

# The Natural History Of Dolphins

## Interactive Dolphin Programs: A New Approach to Education

Dolphins by nature are curious creatures, commonly investigating people swimming in their environment — the ocean. Their amiability has stirred the fascination with which we view these animals.

Beginning in the early 1980's, a few facilities around the world began to offer a new and different type of dolphin presentation commonly referred to as a "swim program."

Whether structured as a shallow-water encounter or an actual swim format, these interactive programs were designed to create a new kind of awareness, one that would come from a personal interaction with the animals in a safe and healthy environment.



At Dolphin Encounters, we fulfill the dreams of our guests in meeting these incredible animals and plant a new seed of conservation in each person, one that is taken home and nurtured in their local environment, ocean or otherwise.

## Marine Mammals & Cetaceans

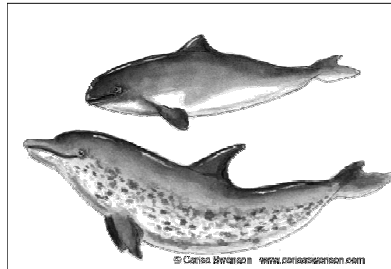
In the animal kingdom there are many different groups or "classes" such as reptiles, birds, amphibians and mammals. All mammals have five characteristics in common:

- warm-blooded
- breath air
- give birth to live young
- born with hair
- nurse their young

Dolphins are one of many marine mammals that inhabit the sea, others being manatees, otters, sea lions and whales.

All the whales, dolphins and porpoises belong to the order called *Cetacea*, which can be further divided into three smaller groups known as suborders. The *Archeocetes* were the ancient whales and are now extinct. The second group, the *Mysticetes*, include, among others, the gigantic blue, grey and humpback whales. Members of this suborder have two blowholes and

instead of teeth, have a series of comb-like plates called baleen which they use to strain plankton and shrimp from the water as a food source.



*Though often confused to be the same type of cetacean, porpoises and dolphins are distinctly different in size and appearance.*

The largest suborder is the *Odontocetes*, also known as the toothed whales which includes groups such as the sperm whales, belugas and dolphins. The number of teeth may vary with the species, but all use their teeth for

catching, not chewing, their food. There are ten different families of toothed whales.

Though many people often confuse the two, dolphins and porpoises are different families of toothed whales. Divided into six different species, porpoises are generally smaller than dolphins, darker in color, and found in deeper and cooler waters. Porpoises usually lack the rostrum or "bottleneck" that most dolphins have. Another distinct trait of porpoises is their teeth: they have flat, spade-shaped teeth versus the conical-shaped teeth of dolphins.

Finally, there are about thirty species of dolphins found in our oceans, a few being the white-sided, spotted and bottlenose. It is the Atlantic bottlenose dolphin, *Tursiops truncatus*, that is most well known to people. These animals tend to live in the shallow waters in which people frequently choose to swim and boat. This species of dolphin also does very well under human care and are usually your marine park performers.

## Atlantic Bottlenose Dolphins

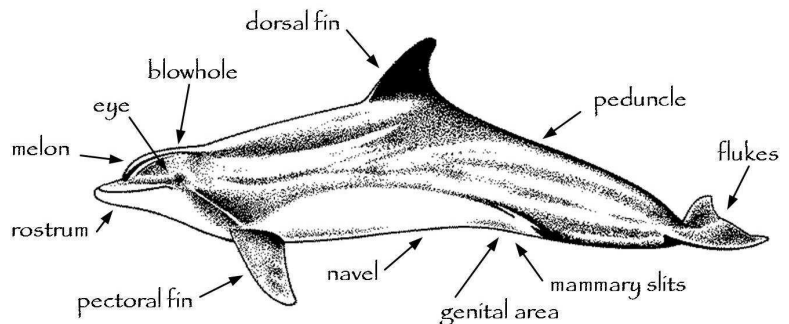
The Atlantic bottlenose dolphin can be found throughout the temperate, tropical and sub-tropical waters of the Atlantic Ocean. With a great deal of variety in size, appearance and behaviors, these dolphins are further divided into approximately nine different sub-species.

For example, the bottlenose dolphins off the United Kingdom may weigh up to 1200 pounds and migrate short distances to locate food or evade predators. In the shallow Bahamian waters, Atlantic bottlenose dolphins grow up to nine feet in length weighing up to 500 pounds. Average lifespan for this species in the wild is approximately 25 years.

Research confirms that these animals currently live equally as long under human care and, in many cases, live longer, healthier lives than their counterparts in the wild. In marine parks and aquariums, dolphins are protected from the dangers of pollution, predators, and events such as El Nino, which triggered food shortages for many marine mammals in the late 1990's.

The oldest dolphin under human care lived to be 54 years of age. Due to public display, advances in animal care and medicine have greatly contributed to the improved health of cetaceans under human care, as well as to the successful rehabilitation and release of stranded, injured animals.

(continued...)



Atlantic Bottlenose Dolphin (*Tursiops truncatus*)

## Bottlenose Dolphins continued...

In general dolphins are well known for their bottlenose or rostrum with the built-in smile. The rostrum is a bony extension of their skull used to touch and move objects since they don't have hands. The hair on a dolphin's upper rostrum — a "mustache" of sorts — falls out either just before the animal is born or shortly thereafter.

