

THE SEA OF CORTEZ

BAJA GEOLOGY

The Creation of the Peninsula

An understanding of plate tectonics is necessary in order to describe the geology of Baja California. In its simplest terms, the theory of plate tectonics states that the surface of the earth is covered with giant plates some 90 km in thickness. These plates are sliding laterally, separating, converging and overlapping each other. The coastline of California and the entire Baja peninsula ride on the eastern rim of the Pacific plate. The Mexican mainland, the remainder of California, and the rest of the United States are located on the North American plate. The San Andreas Fault marks the active boundary between these two plates. The Pacific plate on the west side of the fault moves northwest with respect to the North American plate. This Pacific plate edge of California is still sliding laterally, neither converging nor diverging in relation to the North American plate. Earthquakes in both California and the Peninsula are caused by this movement of 2.5 to 3.5 cm annually (approximately the rate of your fingernail growth). From the Imperial Valley to Puerto Vallarta, the northwest movement on the fault has an additional divergent component that has torn the crust of the earth open to form a series of basins that we now call the Gulf of California.

The San Andreas fault became active about 25 million years ago. This fault literally split California and northwestern Mexico apart, and everything west of it began moving laterally northwest. Mountain formation began along the San Andrea fault during this period, pushing up granites from below to form the northern mountains, while farther south the Sierra de la Giganta emerged through volcanism. This range consists of volcanic centers such as the spectacular Pilon de las Parras west of Loreto, lava flows and ash layers. A striking example of an ash layer is the horizontal pink band that can be followed in the cliffs almost continuously along the east side of the Sierra de la Giganta range. This band can best be seen from the islands in the Gulf.

Sand dunes: In the deserts of Baja wind often heaps sand particles into mounds and ridges called dunes. They move slowly in the direction of the wind. In Baja sand dunes are found wherever there are sand grains and where the wind direction is fairly constant, like Magdalena Bay. Once they are formed dunes migrate with the prevailing wind. Sand is transported from windward to leeward where it gathers at the dune foot and constantly encroaches on new territory. Vegetation often helps to stabilize smaller dunes. Although dunes may look dry, they are not. Almost all precipitation that falls on dunes soaks in and very little runs off. Though the surface is dry, water remains in the lower levels of the dunes. This provides moisture for plant growth.

PLANTS OF BAJA

Two-thirds of Baja California is within the Sonoran Desert – the hottest, wettest and biologically richest of North America’s four arid ecosystems (the Chihuahuan, Great Basin and Mojave deserts complete the set). The Sonoran Desert extends over 12 degrees of latitude, from roughly 23 degrees north, on the tip of Baja, to 35 degrees N, on the border between Arizona and California. Another portion covers more than half the Mexican State of Sonora. It is a young desert and has probably existed for no more than 10,000 years.

Here, two rainy seasons, one in winter and the other in late summer, create North America’s only subtropical desert. “Rainy” is a relative term, since less than 10 inches fall on average in Baja each year. Despite that, nearly 2500 plant species populate this so-called wasteland, and the landscape is surprisingly lush and green, brimming with palo verde trees and tangled mesquite shrubs. Tall-stalked agaves and the waving tendrils of ocotillos add to the exotic aura. But cacti dominate.

Columns of cardons dominate the horizon, quivering in the hot thermals amid clustered stalks of organ pipes and spiny cholla (pronounced Choy-a). Tiny clusters of round hedgehog cactus peak from beneath sheltering tangles of creosote bush. Barrel cactus usually leans to the south towards the most intense light, therefore its name “compass cactus”. All are arrayed at regular intervals, as competition for water is fierce; each plant claims a small expanse of desert, and guards that area jealously with root toxins.

Their prehistoric appearance notwithstanding, cacti haven’t spent much time on this earth. Like the Sonoran Desert itself, the cactus family is a recent phenomenon, having evolved from tropical roses no more than 50,000 years ago. Modern cactus species are strictly New World natives. On the evolutionary scale, they are a family still in transition, colonizing and hybridizing rapidly. The ubiquitous prickly pear with its signature flat, oval pads is the most widespread of the cacti, thriving from the southern tip of South America and northward through Canada to sand dunes rimming the Arctic Circle. Nowadays, the more productive species of prickly pear are valued for their thin pads, called nopales, and are raised commercially in Mexico for food.

