

The Kids' Times:

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Right Whale



Right whales have no dorsal fin on their backs.

Illustration by Pieter A. Folkens

How did the right whale get its name?

Whalers gave the name "right" whale to this species because they thought it was the right (correct) whale to hunt. The whale was easy to kill because it swam slowly and once dead, it floats. This made it easier for the whalers to pull the whales onto ships and to shore to boil the blubber for oil. Whale oil was used in lamps and for heat until the late 1800s.

The scientific names are *Eubalaena glacialis*, (North Atlantic Right whale), *Eubalaena japonica* (North Pacific Right whale), and *Eubalaena australis* (Southern Right whale). *Eubalaena* means "true whale", *glacialis* means "ice", *japonica* means "Japan", and *australis* means "southern".

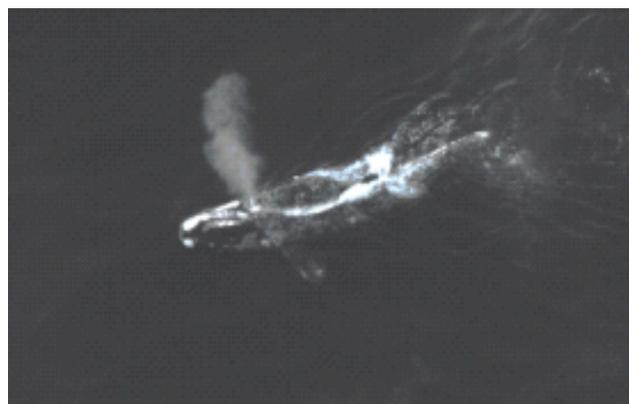
What do they look like?

The North Atlantic right whale does not have the dorsal fin most great whales have. They have a broad (wide) back, paddle-like flippers, and wide triangular **flukes**. They are mainly black in color with varying amounts of white on their undersides. The head of a right whale is very large, with a long, arched mouthline like a frown.

The right whale is a **baleen** whale, meaning it has not teeth, but uses baleen plates to strain its prey. The baleen plates in the mouth of a right whale are made of fingernail-like material called **keratin** that hangs down inside the mouth. Right whales have between 200 and 270 plates of baleen on each side of the mouth that can be up to 9 feet (2.7 m) long and have a fine inner fringe.

The right whale is a bulky baleen whale that can weigh up to about 200,000 lb (90,000 kg). The right whale can grow to be about 60 feet (18m) at its longest, although typical adults are 40-50 feet (13-16 m) long.

In addition to the white patches of skin color, the North Atlantic right whales have patches of roughened skin, called **callosities**, on the head and **rostrum**. The callosities are light-colored due to the presence of **cyamids**. The patches help scientists tell the right whales apart in the water.



NMFS File Photo

Right whales expel carbon dioxide through their blow holes.

Where do they live?

The North Atlantic right whale lives mostly near the coasts and the shelf waters, but can be found offshore in deeper water. They range from Nova Scotia, in Canada, south to the southeastern United States. In the summer, they feed in the waters off Cape Cod, Massachusetts, the Bay of Fundy and the Scotian Shelf. In winter and spring, pregnant females and young adults can be found on the calving grounds off the coasts of Florida and Georgia. The location of most of the **population** during fall and winter is unknown. In addition to traveling between summer and winter habitats, scientists now think whales travel much more within those habitats than once thought.

What do they eat?

The diet of the North Atlantic right whale consists mainly of **plankton (copepods)**, though they sometimes eat **krill**. They use baleen plates to filter out these tiny prey from the water.

The right whale feeds by "skimming": it swims through a swarm of prey with its mouth open and its head partly above water.



The baleen of Right whales acts like a sieve when they feed.

When it has filtered a mouthful of prey using the inner bristles of its baleen plates, it forces the water out of its mouth, dives, and swallows the food.



C. Slay/NEAq

Right whale calves stay with their mothers for approximately one year.

How do they behave?

The right whale is a slow swimmer, averaging about 6 mph (8 kph). It usually makes a series of 5 or 6 shallow dives and then submerges for about 20 minutes. Right whales emit a number of low frequency sounds, which carry through the ocean, mostly during courtship. (see *What sounds do whales make and why?* section for more sound information)

North Atlantic right whales usually travel alone or in small, short-lived groups. When there were many more right whales in the oceans, groups of up to 100 were seen together on the feeding grounds. If large amounts of prey are present in one area, such as a prime feeding area like the Bay of Fundy, the whales may feed together. Usually the groups break up to feed individually, probably because of the enormous amount of food each individual whale has to eat in one day.

Female right whales generally give birth to one live **calf** every three to five years. The calves are born during the winter along the coast of Florida and Georgia. The calf is born tail first, and is 13-15 feet (4-4.5 m) and around 2,000 lbs (900 kg) at birth. Calves generally nurse from their mother for 10 to 12 months.

Right whale calves and mothers spend a long time together, like other mammals. The calf stays close to the mother, swimming up on her back or butting her with its head. The mother may roll over on her back and hold her calf in her flippers.



The Whale Center of New England

Callosities help scientists tell Right whales apart.

What sounds to Right whales make and why?

