



## Sperm Whale

**Sperm whales** (*Physeter macrocephalus*) range over the Northern and Southern Hemispheres, however, distribution tends to be patchy with high abundance in areas including Hawaii, Alaska, and the western coast of the U.S. They are usually found offshore in submarine canyons at the edge of the continental shelf or in water deeper than 655 ft (200 m).

In Alaska, the northern limit for the sperm whale is 62° north in the eastern Bering Sea dropping down to the Pribilof Islands. While the females and young generally stay in tropical and temperate waters, it's the males that may be seen during the summer in the Gulf of Alaska, Bering Sea and throughout the Aleutian Islands. These males come here to feed on the rich biomass of the North Pacific.

**General description:** The Sperm whale is probably one of the most recognizable large whales, when most people hear the word leviathan it is the sperm whale that comes to mind. It's blunt snout (extending up to 5 feet high), large squareish head, massive size (adults 36-59 ft [11-18 m], newborns 11 ½-15 ft [3.5-4.5 m]), and small eyes inspired many armchair whalers while reading Herman Melville's book *Moby Dick* in which the fictionalized sperm whale played the central role. It is the sperm whale's large head which houses a reservoir containing spermaceti, a clear liquid oil that hardens to a wax-like consistency when cold. This oil was prized by whalers who gave the animal its name when they assumed this liquid to be sperm. There are marked differences between males and females with the males up to 20 ft longer and with a proportionately larger head. Both male and female are dark bodied with a mostly hidden lower jaw, short flippers and white around the jaw and underside. The sperm whale has a broad triangular fluke with straight trailing edges and a notch in the middle. While sperm whales lack a dorsal fin they do have triangular humps known as "knuckles" that run along the final 1/3 of the dorsum following the spine to the base of the fluke. The skin of a sperm whale appears wrinkled and males will often be badly scarred, especially around the head. While at the surface sperm whales will often remain motionless before diving for a long period. It is during the interval between resting and diving that the distinctive sideways and forward angled blow of the sperm whale can be seen. Their teeth can grow up to 8 in (20 cm) long and weigh over 2 ¼ lbs (1 kg) and therefore are prized by cultures on all sides of the Pacific.



**Food habits:** Sperm whales are toothed whales and their diet consists mostly of medium to large squid, but they also feed on sharks, skates, and fishes. Sperm whales are known to 'steal' fish from hooks on commercial deep-water long-line fisheries off the coast of southeastern Alaska.

**Life history:** Sperm whales form groups of varying sizes at different stages in their life. Females form what are known as "breeding schools" which consist of females and young animals. Breeding schools have been known to number in the hundreds of animals. The males (especially older animals) tend to travel by themselves in small groups of up to 5 animals. The smaller male groups containing older animals (10+ yrs) will join the breeding schools during the winter breeding season along the equator. However the groups rarely join together, rather a single male will join a breeding school for a few hours at a time and then rejoin its "bachelor school". Females reach sexual maturity at 7-13 years of age when they are 27-29 feet (8-9 m) long, and have a gestation period of 14-16 months. Newborn calves weigh approximately 1 ton (907 kg), and are 11-16 feet (3.4-4.9 m) long and will nurse up to two years or longer. The females maintain their breeding schools after breeding season and often seem to give communal care of young.

**Seasonal movements:** Sperm whale movement patterns seem to be largely dictated by gender and age. Females and younger animals remain in warmer waters year-round with older males joining them during the breeding season. During this time the young males journey north to feed. In the North Pacific there is little evidence for a north-south migration of sperm whales, rather an east-west movement between Alaska, Japan and the Bonin Islands.

**Behavior:** One of the primary reasons there is little known about sperm whales is their ability to dive to depths exceeding 3,300 ft (1000 m) and to stay submerged for over two hours. Average dives range from 20-50 minutes and to depths of 1000-2000 ft (300-600 m). This behavior makes them very hard to locate consistently, even by aerial survey. It is at these depths that the sperm whale's talent for locating food and navigating using their highly developed echolocation allows them to feed in a nearly lightless area of the ocean. Sperm whales are also thought to communicate with other whales using clicks which they emit at a constant rate. These clicks have been compared to Morse code because of their repetitive nature and the way the whales seem to be constantly calling back and forth to each other.

**Population size:** One of the primary reasons there is little known about sperm whales is their ability to dive to depths exceeding 3,300 ft (1000 m) and to stay submerged for over two hours. Average dives range from 20-50 minutes and to depths of 1000-2000 ft (300-600 m). This behavior makes them very hard to locate consistently, even by aerial survey. It is at these depths that the sperm whale's talent for locating food and navigating using their highly developed echolocation allows them to feed in a nearly lightless area of the ocean. Sperm whales are also thought to communicate with other whales using clicks which they emit at a constant rate. These clicks have been compared to Morse code because of their repetitive nature and the way the whales seem to be constantly calling back and forth to each other.

**Predators, hunting, and other mortality:** Alaska Native hunters have never been known to harvest sperm whales. However, commercial harvests of sperm whales continued to 1967 in Alaska and to 1987 elsewhere in the North Pacific. There are no known predators of sperm whales other than humans. And while sperm whale teeth are still largely prized in many cultures, their harvest has been strictly forbidden by the International Whaling Commission. In the North Pacific there are few threats to this great animal. Sperm whales are known to exploit the catch of long-line fisheries. One sperm whale died after being hooked during the longline sable fishery off Alaska in 2000.

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