To cope with aridity, desert plants employ a variety of strategies. Waxy coatings and reduced leaf size limits evaporation. Plants can respond to drought by going dormant or, like the Ocotillo, they may shed and regrow leaves several times a year in response to available moisture. Many desert plants are drought-escaping annuals whose seeds only germinate when there is a rainy year. The perennials are often slow growing, low in stature, and widely spaced, reducing competition for water and light.



Structural modifications for the collection, extraction, conservation, and storage of water allow desert plants to survive. The most striking aspect of many cacti is their fleshy, jointed trunk covered with a woody, green cuticle. A waxy evaporation resistant layer over the cuticle helps protect the plant against dehydration. Cactus spines are modified leaves that protect the plant from being eaten and serve to break up the sun's rays. Pleated ribs also provide shade for 50 percent of the stem's surface area. Some cactus species have a woody skeleton for internal support. Cacti have shallow, spreading root systems that radiate far from the plant, but seldom penetrate the soil more than a foot. During times of abundant rain, the primary roots sprout additional rain roots that can emerge literally overnight. The funnel shape of the agave channels water directly to its roots.

The pleated trunks and oval pads of cacti and other succulent plants are designed to seize these windfalls of moisture. Up to 95 percent of many cacti's total volume is water, which is contained in a thickened mucilaginous substance that decreases the rate of evaporation. Accordion pleats allow a cactus to expand and contract as the rainy season gives way to long dry spells. After a drenching rainfall, this stately giant could swell another 15 percent beyond its original diameter. By late autumn, its shadow might be a third thinner. Some cacti can sustain a 60-70 percent moisture loss without damage and survive years with no rainfall.

To survive in inhospitable surroundings, a cactus holds its breath all day long. It opens respiratory skin pores called stomata only at night, a neat evolutionary trick that keeps the evaporation of precious fluid to a minimum. Carbon dioxide for the day's photosynthesis is gathered then and stored for the day. Oxygen, a by-product of photosynthesis, must be held in the plant's tissues until evening's sigh of relief. Most photosynthesis occurs in the fleshy stems or trunks.

Cacti require more than a single season to mature. A cactus may not flower until its 50th year. Each flower opens just one night and a day, thereby taking advantage of both night pollinators such as nectar seeking bats and day pollinators. All flowers are wheel- or funnel-shaped, and the resulting fruits contain numerous tiny seeds. The fruits of all cactus species are edible.

This was important for the early inhabitants of Baja, for cactus fruits form one of the Sonoran's only late-summer food sources. The fruit of the organ pipe cactus (or pitaya dulce) were once a staple food for the Indians. They even ate seeds picked from dried feces, prompting Spanish missionaries to call it the "fruit of the second harvest". It is still eagerly sought after in Baja for its sweet flavor, often made into marmalades and wines.

The cactus blooming overhead may produce 40 or 50 fruits each year once its brief, snow-white blossoms have dried. Of the 22 million seeds a cactus produces in its lifetime, few will have the opportunity to germinate because every creature in this harsh world covets the nutrients stored within. Only seeds that land in the shade of a nursery tree like ironwood or torote stand a chance of germinating, and for those seedlings fortunate enough to break ground, the average lifespan still is less



than six weeks. Even these toughest of plants can't survive their youth without shelter from the sun. If conditions are right, a cardon will live to 200 years and grow up to 60 feet tall, making it the world's largest cactus. Cardon replaces Saquaro in Baja (the Saquaro is only found north of the border); they resemble one another, but Cardon has more, and longer, arms.

Contrary to popular myth, cacti are not an efficient source of water for lost souls dying of thirst in the desert. Barrel cacti, for example, do not give water, but an astringent, unpalatable greenish-yellow jelly-like sap called mucilage. Any attempt to drink this bitter alkaline fluid would likely result in vomiting and dehydration.

The "jumping" cholla is the pit bull of the cactus world. It's thickly covered with long, barbed spines that pierce skin at the slightest pressure and hold fast. Cholla segments separate easily from their parent plant, leaving the unfortunate hiker firmly attached to something resembling a rabid sea urchin. Attempting to pluck off a spine-covered cholla segment with your fingers merely results in stabbed digits. The best strategy is to use a stick, fork or comb. Insert the tines between skin and cholla, and pull gently outward. Most individual spines can be removed using tweezers or needle-nose pliers.

The agave is commonly called the century plant because it was generally believed that it took 100 years for a plant to mature, after which it would bloom and then die. This is an intriguing idea, but it's not true. Some agaves do follow the general pattern of dying after they have flowered. Their lives however, only span a period of eight to twenty years. Agaves have played an important role in the human economy from ancient times as a source of food, drink, and fiber. Alcoholic drinks such as mescal and tequila are a product of this plant.

