fact sheet: right whale

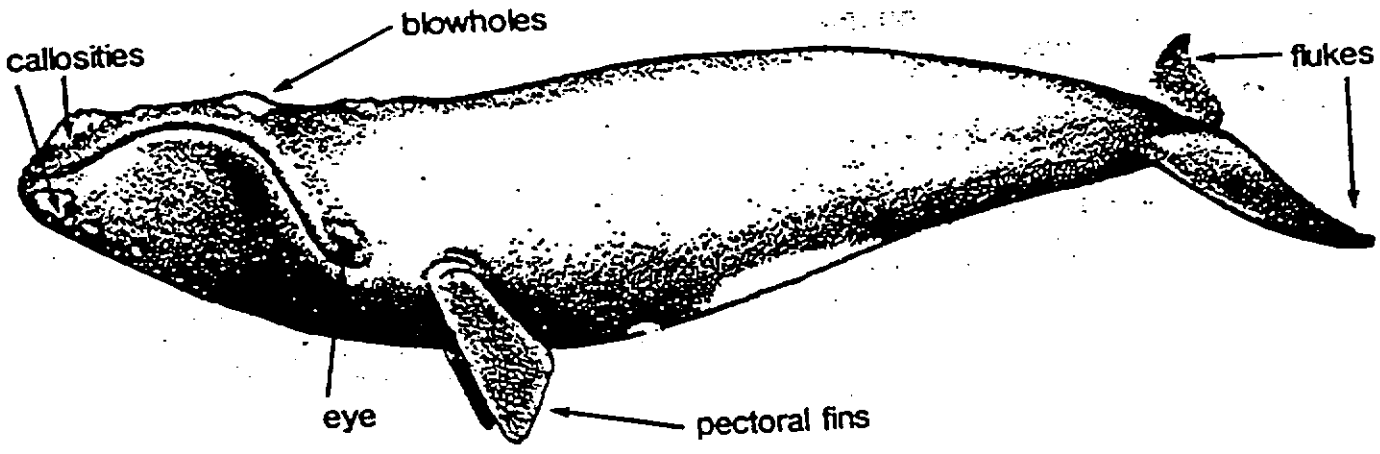
RIGHT WHALE (Eubalaena glacialis)

Adult Length: 35-50 feet
Distribution: North Atlantic from the Gulf of St. Lawrence to Florida
Estimated Population: 200 animals
Diet: Planktonic copepods and other small crustaceans
Gestation Period: 12 months

Due to overhunting, primarily during the 17th and 18th centuries, the right whale is one of the most endangered whale species. Because of their high yield of oil and baleen, and because they were slow swimmers and floated when dead, they were highly prized by whalers. In fact, the name right whale was given to this species because whalers considered them to be the "right" whale to kill.

Although right whale sightings are somewhat rare, the species can be easily identified by several field marks. These include broad, smooth flukes, the absence of a dorsal fin, and unusual light-colored, wart-like growths on the head, upper jaw, and around the blow hole. These "callosities" and the patterns they form have been used to identify individual right whales.

The New England Aquarium has been studying right whales in the Bay of Fundy for 3 years. Our investigations have focused on the behaviors of these animals, as well as researching what appears to be a critical habitat for the remaining right whale population in the North Atlantic.



