



NATIONAL AQUARIUM IN BALTIMORE.

Conservation Education Department
Pier 3, 501 East Pratt Street
Baltimore, MD 21202

Fast Facts

- ❑ Dolphins have hair, lungs to breathe air, give live birth, and provide milk for their young.
- ❑ Echolocation allows dolphins to find food and other objects in dark, murky water, where sight is nearly useless.
- ❑ The Chinese river dolphin is the most endangered dolphin in the world.

Key Terms

Echolocation - Use of sound underwater to sense the environment.

Mammals - Animals that they have hair, have lungs to breathe air, give live birth, and provide milk for their young.

Melon - The fatty bulge that looks like the dolphin's forehead; it helps direct sound traveling through the water.

Ask the Aquarium

Fact Sheets from the
Conservation Education Department

Dolphins

The Atlantic bottlenose dolphins, *Tursiops truncatus*, living at the National Aquarium in Baltimore are just one of approximately 70 species of dolphin. Dolphins are actually small, toothed whales and belong to the class Cetacea.

Marine Mammals

Although the word "dolphin" is sometimes associated with a dolphin fish, also known as a mahi mahi, a type of bony fish served in restaurants, dolphins are marine mammals. Like all mammals, they have hair, have lungs to breathe air, give live birth, and provide milk for their young with mammary glands. A dolphin's hair is in the form of whiskers on its chin when it is born, although the hair falls out shortly after birth. Dolphins nurse their young until they are old enough to eat solid foods. Since these animals have lungs, they must rise to the surface to breathe. Dolphins breathe through the blowholes on top of their heads. Each time a dolphin surfaces, the flap over its blowhole opens. The dolphin then rapidly exhales and inhales, and the flap closes. In one breath, dolphins may exchange up to 90% of the air in their lungs, compared with a human's air exchange, which is approximately 15%.

Dolphin Adaptations

Animals living in the ocean have special adaptations that help them survive. Mammals are warm-blooded, meaning they maintain a constant body temperature. Dolphins have a layer of blubber under their



PLAY! the new dolphin show gives visitors a look into the world of dolphins and their amazing behaviors.

skin that insulates their body against the cold water. Dolphins can dive up to 300 meters (984 feet) below the ocean's surface, but they will rarely stay underwater for long periods of time. Dolphins use oxygen much more efficiently than humans because they store O₂ in their blood and muscles, rather than in their lungs. During deep dives, their lungs and ribs partially collapse.

Echolocation

Although dolphins lack vocal cords, they produce sound by pushing air back and forth between air sacs below their blowholes. In this way dolphins can produce a series of clicks and whistles, which they use to communicate with one another. Dolphins also produce clicks to orient themselves underwater. Echolocation, a biological sonar, consists of a series of clicks that are sent from the air sacs through a structure called the melon. The melon is the fatty bulge that looks like the dolphin's forehead; it helps direct sound traveling through the

water. When the sound hits an object, it will bounce back as "echoes". The returning echoes travel through fat in the dolphin's lower jaw and vibrate against its inner ear. By analyzing these, a dolphin can learn the size, density, speed, and direction of movement of objects around them.

Echolocation allows dolphins to find food and other objects in dark, murky water, where sight is nearly useless.

River Dolphins

Not all dolphins live near the shore. Oceanic dolphins are often found miles from land. Other dolphins, such as the Amazon River dolphin, *Inia geoffrensis*, live in freshwater. The river dolphins are among the most endangered dolphins. The Chinese river dolphin, *Leipo vexillifer*, is the most endangered dolphin in the world; only an estimated 5 individuals are still alive. Fifty years ago more than 6,000 of these animals existed, but due to habitat destruction and human encroachment, their population has plummeted.

Dolphin Versus Porpoise

Dolphins and porpoises are frequently confused, however, there are some slight differences between these two groups. Dolphins are usually more curious than porpoises, and are more frequently seen. Porpoises often swim away when human activity gets close. Dolphins are also larger than porpoises. For instance, bottlenose dolphins often reach more than 3 meters (10 feet) in length, and can weigh 650 kg (1000 pounds) while harbor porpoises, *Phocoena phocoena*, rarely reach more than 2 meters (6.5 feet) long or weigh more than 65 kg (145 pounds). Porpoises have spade-shaped teeth, while dolphins have cone-shaped teeth. Most dolphins

also have a longer, more-pronounced rostrum, or "beak", and a taller, more curved dorsal fin.

Social Structure and Reproduction

Dolphins separate themselves into social groups based on gender. Females and calves associate in groups, or pods, while males may roam individually or in "bachelor groups". Female calves stay with their mothers' pod for life, but male calves leave the pod between two and four years of age.

Dolphins reach sexual maturity in six to ten years and reproduce in the spring. Gestation lasts approximately eleven months and females give birth to one calf every two years. Mothers nurse the calves for about a year. During this time, "babysitters" from the pod may watch the calf while the mothers are feeding. If a mother becomes annoyed with the calf, or wants to gain its attention, she slaps the water surface with her tail.

History and Conservation

Since the days of ancient Greece and Rome, dolphins have delighted and intrigued people with their inquisitive nature. They have even been rumored to make friends with boaters and bathers. Their curious behavior has convinced many people that dolphins are very intelligent animals. When in aquariums and zoos they quickly learn behaviors; they appear to be healthier when they are presented with games and tasks to perform. Although trainers rate their intelligence as equal to that of smart dogs, scientists disagree as to exactly how "smart" dolphins are. Until scientists devise a way to measure intelligence, this shall remain a mystery.

Dolphins at the National Aquarium in Baltimore

The National Aquarium in Baltimore has permits allowing us to have dolphins. These permits are issued by the federal government and require that certain standards regarding animal care and public education are met.

Dolphins, and all marine mammals, are protected by the Marine Mammal Protection Act. This law makes it illegal to feed, touch, harass, or kill marine mammals. It also makes it illegal to buy, sell, import, or export products made from marine mammals.

Humans pose the biggest threat to dolphins. Our trash, especially plastics, ends up in the ocean where marine mammals often ingest it or become entangled in it. Approximately 90% of all marine mammal strandings are due to humans.

By following simple suggestions, people could make the oceans much safer for dolphins.

- ◆ Help by throwing trash away properly, and recycling whenever possible.
- ◆ Participating in local beach clean-ups.
- ◆ Support sustainable seafood practices like "dolphin safe" tuna.