Resembling a bonsai tree, the Elephant Tree or Torote is distinguished by its thick, enlarged trunk and its butterscotch-yellow papery bark. Ranch women utilized the fruits from this tangerine-scented tree as a perfume.

A most unusual plant, the Ocotillo has no main truck, but instead, many whip-like branches which spread fan-like from the base. Following a rain, scarlet tubular flowers bloom and offer a popular nectar to hummingbirds. During periods of drought, ocotillo will lose its leaves to prevent water loss to evaporation.

Palo Verde trees are among the most conspicuous and characteristic plants of the Sonoran Desert. They have smooth, greenish bark and twigs armed with long spines. The palo verde trees' small leaves can turn to catch or avoid the sunlight and, like the ocotillo, are drought-deciduous. In spring, a profusion of small yellow flowers sprinkle the ground and give the tree a festive aura.

Near the Pacific coast, many large cacti are covered with a Ball Moss, much as one would expect in a more tropical environment. This is due to the presence of humid Pacific Ocean air, which these plants use as a water source.

In the Sonoran desert, mammals, especially small species, tend to be nocturnal. Common animals are rabbits, coyotes, mice, ground squirrels and bats.

Scorpions can be quite common, though they are not encountered often in the daytime. They are nocturnal hunters preying on other insects. Scorpion stings can be quite painful, but are not dangerous. They hide by moving beneath stones or wood. Because they cling to such surfaces, extreme caution should be exercised when picking up firewood or turning over stones. Researchers say that there are more scorpions per square meter in Baja, than anywhere else in the world. Tarantulas are common after rains and are harmless. Tarantula Hawks are large black wasps with red wings that will hunt and sting a tarantula, immobilizing it. The female quickly digs a burial chamber, drags the spider inside, lays an egg, and closes burrow. Wasp larva feeds on spider.





SEA OF CORTEZ BIRDING LIST

Blue-footed Booby

Double-crested Cormorant

Magnificent Frigatebird

Hermann's Gull

Royal Tern

Brown Booby

Brandt's Cormorant

Yellow-footed Gull (endemic to Baja)

Ring-billed Gull

Brown Pelican

Osprey

American Oystercatcher

Xantu's (endemic to Baja)

Northern Flicker

Ladder-backed Woodpecker

Red-tailed Hawk

Eared Grebe

Costa's hummingbirds

Gila Woodpecker

Ash-throated flycatcher

Black Phoebe

Vermillion Flycatcher

Raven

Cactus Wren

Hermit Thrush

Gray Thrasher

Phainopepla

Northern Cardinal

Lazuli Bunting

Brown Towhee

Black-throated Sparrow

Lark Bunting

House Finch

White-winged Dove

Common Ground-dove

Say's Phoebe

Gray Flycatcher

Verdin

Black-tailed Gnatcatcher

Loggerhead Shrike

Northern Mockingbird

Orange-crowned Warbler

Pyrrhuloxia

Green-tailed Towhee

Lark Sparrow

White-crowned Sparrow

Hooded Oriole

California Quail

Ruddy Ground-dove

In the tidal mudflats where the arroyo meets the sea near downtown Loreto, it is often possible to view several kinds of herons and shorebirds (for example willets, marbled godwits, greater yellowlegs, semi-palmated plovers, whimbrels, long-billed curlews, snowy egrets, great egrets, great blue herons, reddish egrets)

In the Tripui RV Park's wastewater pond (a 20-min. drive south of Loreto), we have seen: violet-green swallow, least grebe, yellow-rumped warbler among others)





Blue Whale Facts

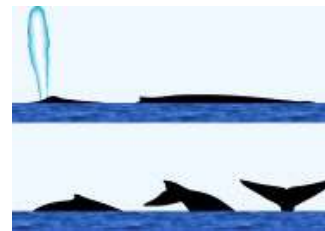
CLASS: Mammalia
ORDER: Cetacea
SUBORDER: Mysticeti
FAMILY: Balaenopteridae
GENUS: Balaenoptera
SPECIES: musculus



The blue whale is one of the rorquals, a family that also includes the humpback whale, fin whale, Bryde's whale, sei whale, and minke whale. On land an animal the size of a blue whale would be crushed by its own weight without the support of large heavy bones. Because its body is supported by water, as a sea animal, the need for heavy bones to support its weight disappeared. This, plus the availability of a large food supply, have made it possible for the blue whale to reach such an enormous size. The blue whale makes deep and rumbling sounds which can be felt as much as heard. These low-frequency sounds travel long distances through water, allowing blue whales to communicate with each other over hundreds of miles of ocean.