New England Aquarium Education Department Central Wharf, Boston MA
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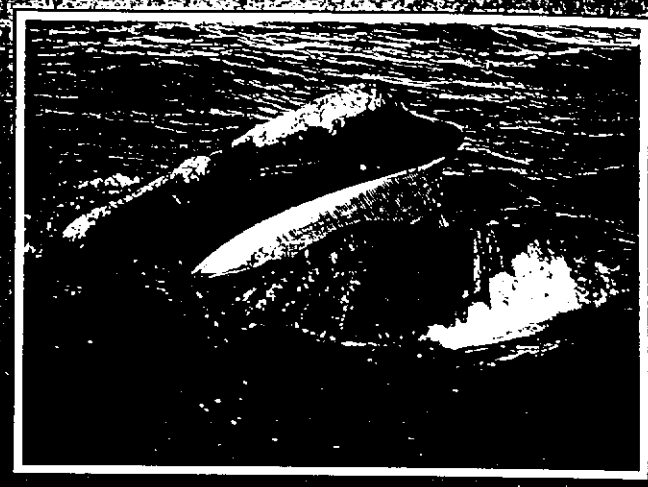
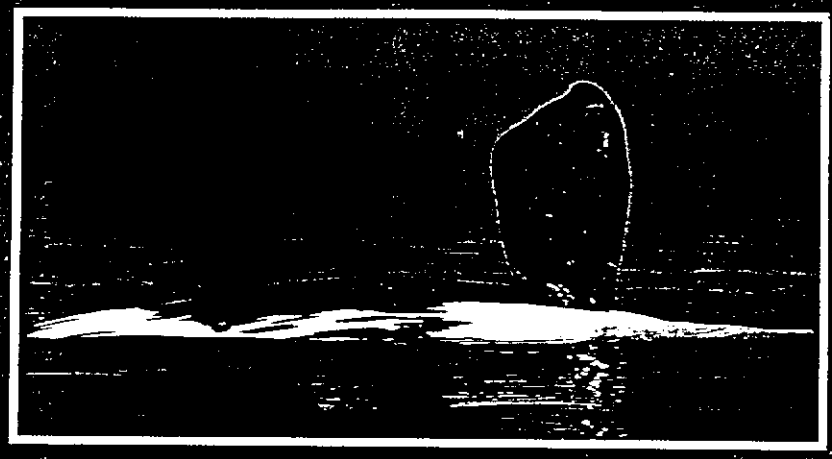
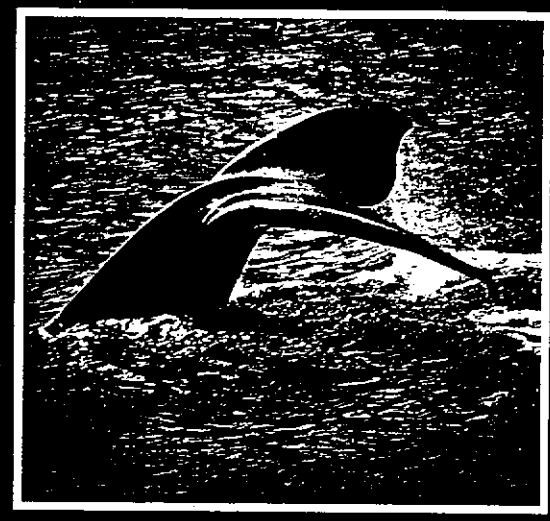
Right Whales

on the Brink







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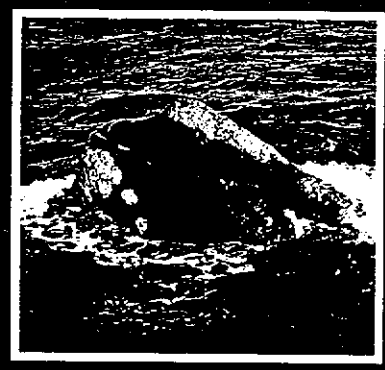

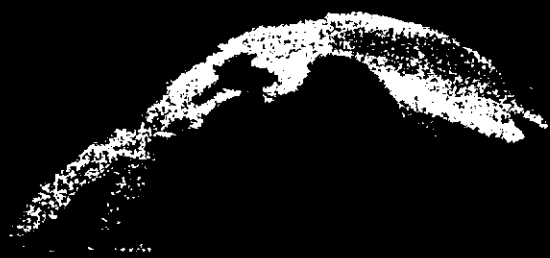

Right Whales

Behavior

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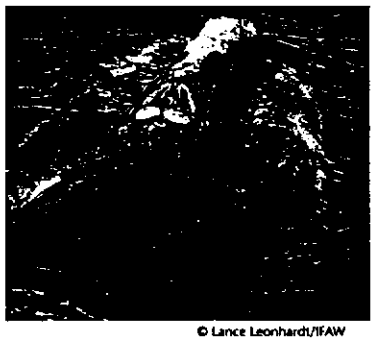
Blows

Whales breathe air through their blowholes. The blowhole is opened when the whale surfaces and closed when it submerges. Whales usually take about one to two breaths per minute while traveling at the surface. Each breath is less than half a second long, but whales absorb more oxygen than other mammals by storing it in their muscles.

When whales breathe out, the condensation in their respiratory passages forms a mist cloud called a blow. A blow can be seen and/or heard from almost a mile away on a calm day. The blow of right whales forms a distinctive V shape due to their two separate blowholes.

