalus)*
- Black-capped Vireo *(Vireo atricapilla)*
- Black-chinned Hummingbird *(Archilochus alexandri)*
- Black-crowned Night-heron *(Nycticorax nycticorax)*
- Black-necked Stilt *(Himantopus mexicanus)*
- Blue Jay *(Cyanocitta cristata)*
- Buff-bellied Hummingbird *(Amazilia yucatanensis)*
- Bufflehead *(Bucephala albeola)*

Kemp's Ridley Sea Turtle

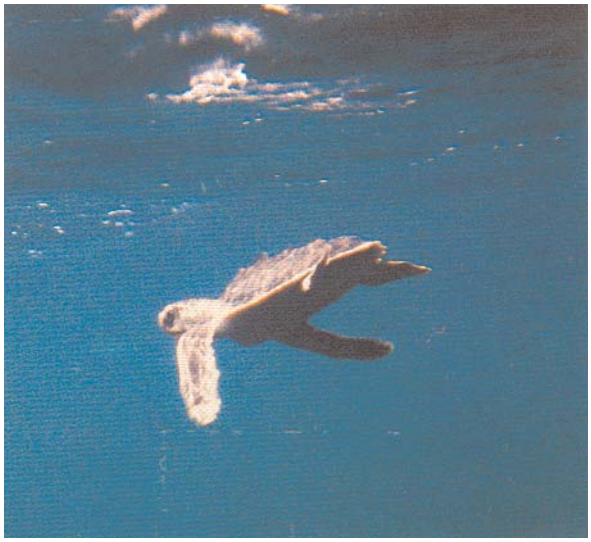
Scientific Name: *Lepidochelys kempii*

Federal Status: Endangered, 12/2/70• State Status: Endangered

Description

The Kemp's ridley is the smallest member of the sea turtle family Cheloniidae. Adults have a carapace (upper shell) length of up to 28 inches and can weigh 75 to 100 pounds. Juvenile Kemp's ridleys have broad, heart-shaped, keeled carapaces that are serrated along the trailing edge. In adults, the carapace is round and can be wider than it is long. Hatchlings and juveniles have a dark-charcoal colored carapace, but as they age this color changes to olive-green or gray. The lower shell (plastron) is charcoal-colored in hatchlings and later changes to a light cream color. Adult males often have a concave plastron and long tails that extend beyond the rear of the carapace. Kemp's ridleys have large, somewhat triangular heads and powerful, massive jaws.

Kemp's Ridley turtle
© TPWD Bill Reaves



Kemp's Ridley hatchling
© TPWD Mary E. Candee

Distribution and Range

Kemp's ridley adults are generally only found in the Gulf of Mexico. Juveniles have been reported most commonly in the northern Gulf of Mexico between Texas and Florida. Juveniles are also found along the eastern seaboard of the United States as far north as Nova Scotia, Canada. Apparently, drifting hatchlings and juveniles from the western Gulf enter the eastern Gulf Loop Current and are carried by the Florida Current and the Gulf Stream up the eastern coast of the United States. Some juveniles even cross the Atlantic and have been reported from Ireland and the Azores.

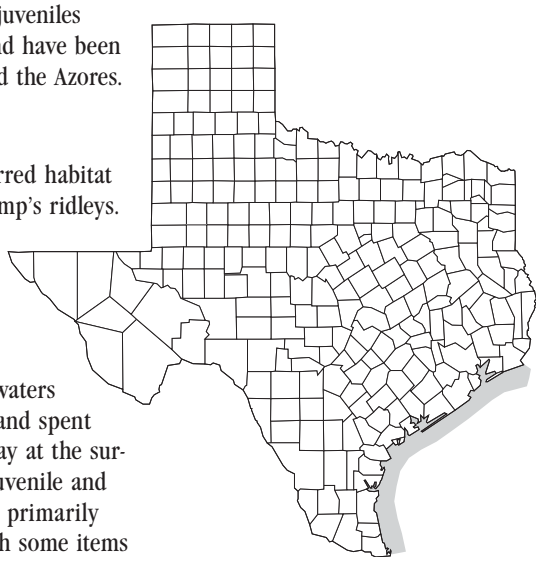
Habitat

Shallow waters are preferred habitat for juvenile and adult Kemp's ridleys. Satellite-tracked females migrating away from the nesting beach at Rancho Nuevo, Mexico and Padre Island, Texas, generally remained in near shore waters less than 165 feet deep, and spent less than an hour each day at the surface. It is thought that juvenile and adult Kemp's ridleys feed primarily near the bottom, although some items may be taken from the surface or water column.