PHYSICAL DESCRIPTION

The blue whale is the largest mammal, possibly the largest animal, to ever inhabit the earth. Its body is long, somewhat tapered, and streamlined, with the head making up less than one-fourth of its total body length. Its rostrum (upper part of the head) is very broad and flat and almost U-shaped, with a single ridge that extends just forward of the blowholes to the tip of the snout. Its blowholes are contained in a large, raised "splash guard", and the blow is tall and straight and over 20 feet (6 meters) high. Its body is smooth and relatively free of parasites, but a few barnacles attach themselves to the edge of the fluke and occasionally to the tips of the flippers and to the dorsal fin. There are 55-68 ventral grooves or pleats extending from the lower jaw to near the navel.



Surface Characteristics

COLOR

The blue whale is blue-gray in color, but often with lighter gray mottling on a darker background (or with darker spots on a lighter background). The underside of its flippers may be a lighter color or white, while the ventral (underside) of the fluke is dark. The blue whale acquires microorganisms called diatoms in the cold waters of the Antarctic and North Pacific and North Atlantic which give the underside of its body a yellowish green cast. Because of this yellow color, the early whalers gave it the name "sulfur bottom."

FINS AND FLUKE

Its dorsal (top) fin is small and triangular or falcate (curved) in shape, and is located three-fourths of the way back on the body. The fin measures only one foot (30 cm) at its highest point though its size and shape are highly variable. Its flippers are tapered and relatively short, about 12% of the total body length. The flukes are broad and triangular. The rear edge is smooth with a slight median notch.

LENGTH AND WEIGHT

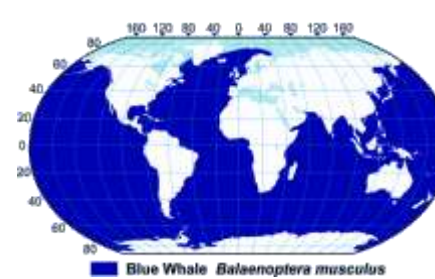
The longest blue whale ever recorded was a 108-foot adult female caught during whaling efforts in Antarctica! In modern times, blue whales in the Southern Hemisphere reach lengths of 90-100 feet, but their Northern Hemisphere counterparts are smaller, on average 75 to 80 feet (23 to 24.5 m). Blue whales can weigh over 100 tons (99,800 kg). Females are larger than males of the same age, the largest perhaps weighing as much as 150 tons (136,000 kg).

FEEDING

The blue whale is thought to feed almost exclusively on small, shrimp-like creatures called euphausiids or krill. During the summer feeding season the blue whale gorges itself, consuming an astounding 4 tons (3.6 metric tons) or more each day. This means it may eat up to 40 million krill a day. As a baleen whale, it has a series of 260-400 fringed overlapping plates hanging from each side of the upper jaw, where teeth might otherwise be located. These plates consist of a fingernail-like material called keratin that frays out into fine hairs on the ends inside the mouth near the tongue. The plates are black and measure about 20 inches (51 cm) in length toward the front of the mouth and about 40 inches (102 cm) at the rear. During feeding, large volumes of water and food can be taken into the mouth because the pleated grooves in the throat expand. As the mouth closes water is expelled through the baleen plates, which trap the food on the inside near the tongue to be swallowed.

MATING AND BREEDING

Recent research indicates that blue whales reach sexual maturity between the ages of 6-10 years, or when males average about 74 feet (23 m) and females are about 79 feet (24 m). Calves are born at intervals of 2 to 3 years and gestation is about 12 months. Calves are 23 to 27 feet (7-8.2 m) long at birth and 3 tons (2,722 kg). Calves nurse for 7 to 8 months and are weaned when they reach 52 feet (16 m) in length. At that time they weigh about 23 tons (20,900 kg). During the nursing period, calves consume 100 gallons (379 liters) of the fat-rich mother's milk each day, gain 200 pounds a day, or 8 pounds an hour, and grow 1 and 1/2 inches in length a day.



Range Map

DISTRIBUTION AND MIGRATION

Blue whales may be found in all oceans of the world. They migrate to tropical-to-temperate waters during winter months to mate and give birth to calves. They can feed throughout their range, in polar, temperate, or even tropical waters.