Social Behavior

Right whales show distinctive social behaviors – nuzzling, bumping and rubbing against each other. They vocalize underwater using moans and pulsed calls. They are known to be especially vocal during periods of sexual and social activity. Courtship behavior also includes displays of breaching, when a whale leaps out of the water, often clearing the surface with two thirds of its body or more and then splashes down on its back or side, and tail and flipper slapping on the surface of the water.



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Feeding

The right whale is a baleen whale. Baleen, slightly flexible vertical plates with a fringed edge, hangs from the inside of the upper jaw in closely packed layers up to seven feet long. Right whales are highly specialized feeders who prey on juvenile krill and copepods, tiny crustaceans about the size of a grain of rice. They swim into dense swarms of these crustaceans with their mouths open, trapping the food in the fine strands of baleen. A single whale can eat several tons of krill a day.

In the area near Cape Cod, right whales engage in a unique practice known as skim feeding. They swim slowly at the surface with their mouths open, skimming plankton from the surface of the water. It is believed that whales do this only where krill are found in extremely high concentrations.

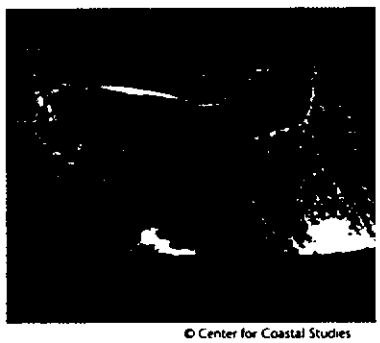
Reproduction

Right whales become sexually mature between five and nine years of age, and mate from February through April. Females give birth to a single calf every three to five years. The gestation period is about 12 months and calves are born the following winter along the coasts of Florida and Georgia. The calf is born tail first, and is gently nudged to the surface to take its first breath. Calves are about 14 feet long at birth, weigh about 2000 pounds, and nurse for 10 to 12 months.

Migration

Right whales are slow swimmers, seldom swimming faster than five knots. They often travel in small groups that may be dispersed over an area of several miles.

The population appears to migrate seasonally. Right whales are



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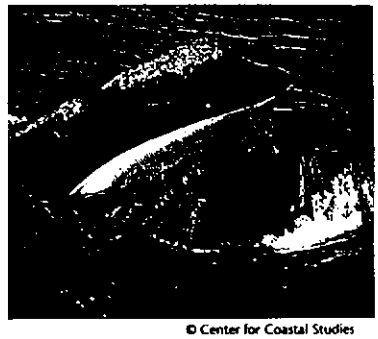

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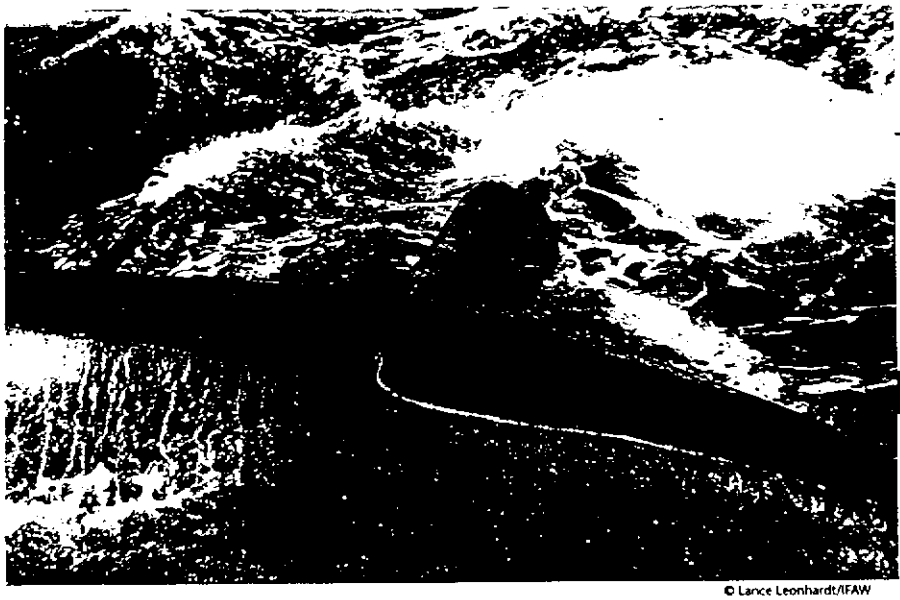
found in Cape Cod Bay (peak season: January through April), the Great South Channel (peak season: April through June), Stellwagen Bank (peak season: July through September), Jeffreys Ledge (peak season: July through mid-December), the Grand Manan Basin (peak season: June through December), and Browns Bank and Roseway Basin (peak season: September through November). Most right whales are born in the coastal waters of Georgia and Florida. A small portion of the population, the pregnant females and their newborn calves, are found in this area from December through March. The location of the wintering grounds of the remainder of the population is unknown.

