[Template:Other uses](/wiki/Template:Other_uses" \o "Template:Other uses) [Template:Pp-move-indef](/wiki/Template:Pp-move-indef) [Template:Pp-semi-indef](/wiki/Template:Pp-semi-indef) [Template:Infobox](/wiki/Template:Infobox)

**Dolphins** are a widely distributed and diverse group of fully aquatic [marine mammals](/wiki/Marine_mammal). They are an informal grouping within the order [Cetacea](/wiki/Cetacea), excluding [whales](/wiki/Whale) and [porpoises](/wiki/Porpoise), so to zoologists the grouping is [paraphyletic](/wiki/Paraphyletic). The dolphins comprise the extant families [Delphinidae](/wiki/Delphinidae) (the oceanic dolphins), [Platanistidae](/wiki/Platanistidae) (the Indian [river dolphins](/wiki/River_dolphin)), [Iniidae](/wiki/Iniidae) (the new world river dolphins), and [Pontoporiidae](/wiki/Pontoporiidae) (the [brackish](/wiki/Brackish) dolphins). There are 40 extant species of dolphins. Dolphins, alongside other [cetaceans](/wiki/Cetaceans), belong to the clade [Cetartiodactyla](/wiki/Cetartiodactyla) with [even-toed ungulates](/wiki/Even-toed_ungulate), and their closest living relatives are the [hippopotamuses](/wiki/Hippopotamidae), having diverged about 40 million years ago.

Dolphins range in size from the [Template:Convert](/wiki/Template:Convert) long and [Template:Convert](/wiki/Template:Convert) [Maui's dolphin](/wiki/Maui's_dolphin) to the [Template:Convert](/wiki/Template:Convert) and [Template:Convert](/wiki/Template:Convert) [killer whale](/wiki/Killer_whale). Several species exhibit [sexual dimorphism](/wiki/Sexual_dimorphism), in that the males are larger than females. They have streamlined bodies and two limbs that are modified into flippers. Though not quite as flexible as [seals](/wiki/Pinniped), some dolphins can travel at [Template:Convert](/wiki/Template:Convert). Dolphins use their conical shaped teeth to capture fast moving prey. They have well-developed hearing − their hearing, which is adapted for both air and water, is so well developed that some can survive even if they are blind. Some species are well adapted for diving to great depths. They have a layer of fat, or [blubber](/wiki/Blubber), under the skin to keep warm in the cold water.

Although dolphins are widespread, most species prefer the warmer waters of the tropic zones, but some, like the [right whale dolphin](/wiki/Right_whale_dolphin), prefer colder climates. Dolphins feed largely on fish and squid, but a few, like the killer whale, feed on large mammals, like seals. Male dolphins typically mate with multiple females every year, but females only mate every two to three years. Calves are typically born in the spring and summer months and females bear all the responsibility for raising them. Mothers of some species fast and nurse their young for a relatively long period of time. Dolphins produce a variety of vocalizations, usually in the form of clicks and whistles.

Dolphins are sometimes hunted in places like Japan, in an activity known as [dolphin drive hunting](/wiki/Dolphin_drive_hunting). Besides drive hunting, they also face threats from [bycatch](/wiki/Bycatch), habitat loss, and marine pollution. Dolphins have been depicted in various cultures worldwide. Dolphins occasionally feature in literature and film, as in the Warner Bros film [Free Willy](/wiki/Free_Willy_(film_series)). Dolphins are sometimes kept in captivity and trained to perform tricks, but breeding success has been poor and the animals often die within a few months of capture. The most common dolphins kept are the killer whales and bottlenose dolphins.

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## Etymology[[edit](/index.php?title=(none)&action=edit&section=1)]

The name is originally from [Greek](/wiki/Ancient_Greek) [Template:Lang](/wiki/Template:Lang) (*delphís*), "dolphin",<ref name=Liddel>[Template:Cite web](/wiki/Template:Cite_web)</ref> which was related to the Greek [Template:Lang](/wiki/Template:Lang) (*delphus*), "womb".<ref name=Liddel/> The animal's name can therefore be interpreted as meaning "a 'fish' with a womb".[[1]](#cite_note-1) The name was transmitted via the [Latin](/wiki/Latin) *delphinus*[[2]](#cite_note-2) (the [romanization](/wiki/Romanization) of the later Greek δελφῖνος – *delphinos*<ref name=Liddel/>), which in [Medieval Latin](/wiki/Medieval_Latin) became *dolfinus* and in [Old French](/wiki/Old_French) *daulphin*, which reintroduced the *ph* into the word. The term **mereswine** (that is, "sea pig") has also historically been used.[[3]](#cite_note-3) [Template:Anchor](/wiki/Template:Anchor) The term 'dolphin' can be used to refer to, under the [parvorder](/wiki/Parvorder) [Odontoceti](/wiki/Odontoceti), all the species in the family [Delphinidae](/wiki/Delphinidae) (oceanic dolphins) and the river dolphin families [Iniidae](/wiki/Iniidae) (South American river dolphins), Pontoporiidae ([La Plata dolphin](/wiki/La_Plata_dolphin)), [Lipotidae](/wiki/Lipotidae) (Yangtze river dolphin) and [Platanistidae](/wiki/Platanistidae) (Ganges river dolphin and Indus river dolphin).[[4]](#cite_note-4)[[5]](#cite_note-5)This term has often been misused in the US, mainly in the fishing industry, where all small [cetaceans](/wiki/Cetacea) (dolphins and [porpoises](/wiki/Porpoise)) are considered porpoises,[[6]](#cite_note-6) while the fish [*dorado*](/wiki/Dolphin_fish) is called dolphin fish.[[7]](#cite_note-7) In common usage the term 'whale' is used only for the larger cetacean species,[[8]](#cite_note-8) while the smaller ones with a beaked or longer nose are considered 'dolphins'.[[9]](#cite_note-9) The name 'dolphin' is used casually as a synonym for [bottlenose dolphin](/wiki/Bottlenose_dolphin), the most common and familiar species of dolphin.[[10]](#cite_note-10) There are six species of dolphins commonly thought of as whales, collectively known as blackfish: the [killer whale](/wiki/Killer_whale), the [melon-headed whale](/wiki/Melon-headed_whale), the [pygmy killer whale](/wiki/Pygmy_killer_whale), the [false killer whale](/wiki/False_killer_whale), and the two species of [pilot whales](/wiki/Pilot_whale), all of which are classified under the family Delphinidae and qualify as dolphins.[[11]](#cite_note-11) Though the terms 'dolphin' and 'porpoise' are sometimes used interchangeably, porpoises are not considered dolphins and have different physical features such as a shorter beak and spade-shaped teeth; they also differ in their behavior. Porpoises belong to the family Phocoenidae and share a common ancestry with the Delphinidae.[[10]](#cite_note-10) A group of dolphins is called a "school" or a "pod". Male dolphins are called "bulls", females "cows" and young dolphins are called "calves".[[12]](#cite_note-12)