NATURAL HISTORY

Though they may be found singly or in small groups, it is more common to see blue whales in pairs. They are sometimes seen in larger groups and loosely defined concentrations of 50-60 have been observed. They are fast, strong swimmers, capable of reaching 30 mph (48.3 km/hr) when alarmed, but they usually cruise along at about 12 mph (19.3 km/hr).

STATUS

Because of their enormous size and speed, blue whales were safe from early whalers, who could not pursue them in open boats with hand harpoons. But in 1868 a Norwegian, Sven Foyn, revolutionized the whaling industry with the invention of the exploding harpoon gun and by using steam and diesel powered factory ships and catcher boats. He also perfected the technique of inflating dead whales with

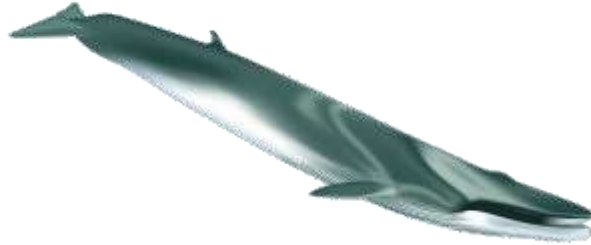
air so they wouldn't sink after being harpooned. The whaling industry began to focus on blue whales after 1900. A single 90-foot blue whale could yield up to 120 barrels of oil, and the blues were killed by the thousands. The slaughter peaked in 1931 when over 29,000 were killed in one season. After that blue whales became so scarce that the whalers turned to other species and, belatedly, the International Whaling Commission (IWC) banned all hunting of blue whales in 1966 and gave them worldwide protection. Recovery has been extremely slow, and only in the last few years have there been signs that their numbers may be increasing. Pre-whaling population estimates were over 350,000 blue whales, but up to 99% of blue whales were killed during whaling efforts. Presently, there are an estimated 5-10,000 blue whales in the Southern Hemisphere, and only around 3-4,000 in the Northern Hemisphere.

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Fin Whale Facts

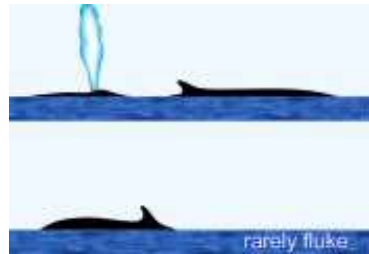
Balaenoptera physalus
CLASS: Mammalia
ORDER: Cetacea
SUBORDER: Mysticeti
FAMILY: Balaenopteridae
GENUS: Balaenoptera
SPECIES: physalus



The fin whale is one of the rorquals, a family that includes the humpback whale, blue whale, Bryde's whale, sei whale, and minke whale. Rorquals all have a dorsal fin and throat grooves that expand when the animal is feeding. The fin, or finback whale is second only to the blue whale in size and weight. Among the fastest of the great whales, it is capable of bursts of speed of up to 23 mph (37 km/hr) leading to its description as the "greyhound of the sea." Its most unusual characteristic is the asymmetrical coloring of the lower jaw, which is white or creamy yellow on the right side and mottled black on the left side. Fin whales are found in all oceans of the world, though they seem to prefer temperate and polar waters to tropical seas.

PHYSICAL DESCRIPTION

The fin whale is long, sleek, and streamlined, with a V-shaped head which is flat on top. A single ridge extends from the blowhole to the tip of the rostrum (upper jaw). There is a series of 50-100 pleats or grooves on the underside of its body extending from under the lower jaw to the navel.



Surface Characteristics



COLOR

The fin whale is light gray to brownish-black on its back and sides. Two lighter "colored" chevrons begin midline behind the blowholes and slant down the sides towards the fluke (tail) before turning and ending right behind the eye. The underside of its body, flippers, and fluke are white. The lower jaw is gray or black on the left side and creamy white on the right side. This asymmetrical coloration extends to the baleen plates as well, and is reversed on the tongue.

FINS AND FLUKE

The fin whale has a prominent, slightly falcate (curved) dorsal fin located far back on its body. Its flippers are small and tapered, and its fluke is wide, pointed at the tips, and notched in the center.

LENGTH AND WEIGHT

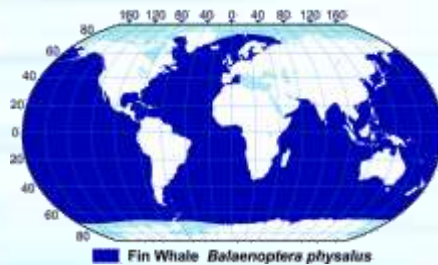
Adult males measure up to 78 feet (24 m) in the northern hemisphere, and 88 feet (26.8 m) in the southern hemisphere. Females are slightly larger than males. Weight for both sexes is between 50-70 tons (45,360-63,500 kg).