Individual Identification

Right whales are black with white patches on their throats and bellies. They lack a dorsal fin and have a narrower upper jaw and a broader, curved lower jaw; broad, paddle-shaped flippers; and deeply notched tail flukes.

The patterns formed by callosities on the whales' heads are used to identify individuals. Callosities are patches of raised and roughened skin that appears yellow or grey due to small parasitic crustaceans. Characteristic scars and coloration also aid in identification. The New England Aquarium maintains a photo identification catalog of individual right whales in the western North Atlantic Ocean.



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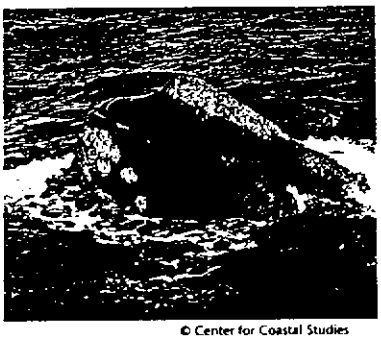
Current Threats to Right Whale Recovery

The same characteristics that made the right whales easy to hunt — their slow speed and surface habits — also make them vulnerable to other human threats.



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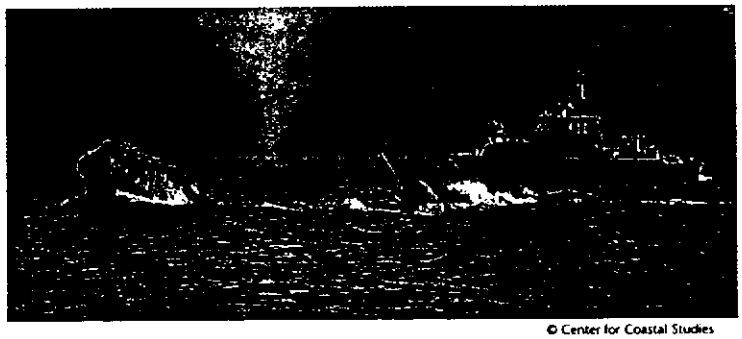

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Vessel Collisions

Right whales are found resting, socializing and feeding near the surface in coastal areas of high vessel density. Designated navigation routes overlap right whale habitat and collisions with vessels are a known cause of right whale mortality. It is estimated that collisions with vessels have accounted for the mortality of at least 13 right whales since 1976, one third of all documented right whale deaths. Scientists believe this number represents only a portion of the total number of whales struck by vessels, because many whales that die in these collisions drift out to sea and are never found.

Entanglements in Fishing Gear

When whales and other marine mammals become entangled in fishing gear, they may not be able to feed or may be held underwater by the nets, unable to breathe. There have been 16 recorded encounters between right whales and fishing gear in the North Atlantic between 1975 and 1989. Three whales are known to have died from entanglements. Photographs show that 57% of the catalogued whales have scars and injuries resulting from rope and net cuts.

Ecosystem Changes

General degradation of coastal marine habitats is also an important factor affecting the whales' recovery. Untreated sewage and wastewater, silt, gas, oil and other pollutants in the ocean can affect the whales' health directly, and may also have an impact on the populations of crustaceans they feed on. Toxins in the crustaceans can build up in the tissues of whales in a process called bioaccumulation. Ship traffic and other operations may also disturb the whales and interfere with their communication.

Inbreeding

Genetic studies show that the current population of right whales descend from a small number of unrelated females. This small breeding pool may affect how often and how successfully the whales reproduce. Inbreeding may also produce more still births and a lowered survival rate in the offspring. Scientists have indeed noted that the interval between calves appears to be increasing.