## Taxonomy[[edit](/index.php?title=(none)&action=edit&section=2)]

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* Parvorder Odontoceti, toothed whales
  + Family [Platanistidae](/wiki/Platanistidae)
    - [Ganges and Indus river dolphin](/wiki/Ganges_and_Indus_river_dolphin), *Platanista gangetica* with two subspecies
      * [Ganges river dolphin](/wiki/Ganges_river_dolphin) (or Susu), *Platanista gangetica gangetica*
      * [Indus river dolphin](/wiki/Indus_river_dolphin) (or Bhulan), *Platanista gangetica minor*
  + Family [Iniidae](/wiki/Iniidae)
    - [Amazon river dolphin](/wiki/Amazon_river_dolphin) (or Boto), *Inia geoffrensis*
      * [Orinoco river dolphin](/wiki/Orinoco_river_dolphin) (the [Orinoco](/wiki/Orinoco) subspecies), *Inia geoffrensis humboldtiana*
    - [Araguaian river dolphin](/wiki/Araguaian_river_dolphin) (Araguaian boto), *Inia Araguaiaensis*
    - [Bolivian river dolphin](/wiki/Bolivian_river_dolphin), *Inia boliviensis*
  + Family [Lipotidae](/wiki/Lipotidae)
    - [Baiji](/wiki/Baiji) (or Chinese river dolphin), *Lipotes vexillifer* (possibly extinct, since December 2006)
  + Family [Pontoporiidae](/wiki/Pontoporiidae)
    - [La Plata dolphin](/wiki/La_Plata_dolphin) (or Franciscana), *Pontoporia blainvillei*
  + Family Delphinidae, [oceanic dolphins](/wiki/Oceanic_dolphin)
    - Genus [*Delphinus*](/wiki/Delphinus_(genus))
      * [Long-beaked common dolphin](/wiki/Long-beaked_common_dolphin), *Delphinus capensis*
      * [Short-beaked common dolphin](/wiki/Short-beaked_common_dolphin), *Delphinus delphis*
    - Genus [*Tursiops*](/wiki/Tursiops)
      * [Common bottlenose dolphin](/wiki/Common_bottlenose_dolphin), *Tursiops truncatus*
      * [Indo-Pacific bottlenose dolphin](/wiki/Indo-Pacific_bottlenose_dolphin), *Tursiops aduncus*
      * [Burrunan dolphin](/wiki/Burrunan_dolphin), *Tursiops australis*, a newly discovered species from the sea around [Melbourne](/wiki/Melbourne) in September 2011.[[13]](#cite_note-13)\*\*\* Genus [*Lissodelphis*](/wiki/Lissodelphis)
      * [Northern right whale dolphin](/wiki/Northern_right_whale_dolphin), *Lissodelphis borealis*
      * [Southern right whale dolphin](/wiki/Southern_right_whale_dolphin), *Lissodelphis peronii*
    - Genus [*Sotalia*](/wiki/Sotalia)
      * [Tucuxi](/wiki/Tucuxi), *Sotalia fluviatilis*
      * [Costero](/wiki/Costero), *Sotalia guianensis*
    - Genus [*Sousa*](/wiki/Sousa_(genus))
      * [Indo-Pacific humpback dolphin](/wiki/Indo-Pacific_humpback_dolphin), *Sousa chinensis*
        + [Chinese white dolphin](/wiki/Chinese_white_dolphin) (the Chinese variant), *Sousa chinensis chinensis*
      * [Atlantic humpback dolphin](/wiki/Atlantic_humpback_dolphin), *Sousa teuszii*
    - Genus [*Stenella*](/wiki/Stenella)
      * [Atlantic spotted dolphin](/wiki/Atlantic_spotted_dolphin), *Stenella frontalis*
      * [Clymene dolphin](/wiki/Clymene_dolphin), *Stenella clymene*
      * [Pantropical spotted dolphin](/wiki/Pantropical_spotted_dolphin), *Stenella attenuata*
      * [Spinner dolphin](/wiki/Spinner_dolphin), *Stenella longirostris*
      * [Striped dolphin](/wiki/Striped_dolphin), *Stenella coeruleoalba*
    - Genus [*Steno*](/wiki/Steno_(genus))
      * [Rough-toothed dolphin](/wiki/Rough-toothed_dolphin), *Steno bredanensis*
    - Genus [*Cephalorhynchus*](/wiki/Cephalorhynchus)
      * [Chilean dolphin](/wiki/Chilean_dolphin), *Cephalorhynchus eutropia*
      * [Commerson's dolphin](/wiki/Commerson's_dolphin), *Cephalorhynchus commersonii*
      * [Haviside's dolphin](/wiki/Haviside's_dolphin), *Cephalorhynchus heavisidii*
      * [Hector's dolphin](/wiki/Hector's_dolphin), *Cephalorhynchus hectori*
    - Genus [*Grampus*](/wiki/Grampus_(genus))
      * [Risso's dolphin](/wiki/Risso's_dolphin), *Grampus griseus*
    - Genus [*Lagenodelphis*](/wiki/Lagenodelphis)
      * [Fraser's dolphin](/wiki/Fraser's_dolphin), *Lagenodelphis hosei*
    - Genus [*Lagenorhynchus*](/wiki/Lagenorhynchus)
      * [Atlantic white-sided dolphin](/wiki/Atlantic_white-sided_dolphin), *Lagenorhynchus acutus*
      * [Dusky dolphin](/wiki/Dusky_dolphin), *Lagenorhynchus obscurus*
      * [Hourglass dolphin](/wiki/Hourglass_dolphin), *Lagenorhynchus cruciger*
      * [Pacific white-sided dolphin](/wiki/Pacific_white-sided_dolphin), *Lagenorhynchus obliquidens*
      * [Peale's dolphin](/wiki/Peale's_dolphin), *Lagenorhynchus australis*
      * [White-beaked dolphin](/wiki/White-beaked_dolphin), *Lagenorhynchus albirostris*
    - Genus [*Orcaella*](/wiki/Orcaella)
      * [Australian snubfin dolphin](/wiki/Australian_snubfin_dolphin), *Orcaella heinsohni*
      * [Irrawaddy dolphin](/wiki/Irrawaddy_dolphin), *Orcaella brevirostris*
    - Genus [*Peponocephala*](/wiki/Peponocephala)
      * [Melon-headed whale](/wiki/Melon-headed_whale), *Peponocephala electra*
    - Genus [*Orcinus*](/wiki/Orcinus)
      * [Killer whale](/wiki/Killer_whale) (Orca), *Orcinus orca*
    - Genus [*Feresa*](/wiki/Feresa)
      * [Pygmy killer whale](/wiki/Pygmy_killer_whale), *Feresa attenuata*
    - Genus [*Pseudorca*](/wiki/Pseudorca)
      * [False killer whale](/wiki/False_killer_whale), *Pseudorca crassidens*
    - Genus [*Globicephala*](/wiki/Globicephala)
      * [Long-finned pilot whale](/wiki/Long-finned_pilot_whale), *Globicephala melas*
      * [Short-finned pilot whale](/wiki/Short-finned_pilot_whale), *Globicephala macrorhynchus*
    - Genus †[Australodelphis](/wiki/Australodelphis)
      * *†*[*Australodelphis mirus*](/wiki/Australodelphis)
* *Six species in the family Delphinidae are commonly called "*[*whales*](/wiki/Whale)*", but genetically are dolphins. They are sometimes called blackfish.* 
  + [*Melon-headed whale*](/wiki/Melon-headed_whale)*, Peponocephala electra*
  + [*Killer whale*](/wiki/Killer_whale) *(Orca), Orcinus orca*
  + [*Pygmy killer whale*](/wiki/Pygmy_killer_whale)*, Feresa attenuata*
  + [*False killer whale*](/wiki/False_killer_whale)*, Pseudorca crassidens*
  + [*Long-finned pilot whale*](/wiki/Long-finned_pilot_whale)*, Globicephala melas*
  + [*Short-finned pilot whale*](/wiki/Short-finned_pilot_whale)*, Globicephala macrorhynchus*

### *Hybridization[*[*edit*](/index.php?title=(none)&action=edit&section=3)*]*

*In 1933, three strange dolphins beached off the* [*Irish*](/wiki/Ireland) *coast; they appeared to be* [*hybrids*](/wiki/Hybrid_(biology)) *between* [*Risso's*](/wiki/Risso's_Dolphin) *and bottlenose dolphins.*[*[14]*](#cite_note-14) *This mating was later repeated in captivity, producing a hybrid calf. In captivity, a bottlenose and a* [*rough-toothed dolphin*](/wiki/Rough-toothed_dolphin) *produced hybrid offspring.*[*[15]*](#cite_note-15) *A common-bottlenose hybrid lives at* [*SeaWorld*](/wiki/SeaWorld) *California.*[*[16]*](#cite_note-16) *Other dolphin hybrids live in captivity around the world or have been reported in the wild, such as a bottlenose-*[*Atlantic spotted*](/wiki/Atlantic_Spotted_Dolphin) *hybrid.*[*[17]*](#cite_note-17) *The best known hybrid is the* [*wolphin*](/wiki/Wolphin)*, a false killer whale-bottlenose dolphin hybrid. The wolphin is a fertile hybrid. Two wolphins currently live at the* [*Sea Life Park*](/wiki/Sea_Life_Park) *in* [*Hawaii*](/wiki/Hawaii)*; the first was born in 1985 from a male false killer whale and a female bottlenose. Wolphins have also been observed in the wild.*[*[18]*](#cite_note-18)

## *Evolution[*[*edit*](/index.php?title=(none)&action=edit&section=4)*]*

[*Template:Main*](/wiki/Template:Main)[*thumb|Dolphins display*](/wiki/File:Ichthyosaur_vs_dolphin.svg) [*convergent evolution*](/wiki/Convergent_evolution) *with fish and* [*aquatic reptiles*](/wiki/Ichthyosaur)

*Dolphins are descendants of land-dwelling mammals of the* [*artiodactyl*](/wiki/Artiodactyl)[*order*](/wiki/Order_(biology)) *(even-toed ungulates). They are related to the* [*Indohyus*](/wiki/Indohyus)*, an extinct* [*chevrotain-like*](/wiki/Chevrotain) *ungulate, from which they split approximately 48 million years ago.<ref name=science\_news>*[*Template:Cite web*](/wiki/Template:Cite_web)*</ref>*[*[19]*](#cite_note-19)*The primitive cetaceans, or* [*archaeocetes*](/wiki/Archaeocetes)*, first took to the sea approximately 49 million years ago and became fully aquatic by 5–10 million years later.<ref name=radiations>*[*Template:Cite journal*](/wiki/Template:Cite_journal)*</ref>*