FEEDING

Fin whales feed mainly on small shrimp-like creatures called krill or euphausiids and schooling fish. They have been observed circling schools of fish at high speed, rolling the fish into compact balls then turning on their right side to engulf the fish. Their color pattern, including their asymmetrical jaw color, may somehow aid in the capture of such prey. They can consume up to 2 tons (1,814 kg) of food a day. As a baleen whale, it has a series of 262-473 fringed overlapping plates hanging from each side of the upper jaw, where teeth might otherwise be located. These plates consist of a fingernail-like material called keratin that frays out into fine hairs on the ends inside the mouth near the tongue. The baleen on the left side of the mouth has alternating bands of creamy-yellow and blue-gray color. On the right side, the forward 1/3 section of the plates is all creamy-yellow. The plates can measure up to 30 inches (76 cm) in length and 12 inches (30 cm) in width. During feeding, large volumes of water and food can be taken into the mouth because the pleated grooves in the throat expand. As the mouth closes water is expelled through the baleen plates, which trap the food on the inside near the tongue to be swallowed.

MATING AND BREEDING

Adult males reach sexual maturity at about 6-10 years of age. As in some other whales, sexual maturity is reached before physical maturity. Gestation is 12 months, and calves are believed to be born at 3-4 year intervals. Length at birth is 14-20 feet (5.5 -6.5 m) and weight is 2 tons (1,814 kg). Calves nurse for 6-8 months and are weaned when they are 30-40 feet (10-12 m) in length.



Range Map

DISTRIBUTION AND MIGRATION

Fin whales are found in all oceans of the world. They may migrate to subtropical waters for mating and calving during the winter months and to the colder areas of the Arctic and Antarctic for feeding during the summer months; although recent evidence suggests that during winter fin whales may be dispersed in deep ocean waters.

NATURAL HISTORY

Fin whales are found most often alone, but groups of 3-7 individuals are common, and association of larger numbers or concentrations may occur in some areas at times. Because their powerful sounds can carry vast distances, fin whales may stay in touch with each other over long distances. The fin whale's blow is tall and shaped like an inverted cone, and the dive sequence is 5-8 blows approximately 70 seconds apart before a long dive. They rarely raise their flukes as they begin their dive, which can be as deep as 1,800 feet (550 m).

STATUS

The fin whale's speed, plus the fact that they prefer the vastness of the open sea, gave them almost complete protection from the early whalers. With modern whaling methods, however, finback whales became easy victims. As blue whales became depleted, the whaling industry turned to the smaller, still abundant fin whales as a replacement. As many as 30,000 fin whales were slaughtered each year from 1935 to 1965. The International Whaling Commission (IWC) placed them under full protection in 1966 beginning with the North Pacific population. Precise estimates are unavailable today, but it is thought that present populations are about 40,000 in the northern hemisphere and 15,000-20,000 in the southern hemisphere, a small percentage of the original population levels.

Facts reprinted with permission from the American Cetacean Society.

Common Dolphin Facts

Delphinus delphis (short-beaked) & Delphinus capensis (long-beaked)

CLASS: Mammalia

ORDER: Cetacea

SUBORDER: Odontoceti

FAMILY: Delphinidae

GENUS: Delphinus

SPECIES: delphis (short-beaked) & capensis (long-beaked)



The common dolphin throughout history has often been recorded in art and literature. It was recently proposed that two forms of this species, the short- and long-beaked common dolphin, represent two distinct species.

PHYSICAL DESCRIPTION

Common dolphins are colorful, with a complex crisscross or hourglass color pattern on the side; the long-beaked common dolphin being more muted in color. When looking at the profile of the two common dolphin species, the short-beaked common dolphin has a more rounded melon that meets the beak at a sharp angle, as compared to the long-beaked common dolphin that has a flatter melon that meets the beak at a more gradual angle.



Surface Characteristics

COLOR

Color patterns on the common dolphin are the most elaborate of any cetacean. The back is dark gray-to-black from the top of the head to the tail dipping to a V on the sides below the dorsal fin. The flanks are light gray behind the dorsal fin and yellowish-tan forward of the dorsal fin, forming an hourglass pattern. Its belly is white. There are large dark circles around the eyes connected by a dark line that runs across the head behind the beak and a black stripe runs from the jaw to the flippers.

