

LEVELED BOOK • R

Blue Whales: Giant Mammals



Written by S.E. Virgilio

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Focus Question

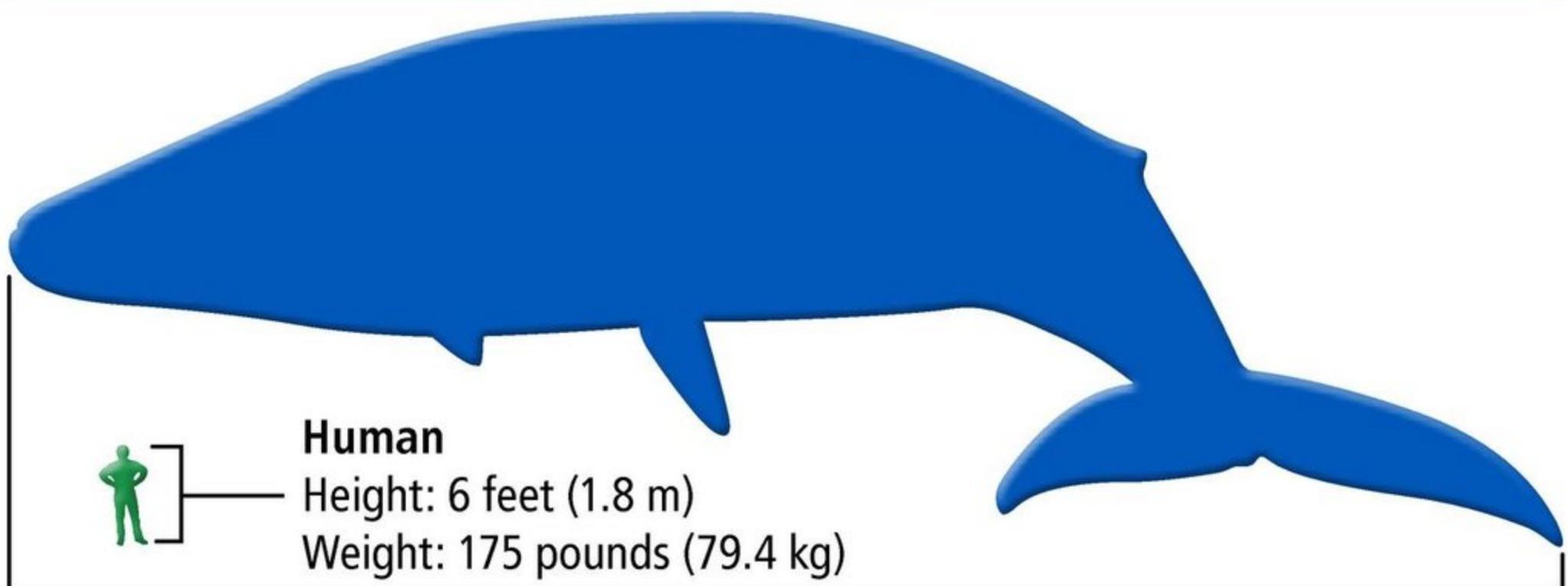
What features allow the blue whale,
a mammal, to survive in water?



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How Big Is It?



Human

Height: 6 feet (1.8 m)

Weight: 175 pounds (79.4 kg)

Blue whale

Length: 100 feet (30.5 m), Weight: 200 tons (181.4 mt)

Introduction

Far out at sea, scientists scan the horizon. They are looking for the largest creature on Earth. You would think that finding an enormous animal would be easy, but oceans are vast and wide.

Suddenly, a thunderous roar sounds as a blast of water shoots high into the air. The scientists have found what they were looking for—the mighty, magnificent blue whale.



A blue whale's water spout can shoot over 30 feet (9.1 m) in the air.