Saving Whales from Entanglement

More than 10% of known right whale deaths are caused by unintentional entanglement in fishing gear. An innovative new partnership has been formed to save whales from this fate. Known as the Rapid Response Team, scientists from the Center for Coastal Studies, under the authority of the National Marine Fisheries Service, have joined forces with the Coast Guard to respond at a moment's notice to whale entanglement emergencies. Using helicopters and cutters provided by the Coast Guard and special equipment provided by IFAW, the Center specialists can travel up to 100 miles off shore to track and free entangled whales.

Research and Conservation Projects

Right whales are the focus of an intensive research program along the east coast of the United States and Canada, studying distribution, abundance, movement and genetics. A consortium that includes researchers from the Center for Coastal Studies (MA), East Coast Ecosystems (Nova Scotia), the International Fund for Animal Welfare (MA), McMaster University (Ontario), the New England Aquarium (MA), the University of Rhode Island (RI), and Woods Hole Oceanographic Institution (MA) has been working to monitor the population status, identify sources of mortalities and develop ways to reduce the effects of human activities on this extremely rare population. In addition, the states of Massachusetts, Georgia and Florida, as well as the National Marine Fisheries Service, have been actively developing policies and regulations to assist right whales.

By increasing the understanding of right whale biology, behavior and distribution, these organizations are hoping to minimize the threats to right whales from ship strikes and entanglements.

Right Whales

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Current Right Whale Conservation Efforts

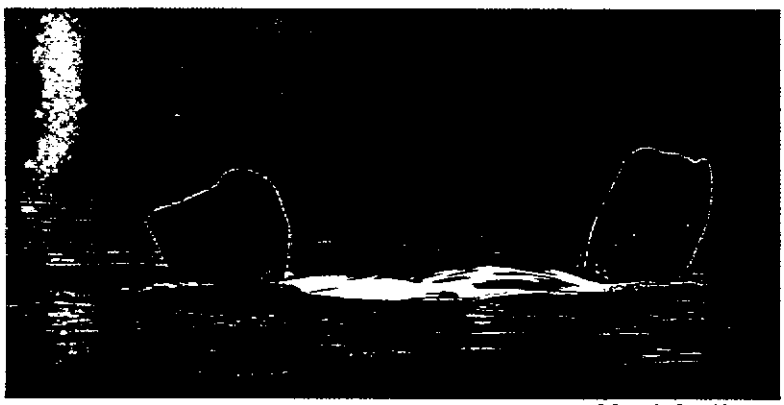
Right whales are listed as an endangered species in the U.S. There are two federally mandated Implementation Teams coordinating right whale recovery efforts under the authority of the Endangered Species Act. In addition, the National Marine Fisheries Service has designated three of the right whales' seasonal feeding and calving areas as critical habitats that are essential to the whales continued survival. In Canada, Marine Mammal Regulations, pursuant to the Fisheries Act, address marine mammal issues.

Southeast Implementation Team

There is one right whale critical habitat in the Southeast, covering the coastal area from Altamaha Sound, Georgia to Sebastian Inlet, Florida. This area is the right whales' main calving grounds. The Implementation Team has developed an early warning system to help reduce the number of vessel collisions in this region. Aerial surveys are conducted over the Critical Habitat from December to March, and the location of right whales is forwarded to all vessels in the area.

Northeast Implementation Team

There are two designated Critical Habitats in the Northeast – Cape Cod Bay and the Great South Channel. Surveys are performed over these areas by Coast Guard helicopter, boat trips and small plane flyovers, in order to provide information about whale locations for vessel traffic. Mariners are notified by NOAA weather radio and on a special NMFS fishery broadcast frequency.



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Canada

The Canadian government has established Conservation Areas for right whales in the Grand Manan Basin and Roseway Basin. Ships operating in these areas from July through November are asked to follow seasonal guidelines to decrease the possibility of collisions. For more information, contact the Department of Fisheries and Oceans.

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You can help protect whales and their marine habitats

- **Operate safely around whales and other marine mammals. U.S. federal law requires a 500 yard buffer zone around right whales. (50 CFR part 222.32)**
- **Never throw trash into the ocean – dispose of it properly. Plastics can kill wildlife, including whales. (MARPOL* Annex V; 33 CFR 151)**
- **Never release poisonous or toxic substances. These can harm whales, fish, plankton and corals. (MARPOL Annexes I and II; 33 CFR 151 and 40 CFR 117)**
- **Support conservation, research and education initiatives.** ***International Convention for the Prevention of Pollution from Ships***

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