[*Archaeoceti*](/wiki/Archaeoceti) *is a parvorder comprising ancient whales. These ancient whales are the predecessors of modern whales, stretching back to their first ancestor that spent their lives near (rarely in) the water. Likewise, the archaeocetes can be anywhere from near fully terrestrial, to semi-aquatic to fully aquatic, but what defines an archaeocete is the presence of visible legs or asymmetrical teeth.*[*[20]*](#cite_note-20)[*[21]*](#cite_note-21)[*[22]*](#cite_note-22)[*[23]*](#cite_note-23) *Their features became adapted for living in the* [*marine environment*](/wiki/Sea)*. Major anatomical changes include the hearing set-up that channeled vibrations from the jaw to the earbone which occurred with* [*Ambulocetus*](/wiki/Ambulocetus) *49 million years ago, a* [*streamlining*](/wiki/Streamline_(fluid_dynamics)) *of the body and the growth of flukes on the tail which occurred around 43 million years ago with* [*Protocetus*](/wiki/Protocetus)*, the migration of the nasal openings toward the top of the* [*cranium*](/wiki/Cranium) *and the modification of the forelimbs into flippers which occurred with* [*Basilosaurus*](/wiki/Basilosaurus) *35 million years ago, and the shrinking and eventual disappearance of the hind limbs which took place with the first odontocetes and mysticetes 34 million years ago.*[*[24]*](#cite_note-24)[*[25]*](#cite_note-25)[*[26]*](#cite_note-26) *The modern dolphin* [*skeleton*](/wiki/Skeleton) *has two small, rod-shaped pelvic bones thought to be* [*vestigial*](/wiki/Vestigial) *hind limbs. In October 2006, an unusual bottlenose dolphin was captured in* [*Japan*](/wiki/Japan)*; it had small* [*fins*](/wiki/Fin) *on each side of its genital slit, which scientists believe to be an unusually pronounced development of these vestigial hind limbs.*[*[27]*](#cite_note-27) *Today, the closest living relatives of cetaceans are the hippopotamuses; these share a semi-aquatic ancestor that branched off from other artiodactyls some 60 million years ago.*[*[28]*](#cite_note-28) *Around 40 million years ago, a common ancestor between the two branched off into cetacea and* [*anthracotheres*](/wiki/Anthracotheres)*; anthracotheres became extinct at the end of the Pleistocene two-and-a-half million years ago, eventually leaving only one surviving lineage: the hippo.*[*[29]*](#cite_note-29)[*[30]*](#cite_note-30)

## *Biology[*[*edit*](/index.php?title=(none)&action=edit&section=5)*]*

### *Anatomy[*[*edit*](/index.php?title=(none)&action=edit&section=6)*]*

[*thumb|300px|The anatomy of a dolphin showing its skeleton, major organs, tail and body shape*](/wiki/File:Dolphin_Anatomy.svg) *Dolphins have torpedo shaped bodies with non-flexible necks, limbs modified into flippers, non-existent external ear flaps, a tail fin, and bulbous heads. Dolphin skulls have small eye orbits, long snouts, and eyes placed on the sides of its head. Dolphins range in size from the* [*Template:Convert*](/wiki/Template:Convert) *long and* [*Template:Convert*](/wiki/Template:Convert)[*Maui's dolphin*](/wiki/Maui's_dolphin) *to the* [*Template:Convert*](/wiki/Template:Convert) *and* [*Template:Convert*](/wiki/Template:Convert)[*killer whale*](/wiki/Killer_whale)*. Overall, however, they tend to be dwarfed by other* [*Cetartiodactyls*](/wiki/Cetartiodactyl)*. Several species have female-biased sexual dimorphism, with the females being larger than the males.*[*[31]*](#cite_note-31)[*[32]*](#cite_note-32) *Dolphins have conical shape teeth, as apposed to their counterparts,* [*porpoise's*](/wiki/Porpoise)*, spade-shaped teeth. These conical teeth are used to catch swift prey such as fish, squid or large mammals, such as seal.*[*[32]*](#cite_note-32) *Breathing involves expelling stale air from their* [*blowhole*](/wiki/Blowhole_(anatomy))*, forming an upward, steamy spout, followed by inhaling fresh air into the lungs, however this only occurs in the polar regions of the oceans. Dolphins have rather small, unidentifiable spouts.*[*[32]*](#cite_note-32)[*[33]*](#cite_note-33) *All dolphins have a thick layer of* [*blubber*](/wiki/Blubber)*, thickness varying on climate. This blubber can help with buoyancy, protection to some extent as predators would have a hard time getting through a thick layer of fat, and energy for leaner times; the primary usage for blubber is insulation from the harsh climate. Calves, generally, are born with a thin layer of blubber, which develops at different paces depending on the habitat.*[*[32]*](#cite_note-32)[*[34]*](#cite_note-34) *Dolphins have a two-chambered stomach that is similar in structure to terrestrial carnivores. They have* [*fundic*](/wiki/Fundic_stomach) *and* [*pyloric*](/wiki/Pyloric_stomach) *chambers.*[*[35]*](#cite_note-35)

### *Locomotion[*[*edit*](/index.php?title=(none)&action=edit&section=7)*]*

*Dolphins have two flippers on the underside toward the head, a* [*dorsal fin*](/wiki/Dorsal_fin) *and a tail fin. These flippers contain four digits. Although dolphins do not possess fully developed hind limbs, some possess discrete rudimentary appendages, which may contain feet and digits. Dolphins are fast swimmers in comparison to seals who typically cruise at* [*Template:Convert*](/wiki/Template:Convert)*; the killer whale, in comparison, can travel at speeds up to* [*Template:Convert*](/wiki/Template:Convert)*. The fusing of the neck vertebrae, while increasing stability when swimming at high speeds, decreases flexibility, which means they are unable to turn their heads.*[*[36]*](#cite_note-36)[*[37]*](#cite_note-37)[*River dolphins*](/wiki/River_dolphin)*, however, have non-fused neck vertebrae and are able to turn their head up to 90°.*[*[38]*](#cite_note-38) *Dolphins swim by moving their tail fin and rear body vertically, while their flippers are mainly used for steering. Some species* [*log*](/wiki/Cetacean_surfacing_behaviour) *out of the water, which may allow them to travel faster. Their skeletal anatomy allows them to be fast swimmers. All species have a* [*dorsal fin*](/wiki/Dorsal_fin) *to prevent themselves from involuntarily spinning in the water.*[*[32]*](#cite_note-32)[*[34]*](#cite_note-34) *Some dolphins are adapted for diving to great depths. In addition to their streamlined bodies, some can slow their heart rate to conserve oxygen. Some can also re-route blood from tissue tolerant of water pressure to the heart, brain and other organs. Their* [*hemoglobin*](/wiki/Hemoglobin) *and* [*myoglobin*](/wiki/Myoglobin) *store oxygen in body tissues and they have twice the concentration of myoglobin than hemoglobin.*[*[39]*](#cite_note-39)[*[40]*](#cite_note-40)

### *Senses[*[*edit*](/index.php?title=(none)&action=edit&section=8)*]*

[*thumb|right|*](/wiki/File:Delfinekko.gif)[*Biosonar*](/wiki/Biosonar) *by cetaceans* [*300px|right|Diagram illustrating sound generation, propagation and reception in a toothed whale. Outgoing sounds are in red and incoming ones are in green*](/wiki/File:Toothed_whale_sound_production.png)

*The dolphin ear has specific adaptations to the* [*marine*](/wiki/Marine_(ocean)) *environment. In humans, the* [*middle ear*](/wiki/Middle_ear) *works as an impedance equalizer between the outside air's low* [*impedance*](/wiki/Acoustic_impedance) *and the* [*cochlear*](/wiki/Cochlea) *fluid's high impedance. In dolphins, and other marine mammals, there is no great difference between the outer and inner environments. Instead of sound passing through the outer ear to the middle ear, dolphins receive sound through the throat, from which it passes through a low-impedance fat-filled cavity to the inner ear. The dolphin ear is acoustically isolated from the skull by air-filled sinus pockets, which allow for greater directional hearing underwater.*[*[41]*](#cite_note-41) *Dolphins send out high frequency clicks from an organ known as a* [*melon*](/wiki/Melon_(cetacean))*. This melon consists of fat, and the skull of any such creature containing a melon will have a large depression. This allows dolphins to produce* [*biosonar*](/wiki/Biosonar) *for orientation.*[*[32]*](#cite_note-32)[*[42]*](#cite_note-42)[*[43]*](#cite_note-43)[*[44]*](#cite_note-44)[*[45]*](#cite_note-45) *Though most dolphins do not have hair, they do have* [*hair follicles*](/wiki/Hair_follicle) *that may perform some sensory function.*[*[46]*](#cite_note-46) *Beyond locating an object, echolocation also provides the animal with an idea on an object's shape and size, though how exactly this works is not yet understood.*[*[47]*](#cite_note-47) *The small hairs on the rostrum of the* [*Boto*](/wiki/Boto) *are believed to function as a* [*tactile sense*](/wiki/Somatosensory_system)*, possibly to compensate for the Boto's poor eyesight.*[*[48]*](#cite_note-48) *The dolphin eye is relatively small for its size, yet they do retain a good degree of eyesight. As well as this, the eyes of a dolphin are placed on the sides of its head, so their vision consists of two fields, rather than a binocular view like humans have. When dolphins surface, their lens and cornea correct the nearsightedness that results from the refraction of light; they contain both* [*rod*](/wiki/Rod_cell) *and* [*cone*](/wiki/Cone_cell) *cells, meaning they can see in both dim and bright light, but they have far more rod cells than they do cone cells. Dolphins do, however, lack short wavelength sensitive visual pigments in their cone cells indicating a more limited capacity for color vision than most mammals.*[*[49]*](#cite_note-49) *Most dolphins have slightly flattened eyeballs, enlarged pupils (which shrink as they surface to prevent damage), slightly flattened corneas and a* [*tapetum lucidum*](/wiki/Tapetum_lucidum)*; these adaptations allow for large amounts of light to pass through the eye and, therefore, a very clear image of the surrounding area. They also have glands on the eyelids and* [*outer corneal layer*](/wiki/Corneal_epithelium) *that act as protection for the cornea.*[*[42]*](#cite_note-42) *The* [*olfactory lobes*](/wiki/Olfactory_lobes) *are absent in dolphins, suggesting that they have no sense of smell.*[*[42]*](#cite_note-42) *Dolphins are not thought to have a good sense of taste, as their taste buds are atrophied or missing altogether. However, some have preferences between different kinds of fish, indicating some sort of attachment to taste.*[*[42]*](#cite_note-42)