FINS AND FLUKE

The dorsal fin is triangular-to-falcate (curved). It is pointed and located near the middle of the back and is black-to-light gray in color with a black border. The flippers are long and thin and slightly curved or pointed depending on geographical location. Flukes are thin and pointed at the tips with a slight notch in the center.

LENGTH AND WEIGHT

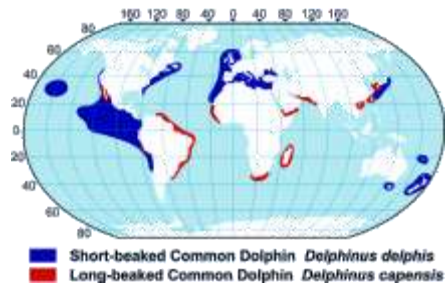
Common dolphins can reach lengths of 7.5 - 8.5 feet (2.3-2.6 m) and weigh as much as 297 lb. (135 kg). The short-beaked common dolphin is relatively heavier, and has a larger dorsal fin and flippers than the long-beaked common dolphin.

FEEDING

The common dolphin feeds on squid and small schooling fish. In some parts of the world, common dolphins feed at night on the deep scattering layer, which moves towards the water's surface during that time. Common dolphins have been seen working together to herd fish into tight balls. Like many other dolphin species, the common dolphin will sometimes take advantage of human fishing activities (such as trawling), feeding on fish escaping from the nets or discarded by the fishermen.

MATING AND BREEDING

Sexual maturity is reached at 3 to 4 years of age or when they reach 6 to 7 feet in length (1.8 to 2.1 m). Calves are 30 to 34 inches at birth (76 to 86 cm); gestation period is 10 to 11 months.



Range Map

DISTRIBUTION AND MIGRATION

The common dolphin is found in all tropical and warm-temperate waters. The long-beaked common dolphin is found more in coastal waters; the short-beaked common dolphin is found in offshore waters and is the species that occurs frequently in the eastern tropical Pacific. Both long-beaked and short-beaked common dolphins occur in the Southern California Bight.

NATURAL HISTORY

Common dolphins are often found in large herds of hundreds or even thousands. They are extremely active, fast moving, and engage in spectacular aerial behavior. They are noted for riding bow and stern waves of boats, often changing course to bow ride the pressure waves of fast-moving vessels and even large whales. Common dolphins can be frequently seen in association with other marine mammal species.

STATUS

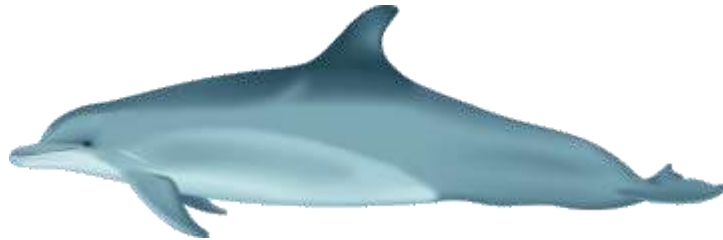
Traditionally, hundreds of thousands of common dolphins have been taken incidentally, along with spinner and pantropical spotted dolphins, in purse seine nets used during tuna fishing operations in the eastern tropical Pacific although these numbers may be improving. Common dolphins also may be caught accidentally in other fishing gear, such as midwater trawls. Turkish and Russian fishermen used to catch large numbers of common dolphins in the Black Sea for meat (to be used for fish meal) and oil. The fishery stopped after the common dolphin numbers became severely depleted (and still is); there are several reports suggesting that the Turkish fishery may have resumed. Many common dolphins are taken in a Japanese small cetacean fishery and directly caught in the Mediterranean. Some common dolphins may be taken in Peru for human consumption.

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Bottlenose Dolphin

Tursiops truncatus
CLASS: Mammalia
ORDER: Cetacea
SUBORDER: Odontoceti
FAMILY: Delphinidae
GENUS: Tursiops
SPECIES: truncatus



The bottlenose dolphin is perhaps one of the most well-known cetaceans, because of its widespread use in marine parks and research facilities. The bottlenose dolphin may be best known as "Flipper" (as seen in the television series). This is the dolphin most frequently seen along the shores of the United States. This species is very flexible in its behavior.

