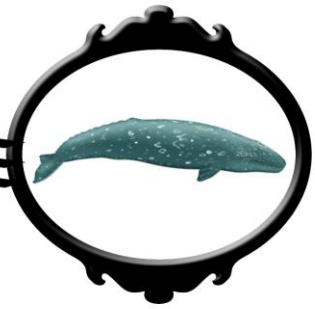
GRAY WHALE

Eschrichtius robustus



Physical Description:

Gray whales are mid-sized whales – they can grow to 45 feet in length and weigh 30 to 40 tons. As is typical in baleen whales, females are slightly larger than males. They have gray and white mottling with unique color patterns to each individual. Their heads and backs are frequently covered in barnacles – a particular species that lives nowhere else in the world except on gray whales - and patches of whale lice which appear orange-brown in color. They possess a streamlined body with 6 to 12 knuckles forming a dorsal ridge instead of a dorsal fin. They have 2 to 5 ventral grooves on their throat, which allows for expansion of the throat when feeding. They are the only baleen whale with an upper jaw longer than the lower jaw. They have over 300 plates of coarse yellowish-white baleen in their mouths that can grow up to 10 inches long. Their rostrums contain 'dimples' each of which is a hair follicle – these are more prominent in the calves. Gray Whales can easily be identified from a distance by their distinct heart-shaped blow.

Photo Identification Methods:

Gray whales can be identified by markings, pigmentation patterns, and scars along the right and left sides of the dorsal hump and dorsal ridge. While barnacle patterns can sometimes be used within a season, these will change in time and are not a reliable method of identification.

Natural History:

Species Subtypes:

There are two distinct populations of gray whales alive today. The Eastern Pacific gray whale, or California stock, migrates along the Pacific coast of North America. Within this subtype there is a subgroup called the Pacific Coast Feeding Aggregation. Research suggests that this subgroup may be genetically distinct from the larger population. The other population, known as the Western Pacific gray whale, or the Korean Stock, migrates along the shores of Russia, Japan and Korea.

Reproduction:

Gray whales migrate to warmer water lagoons along Baja California to mate and give birth to their young. Mating groups have been seen with up to 10 whales, but most often consist of one female and two males who are thought to be competing for her. A female may mate with several males in a season but generally avoids mating if she is caring for a calf.

Life Cycle:

The gestation for gray whales is approximately one year. They mate in their warm breeding lagoons of Baja during the winter months, and then return the following year to give birth. Females generally give birth every 2 to 3 years. Calves 12 to 15 feet long at birth and weigh

1,200 to 1,500 lbs. They gain up to 50 pounds a day by nursing on milk that is 53% fat. The calf remains with its mother through the feeding season during the summer, and then the pair will separate sometime the following winter, probably during the migration south as many one year-old whales do not complete the entire migration south to Baja. Gray whales reach sexual maturity around 6 to 12 years old. Their lifespan is largely unknown but is thought to be about 40 to 50 years. However, this estimate is based on whaling data and there is reason to believe that the average lifespan for gray whales, as well as many other whale species, may be much longer than originally thought.

Range:

Eastern Pacific gray whales undertake one of the longest migrations of any mammal at about 10,000 miles round trip. Only one population of Humpbacks is known to travel further. Eastern Pacific gray whales spend their winters in the shallow lagoons of Baja California, Mexico where they mate, give birth and raise their young. In the spring, most gray whales travel to the Bering, Chukchi and Beaufort seas to feed. However there is a population of around 200 to 250 whales who remain around Oregon, Washington, and British Columbia to feed instead of continuing to travel north. They are known as the Pacific Coast Feeding Aggregation, or seasonal residents. There is also a very small group of about 10-12 gray whales who enter Puget Sound each spring to feed on Ghost Shrimp off Camano and Whidbey Islands. These whales are known as the North Puget Sound gray whales or Sounders and are part of the Eastern North Pacific gray whales. Once they leave Puget Sound, they continue north to the Bering and Chukchi seas for summer feeding.

Western Pacific gray whales are not as well known as their eastern counterparts, although research efforts are increasing throughout their range. Feeding grounds appear to be off the coast of Sakhalin Island, Russia, and off southeastern Kamchatka in the Bering Sea. Breeding grounds are currently unknown but are thought to be somewhere in the South China Sea. Until recently, the gray whales in the eastern and western North Pacific were thought to be entirely separate. While there is evidence that some of those that feed off Sakhalin move south to at least Japan in the winter, it is uncertain to what extent the traditional wintering areas in Asia are still used. Photographic and genetic matches, as well as satellite tracking results, have shown that substantial numbers of the Sakhalin whales migrate to the Mexican wintering grounds, but recent acoustic evidence from the U.S. Navy has been interpreted as suggesting that some gray whales move through the East China Sea, travelling south in the fall and north in the spring.

Diet:

Gray whales are extremely adaptable and are known to feed on a variety of marine organisms using a number of feeding techniques. The most preferred method of feeding is to filter through the mud and feed on small shrimp-like organisms called amphipods. When feeding, gray whales turn on their sides and suck up mud containing prey items which are then filtered through their baleen. Since they often feed close to shore in shallow water, they leave behind mud pits that can frequently be seen at low tide. They also feed on swarming mycids in some parts of their range, such as the Oregon and British Columbia coasts. Off Kodiak, Alaska, they have been known to feed on cumaceans in lean food years, a small invertebrate that is very low in nutrition. During the feeding season an adult gray whale can eat up to one ton of food per day. Gray whales feed very little or not at all while migrating and when in the breeding grounds. A nursing mother can lose up to 1/3 of her body weight by the time she returns to the feeding grounds in the spring.