Hatchlings spend many months as surface drifters in the open ocean (pelagic phase). Recent evidence suggests that they may be found in surface water areas where drifting material, such as floating marine vegetation and debris, accumulate. These areas are called convergence zones or drift lines. Little is known regarding how long they drift, what they eat, or how they get back to the coast. Studies have shown that, after the pelagic phase, body size of Kemp's ridley is related to water depth. For example, the smallest juveniles are found in shallow waters of bays or lagoons, often foraging in less than 3 feet of water, whereas larger juveniles and adults are found in deeper water.

Juvenile Kemp's ridleys studied in the Chesapeake Bay area used the estuary for summer feeding. They occupied shallow foraging areas over extensive seagrass beds and fed mostly on blue crabs. In Texas, Kemp's ridley and loggerhead sea turtles are thought to partition food resources: the ridleys forage on relatively fast blue and spotted crabs, whereas the loggerheads feed on seapens and slow-moving crabs.

The nesting beach at Rancho Nuevo, in the Mexican State of Tamaulipas, is the primary land habitat (used only for nesting) for Kemp's ridley. This remote stretch of beach along the Gulf of Mexico is located about 100 miles north of Tampico, Mexico. It is the only known major nesting beach for this species in the world. However, lower levels of nesting also occur every year on other beaches in Tamaulipas, the Mexican state of Veracruz, and in Texas, particularly in the southern part of the state. Nesting also occasionally occurs in other U.S. states along the Gulf and Atlantic coasts.



Life History

The diet of juvenile and adult Kemp's ridley turtles consists primarily of crabs, shrimp, snails, bivalves, sea urchins, jellyfish, sea stars, fish, and occasionally marine plants. Crabs are

a preferred food and several species are eaten. In some regions, the blue crab is the most common food item. Although feeding habits of hatchlings have not been observed in the wild, they are presumed to eat swimming and floating animal matter located at or near the surface of the open Gulf of Mexico and Atlantic Ocean.

Reproduction in Kemp's ridley differs from that of other sea turtles in four important ways. First, most female Kemp's ridleys, along with their sister species Olive ridleys (*Lepidochelys olivacea*), arrive at nesting beaches in large groups. These nesting events are called "arribazones." Many females gather in the waters near the nesting beach and emerge to nest simultaneously over a period of several hours or days. Second, Kemp's ridleys nest mainly during the daytime, whereas other sea turtles usually nest at night. Third, most nesting occurs on one stretch of beach, which is unique for sea turtles. Fourth, Kemp's ridley females nest every 1 to 3 years, with an average of every 2 years, whereas other sea turtles nest about every 2 to 3 years.

During the breeding season, female Kemp's ridleys migrate toward the nesting beach. A large portion of the adult male population may remain offshore from the nesting beach year-round. Courtship and mating occur in nearby offshore waters several weeks prior to and during the nesting period. Nesting usually occurs during April, May, and June, although it can occur in July and August if cool spring weather delays the onset of the reproductive period.

A well-defined and elevated dune area, above the tidal zone, is preferred for nesting. The female digs a hole in the sand, deposits her eggs, and returns to the sea, a process which takes about 45 minutes. Females generally deposit one to three clutches per season, laying an average of about 100 soft, leathery, white eggs per clutch. After about 45 to 55 days of incubation in the sand, the eggs hatch. The temperature of the incubating eggs during the middle third of the incubation period determines the gender of the developing embryo. Warmer temperatures produce primarily females and colder temperatures primarily males.

To escape a variety of land predators, hatchlings move quickly from the beach through the surf zone and into open waters of the Gulf of Mexico. Scientists think the baby turtles may remember or "imprint" on the particular smell, chemical make-up, or magnetic location of the beach where they hatched. Other predators await them in the water. Most breeding females return to the shallow waters of the western Gulf of Mexico to nest at the same beach where they hatched. Wild Kemp's ridleys require 10 to 20 years to reach sexual maturity.

Threats and Reasons for Decline

The Kemp's ridley population crash that occurred between 1947 and the early 1970's was probably a result of the combination of intensive annual harvest of eggs and mortality of juveniles and adults in shrimp trawl nets.