Inside the mouth, 77 to 100 conically-shaped teeth can be found. Remember, dolphins do not chew their food. The teeth are used to grasp prey before swallowing it whole. The stomach of a dolphin is highly acidic, capable of digesting whole foods. As far as diet, these dolphins are known as "catholic" feeders, eating whatever fish species is locally available. Primarily they eat schooling fish — herring, mackerel, mullet or capelin to name a few — but also some crustaceans and molluscs, such as squid or shrimp.

### Vocalizations

The blowhole on top of the dolphin's head is their nose. Dolphins can remain submerged up to 8 minutes but generally take a breath about every 30 seconds. In fact the blowhole is the only place they breathe. The blowhole, not the mouth, is also the only place from which sounds come. Beneath the opening of the blowhole are three pairs of nasal air sacs and by squeezing air from one sac to another, dolphins produce sounds. Vocalizations are broken down into three main types: buzzes, clicks and whistles.

### Fins

The dorsal fin on the back is used for stability much like a keel on a boat. It is made of collagen, a fibrous connective tissue similar to the cartilage in your nose and ears. The pectoral fins or front flippers are used for stopping and steering. An x-ray will reveal five digits and the same number of bones found in a human arm from the fingertips to the shoulder. This with the support of other evidence, indicates that these animals migrated back into the oceans about 53.5 million years ago. The tail flukes of a dolphin are very powerful and are also made of collagen. Using their tails dolphins propel themselves in the water up to 25 miles per hour.

### Eyesight

Dolphins have several acute senses. Their eyesight is as good as a human's, however dolphins have the ability to compensate for the refraction of the light waves as they pass through the surface of the eye underwater, allowing dolphins to see well both above and below the surface of the water.

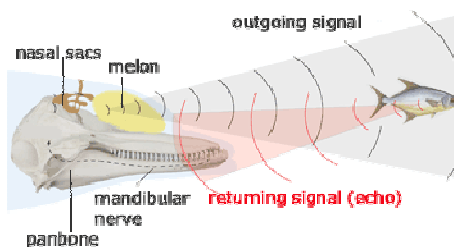
### Sonar

Dolphins do not have a sense of smell but do appear to have compensated with a highly developed sense of hearing. Above the water they are quite capable of hearing a wide range of frequencies. The pin hole opening located about two inches behind the eye is the external opening to the ear canal.

Below the surface, dolphins use a system known as echolocation or biosonar. They emit bursts of high frequency sounds from the forehead or melon which

then bounce off objects and return to the dolphin in the form of echoes. Each echo is absorbed through the hollow lower jaw and transmitted via a fatty fluid to an acoustic window and then to the inner ear. When the dolphin processes the sounds, it can tell the size, shape, density, distance and speed of an object. Thus, they can not only locate an object, but also scan the object similar in function to an ultrasound.

Echolocation is very helpful tool for dolphins in the wild. It is used for navigation, finding food, avoiding predators and communication with other dolphins. Scientists believe that dolphins may also be able to produce a strong enough burst of sound to temporarily debilitate their prey, giving them the extra edge when hunting.



*Dolphins can project sounds through the melon & use the lower jaw as an antenna to listen to the returning echos, which can be used to help "see" prey when hunting or to help navigate.*

### Social Groups

Dolphins and whales are gregarious animals and usually travel in social groups called pods. Larger groups of pods are referred to as a school. In deep waters offshore, animals may travel in large groups, even up to hundreds of individuals, and commonly travel in shallow water in small groups less than a dozen. Adult males are also commonly found in shallow waters swimming alone or with another adult male to which it has bonded. These "pair bonds" appear to be long term relationships for males which may last the rest of their lives.

Generally, dolphin pods can be grouped into three types: adult males, juvenile males and the last group being mothers, females and calves. Organized as a matriarchal society, females usually do not allow males within their social group unless it is mating season and only then will it be the dominant males. This ensures that the females will mate with the most "successful" males of the group, providing the potential offspring with the greatest chance for survival.

Dolphins communicate with each other in a variety of ways: body posturing, vocalizations and echolocation. There has always been a fascination regarding their ability to communicate with sound and today we continue to study these animals in an effort to understand of what dolphins are capable.

## Cetaceans In The Wild: A Shared Future

For cetaceans and all marine life to thrive in the oceans we must make a conscious effort to protect our oceans directly and indirectly. Recycling and disposing of trash, toxins or pollutants properly is a beginning.

Driftnets and indiscriminate fishing techniques can only be prevented by international public pressure. Public support was the main reason the "dolphin safe" tuna label was so successful in decreasing unnecessary deaths from 200,000 to less than 3,000 each season. You can make a difference by having a voice.

Finally, human curiosity must have its limits when it endangers the lives of the animals with whom we are so fascinated. By staying an observer in the wild, you will ensure the wild animals of today will be here for your children in the future. Enjoy the intimate experience you have had today and protect these incredible animals by staying an observer in the wild. When you go home, share the information and the knowledge you have gained today. Thanks for all your effort!

### Surf the Web!!!



**Surfing the web has become one of the fastest ways to access information about dolphins, marine careers and ocean conservation!**

Check out these websites on the Internet for more information on these fascinating animals and how to protect the oceans we share with them!!!

- [www.dolphinencounters.com](http://www.dolphinencounters.com)
- [www.ammpa.org](http://www.ammpa.org)
- [www.tmsn.org](http://www.tmsn.org)
- [www.coral.org](http://www.coral.org)
- [www.marine-ed.org](http://www.marine-ed.org)