

Order Pinnipedia: Fin-Footed Mammals

Seals, sea lions, and walrus are carnivores that live in marine environments. Although classified in the order Carnivora for many years, most modern classifications have elevated them to their own order, **Pinnipedia*** (PIN uh PEE dee uh), since they are so unlike the land carnivores. Pinnipeds spend most of their time in the water, but they do come ashore to sleep, mate, and give birth. On land they move awkwardly since their fins can barely support their weight. Because they are buoyant in water, a large, heavy body is not a disadvantage. In fact, most pinnipeds depend on fat called blubber to maintain a warm body temperature even in frigid water.

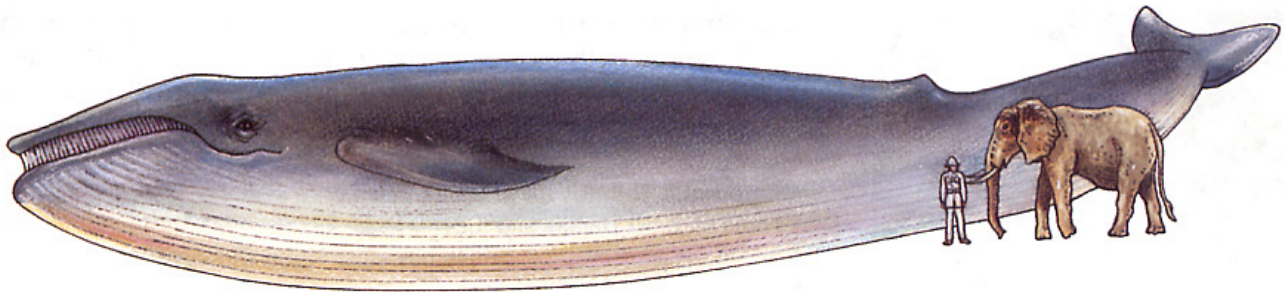
Order Cetacea: Aquatic Mammals

Aquatic mammals include the fishlike whales, dolphins, and porpoises and are often called **cetaceans*** (sih TAY shuns). Unlike the pinnipeds, which are also carnivores, these mammals do not come ashore; they even bear their young in the water. The ninety species of cetaceans are divided into two groups—the toothed whales, ranging from dolphins to killer whales, and the baleen whales, which filter invertebrates from the water with a net of baleen in their mouth.



Pinnipedia: Pinni- (L. PINNA, feather) + -pedia (foot)

cetacean: (L. CETUS, whale)



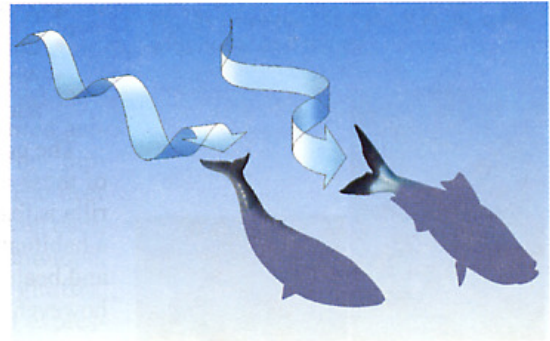
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Giants of sea and land compared to a human

The great blue whale, the largest creature on earth, is a baleen whale. The toothed whales feed on squid, fish, and even other whales.

Cetaceans steer with a pair of pectoral flippers supported by bones. They may have a small dorsal fin to help stabilize them. The power for movement is provided by a pair of tail flukes that are horizontal rather than vertical as in the caudal fin of a fish. Powerful muscles in the tail section of the body pump the boneless flukes up and down, propelling the creature up to 40 km/h (25 mph).

Whales and dolphins must surface to breathe air. Some have a single nostril on the top of their head. This **blowhole** is for breathing, although in colder areas the release of warm breath gives the appearance of water being forced out. The toothed cetaceans find prey and navigate by echolocation. They emit clicks and “songs” that are focused by a special chamber in the forehead called the melon. The returning sound waves are detected elsewhere in the head, perhaps in the lower jaw.



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Unlike fish, marine mammals swim by flexing their tails vertically.



The dolphin has a long snout and a permanent smile. These mammals readily tolerate the presence of man and are easily tamed. They often help wounded dolphins and even drowning humans. Some researchers believe that the dolphin and porpoises are among the most intelligent animals since they are easily trained and appear to have an intricate method of communicating by underwater sounds.



Dolphin vs. Porpoise

While the terms *dolphin* and *porpoise* are often used interchangeably, they are two different groups of cetaceans, each with its own family. In addition to the differences in the table below, dolphins are much more social, often congregating in large groups called pods, and they seem less frightened by man.

To further confuse matters, there is a bony fish from the perch family sometimes called dolphin that appears on many seafood menus. This tasty fish is not the dolphin mammal and is often referred to by one of its other names, *mahi-mahi* or *dorado*.

Dolphin vs. Porpoise			
	Teeth	Dorsal fin	Head shape
Dolphin 	Conical	Taller and curved	Beak on snout
Porpoise 	Spade-shaped	Smaller and triangular	More rounded

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Most cetaceans breathe through a blowhole rather than nostrils.

Order Sirenia: Sea Cows

Manatees and dugongs make up the small **order Sirenia** (si REE nee uh). The four species live primarily in coastal tropical and subtropical areas, sometimes moving up into estuaries and rivers. When mariners first discovered

them, their slow movements in the water reminded them of mermaids or sirens, hence the order name. With their flat tail fluke, they superficially resemble small whales, but they have many differences. Sirenians are all herbivores, feeding on underwater and floating foliage, and they all breathe through nostrils rather than a blowhole.



Order Proboscidea: Trunked Mammals

Two species of elephants, the African and Asian types, are all that remain of the **order Proboscidea*** (PROH buh SIHD ee uh). The mammoth, an extinct member of this order, at one time flourished across Africa, Eurasia, and even North America, perhaps becoming extinct as recently as two thousand years ago. There is strong evidence that Native Americans killed and ate them. Other pressures that may have led to their extinction include the climate change that may have occurred following the Great Flood and predators like the saber-toothed tiger.

Elephants today are distinguished by a flexible and useful trunk, which is essentially an elongation of the nose and upper lip. The ivory tusks that attract great attention from poachers are the two upper incisor teeth that continually grow. The only other teeth in an elephant's mouth are four brick-sized molars. Weighing up to 6000 kg (13 200 lb), the bull African elephant is the largest land animal.

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The West Indian manatee, the species found along the coast of North America, is often injured or killed by powerboats. This may be due to their slow movements and their inability to hear low sound frequencies.



Proboscidea: Pro- (Gk. PRO, in front) + -bosc- (BOSKEIN, to feed)