

## WHALES

**Sperm whale, *Physeter macrocephalus***

**Fin whale, *Balaenoptera physalus***

**Sei whale, *Balaenoptera physalus borealis***

**Blue whale, *Balaenoptera musculus***

**Humpback whale, *Megaptera novaeangliae***

**North Atlantic northern right whale (or Black right whale)  
*Eubalaena glacialis***

**Status:**            *State:* All endangered            *Federal:* All endangered

### Identification

Like the first time one sees a bald eagle, few people fail to vividly remember their first encounter with a whale surfacing from the depths of the Atlantic. Given their great size and--in some cases--great mystery, it's hard not to be fascinated with these marine mammals that, for centuries, were the object of storied hunting.

Cetaceans, an order that includes whales, dolphins and porpoises, are divided into two suborders: Odontoceti and Mysticeti. Odontoceti have teeth and a single blowhole, or nostril, at the top of the head. Of this suborder, the sperm whale is the only one that regularly produces a visible spout or blow. The Mysticetes, or baleen whales--which include the other five species listed here--have no teeth and two blowholes. Instead of teeth, great plates of horny baleen, which extend from the upper jaw, are used to strain food from large mouthfuls of water. (Audubon 1983)

**Sperm whales (Family Physeteridae):** These whales have a distinctive jaw that both recedes and is located directly under the head's center.

**Sperm whale:** The sperm whale's huge head extends a quarter to a third of its entire length, which can be as much as 21 m (69 ft.). Its single blowhole, well left of the center and far forward on the head, emits a distinctive spout: small, bushy and angled sharply forward. The sperm whale's skin, a dark brownish gray, looks corrugated. Occasionally its belly and front of the head are grayish, and the mouth area white. The blunt, square snout extends far beyond the tip of the lower jaw, which has a row of large teeth on either side; smaller teeth are embedded in the upper jaw. Two-thirds of the way back from the snout the whale has a distinguishing dorsal hump; behind that are a number of bumps. The sperm whale has a keel on its belly, and the flukes, or sides of the flat tail, are broad, triangular and heavily notched at their back edges (Audubon 1983).

**Rorquals (Family Balaenopteridae):** Long, slender streamlined whales with grooves on the throat and/or chest. They include:

**Fin whale:** The fin whale, which in the North Atlantic can reach lengths of 24.1 m (79 ft.), has a blue-black body and a white underside. There is a distinctive grayish-white chevron on the back behind the head, and its V-shaped snout has a single dorsal ridge running down its middle. Its mouth is also quite distinctive, with the right lower jaw lip white, in contrast to the black left lower jaw; this asymmetry is unique among cetaceans. The mouth cavity is yellowish white and the upper right lip also at times white. Meanwhile, the left lips are dark. The baleen plates are also white on the right side; the rest are alternately striped yellowish-white and bluish-gray to grayish-white. The fin whale's head is flat. Far back is situated a steeply angled dorsal fin, and behind that runs a tell-tale ridge. Underneath, ventral grooves line the belly at least to the navel (Audubon 1983). The blow is tall and columnar in shape (Phil Clapham, pers. comm. 2001)

**Sei whale:** Reaching lengths of 18.9 meters (62 ft.), the sei whale's dark steel-gray body frequently looks galvanized. The body is frequently covered with small pit-like circular scars, originating in the bites of cookie-cutter sharks. Underneath, the belly is grayish white around the ventral grooves, which stretch only midway between the base of the flippers and the navel. The right lower lip is gray and baleen plates are primarily grayish black. The whale's snout is barely arched, while its slightly pointed rostrum--the forward extension of the upper jaw--sports a single median dorsal ridge. Two-thirds of the body length back of the head, a tall dorsal fin is very falcate, or curved like a sickle. Finally, the leading edges of the flukes are occasionally white (Audubon 1983). The blow, either bushy or columnar, is usually quite tall (Clapham, pers. comm. 2001).

**Blue whale:** The largest animal alive and probably the largest animal that has ever existed, the blue whale has reached lengths greater than 30.5 meters (100 ft.) and has reached weights of about 178,000 kg (196 tons), although it averages 23-27 m (70 to 90 ft.) and weights of 90,000 to 135,000 kg (100 to 150 tons). The blue whale's skin is light-bluish gray and mottled with gray or grayish-white; it appears distinctly blue when seen through the water. Underneath, the belly sometimes has a yellowish tinge as a result of diatoms that have attached themselves in cold water; hence the nickname "Sulphur Bottom Whale." The belly's ventral grooves also extend to or just beyond the navel. Almost U-shaped, the broad, flat rostrum has a single median dorsal ridge. The pectoral flippers are long and thin, while the dorsal fin is very small and far back (Audubon 1983). The blow is high and columnar. Like the fin whale (and unlike the sei) the blowholes appear before (not with) the dorsal fin as the whale surfaces (Clapham, pers. comm. 2001).