## *Behavior[*[*edit*](/index.php?title=(none)&action=edit&section=9)*]*

[*thumb|A pod of Indo-Pacific bottlenose dolphins in the*](/wiki/File:Dolphins_gesture_language.jpg) [*Red Sea*](/wiki/Red_Sea)[*Template:See also*](/wiki/Template:See_also) *Dolphins are often regarded as one of Earth's most intelligent animals, though it is hard to say just how intelligent. Comparing species' relative intelligence is complicated by differences in sensory apparatus, response modes, and nature of cognition. Furthermore, the difficulty and expense of experimental work with large aquatic animals has so far prevented some tests and limited sample size and rigor in others. Compared to many other species, however, dolphin behavior has been studied extensively, both in captivity and in the wild. See* [*cetacean intelligence*](/wiki/Cetacean_intelligence) *for more details.*

### *Social behavior[*[*edit*](/index.php?title=(none)&action=edit&section=10)*]*

[*thumb|Dolphins surfing at*](/wiki/File:Dolphinsurfresize.jpg) [*Snapper Rocks*](/wiki/Snapper_Rocks)*,* [*Queensland*](/wiki/Queensland)*,* [*Australia*](/wiki/Australia) *Dolphins are highly social animals, often living in pods of up to a dozen individuals, though pod sizes and structures vary greatly between species and locations. In places with a high abundance of food, pods can merge temporarily, forming a superpod; such groupings may exceed 1,000 dolphins. Membership in pods is not rigid; interchange is common. Dolphins can, however, establish strong social bonds; they will stay with injured or ill individuals, even helping them to breathe by bringing them to the surface if needed.*[*[50]*](#cite_note-50) *This* [*altruism*](/wiki/Altruism) *does not appear to be limited to their own species. The dolphin* [*Moko*](/wiki/Moko_(dolphin)) *in* [*New Zealand*](/wiki/New_Zealand) *has been observed guiding a female* [*Pygmy Sperm Whale*](/wiki/Pygmy_Sperm_Whale) *together with her calf out of shallow water where they had stranded several times.*[*[51]*](#cite_note-51) *They have also been seen protecting swimmers from sharks by swimming circles around the swimmers*[*[52]*](#cite_note-52)[*[53]*](#cite_note-53) *or charging the sharks to make them go away.*

*Dolphins communicate using a variety of clicks, whistle-like sounds and other vocalizations. Dolphins also use* [*nonverbal communication*](/wiki/Nonverbal_communication) *by means of touch and* [*posturing*](/wiki/Posture_(psychology))*.*[*[54]*](#cite_note-54) *Dolphins also display* [*culture*](/wiki/Culture)*, something long believed to be unique to humans (and possibly other* [*primate*](/wiki/Primate) *species). In May 2005, a discovery in Australia found* [*Indo-Pacific bottlenose dolphins*](/wiki/Indo-Pacific_bottlenose_dolphin) *(Tursiops aduncus) teaching their young to use tools. They cover their* [*snouts*](/wiki/Snout) *with* [*sponges*](/wiki/Sea_sponge) *to protect them while foraging. This knowledge is mostly transferred by mothers to daughters, unlike* [*simian*](/wiki/Simian) *primates, where knowledge is generally passed on to both sexes. Using sponges as mouth protection is a learned behavior.*[*[55]*](#cite_note-55) *Another learned behavior was discovered among river dolphins in Brazil, where some male dolphins use weeds and sticks as part of a sexual display.*[*[56]*](#cite_note-56) *Forms of care-giving between fellows and even for members of different species*[*[57]*](#cite_note-57) *(see* [*Moko (dolphin)*](/wiki/Moko_(dolphin))*) are recorded in various species - such as trying to save weakened fellows*[*[58]*](#cite_note-58) *The* [*gestation period*](/wiki/Gestation_period) *varies with species; for the small* [*Tucuxi dolphin*](/wiki/Tucuxi_dolphin)*, this period is around 11 to 12 months,*[*[64]*](#cite_note-64) *while for the orca, the gestation period is around 17 months.*[*[65]*](#cite_note-65) *Typically dolphins give birth to a single calf, which is, unlike most other mammals, born tail first in most cases.*[*[66]*](#cite_note-66) *They usually become sexually active at a young age, even before reaching* [*sexual maturity*](/wiki/Sexual_maturity)*.<ref name=Silva/> The age of sexual maturity varies by species and gender.*[*[67]*](#cite_note-67) *Dolphins are known to display* [*non-reproductive sexual behavior*](/wiki/Animal_co-opted_sexual_behavior)*, engaging in* [*masturbation*](/wiki/Animal_sexual_behavior#Autoeroticism_or_masturbation)*, stimulation of the genital area of other individuals using the* [*rostrum*](/wiki/Rostrum_(anatomy)) *or flippers, and* [*homosexual contact*](/wiki/Homosexual_behavior_in_animals)*.<ref name=Silva/>*[*[68]*](#cite_note-68)[*[69]*](#cite_note-69) *Male dolphins have been known to masturbate by wrapping a live eel around their penis.*[*[70]*](#cite_note-70) *This type of travel is known as porpoising.*[*[91]*](#cite_note-91) *Other reasons include orientation, social displays, fighting,* [*non-verbal communication*](/wiki/Non-verbal_communication)*, entertainment and attempting to dislodge* [*parasites*](/wiki/Parasite)*.*[*[92]*](#cite_note-92)[*[93]*](#cite_note-93) *Dolphins show various types of playful behavior, often including objects, self-made* [*bubble rings*](/wiki/Bubble_ring)*, other dolphins or other animals.*[*[5]*](#cite_note-5)*<ref name=dolphinplay>Robin D. Paulos (2010), Play in Wild and Captive Cetaceans</ref>*[*[94]*](#cite_note-94) *When playing with objects or small animals, common behavior includes carrying the object or animal along using various parts of the body, passing it along to other members of the group or taking it from another member, or throwing it out of the water.*[*[95]*](#cite_note-95) *Dolphins have also been observed harassing animals in other ways, for example by dragging birds underwater without showing any intent to eat them.*[*[95]*](#cite_note-95) *Playful behaviour that involves an other animal species with active participation of the other animal can also be observed however. Playful human interaction with dolphins being the most obvious example, however playful interactions have been observed in the wild with a number of other species as well, such as* [*Humpback Whales*](/wiki/Humpback_Whale) *and* [*dogs*](/wiki/Dog)*.*[*[96]*](#cite_note-96)[*[97]*](#cite_note-97)

### *Intelligence[*[*edit*](/index.php?title=(none)&action=edit&section=15)*]*

[*Template:Main*](/wiki/Template:Main)[*Template:See also*](/wiki/Template:See_also)