From the little known about their communication systems, it appears that most of the calls produced by North Atlantic right whales are moans that are either low frequency (100-200 Hz) or mid-frequency (200-800 Hz). As with other baleen whales, right whales probably do not use sonar sounds to find their food. However, right whale sounds appear to differ with changing behavior and, thus, may be important in communication. Right whales also produce drum-like (or "gunshot") sounds during **breaching** and **flipper and tail slapping**.

An interesting clicking sort of sound (called the "baleen rattle") is made when water flows across baleen plates held partially out of water by whales feeding at the surface. New techniques are being developed to use the various sounds that North Atlantic right whales make to detect them (called "passive acoustic monitoring and localization") and reduce the chance of boats hitting them.

Southern right whales also produce pulsed "flatulent" sounds, slaps, and moans, but have two different versions of the moan based on what the animals are doing at the time. They make a simple "upsweep" low frequency call that rises between about 50 and 200 Hz when they are trying to find one another. They use a "downsweep" sound between about 200 and 100 Hz when they are just communicating but not actively trying to locate one another.

The sounds made by right whales can be heard on the following website:

<http://www.birds.cornell.edu/brp/listen-to-project-sounds/>
(Cornell Lab of Ornithology)

(Contributed by Dr. Brandon Southall and Logan Southall)

Who are their predators?

The right whale has no known predators. Humans activities are the main threats to the right whale's recovery. (See *Why are they in trouble?*)

How many North Atlantic right whales are there in the ocean?

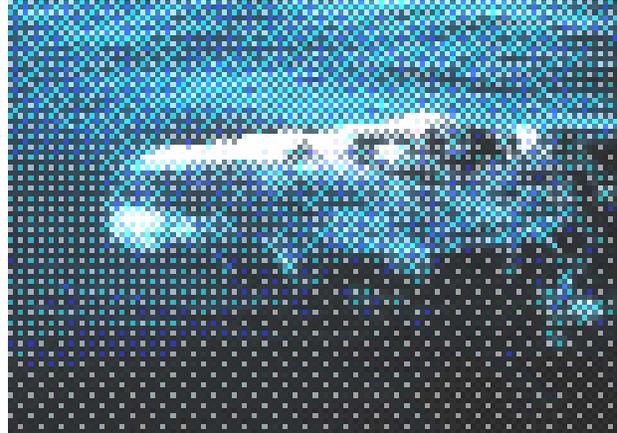
Scientists estimate there are only around 300 animals left, living mainly off the east coast of the United States and Canada. This makes them one of the most endangered species in the world. North Atlantic right whales produce few calves to replace deceased animals.

Why are they in trouble?

The Right whale was the first great whale to be hunted regularly by commercial whalers (from the 11th to the early 20th century). Today, most right whale deaths are caused by human activities. Ships hit right whales accidentally because the whales rest, socialize and feed near the surface in coastal areas where many ships travel. They also become **entangled** in fishing lines stretching hundreds of feet. Entanglement can keep the whales from eating, breathing, or swimming. Lines cutting into their skin can also cause fatal infections. The development and pollution of coastal marine habitats is another factor possibly affecting the recovery of the northern right whale. The noise from ship traffic may also interfere with the whales' communication.

What is being done to help them?

NOAA Fisheries is working to protect these animals in many ways. First, NOAA Fisheries works with **mariners** to educate them about right whales and how to take steps to avoid a ship strike. Second, NOAA Fisheries conducts surveys to photograph and identify individual right whales, and also to warn mariners about where the whales are located in order to avoid a collision. Third, NOAA Fisheries set limits for when certain fishing gear can be used in areas where right whales



NMFS File Photo

Right whales must come to the surface of the water to breathe.

are found; the agency also is working with fishermen to develop different kinds of gear that will not harm the whales. Fourth, NOAA Fisheries has designated critical habitat, or protected areas where the whales spend much of their time. Finally, NOAA Fisheries is working on new ways to help ships and whales avoid each other, while also researching other things that may be harming the population, like contamination from pollution, noise in the ocean, and whether they have enough food available to them.

The International Whaling Commission also protects all right whales by giving them a Protected Stock status, which means no right whales can be hunted or killed anywhere in the world.

Glossary:

Baleen: Overlapping plates made of keratin that hang from each side of the upper jaw of certain whales

Breach: A leap out of the water

Callosities: Raised and roughened part of the skin; usually white or cream-colored due to infections of whale lice

Calf(ves): A very young, often newborn whale

Copepods: Floating crustaceans the size of rice

Crustacean: Marine animal with a segmented body, shell, and jointed legs

Cyamids: Whale lice

Entangle: To catch in a fishing line

Fluke: The end of a whale's tail

Krill: Small, shrimp-like creatures

Mariner: A person who works on a ship

Population: a group of individuals of the same species that live (or occur) in the same area and interbreed

Rostrum: Upper jaw of a whale; can refer to the beak composed of the upper and lower jaws

Ship strike: When a ship hits or collides with a whale

Slapping, Flipper and Tail: When a whale hits the water with its flipper or tail



Whale Center of New England

Right whales show their fluke when they dive. Flukes also help tell Right whales apart.



NOAA's National Marine Fisheries Service
Office of Protected Resources
www.nmfs.noaa.gov/pr/
Molly Harrison 2005