PHYSICAL DESCRIPTION

This is a relatively robust dolphin with a usually short and stubby beak - hence the name "bottlenose". The bottlenose dolphin (like the beluga) has more flexibility in its neck than other oceanic dolphins, because 5 of the 7 neck vertebrae are not fused together as in the other oceanic dolphins. There are 18-26 pairs of sharp, conical teeth in each side of its jaw.



Surface Characteristics

The color of the bottlenose dolphin varies considerably, but generally this dolphin is light gray to slate gray on the upper part of the body shading to lighter sides and pale, pinkish gray on the bell

FINS AND FLUKE

The dorsal fin is high and falcate (curved) and located near the middle of the back. The flukes are broad and curved with a deep median notch. The flippers are of moderate length and pointed.

LENGTH AND WEIGHT

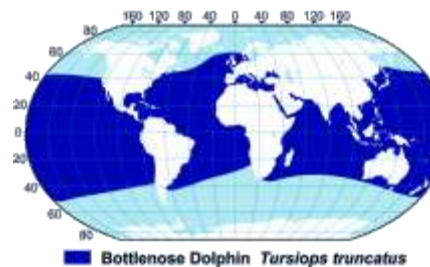
Adult length is from 8-12 feet (2.5-3.8 m). These dolphins may weigh as much as 1,430 pounds (650 kg) off Great Britain, though most are much smaller in other parts of the world. Males are significantly larger than females.

FEEDING

Feeding behaviors are diverse, primarily involving individual prey capture, but sometimes involving coordinated efforts to catch food, feeding in association with human fishing, and chasing fish into mudbanks. An adult bottlenose dolphin may consume 15-30 pounds (8-15 kg) of food each day. Bottlenose dolphins eat a wide variety of food, including primarily fishes, and sometimes squid, and crustaceans.

MATING AND BREEDING

Males reach sexual maturity at about 10 years. Females reach sexual maturity at about 5-10 years. The gestation period is 12 months. Calving can take place year-round with peaks in some areas during spring and fall. Calves nurse for over a year (12-18 months), and stay with their mothers for 3-6 years learning how to catch fish and other important tasks.



Range Map

DISTRIBUTION AND MIGRATION

Bottlenose dolphins are found worldwide in temperate and tropical waters, absent only from 45 degrees poleward in either hemisphere. They are frequently seen in harbors, bays, lagoons, estuaries, and river

mouths. There appear to be two ecotypes: a coastal form and an offshore form. Population density appears to be higher nearshore. Biochemical studies now are providing more information about the relationship within and between the ecotypes. In some areas, dolphins have limited home ranges; in others, they are migratory. A second species *Tursiops aduncus*, inhabits the Indian Ocean.

NATURAL HISTORY

Based on a number of studies of nearshore populations, bottlenose dolphins seem to live in relatively open societies. Mother and calf bonds and some other associations may be strong, but individuals may be seen from day-to-day with a variety of different associates. Group size is often less than 20 nearshore; offshore groups of several hundred have been seen. Much of what we know of the general biology of dolphins comes from studies of bottlenose dolphins, both in captivity and in the wild.

STATUS

The bottlenose dolphin is protected in U.S. waters by the Marine Mammal Protection Act. Bottlenose dolphins are still generally plentiful in numbers, but are near depletion in some areas. Both incidental and direct exploitation of bottlenose dolphins are known to occur, generally at low to moderate levels. The largest direct kills have traditionally been in the Black Sea, where Russian and Turkish hunters apparently have reduced local populations. Bottlenose dolphins are accidentally caught in a variety of fishing gear, including gillnets, purse seiners used to catch tuna, and shrimp trawls. These dolphins also are occasional victims of harpoon and drive fisheries. Live captures of bottlenose dolphins for captivity have had effects on some local dolphin populations in the Gulf of Mexico and southeastern United States, but no commercial live captures have occurred in the U.S. since the 1980's. Bottlenose dolphins are vulnerable to pollution, habitat alteration, boat collisions, human feeding of and swimming with wild animals, and human disturbance (such as boating). Several die-offs of bottlenose dolphins have occurred. Retrospective analysis of tissues of dolphins that died in 1987-1988 during a large die-off (approximately 800-1,000 dolphins) on the Atlantic U.S. coast indicates that mortality may have been caused by a morbillivirus. This virus has been linked to die-offs of Gulf of Mexico bottlenose dolphins as well. Dolphins with disease symptoms appeared to have elevated levels of PCB's, leading researchers to conclude that pollutants may be playing a role in these events. Preliminary evidence from other studies show links between contaminant residues in tissues and impaired immune system function.

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