*Dolphins are known to teach, learn, cooperate, scheme, and grieve.<ref name=wwwu>*[*Template:Cite news*](/wiki/Template:Cite_news)*</ref> The neocortex of many species is home to elongated* [*spindle neurons*](/wiki/Spindle_neurons) *that, prior to 2007, were known only in hominids.*[*[98]*](#cite_note-98) *In humans, these cells are involved in social conduct, emotions, judgment, and theory of mind.*[*[99]*](#cite_note-99) *Cetacean spindle neurons are found in areas of the brain that are homologous to where they are found in humans, suggesting that they perform a similar function.*[*[100]*](#cite_note-100)[*Brain size*](/wiki/Brain_size) *was previously considered a major indicator of the intelligence of an animal. Since most of the brain is used for maintaining bodily functions, greater ratios of brain to body mass may increase the amount of brain mass available for more complex cognitive tasks.* [*Allometric*](/wiki/Allometric) *analysis indicates that mammalian brain size scales at approximately the ⅔ or ¾ exponent of the body mass.*[*[101]*](#cite_note-101) *Comparison of a particular animal's brain size with the expected brain size based on such allometric analysis provides an* [*encephalization quotient*](/wiki/Encephalization_quotient) *that can be used as another indication of animal intelligence.* [*Killer whales*](/wiki/Killer_whale) *have the second largest brain mass of any animal on earth, next to the* [*sperm whale*](/wiki/Sperm_whale)*.*[*[102]*](#cite_note-102) *The* [*brain to body mass ratio*](/wiki/Brain_to_body_mass_ratio) *in some is second only to humans.*[*[103]*](#cite_note-103)[*Self-awareness*](/wiki/Self-awareness) *is seen, by some, to be a sign of highly developed, abstract thinking. Self-awareness, though not well-defined scientifically, is believed to be the precursor to more advanced processes like* [*meta-cognitive reasoning*](/wiki/Metacognition) *(thinking about thinking) that are typical of humans. Research in this field has suggested that cetaceans, among others, possess self-awareness.*[*[104]*](#cite_note-104)*The most widely used test for self-awareness in animals is the* [*mirror test*](/wiki/Mirror_test) *in which a temporary dye is placed on an animal's body, and the animal is then presented with a mirror; they then see if the animal shows signs of self-recognition.*[*[105]*](#cite_note-105) *Some disagree with these findings, arguing that the results of these tests are open to human interpretation and susceptible to the* [*Clever Hans*](/wiki/Clever_Hans) *effect. This test is much less definitive than when used for primates, because primates can touch the mark or the mirror, while cetaceans cannot, making their alleged self-recognition behavior less certain. Skeptics argue that behaviors that are said to identify self-awareness resemble existing social behaviors, and so researchers could be misinterpreting self-awareness for social responses to another individual. The researchers counter-argue that the behaviors shown are evidence of self-awareness, as they are very different from normal responses to another individual. Whereas apes can merely touch the mark on themselves with their fingers, cetaceans show less definitive behavior of self-awareness; they can only twist and turn themselves to observe the mark.*[*[105]*](#cite_note-105) *In 1995, Marten and Psarakos used television to test dolphin self-awareness.*[*[106]*](#cite_note-106) *They showed dolphins real-time footage of themselves, recorded footage, and another dolphin. They concluded that their evidence suggested self-awareness rather than social behavior. While this particular study has not been repeated since then, dolphins have since passed the mirror test.*[*[105]*](#cite_note-105)

### *Sleeping[*[*edit*](/index.php?title=(none)&action=edit&section=16)*]*

[*right|thumb|Sleeping dolphin in captivity: a tail kick reflex keeps the dolphin's blowhole above the water*](/wiki/File:דולפין_ישן.svg)[*Template:Further*](/wiki/Template:Further) *Generally, dolphins sleep with only one brain* [*hemisphere*](/wiki/Cerebral_hemisphere) *in* [*slow-wave sleep*](/wiki/Slow-wave_sleep) *at a time, thus maintaining enough consciousness to breathe and to watch for possible predators and other threats. Earlier sleep stages can occur simultaneously in both hemispheres.*[*[107]*](#cite_note-107)[*[108]*](#cite_note-108)[*[109]*](#cite_note-109)*In captivity, dolphins seemingly enter a fully asleep state where both eyes are closed and there is no response to mild external stimuli. In this case, respiration is automatic; a tail kick* [*reflex*](/wiki/Reflex) *keeps the blowhole above the water if necessary.* [*Anesthetized*](/wiki/Anesthesia) *dolphins initially show a tail kick reflex.*[*[110]*](#cite_note-110) *Though a similar state has been observed with wild* [*sperm whales*](/wiki/Sperm_whale)*, it is not known if dolphins in the wild reach this state.*[*[111]*](#cite_note-111) *The* [*Indus river dolphin*](/wiki/Indus_river_dolphin) *has a sleep method that is different from that of other dolphin species. Living in water with strong currents and potentially dangerous floating debris, it must swim continuously to avoid injury. As a result, this species sleeps in very short bursts which last between 4 and 60 seconds.*[*[112]*](#cite_note-112)

## *Threats[*[*edit*](/index.php?title=(none)&action=edit&section=17)*]*

[*thumb|Lesions in the*](/wiki/File:Bottle-nosed-dolphin-Lobomycosis-disease.jpg) [*dorsal*](/wiki/Dorsum_(anatomy)) *fin of a bottlenose dolphin caused by* [*lobomycosis*](/wiki/Lobomycosis)*, a* [*fungal infection*](/wiki/Mycosis) *of the skin*

### *Natural threats[*[*edit*](/index.php?title=(none)&action=edit&section=18)*]*

*Dolphins have few natural enemies. Some species or specific populations have none, making them* [*apex predators*](/wiki/Apex_predator)*. For most of the smaller species of dolphins, only a few of the larger sharks, such as the* [*bull shark*](/wiki/Bull_shark)*,* [*dusky shark*](/wiki/Dusky_shark)*,* [*tiger shark*](/wiki/Tiger_shark) *and* [*great white shark*](/wiki/Great_white_shark)*, are a potential risk, especially for calves.*[*[113]*](#cite_note-113) *Some of the larger dolphin species, especially* [*orcas*](/wiki/Orcas) *(killer whales), may also prey on smaller dolphins, but this seems rare.*[*[114]*](#cite_note-114)[*[115]*](#cite_note-115) *Dolphins also suffer from a wide variety of diseases and parasites.*[*[116]*](#cite_note-116)[*[117]*](#cite_note-117) *The* [*Cetacean morbillivirus*](/wiki/Cetacean_morbillivirus) *in particular has been known to cause regional* [*epizootics*](/wiki/Epizootics) *often leaving hundreds of animals of various species dead.*[*[118]*](#cite_note-118)[*[119]*](#cite_note-119) *Symptoms of infection are often a severe combination of* [*pneumonia*](/wiki/Pneumonia)*,* [*encephalitis*](/wiki/Encephalitis) *and damage to the immune system, which greatly impair the cetacean's ability to swim and stay afloat unassisted.*[*[120]*](#cite_note-120)*<ref name=austurs>*[*Template:Cite journal*](/wiki/Template:Cite_journal)*</ref> A study at the U.S. National Marine Mammal Foundation revealed that dolphins, like humans, develop a natural form of* [*type 2 diabetes*](/wiki/Diabetes_mellitus) *which may lead to a better understanding of the disease and new treatments for both humans and dolphins.*[*[121]*](#cite_note-121) *Dolphins can tolerate and recover from extreme injuries such as* [*shark*](/wiki/Shark) *bites although the exact methods used to achieve this are not known. The* [*healing*](/wiki/Healing) *process is rapid and even very deep wounds do not cause dolphins to* [*hemorrhage*](/wiki/Hemorrhage) *to death. Furthermore, even gaping wounds restore in such a way that the animal's body shape is restored, and* [*infection*](/wiki/Infection) *of such large wounds seems rare.*[*[122]*](#cite_note-122)

### *Human threats[*[*edit*](/index.php?title=(none)&action=edit&section=19)*]*

[*Template:See also*](/wiki/Template:See_also)[*thumb|Dead Atlantic white-sided dolphins in*](/wiki/File:Whaling_in_the_Faroe_Islands.jpg) [*Hvalba*](/wiki/Hvalba) *on the* [*Faroe Islands*](/wiki/Faroe_Islands)*, killed in a* [*drive hunt*](/wiki/Dolphin_drive_hunting)*|alt=Rows of dead dolphin lying on concrete Some dolphin species face an uncertain future, especially some river dolphin species such as the Amazon river dolphin, and the* [*Ganges*](/wiki/Ganges_River_Dolphin) *and* [*Yangtze river dolphin*](/wiki/Baiji)*, which are critically or seriously endangered. A 2006 survey found no individuals of the* [*Yangtze river dolphin*](/wiki/Yangtze_river_dolphin)*, which now appears to be* [*functionally extinct*](/wiki/Functionally_extinct)*.*[*[123]*](#cite_note-123)[*Pesticides*](/wiki/Pesticides)*, heavy metals, plastics, and other industrial and agricultural pollutants that do not disintegrate rapidly in the environment concentrate in predators such as dolphins.*[*[124]*](#cite_note-124) *Injuries or deaths due to collisions with boats, especially their* [*propellers*](/wiki/Propeller)*, are also common.*

