CRESLI creatures

About whales, dolphins, seals and sea turtles of NY Spring 2003

NY's amazing marine mammal and sea turtle diversity

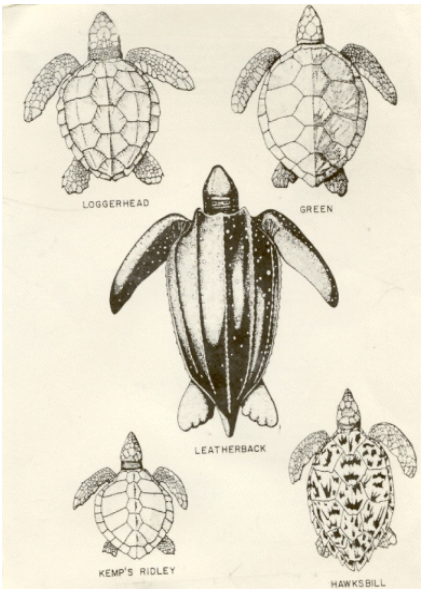
The coastal waters of NY are home to an amazing array of marine organisms. CRESLI (The Coastal Research and Education Society of Long Island) has been in the forefront of research and public outreach and education concerning our coastal ecosystems and their preservation.

The following pages highlight some of the biodiversity of the waters we call home. For more information about what you read here, visit the CRESLI website at www.cresli.org.

SEA TURTLES

Sea turtles are large turtles that inhabit warm waters of our planet's oceans, bays and estuaries. They are similar to their terrestrial (land) cousins, the tortoises, and to freshwater turtles, except that their legs have been modified into flippers to aid them in swimming. Their shape has taken on a flattened, more streamlined appearance - tapering off in the rear to allow for less water resistance during swimming. All sea turtles except the leatherback turtle have a hard carapace (top shell) and another hard shell on the belly called the plastron. The carapace, as with all other turtles incorporates their backbone, sternum and ribs. This is unlike most other animals whose backbone and ribs are free of a shell or skin.

Sea turtles are closely related to ancient species dating back 130 million years to the Cretaceous Period. Some may be more closely related to dinosaurs than our present day reptiles.



Like all other reptiles, sea turtles' body temperature depends upon their surroundings which explains their migration southward as northern waters cool off in the fall. The leatherback turtle, though, has recently been found to be able to create some body heat, thus making them able to withstand the chilly waters off Canada and Iceland, where they roam in the summer. Sea Turtles are air breathers, but are capable of holding their breath for quite some time. It is thought that they are also able to absorb oxygen from their skin, mouth and their cloaca.

Sea turtles remain in the sea during their entire lives except for adult females who briefly come ashore to nest in the summer months. In the eastern US sea turtles are found mainly along the southern and Mid - Atlantic coasts, Gulf of Mexico and in the

Caribbean Sea. During the summer months when the Gulf Stream carries warm water north as far as Canada, sea turtles, with the exception of the hawksbill, roam as far north as Cape Cod near the shore, while the leatherback ranges even further north.

There are five species of sea turtle in the North Atlantic Ocean - hawksbill, loggerhead, Kemp's ridley, green and leatherback Of these, the last four regularly inhabit Long Island's waters.

LIFE HISTORY

All sea turtles have a similar life history. Life begins as the males and females mate in spring and early summer in the waters near the nesting beaches. The females come ashore and deposit 80 - 200 ping pong ball-sized eggs in a thick fluid in the 20 - 30 inch deep holes they excavate. The nest is located in the sand on the upper part of the beach, often at the base of the dunes or vegetation line. Females may return to the nesting beach to lay up to 10 clutches of eggs in a season (except the Kemp's ridley).

After the hot sand incubates the eggs for about two months the tiny hatchlings break through the leathery shell of the egg and scramble out of the nest to head for the water. Although this usually occurs at night, these tiny creatures are prey to many predators such as ghost crabs, dogs, foxes, raccoons, opossums and gulls. If they make it to the sea another set of predators, fish and seabirds, are waiting to pick them off. It is estimated that only a fraction of turtles that hatch actually survive this gauntlet, and less than 1% endure to maturity. Once in the sea, the turtles will inhabit offshore waters of the Atlantic Ocean and the Gulf of Mexico. They remain there for several years, sometimes taking refuge in large clumps of Sargassum weed that host a variety of small fishes and crustaceans which presumably the turtles feed on.

After two to three years loggerheads, greens and Kemp's ridleys move into coastal waters in their northern range, where they spend their juvenile life. Locally, these three species of turtles can be found in Long Island Sound and Long Island's eastern bays where they feed on crustaceans (crabs, shrimp, lobster, etc.), shellfish and even small fish. They arrive here every year in late June as water temperatures rise, then migrate south to warmer waters by late fall.

Leatherbacks lead a different lifestyle. They appear to inhabit deep oceanic waters for most of their life feeding on jellyfish, which make up their chief diet. Adult and sub - adult leatherback turtles are found in Long Island's offshore waters.