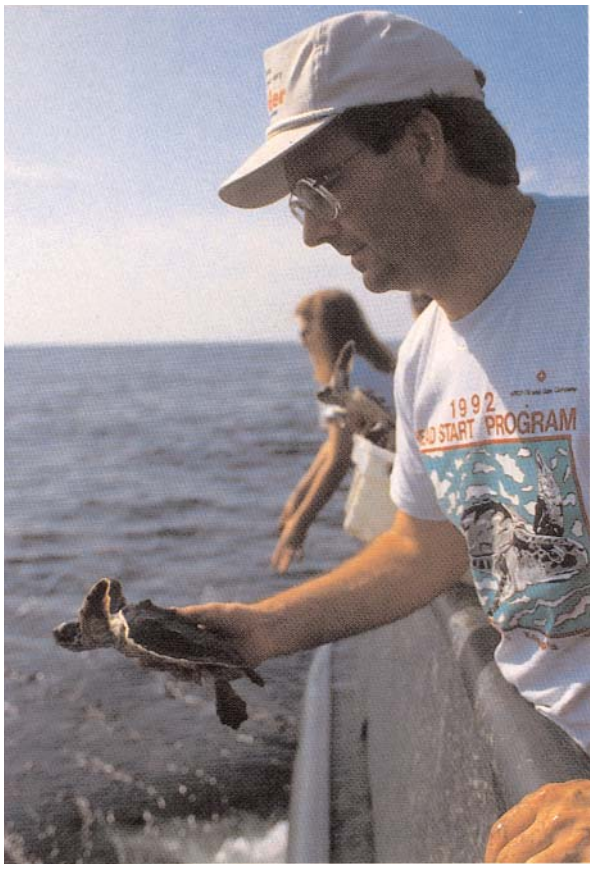
Kemp's ridley eggs were (and still are in many places) considered a delicacy. Between about 1947 and 1966 people dug up truckloads of eggs and sold them in the towns and cities of Texas and Mexico. Since many of the eggs were either taken by people or eaten by predators, there was a drastic decline in the turtle population. Also, prior to its being listed as endangered by the U.S. Fish and Wildlife Service in 1970, Kemp's ridleys, along with green and loggerhead turtles, were taken for meat by commercial fishermen in the northern and northeastern Gulf of Mexico. Human consumption of turtle eggs and meat has declined with national and international protection. Although nesting turtles and nests are protected at Rancho Nuevo, the harvest of eggs and slaughter of animals continue to be potential problems in other areas.

Because the Kemp's ridley sea turtle is a shallow water inhabitant, it is frequently caught in shrimp trawl nets that may drown or exhaust the turtle. There is strong evidence that shrimp trawling is a primary agent for sea turtle mortality today. The National Marine Fisheries Service estimated that, prior to the 1990 law requiring Turtle Excluder Devices (TEDs), about 12,000 sea turtles drowned each year in nets. The National Research Council's Committee on Sea Turtle Conservation estimated in 1990 that 86% of the human caused deaths of juvenile and adult loggerheads and Kemp's ridleys resulted from shrimp trawling.

Nesting female
© NPS D. J. Shaver

Marine debris ingested by Kemp's Ridley turtle
© NPS R. W. Wilder

Trash discarded at sea is another serious problem facing this species and other marine animals. Some of this debris never makes it to shore because it is eaten by fishes, sea turtles, birds, and marine mammals that mistake it for food. Postmortem examinations of sea turtles found stranded on the south Texas coast from 1986 through 1988 revealed 54% (60 of the 111 examined) of the sea turtles had eaten some type of marine debris. Plastic materials were most frequently ingested, and included pieces of plastic bags, Styrofoam, plastic pellets, balloons, rope, and fishing line. Non-plastic debris such as glass, tar, and aluminum foil were also ingested by the sea turtles examined. Much of this debris comes from offshore oil rigs, cargo ships, commercial and recreational fishing boats, research vessels, naval ships, and other vessels operating in the Gulf of Mexico. Laws enacted during the late-1980's prohibit the disposal of all types of plastics, and regulates the distance from shore that non-plastic debris may be discarded. However, enforcement of these laws is



Releasing "headstarted" Kemp's Ridley turtles
© TPWD Mario Gonzalez

National Park Service biologists with a nesting Kemp's Ridley turtle
© NPS P. Eubank

difficult over vast areas of water. In addition to trash, pollution from heavy spills of oil or waste products poses additional threats. Other sources of mortality include dredging, entanglement in drift and gill nets, collisions with boats, explosives used to remove oil rigs, entrapment in coastal power plant intake pipes, and cold stunning in waters off the northeastern U.S coast.