*Various fishing methods, most notably purse* [*seine fishing*](/wiki/Seine_fishing) *for* [*tuna*](/wiki/Tuna) *and the use of* [*drift*](/wiki/Drift_net) *and* [*gill nets*](/wiki/Gill_net)*, unintentionally kill many dolphins.*[*[125]*](#cite_note-125) *Accidental* [*by-catch*](/wiki/By-catch) *in gill nets and incidental captures in antipredator nets that protect marine fish farms are common and pose a risk for mainly local dolphin populations.*[*[126]*](#cite_note-126)[*[127]*](#cite_note-127) *In some parts of the world, such as* [*Taiji*](/wiki/Taiji,_Wakayama) *in Japan and the* [*Faroe Islands*](/wiki/Faroe_Islands)*, dolphins are traditionally considered food and are killed in* [*harpoon*](/wiki/Harpoon) *or* [*drive hunts*](/wiki/Dolphin_drive_hunting)*.*[*[128]*](#cite_note-128) *Dolphin meat is high in mercury and may thus pose a health danger to humans when consumed.*[*[129]*](#cite_note-129)[*Dolphin safe labels*](/wiki/Dolphin_safe_label) *attempt to reassure consumers that fish and other marine products have been caught in a dolphin-friendly way. The earliest campaigns with "Dolphin safe" labels were initiated in the 1980s as a result of cooperation between marine activists and the major tuna companies, and involved decreasing incidental dolphin kills by up to 50% by changing the type of nets used to catch tuna. The dolphins are netted only while fishermen are in pursuit of smaller tuna. Albacore are not netted this way, making albacore the only truly dolphin-safe tuna.*[*[130]*](#cite_note-130)*Loud underwater noises, such as those resulting from* [*naval*](/wiki/Navy)[*sonar*](/wiki/Sonar) *use, live firing exercises, and certain* [*offshore construction*](/wiki/Offshore_construction) *projects such as* [*wind farms*](/wiki/Wind_farm)*, may be harmful to dolphins, increasing stress, damaging hearing, and causing* [*decompression sickness*](/wiki/Decompression_sickness) *by forcing them to surface too quickly to escape the noise.*[*[131]*](#cite_note-131)[*[132]*](#cite_note-132) *Dolphins and other smaller cetaceans are also hunted in an activity known as dolphin drive hunting. This is accomplished by driving a pod together with boats and usually into a bay or onto a beach. Their escape is prevented by closing off the route to the ocean with other boats or nets. Dolphins are hunted this way in several places around the world, including the* [*Solomon Islands*](/wiki/Solomon_Islands)*, the* [*Faroe Islands*](/wiki/Faroe_Islands)*,* [*Peru*](/wiki/Peru)*, and* [*Japan*](/wiki/Japan)*, the most well-known practitioner of this method. By numbers, dolphins are mostly hunted for their* [*meat*](/wiki/Whale_meat)*, though some end up in* [*dolphinariums*](/wiki/Dolphinarium)*. Despite the controversial nature of the hunt resulting in international criticism, and the possible health risk that the often polluted meat causes, thousands of dolphins are caught in drive hunts each year.*

## *Relationships with humans[*[*edit*](/index.php?title=(none)&action=edit&section=20)*]*

### *In history and religion[*[*edit*](/index.php?title=(none)&action=edit&section=21)*]*

[*thumb|Fresco of Dolphins, ca. 1600 BC, from*](/wiki/File:Akrotiri_dolphins.jpg) [*Knossos*](/wiki/Knossos)*,* [*Crete*](/wiki/Crete)*.* [*thumb|Vessel in form of*](/wiki/File:Vessel_in_form_of_killer_whale_-_Nazca_pottery_in_the_American_Museum_of_Natural_History_-_DSC06105.JPG) [*killer whale*](/wiki/Killer_whale)*,* [*Nazca culture*](/wiki/Nazca_culture)*, circa 200 AD.* [*American Museum of Natural History*](/wiki/American_Museum_of_Natural_History) *collections. Dolphins have long played a role in human culture. Dolphins are sometimes used as symbols, for instance in heraldry. When heraldry developed in the* [*Middle Ages*](/wiki/Middle_Ages)*, not much was known about the biology of the dolphin and it was often depicted as a sort of fish. Traditionally, the stylised dolphins in heraldry still may take after this notion, sometimes showing the dolphin skin covered with* [*fish scales*](/wiki/Fish_scale)*.*

*Dolphins are present in the* [*coat of arms of Anguilla*](/wiki/Coat_of_arms_of_Anguilla) *and the* [*coat of arms of Romania*](/wiki/Coat_of_arms_of_Romania)*,*[*[133]*](#cite_note-133) *and the* [*coat of arms of Barbados*](/wiki/Coat_of_arms_of_Barbados) *has a dolphin* [*supporter*](/wiki/Supporter)*.*[*[134]*](#cite_note-134) *A well-known historical example of a dolphin in heraldry, was the arms for the former province of the* [*Dauphiné*](/wiki/Dauphiné) *in southern France, from which were derived the arms and the title of the* [*Dauphin of France*](/wiki/Dauphin_of_France)*, the heir to the former throne of France (the title literally means "The Dolphin of France").*

*"Dolfin" was the name of an aristocratic family in the maritime* [*Republic of Venice*](/wiki/Republic_of_Venice)*, whose most prominent member was the 13th Century* [*Doge*](/wiki/Doge_of_Venice)[*Giovanni Dolfin*](/wiki/Giovanni_Dolfin)*.*

*In* [*Greek myths*](/wiki/Greek_mythology)*, they were seen invariably as helpers of humankind. Dolphins also seem to have been important to the* [*Minoans*](/wiki/Minoans)*, judging by artistic evidence from the ruined palace at* [*Knossos*](/wiki/Knossos)*. Dolphins are common in* [*Greek mythology*](/wiki/Greek_mythology)*, and many coins from* [*ancient Greece*](/wiki/Ancient_Greece) *have been found which feature a man, a boy or a deity riding on the back of a dolphin.*[*[135]*](#cite_note-135) *The* [*Ancient Greeks*](/wiki/Ancient_Greece) *welcomed dolphins; spotting dolphins riding in a ship's wake was considered a good omen.*[*[136]*](#cite_note-136) *In both ancient and later art,* [*Cupid*](/wiki/Cupid) *is often shown* [*riding a dolphin*](/wiki/Cupid#Cupid_and_dolphins)*. A dolphin rescued the poet* [*Arion*](/wiki/Arion) *from drowning and carried him safe to land, at* [*Cape Matapan*](/wiki/Cape_Matapan)*, a promontory forming the southernmost point of the* [*Peloponnesus*](/wiki/Peloponnesus)*. There was a temple to* [*Poseidon*](/wiki/Poseidon) *and a statue of Arion riding the dolphin.*[*[137]*](#cite_note-137) *The Greeks reimagined the* [*Phoenician*](/wiki/Phoenicia) *god* [*Melqart*](/wiki/Melqart) *as Melikertês (*[*Melicertes*](/wiki/Melicertes)*) and made him the son of* [*Athamas*](/wiki/Athamas) *and* [*Ino*](/wiki/Ino_(Greek_mythology))*. He drowned but was transfigured as the marine deity Palaemon, while his mother became* [*Leucothea*](/wiki/Leucothea)*. (cf* [*Ino*](/wiki/Ino_(Greek_mythology))*.) At Corinth, he was so closely connected with the cult of Poseidon that the* [*Isthmian Games*](/wiki/Isthmian_Games)*, originally instituted in Poseidon's honor, came to be looked upon as the funeral games of* [*Melicertes*](/wiki/Melicertes)*.* [*Phalanthus*](/wiki/Phalanthus_of_Tarentum) *was another legendary character brought safely to shore (in Italy) on the back of a dolphin, according to* [*Pausanias*](/wiki/Pausanias_(geographer))*.*

[*Dionysus*](/wiki/Dionysus) *was once captured by* [*Etruscan*](/wiki/Etruscan_civilization)[*pirates*](/wiki/Pirate) *who mistook him for a wealthy prince they could ransom. After the ship set sail Dionysus invoked his divine powers, causing vines to overgrow the ship where the mast and sails had been. He turned the oars into serpents, so terrifying the sailors that they jumped overboard, but Dionysus took pity on them and* [*transformed*](/wiki/Shapeshifting) *them into dolphins so that they would spend their lives providing help for those in need. Dolphins were also the messengers of Poseidon and sometimes did errands for him as well. Dolphins were sacred to both* [*Aphrodite*](/wiki/Aphrodite) *and* [*Apollo*](/wiki/Apollo)*.*

*In* [*Hindu mythology*](/wiki/Hindu_mythology) *the* [*Ganges River Dolphin*](/wiki/Ganges_River_Dolphin) *is associated with* [*Ganga*](/wiki/Ganga_in_Hinduism)*, the deity of the* [*Ganges*](/wiki/Ganges) *river. The dolphin is said to be among the creatures which heralded the goddess' descent from the heavens and her mount, the* [*Makara*](/wiki/Makara_(Hindu_mythology))*, is sometimes depicted as a dolphin.*[*[138]*](#cite_note-138) *The* [*Boto*](/wiki/Boto)*, a species of* [*river dolphin*](/wiki/River_dolphin) *that resides in the* [*Amazon River*](/wiki/Amazon_River)*, are believed to be shapeshifters, or* [*encantados*](/wiki/Encantado)*, who are capable of having children with human women.*

### *In captivity[*[*edit*](/index.php?title=(none)&action=edit&section=22)*]*

[*Template:Main*](/wiki/Template:Main)[*Template:See also*](/wiki/Template:See_also)