**Humpback whales:** These whales, which reach lengths of 16.2 m (53 ft.), have broad, rapidly tapering bodies that are primarily black. Their bellies are sometimes white, and in the North Atlantic the flippers are usually white both ventrally and dorsally (or top and bottom). Their baleen plates are black, with black or olive-black bristles. Both the top of their heads and lower jaws are dotted with randomly placed fleshy knobs. The lower jaw also has a rounded projection on its tip. The long flippers are the most distinctive feature of this whale, since at one-third the body length they exceed those of any other species; they have scalloped leading edges. The dorsal fin is highly variable in shape and size, from almost absent to high and falcate; it is located on a small hump a little more than two-thirds of the way back. Finally, their concave, deeply notched flukes have scalloped rear edges. The pattern



Photo by Robin Hunter,  
courtesy US FWS

on the underside of the tail varies from all white to all black; each pattern is individually distinctive, allowing researchers to identify and track individual whales. The humpback's blow is often wide and balloon-shaped, although it can be tall and columnar in larger animals (Audubon 1983, Clapham, pers. comm. 2001).

**Right whales (Family Balaenidae):** Large-headed, robust whales. Besides bowhead whales, which frequent the edge of the Arctic ice, in North America this family includes:

**Right whale:** As long as 16.2 m (53 ft.), the right whale is large and rotund, with mottled brown to nearly black coloring. Both chin and belly show some white, while the dark brownish to dark gray or black baleen plates are long (up to 8 feet) and black-- although they might look pale yellowish gray far offshore. The highly arched jaw curves upward. The head and sometimes the lips are characterized by a series of bumps called callosities; these are naturally gray but appear yellow or white because of massive infestation by whale-lice (cyamids). The pattern of callosities can be used to identify individuals; the bonnet, the biggest of these bumps, is located just in front of two large blowholes. The right whale has no dorsal ridge or fin. Broad flukes, which are dark underneath, have pointed tips that are very concave toward a deep notch. Its blow is V-shaped when seen from ahead or behind (Audubon 1983).

### **Habitat**

The waters of the Atlantic Ocean and, depending on the species, estuaries and shallow coastal areas.

## Status and Conservation

Currently, only Japan and Norway are still engaged in commercial whaling. The only species affected in the North Atlantic is the Barents Sea minke whale, which is hunted primarily for its meat (Clapham, pers. comm. 2001)

Whaling in North America was reported as early as A.D. 890 (Grzimek 1979). The principal attraction of whaling was the whale's subcutaneous blubber, which yielded oil ideal for lamp oil and, much later, in the production of margarine. Baleen and, in the case of the sperm whale, whale teeth, were also of value. Whalebones were also used in the manufacture of glue, gelatin and manure. Besides being eaten by humans, the meat has also been used in dog food and, when dried and crushed, cattle feed.

By the time Plymouth colonists began in the 1600s, the stock of right whales may have already been substantially reduced during the previous century by Basques who captured the leviathans in waters between Labrador and Newfoundland. The right whale is so-named because it was considered the "right" whale for whaling ships: it swam slowly, was easy to approach and kill and it didn't sink after death. It was sought for both its oil and baleen, which was used for corset stays and other objects.

Also widely hunted, the sperm whale was prized for the spermaceti and the fine grade of oil contained in its forehead. Sailors and artisans also favored its ivory-like teeth for scrimshaw carvings. A sperm whale that rammed and sunk the New England whaling ship, the Essex, in 1820 in the Pacific was the inspiration for Herman Melville's classic novel, Moby Dick.

In reaction to the decline of various whale species, the first international agreement to halt whale hunting was reached in the mid-1930s. All six species discussed here were listed by the federal government as endangered in 1970 and, as a result of that federal status, were automatically added to the New Jersey endangered species list following enactment of the New Jersey Endangered and Nongame Species Conservation Act in 1973.

Although not terribly reliable, the best available abundance estimates for sperm whales indicate there are about 4,700 individuals in U.S. Atlantic waters. For western North Atlantic fin whales, the best available population estimate, admittedly conservative, is 2,200.

The total number of sei whales in U.S. waters is unknown. A very dated tag-recapture study from 1977 estimated the stock ranged between nearly 1,400 and 2,250 sei whales. Little is known about blue whale populations outside of the Gulf of St. Lawrence, where a 1987 report catalogued 308 individuals. Although this is considered a minimum population estimate for the entire western North Atlantic stock, no evidence exists to refute one estimate that the entire western North Atlantic population is in the low hundreds (Waring, et al. 2000). Humpback whales in the North Atlantic are estimated at more than 11,000 (Clapham, pers. comm. 2001).

The northern right whale is among the most critically endangered large whales in the world. Once thought to number at least 1,000 whales during the early to mid-1600s, its greatest declines were suffered during the 1700s. By the time international protection for right whales was initiated in 1935, they may have numbered fewer than 100. In 1998, the total population was estimated to be just 291 individuals. Between 1986 and 1992, there were suggestions that the stock was showing signs of slow recovery. However, a 1999

study concluding that between the early 1980s and late 1990s the northern right whale had suffered a decline in survival rates, a decline that was particularly marked in adult females (Waring, et al. 2000).