Only 50 years ago, Kemp's ridley was a very abundant sea turtle in the Gulf of Mexico. The most reliable measure of Kemp's ridley population size has been the annual count of adult nesting females at Rancho Nuevo. A film taken by a Mexican businessman in 1947, and discovered by scientists in 1961, shows an estimated 40,000 females nesting in one day on the single known nesting beach on the northeastern coast of Mexico. Despite nest protection efforts in Mexico which began in 1966, the number of nests found each year continued to drop to a low of 702 nests in 1985. Fortunately, increasing numbers of nests have been found during nearly every year since then. However, with only about 3,300 females nesting in one year in 2003, today all conservation efforts are desperately needed.

Recovery Efforts

Since the principal nesting beach is in Mexico, the continued, long-term cooperation of two nations is necessary to recover the species. A joint United States-Mexican management program is underway which includes nesting beach protection and incubation of eggs. The U.S. Fish and Wildlife Service has provided assistance at the Rancho Nuevo nesting beach since 1978. Continued assistance to Mexico is needed to ensure long-term protection of the major nesting beach, including protection of adult turtles and enhanced production and survival of hatchlings. Education efforts and beach nest protection work in Mexico is supported by a partnership which includes the Gladys Porter Zoo, U.S. Fish and Wildlife Service, Texas Parks and Wildlife Department, National Marine Fisheries Service and the seafood industry, along with others from the U.S. and Mexico. It is hoped that through education of children, the conservation message will be spread throughout local communities. In the United States, the U.S. Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Texas Parks and Wildlife Department, and Texas A&M Sea Grant conduct programs to educate the public about sea turtle conservation.

Research is underway to fill in gaps in knowledge that will result in better management of these sea turtles. Research priorities include determining distribution and habitat use for all life stages, migration routes and foraging areas of adults, critical mating and reproductive behaviors and physiology, and survivorship of hatchlings.

Regulations went into effect in the United States in 1990 and in Mexico in 1993 which require commercial trawlers to install Turtle Excluder Devices (TEDs) on their boats. This device guides turtles and other large objects out of the net through an escape opening in the net. Hopefully, the use of these devices in the Gulf of Mexico by the shrimp fleets of the United States and Mexico will substantially reduce mortality associated with net entanglement. Additionally, in 2000, Texas Parks and Wildlife Department revised their shrimp fishery management plan to include measures that should, as a side-benefit, enhance sea turtle survival through a reduction in entanglement death.

Finally, during each summer from 1978 to 1988, approximately 2000 Kemp's ridley eggs were shipped to Padre Island National Seashore from Rancho Nuevo, Mexico in an attempt to establish a secondary breeding colony of this species through "experimental imprinting." Eggs were incubated by the National Park Service at Padre Island National Seashore. Hatchlings that emerged from these eggs were transferred to the National Marine Fisheries Laboratory in Galveston and held for 9 to 11 months before being released into the Gulf of Mexico. It was hoped that the larger size of the turtles after "headstarting" would increase survival in the wild, and that imprinting on Padre Island beaches would establish a nesting colony at some time in the future. Additionally, a few thousand hatchlings were taken directly from Mexico for headstarting from 1978 through 1992. Some headstarted turtles have been recorded nesting in the wild since 1996, with most nests found at Padre Island National Seashore. Kemp's ridley is a native nester on the Texas coast and both wild and headstarted turtles are now nesting there. Attempts to search for nesting of these turtles in Texas and in Mexico continue. Now in Phase II, the Kemp's ridley headstart project is looking for evidence that headstarted turtles are reproducing. The project has produced useful information on sea turtle behavior, husbandry, and

physiology. However, until the results of this experiment are better known, it is not yet considered to be a long-term management technique for species recovery.

How You Can Help

Visit Padre Island National Seashore or the Texas State Aquarium in Corpus Christi to learn more about sea turtles. You can also contact the National Marine Fisheries Service office in Galveston (409) 766-3500.