#### *Species[*[*edit*](/index.php?title=(none)&action=edit&section=23)*]*

[*thumb|SeaWorld show featuring*](/wiki/File:Sea_World1.jpg) [*bottlenose dolphins*](/wiki/Bottlenose_dolphin) *and* [*pilot whales*](/wiki/Pilot_whale) *The renewed popularity of dolphins in the 1960s resulted in the appearance of many* [*dolphinaria*](/wiki/Dolphinarium) *around the world, making dolphins accessible to the public. Criticism and* [*animal welfare*](/wiki/Animal_welfare) *laws forced many to close, although hundreds still exist around the world. In the* [*United States*](/wiki/United_States)*, the best known are the* [*SeaWorld*](/wiki/SeaWorld)[*marine mammal parks*](/wiki/Marine_mammal_park)*. In the Middle East the best known are* [*Dolphin Bay*](/wiki/Dolphin_Bay) *at* [*Atlantis, The Palm*](/wiki/Atlantis,_The_Palm)[*[139]*](#cite_note-139) *and the* [*Dubai Dolphinarium*](/wiki/Dubai_Dolphinarium)*.*[*[140]*](#cite_note-140)[*thumb|*](/wiki/File:Long-finned_Pilot_Whale_(8793172995).jpg)[*SeaWorld*](/wiki/SeaWorld_San_Diego)[*Pilot Whale*](/wiki/Pilot_Whale) *with trainers Various species of dolphins are kept in captivity. These small cetaceans are more often than not kept in theme parks, such as* [*SeaWorld*](/wiki/SeaWorld)*, commonly known as a* [*dolphinarium*](/wiki/Dolphinarium)*.* [*Bottlenose Dolphins*](/wiki/Bottlenose_Dolphin) *are the most common species of dolphin kept in dolphinariums as they are relatively easy to train, have a long lifespan in captivity and have a friendly appearance. Hundreds if not thousands of Bottlenose Dolphins live in captivity across the world, though exact numbers are hard to determine. Other species kept in captivity are* [*Spotted Dolphins*](/wiki/Atlantic_Spotted_Dolphin)*,* [*False Killer Whales*](/wiki/False_Killer_Whale) *and* [*Common Dolphins*](/wiki/Common_Dolphin)*,* [*Commerson's Dolphins*](/wiki/Commerson's_Dolphin)*, as well as* [*Rough-toothed Dolphins*](/wiki/Rough-toothed_Dolphin)*, but all in much lower numbers than the Bottlenose Dolphin. There are also fewer than ten* [*Pilot Whales*](/wiki/Pilot_Whale)*,* [*Amazon River Dolphins*](/wiki/Amazon_River_Dolphin)*,* [*Risso's Dolphins*](/wiki/Risso's_Dolphin)*,* [*Spinner Dolphins*](/wiki/Spinner_Dolphin)*, or* [*Tucuxi*](/wiki/Tucuxi) *in captivity.*[*[141]*](#cite_note-141) *An unusual and very rare* [*hybrid*](/wiki/Hybrid_(biology)) *dolphin, known as a* [*Wolphin*](/wiki/Wolphin)*, is kept at the Sea Life Park in* [*Hawaii*](/wiki/Hawaii)*, which is a cross between a Bottlenose Dolphin and a* [*False Killer Whale*](/wiki/False_Killer_Whale)*.*[*[142]*](#cite_note-142)[*Killer whales*](/wiki/Killer_whale) *are well known for their performances in shows, but the number of Orcas kept in captivity is very small, especially when compared to the number of bottlenose dolphins, with only 44* [*captive killer whales*](/wiki/List_of_captive_orcas) *being held in aquaria* [*Template:As of*](/wiki/Template:As_of)*.*[*[143]*](#cite_note-143) *The killer whale's* [*intelligence*](/wiki/Animal_intelligence)*, trainability, striking appearance, playfulness in captivity and sheer size have made it a popular exhibit at aquaria and aquatic theme parks. From 1976 to 1997, 55 whales were taken from the wild in Iceland, 19 from Japan, and three from Argentina. These figures exclude animals that died during capture. Live captures fell dramatically in the 1990s, and by 1999, about 40% of the 48 animals on display in the world were captive-born.*[*Template:Sfn*](/wiki/Template:Sfn)

*Organizations such as the* [*Mote Marine Laboratory*](/wiki/Mote_Marine_Laboratory) *rescue and* [*rehabilitate*](/wiki/Wildlife_rehabilitation) *sick, wounded, stranded or orphaned dolphins while others, such as the* [*Whale and Dolphin Conservation Society*](/wiki/Whale_and_Dolphin_Conservation_Society) *and* [*Hong Kong Dolphin Conservation Society*](/wiki/Hong_Kong_Dolphin_Conservation_Society)*, work on dolphin conservation and welfare.* [*India*](/wiki/India) *has declared the dolphin as its national aquatic animal in an attempt to protect the* [*endangered*](/wiki/Endangered_species)[*Ganges River Dolphin*](/wiki/Ganges_River_Dolphin)*. The* [*Vikramshila Gangetic Dolphin Sanctuary*](/wiki/Vikramshila_Gangetic_Dolphin_Sanctuary) *has been created in the* [*Ganges*](/wiki/Ganges) *river for the protection of the animals.*[*[144]*](#cite_note-144)

#### *Controversy[*[*edit*](/index.php?title=(none)&action=edit&section=24)*]*

[*Template:Main*](/wiki/Template:Main)[*thumb|Shamu the killer whale, 2009, with a collapsed dorsal fin*](/wiki/File:2009-Seaworld-Shamu.jpg)

*Organizations such as* [*World Animal Protection*](/wiki/World_Animal_Protection) *and the* [*Whale and Dolphin Conservation Society*](/wiki/Whale_and_Dolphin_Conservation_Society) *campaign against the practice of keeping them in captivity. In captivity, they often develop pathologies, such as the* [*dorsal fin*](/wiki/Dorsal_fin) *collapse seen in 60–90% of male killer whales. Captives have vastly reduced life expectancies, on average only living into their 20s, although there are examples of killer whales living longer, including several over 30 years old, and two captive orcas, Corky II and Lolita, are in their mid-40s. In the wild, females who survive infancy live 46 years on average, and up to 70–80 years in rare cases. Wild males who survive infancy live 31 years on average, and up to 50–60 years.*[*[145]*](#cite_note-145) *Captivity usually bears little resemblance to wild habitat, and captive whales' social groups are foreign to those found in the wild. Critics claim captive life is stressful due to these factors and the requirement to perform circus tricks that are not part of wild killer whale behavior. Wild killer whales may travel up to* [*Template:Convert*](/wiki/Template:Convert) *in a day, and critics say the animals are too big and intelligent to be suitable for captivity.<ref name=cbs2010>*[*Template:Cite news*](/wiki/Template:Cite_news)*</ref> Captives occasionally act aggressively towards themselves, their tankmates, or humans, which critics say is a result of* [*stress*](/wiki/Stress_(medicine))*.<ref name=armstrong>*[*Template:Cite book*](/wiki/Template:Cite_book)*</ref>*

*Although dolphins generally interact well with humans, some attacks have occurred, most of them resulting in small injuries.*[*[146]*](#cite_note-146)[*Orcas*](/wiki/Orca)*, the largest species of dolphin, have been involved in fatal* [*attacks on humans*](/wiki/Orca_attacks_on_humans) *in captivity. The record-holder of documented orca fatal attacks is a male named* [*Tilikum*](/wiki/Tilikum_(orca))*, who has lived at* [*SeaWorld*](/wiki/SeaWorld) *since 1992.*[*[147]*](#cite_note-147)[*[148]*](#cite_note-148)[*[149]*](#cite_note-149) *Tilikum has played a role in the death of three people in three different incidents (1991, 1999 and 2010).*[*[150]*](#cite_note-150) *Tilikum's behaviour sparked the production of the documentary* [*Blackfish*](/wiki/Blackfish_(film))*, which focuses on the consequences of keeping orcas in captivity. There are documented incidents in the wild, too, but none of them fatal.*[*[151]*](#cite_note-151) *Fatal attacks from other species are less common, but there is a registered occurrence off the coast of* [*Brazil*](/wiki/Brazil) *in 1994, when a man died after being attacked by a* [*bottlenose dolphin*](/wiki/Bottlenose_dolphin) *named* [*Tião*](/wiki/Tião)*.*[*[152]*](#cite_note-152)[*[153]*](#cite_note-153)[*Tião*](/wiki/Tião) *had suffered harassment by human visitors, including attempts to stick ice cream sticks down her* [*blowhole*](/wiki/Blowhole_(anatomy))*.*[*[154]*](#cite_note-154) *Non-fatal incidents occur more frequently, both in the wild and in captivity.*