Status:

Eastern Pacific gray whales have made a huge comeback since protection began in 1947. In 1994, they were considered recovered to pre-whaling numbers at an estimated population of 26,000 and

became the first whale to be removed from the Endangered Species List. Shortly after that, in 1999 and 2000 there was a huge mortality event which may have decreased the population by 1/3. This die-off was thought to be due to a combination of an El Nino/La Nina weather event and low food resources. The population has since recovered and is estimated to be close to 27,000 although in 2019 an unusual mortality event was declared by NOAA due to a high number of strandings. Preliminary findings in several of the whales have shown evidence of emaciation. These findings are not consistent across all of the whales examined, so more research is needed.

The Western gray whale was heavily hunted commercially in the past and was thought to be extinct until the 1970's when a small remnant population was discovered. This is one of the most endangered whale populations in the world at an estimated size of around 290 individuals (for Sakhalin and Kamchatka combined) of which 175-192 whales are estimated to be predominately part of a Sakhalin feeding aggregation. An upper estimate of approximately 100 whales from Sakhalin is thought to belong to the Western North Pacific breeding population. The Western North Pacific stock of gray whales is listed as endangered under the ESA and depleted under the Marine Mammal Protection Act. However, the combined Sakhalin Island and Kamchatka populations of the Western North Pacific gray whale stock were estimated to be increasing from 2005 through 2016 at an average rate between 2-5% annually.

Threats:

Historical:

There were historically 4 populations of gray whales in the world, but the 2 in the Atlantic Ocean were hunted to extinction by the late 1600's or early 1700's, probably by Basque whalers. The Eastern Pacific gray whale was almost hunted to extinction twice when whalers discovered the breeding lagoons in Baja. Whalers would enter the lagoons in small boats, then harpoon the young calves to bring their protective mothers closer. Female whales would frequently ram whaling boats to protect their young, earning them the nickname "devilfish".

Current:

Western Pacific gray whales are critically endangered and currently facing threats from Japanese fishing nets, and oil drilling in their feeding grounds. Eastern Pacific gray whales, while considered recovered, still potentially face the following threats: predation by transient killer whales, especially off the California coast and in the Aleutian Islands; pollution; loss of habitat; noise pollution; climate change; and loss of prey resources. Research has shown that since the early 1990s, there has been a general northward shift in the primary feeding grounds for Eastern Pacific gray whales from the Chirikov Basin into the Chukchi Sea.

Gray whales recently became the subject of a controversy when the Makah tribe from Neah was given permission by the United States to resume hunting them. The Makah whaling team successfully killed a 3-year-old gray whale in 1999, then illegally killed an adult in 2007. The hunt is currently suspended due to a successful lawsuit by anti-whaling groups, but new permission is pending a granted exemption to the Marine Mammal Protection Act. In 2019, NOAA published a waiver under the MMPA and proposed regulations governing the hunting of eastern North Pacific gray whales by the Makah Tribe for a 10-year period and a related notice of hearing before an administrative law judge to consider the waiver and proposed regulations.

Fun Facts:

- A gray whale's tongue can weigh over a ton.
- Gray whales have gone from Devilfish to Gentle Giants in the lagoons of Baja California. A small percentage of the population, known as friendlies, will actually approach boats and solicit the touch of humans. Mothers will even push their newborn calves up to boats to be caressed. People from around the world now visit the lagoons with the hopes of an up close and personal visit by these friendly whales.
- Gray whales are the only baleen whale to be held in captivity for an extended period of time and released. "Gigi" was captured and kept at Sea World in 1970 for approximately one year before being released. "JJ" was an orphaned infant rescued by Sea World in 1997. She was raised and rehabilitated for 14 months, then released.
- Gray whales have a peculiar thick-walled, sac-like structure embedded in the blubber of their tail behind the anus. It contains fluid and was called a "stink sac" by flensers in the whaling days. Although most whales have an underdeveloped sense of smell, this may not be the case with gray whales and some scientists speculate that the whales use this gland to leave a scent for other whales to follow during migration.
- Researchers have discovered that in gray whales the baleen is typically more worn down on the right side of the mouth, which indicates that most of them appear to eat "right-handed."
- Gray whales carry the heaviest ectoparasite load (up to 400 pounds!) of any mammal. Among the parasites are whale lice – small, crab-like animals that feed on dead skin shed by the whale. Three types of lice have been found on grays, with two of those species **only** found on grays.
- Because of their feeding techniques gray whales act as a natural plow and release nutrients into the water for many other marine species to feed on. In this way they are a very important part of the ecosystem and are thought to be instrumental in the survival of many seabird species.
- In May 2010 a gray whale was seen in the Mediterranean Sea off Israel, then a few weeks later off Barcelona, Spain. Scientists were baffled as gray whales have not been in the Atlantic Ocean in over 200 years! The most common theory is that an Eastern Pacific gray whale was able to traverse a warming ice-free Arctic and made it into the Atlantic Ocean, only to become hopelessly lost.
- In July 2010 an adult gray whale stranded near Everett, Washington three days in a row. Each day, concerned citizens kept him alive by covering him with wet sheets until he was able to get to deeper water with the incoming tide. A possible reason for the strandings was finally discovered. He was being repeatedly attacked by transient orcas and may have come in toward shore to escape! He ended up surviving his ordeal and eventually left the area, hopefully to return to the Pacific Ocean and continue his migration.
- In May 2013 a gray whale was spotted off Namibia Africa! This is the first time a gray whale has ever been seen in the Southern Hemisphere and may represent the longest known migration of any mammal.
- In January 2014 the first known conjoined twin gray whales were born in Laguna Ojo de Liebre in Baja. Unfortunately they did not survive.

Sources:

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