

Gray whales

Eschrichtius robustus

Another title in the series

**Learning about
the ocean**



A gray whale and her calf (reproduced by permission of General Whale)

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The seasonal appearance of gray whales along the Oregon coast attracts knowledgeable residents to rocky headlands, to watch these large mammals on their yearly journey from the Bering Sea and Arctic waters to the lagoons of Mexico. Generally, whale watchers can see them from December through May.

Migrating south from Arctic waters in November, gray whales pass along the Pacific Northwest coast, quite close to shore, on their way to lagoons along the central and southern Pacific coastline of Baja California, Mexico. Here they breed and give birth to their young.

The 6,000-mile (9650-km) migration—12,000-mile or 19 300-km round trip—is the longest known for any mammal. While other whales are known to migrate between summer polar feeding grounds and the more tropical breeding and calving areas, research-

ers know more about the gray whale because it moves so close to shore.

This behavior has led to speculation that gray whales are not good navigators and prefer to follow a shallow-water route to prevent getting lost.

The gray whale, like all whales, is a mammal. It has hair (mostly limited to single hairs around the front of the head), and the females suckle their young, providing milk from two teats. Whales are warmblooded and breathe air.

There are two basic types of whales, toothed and baleen. The gray whale is a baleen whale, without true teeth. Instead, a row of baleen plates grows from the roof of the mouth along each side. Each piece of baleen is made of material like a human fingernail.

Appearing quite stiff and solid at its outer edge, each piece is "fringed" inside the mouth and tapers from several inches wide at its attachment at

the roof of the mouth to nearly a point at its bottom. These plates are separated by approximately $\frac{1}{3}$ inch (6 to 10 mm); inside the mouth, their fringes overlap to form an effective screen.

Gray whales feed primarily on benthic amphipods (bottom-dwelling, shrimplike animals) but may also eat krill (an open-water, shrimplike creature) and squid. Gray whales are bottom feeders and apparently eat amphipods just above the sea floor.

The baleen of gray whales is stiffer than that of other baleen whales. This



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Profiles of the gray whale surfacing and blowing (left), beginning the dive, and diving (reproduced by permission from Gordon C. Pike, Guide to the Whales, Porpoises and Dolphins of the North-East Pacific and Arctic Waters of Canada and Alaska)

may be an adaptation to allow the whale to skim bottom sediments for food. The food is trapped in the baleen filter, while small sediments of dirt and sand pass right through with the water.

During late spring to midfall, most gray whales feed in the Bering and Chukchi Seas in the Arctic, although recently observers have regularly reported some whales feeding in summer from Alaska to Mexico. During the long polar summer days, the sun's energy stimulates the growth in ocean waters of phytoplankton (small marine plants), which in turn are eaten by zooplankton (small marine animals, including krill). Thus, these plankton become the basic food of all ocean animal life, including the gray whale.

Examination of the stomachs of whales during whaling days indicated that gray whales eat very little—if at all—while migrating and while in the breeding and calving areas. The females bearing young may go without food for as long as 5 months.

Gray whales may reach 45 feet (about 14 m) in length and 45 tons (40.5 metric tons) in weight. Females average larger than the males. (For comparison, a cross-country bus is about 40 feet, or 12 m, long.)

All baleen whales have two blow holes set close to each other, located on top of their heads, about one-fourth of the whales' length from the front. Their spoutings are vee-shaped and may rise to 10 feet or so (some 3 m) above the water's surface.

The gray whale gets its name from its blotchy pattern of coloration, caused by barnacles growing in the skin and by scar tissue where barnacles have been.

The southward migration lasts until early February, with most of the animals moving by in 4 to 6 weeks. They travel at about 5 miles an hour (8 km/h) southbound and about half that speed northbound. The northward migration is much more spread out; the immature animals (some of which may not have gone all the way to Mexico), adult males, and females without calves are the first to head north.

Later, females with calves move north at a somewhat slower rate and usually finish passing the Oregon and Washington coasts by early May.

During the northward migration, it is not unusual to see mating activity between a female and one or more males. This generally involves two or three adults apparently rolling in the water.

Females not giving birth to a calf mate one or more times during the calving season or during the migration. Frequently, more than one male will attempt to mate with a female, and "courting triads" are common.

Males may breed with more than one female. There seem to be no long term bonds between males and females, or any bonds between males and newborn animals. Females giving birth to a calf do not mate until the next year.

Whales begin to arrive in their traditional wintering lagoons in mid-December, and the birth of calves starts soon after. Pregnant females arrive first, followed by other adults and immature whales. Most baleen whales give birth in tropical or subtropical oceans, presumably to reduce the heat loss of their young.

Females become sexually mature at about 8 years of age and give birth to a single calf, usually every other year. The 15-foot (4.5-m) calf is born tail first. Births likely take place off-

shore as well as in lagoons. Females with calves move more slowly and take shorter, shallower dives than other adults, apparently to accommodate their young, which need to breathe more frequently.

Females nurse their young with rich milk that is nearly half fat and is squirted from two teats located on the underside of the mother. Calves are likely 2 months old before they start the northward migration.

Gray whales were heavily exploited in the mid-1800's by whalers operating along the migration route and in the breeding grounds. Shore stations to process them were set up in San Diego around 1855, when navigation inside San Diego Bay was judged hazardous because of the abundance of breeding whales (according to one writer of that period).

By 1873, gray whales had been so reduced in number that these shore stations closed. New operations, closer to or within the lagoons, soon followed, and the gray whale populations were further depleted.

Protection by Mexican law, and by international agreement since 1938, has allowed the species to recover to what is now thought to be its pre-exploitation number — approximately 15,000.

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