*While dolphin attacks occur far less frequently than attacks by other sea animals, such as* [*sharks*](/wiki/Shark_attack)*, some scientists are worried about the careless programs of human-dolphin interaction. Dr. Andrew J. Read, a biologist at the Duke University Marine Laboratory who studies dolphin attacks, points out that dolphins are large and wild predators, so people should be more careful when they interact with them.*[*[146]*](#cite_note-146) *Several scientists who have researched dolphin behaviour have proposed that dolphins' unusually high intelligence in comparison to other animals means that dolphins should be seen as* [*non-human persons*](/wiki/Non-human_person) *who should have their own specific rights and that it is* [*morally*](/wiki/Morality) *unacceptable to keep them captive for entertainment purposes or to kill them either intentionally for consumption or unintentionally as by-catch.*[*[155]*](#cite_note-155)[*[156]*](#cite_note-156) *Four countries –* [*Chile*](/wiki/Chile)*,* [*Costa Rica*](/wiki/Costa_Rica)*,* [*Hungary*](/wiki/Hungary)*, and* [*India*](/wiki/India) *– have declared dolphins to be "non-human persons" and have banned the capture and import of live dolphins for entertainment.*[*[157]*](#cite_note-157)[*[158]*](#cite_note-158)

#### *Military[*[*edit*](/index.php?title=(none)&action=edit&section=25)*]*

[*Template:Main*](/wiki/Template:Main)[*thumb|upright|A military dolphin*](/wiki/File:NMMP_dolphin_with_locator.jpeg)

*A military dolphin is a dolphin trained for military uses. A number of militaries have employed dolphins for various purposes from finding mines to rescuing lost or trapped humans. The* [*military use of dolphins*](/wiki/Military_dolphins)*, however, drew scrutiny during the Vietnam War when rumors circulated that the* [*United States Navy*](/wiki/United_States_Navy) *was training dolphins to kill Vietnamese divers.*[*[159]*](#cite_note-159) *The United States Navy denies that at any point dolphins were trained for combat. Dolphins are still being trained by the United States Navy for other tasks as part of the* [*U.S. Navy Marine Mammal Program*](/wiki/U.S._Navy_Marine_Mammal_Program)*. The Russian military is believed to have closed its marine mammal program in the early 1990s. In 2000 the press reported that dolphins trained to kill by the* [*Soviet Navy*](/wiki/Soviet_Navy) *had been sold to* [*Iran*](/wiki/Iran)*.*[*[160]*](#cite_note-160)

#### *Therapy[*[*edit*](/index.php?title=(none)&action=edit&section=26)*]*

*Dolphins are an increasingly popular choice of* [*animal-assisted therapy*](/wiki/Animal-assisted_therapy) *for psychological problems and developmental disabilities. For example, a 2005 study found dolphins an effective treatment for mild to moderate* [*depression*](/wiki/Clinical_depression)*.*[*[161]*](#cite_note-161) *However, this study was criticized on several grounds. For example, it is not known whether dolphins are more effective than common pets.*[*[162]*](#cite_note-162)[*Reviews*](/wiki/Review) *of this and other published dolphin-assisted therapy (DAT) studies have found important methodological flaws and have concluded that there is no compelling scientific evidence that DAT is a legitimate therapy or that it affords more than fleeting mood improvement.*[*[163]*](#cite_note-163)

### *Consumption[*[*edit*](/index.php?title=(none)&action=edit&section=27)*]*

#### *Cuisine[*[*edit*](/index.php?title=(none)&action=edit&section=28)*]*

[*thumb|Plate of dolphin*](/wiki/File:Dolphin_Sashimi.jpg) [*sashimi*](/wiki/Sashimi) *In some parts of the world, such as* [*Taiji, Japan*](/wiki/Taiji,_Wakayama) *and the* [*Faroe Islands*](/wiki/Faroe_Islands)*, dolphins are traditionally considered as food, and are killed in* [*harpoon*](/wiki/Harpoon) *or* [*drive hunts*](/wiki/Dolphin_drive_hunting)*.*[*[164]*](#cite_note-164)*Dolphin meat is consumed in a small number of countries worldwide, which include* [*Japan*](/wiki/Japan)[*[165]*](#cite_note-165) *and* [*Peru*](/wiki/Peru) *(where it is referred to as chancho marino, or "sea pork").*[*[166]*](#cite_note-166) *While Japan may be the best-known and most controversial example, only a very small minority of the population has ever sampled it.*

*Dolphin meat is dense and such a dark shade of red as to appear black. Fat is located in a layer of* [*blubber*](/wiki/Blubber) *between the meat and the skin. When dolphin meat is eaten in Japan, it is often cut into thin strips and eaten raw as* [*sashimi*](/wiki/Sashimi)*, garnished with onion and either* [*horseradish*](/wiki/Horseradish) *or grated* [*garlic*](/wiki/Garlic)*, much as with sashimi of* [*whale*](/wiki/Whale_meat) *or* [*horse meat*](/wiki/Horse_meat) *(basashi). When cooked, dolphin meat is cut into bite-size cubes and then batter-fried or simmered in a* [*miso*](/wiki/Miso) *sauce with vegetables. Cooked dolphin meat has a flavor very similar to* [*beef liver*](/wiki/Beef_liver)*.*[*[167]*](#cite_note-167)

#### *Health concerns[*[*edit*](/index.php?title=(none)&action=edit&section=29)*]*

*There have been human health concerns associated with the consumption of dolphin meat in Japan after tests showed that dolphin meat contained high levels of* [*mercury*](/wiki/Mercury_(element))*.<ref name=WHO/> There are no known cases of* [*mercury poisoning*](/wiki/Mercury_poisoning) *as a result of consuming dolphin meat, though the government continues to monitor people in areas where dolphin meat consumption is high. The Japanese government recommends that children and pregnant women avoid eating dolphin meat on a regular basis.*[*[168]*](#cite_note-168) *Similar concerns exist with the consumption of dolphin meat in the* [*Faroe Islands*](/wiki/Faroe_Islands)*, where* [*prenatal*](/wiki/Prenatal_development) *exposure to* [*methylmercury*](/wiki/Methylmercury) *and* [*PCBs*](/wiki/Polychlorinated_biphenyl) *primarily from the consumption of pilot whale meat has resulted in* [*neuropsychological*](/wiki/Neuropsychology) *deficits amongst children.<ref name=WHO>*[*Template:Cite web*](/wiki/Template:Cite_web)*</ref>*

[*Template:Quotes*](/wiki/Template:Quotes)

## *References[*[*edit*](/index.php?title=(none)&action=edit&section=30)*]*

[*Template:Clear*](/wiki/Template:Clear)[*Template:Reflist*](/wiki/Template:Reflist)

## *Further reading[*[*edit*](/index.php?title=(none)&action=edit&section=31)*]*

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* *Carwardine, M., Whales, Dolphins and Porpoises, Dorling Kindersley, 2000. ISBN 978-0-7513-2781-6.*
* [*Williams, Heathcote*](/wiki/Heathcote_Williams)*, Whale Nation, New York, Harmony Books, 1988. ISBN 978-0-517-56932-0.*

## *External links[*[*edit*](/index.php?title=(none)&action=edit&section=32)*]*

[*Template:Sister project links*](/wiki/Template:Sister_project_links)

***Conservation, research and*** [***news:'''***](news:''')

* *De Rohan, Anuschka.* [*"Why dolphins are deep thinkers"*](http://www.guardian.co.uk/science/2003/jul/03/research.science)*,* [*The Guardian*](/wiki/The_Guardian)*, July 3, 2003.*
* [*The Dolphin Institute*](http://www.dolphin-institute.org/)
* [*The Oceania Project, Caring for Whales and Dolphins*](http://www.oceania.org.au/)
* [*Tursiops.org: Current Cetacean-related news*](http://www.tursiops.org/)
* [*Understanding Dolphins*](http://understanddolphins.tripod.com/index.html)

***Photos:***

* [*Red Sea Spinner Dolphin – Photo gallery*](http://www.robertosozzani.it/Delfini/cont.html)
* [*PBS NOVA: Dolphins: Close Encounters*](http://www.pbs.org/wnet/nature/dolphins/index.html)
* [*David's Dolphin Images*](http://neptune.atlantis-intl.com/dolphins/preview_root.html)
* [*Images of Wild Dolphins in the Red Sea*](http://www.terranomada.com/dolphins/dolphins.html)

[*Template:Cetacea*](/wiki/Template:Cetacea)[*Template:Authority control*](/wiki/Template:Authority_control)

[*\**](/wiki/Category:Dolphins)[*Category:National symbols of Anguilla*](/wiki/Category:National_symbols_of_Anguilla)[*Category:National symbols of Barbados*](/wiki/Category:National_symbols_of_Barbados)[*Category:National symbols of Greece*](/wiki/Category:National_symbols_of_Greece)[*Category:National symbols of Malta*](/wiki/Category:National_symbols_of_Malta)[*Category:Extant Tortonian first appearances*](/wiki/Category:Extant_Tortonian_first_appearances)[*Category:Animals that use echolocation*](/wiki/Category:Animals_that_use_echolocation)