SEALS

Seals belong to the group of mammals called Pinnipeds, which means feather footed. Within this group are the true seals which belong to the Phocidae group, and the Otariidae which include fur seals and sea lions. The ancestors of these two groups are thought to be quite different. The true seals (also called "hair" or "earless" seals), and the sea lions and fur seals (also called eared seals) are thought to have evolved from carnivorous ancestors.

All seals have torpedo-like body shapes that enable them to swim swiftly through the water. Seals inhabiting icy regions have long sharp claws which dig into the ice to help them climb out of the water.

TRUE SEALS

True seals include all of the five species found on Long Island in recent years: *harbor, grey, ringed,*

hooded, and harp seals. True seals have no external ear flap. Instead, they have a small flap of skin that closes over the ear opening when they dive. Their front flippers are short and haired and equipped with large claws, while the hind flippers are webbed and directed backward. The rear flippers propel the seal through the water by side to side sculling. On land these seals crawl along clumsily by humping the body like an inchworm, but they are swift and agile in the water, often covering long distances during migration and in search of prey. Seals have been recorded swimming at over 12 knots (more than 15 miles an hour), and local fishermen have reported seeing seals over 70 miles off long Island's shores.

EARED SEALS

Sea lions and fur seals are quite different from true seals. Their long flexible front flippers and versatile hind flippers enable these mammals to actually run on land and their long agile necks give them the ability to catch objects on their nose as seen in aquariums. The fore flippers propel the animal through the water. The males and females of most true seals are close to the same size, whereas male sea lions and fur seals are often much larger than the females.

CETACEANS

Whales , dolphins, and porpoises belong to an order of mammals known as the Cetacea (derived from the Latin term *cetos* or *cetus*, meaning large sea creature). Cetaceans and the Sirenians (dugongs and manatees) are the only two orders of mammals that are adapted to a fully aquatic existence.

Cetaceans evolved from land mammal ancestors about 53-54 million years ago. Below is some information about NY's most abundant cetaceans species.

THE FIN WHALE

The fin whale, the second largest of the baleen whales and the second largest animal to have ever lived, is the most abundant baleen whale in the Long Island region. Fin whales are present in Long Island waters year round, although there are seasonal distribution differences. During April through August fin whales are usually found in any of five areas located within 30 miles of land. These are areas where intensive feeding activity usually occurs. During September through early December the whales usually move offshore along the continental shelf near the 200 meter contour. In January through March they are found feeding again within 1 mile of the eastern shores of Long Island. During the summer feeding groups often involve aggregations of 20 or more animals. In the winter aggregations are of small groups of 3 to four animals. Calves are observed year round with apparent newborns observed mainly in early July.

Fin whales are listed in the IUCN (International Union for the Conservation of Nature and Natural Resources) Red List and the World Conservation Monitoring Centre (WCMC) as, "endangered." A species or population listed as "endangered" is "facing a very high risk of extinction in the wild in the near future."

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THE HUMPBACK WHALE

The humpback whale is regularly found in the New York Bight but its abundance fluctuates widely. In some years they are very numerous with aggregations of up to 20 individuals. In other years only a few individuals are present. Humpbacks are one of the baleen whales regularly found in shallow water and have been observed for extended periods of time within Long Island Sound, Block Island Sound, and Gardiner's Bay. In some instances humpbacks have also been observed moving in and out of some inlets along the south shore of Long Island (Shinnecock, Fire Island, and New York Harbor). Humpbacks are found in the greatest numbers around Long Island between the months of June through September. Usually they feed on shoals of small schooling fish such as sand eels or herring. The humpback whale is also listed as an endangered species.

NORTH ATLANTIC RIGHT WHALE

The Northern right whale is critically endangered throughout its range with an estimated 300 individuals. The IUCN Red List category "critically endangered" means that the species or population is "facing an extremely high risk of extinction in the wild in the immediate future."

Right whales were named so because they were the "right whale" to hunt. They were the right whale to hunt for a variety of reasons, including slow swimming speed; floating after death; significant amounts of very long and flexible baleen; and significant amounts of blubber that could be rendered down into oil. Right whales were "protected" from legal hunting in 1935, but have not been able to recover.

Studies of biopsied North Atlantic right whales indicate very little genetic variability within the population. This is assumed to be due to significant inbreeding, following the reduction of the population (population bottleneck) due to whaling. Reduced reproductive success due to inbreeding, coupled with the low reproductive rate of mysticetes in general, might partly explain the lack of recovery of Eubalaena glacialis.

Right whales feed almost exclusively on small crustaceans called copepods, and hence have a very limited food niche. Right whales calve in winter off the coast of Georgia and Florida, and can sometimes be seen in the waters of f New York during their migration to and from their typical feeding grounds (the Great South Channel, the Gulf of Maine, the Scotian shelf). Sometimes right whales can be seen in NY's waters in the summer as well.

Coastal Research & Education Society of Long Island, Inc.

Division of Natural Sciences & Mathematics
Kramer Science Center
Dowling College
Oakdale, NY 11769-1999

(631) 244-3352 www.cresli.org