If you see a sea turtle or its nest on the beach, do not disturb it. Report beach sightings of live or dead turtles to 866-TURTLE5 (866-887-8535), Padre Island National Seashore (361) 949-8173, ext. 226, or Texas Parks and Wildlife Department Law Enforcement Office in Corpus Christi (361) 289-5566. Nesting turtles and nests should be reported immediately so that they can be protected and documented as quickly as possible.

Do not discard trash of any type, especially plastics, in the bays or Gulf. If you catch a sea turtle on a hook and line, contact one of the agencies listed above and wait for a representative to pick up the turtle. If you can't call or wait, remove the hook if you can, or cut the line as close to the hook as possible, since ingested fishing line and hooks are often deadly to sea turtles.

Commercial fisherman can contact the National Marine Fisheries Service (409) 766-3500 or the Texas A&M Marine Advisory Service (979) 345-6131 for technical assistance with design and use of TEDs.

For More Information Contact

Texas Parks and Wildlife Department
Wildlife Diversity Branch
4200 Smith School Road
Austin, Texas 78744
(512) 912-7011 or (800) 792-1112
or
U.S. Fish and Wildlife Service
Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, Texas 78758
(512) 490-0057
or
U.S. Fish and Wildlife Service
Corpus Christi Ecological Services Field Office
c/o TAMU-CC, Campus Box 338
6300 Ocean Drive, Room 118
Corpus Christi, Texas 78412
(361) 994-9005

Nesting habitat
© TPWD Glen Mills

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Galveston District Projects

Mouth of the Colorado River / Colorado River Locks

- Main Page
  - Mouth of Colorado River
  - GIWW Mods - Colorado River Locks
  - Modeling Efforts
  - What are our plans

The Mouth of the Colorado River and the Colorado River Locks/GIWW projects are closely entwined not only by proximity but also by the impacts that changes in these projects can have on one another. Variable environmental conditions such as river discharge rates and tides complicate the interaction further. While these projects fall under separate authorities with different regulations, both projects must be included in any analysis. This has led to some confusion concerning study purposes, authority, and scope. The following web pages document the background of both projects, the study progress and describes the models that have been developed to better understand issues associated with the projects and the impacts proposed measures will have on the projects.

This is an official US Government webpage. This webpage is intended to provide information of general interest to the public. The information contained herein is accurate as of the date of publication.

Technical Assistance

For technical difficulties with this website please contact the webmaster.

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Updated: December 09, 2005

USACE Sea Turtle Data Warehouse

US Army Corps of Engineers

Updated 14:55 CST on 2 Mar 2010

Site Information

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- Introduction

View Data By

- Divisions
- Districts
- Projects
- Turtle Species
- Region

Cubic Yards

- Total Cubic Yards
- Fiscal Year Table
- Fiscal Year Graph

Turtle Takes

- Total Turtle Takes
- Takes Graphs
- Fiscal Year
- Calendar Year

Takes with Cubic Yards

- Fiscal Year

Advanced Data Reports

- Takes
- Water Temp

Turtle Information

- References
- Reports
- Biological Assessments/ Opinions
- Sea Turtle Compliance Inspection Checklist
- Stranding Data
- Annual Allotted Takes
- Annual Relocated Turtles
- Observer Criteria
- Observer Forms
- Trawling Form
- Tagging Form
- District Checklist
- Sea Turtle Deflector Draghead-Design Specifications

Maintenance of inland and intracoastal waterways for navigation is essential for national and international trade, job creation, and national security. These waterways also provide hydropower, flood protection, municipal water supply, agricultural irrigation, recreation, and regional development. The US Army Corps of Engineers' role in maintaining and improving these waterways began in 1824 and, today, the Corps maintains over 12,000 miles (19,200 km) of waterways throughout the United States. Corps and contractor-owned dredges annually remove over 270 million cubic yards (cy) of sediment from over 150 projects in the United States.

Several types of dredges are typically used for excavating sediments to construct new waterways or maintain navigation depths in channels. Cutterhead pipeline, hopper, and mechanical dredges are the three primary types used throughout U.S. waterways. The type used depends on factors such as sediment type, location, environmental considerations, and wave conditions. The dredge type of concern with endangered sea turtle interactions is the hopper dredge. *More ...*

- Corps/Industry Hopper Dredge Schedule
- Florida Shore Protection & Sea Turtle Management System

Webdate: January 14, 2005
Updated: May 2006
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