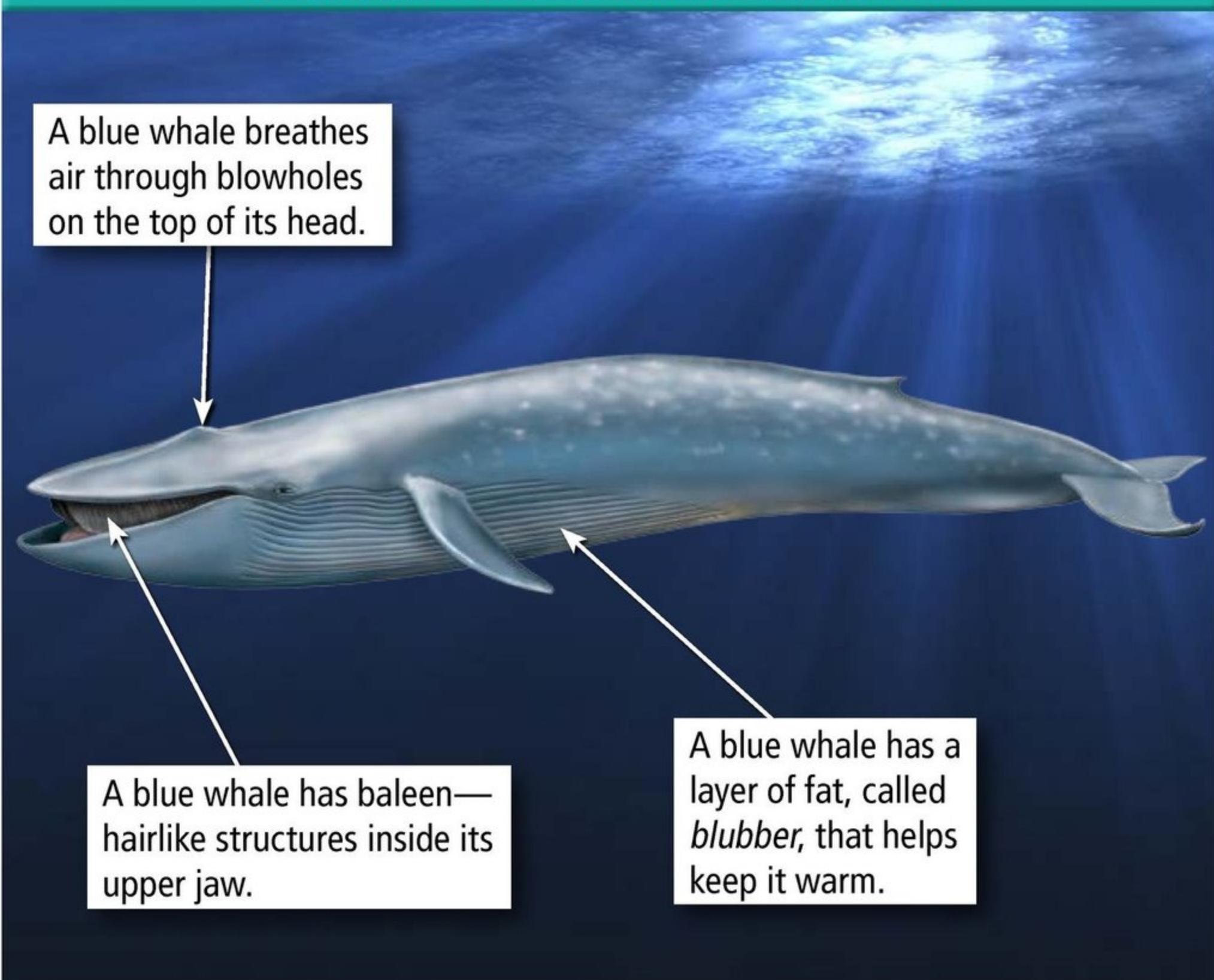
A blue whale's size is impressive. It can weigh as much as 200 tons (181.4 mt) and be as long as approximately 100 feet (30.5 m). Its tongue alone weighs as much as an elephant. Its heart is so large that a person could crawl through its main blood vessels!



wowser!

A blue whale's body is as long as a basketball court.

What Makes a Blue Whale a Mammal?



All mammals

- breathe air
- have hair on their bodies at some stage in their development
- are warm-blooded
- produce milk to feed their babies

The blue whale has a mammoth body. Its skin actually looks blue underwater, but from above it looks blue-gray. The underside of a blue whale sometimes appears to be pale yellow thanks to tiny organisms called *diatoms* that often hitch rides on the whale's skin.



A flap covers a blue whale's blowholes to keep out water when it dives.

Blowholes and Blubber

Blue whales live in the sea, but they are not fish. These graceful giants are the world's largest mammals. Blue whales have lungs and breathe air just like humans. They inhale and exhale through two blowholes on top of their heads.

In order to breathe, a whale must come to the ocean's surface. The blowholes open and the whale expels air, sending water spouts up to 30 feet (9.1 m) into the sky. Then the whale quickly inhales, filling its massive lungs. All of this happens in under two seconds!

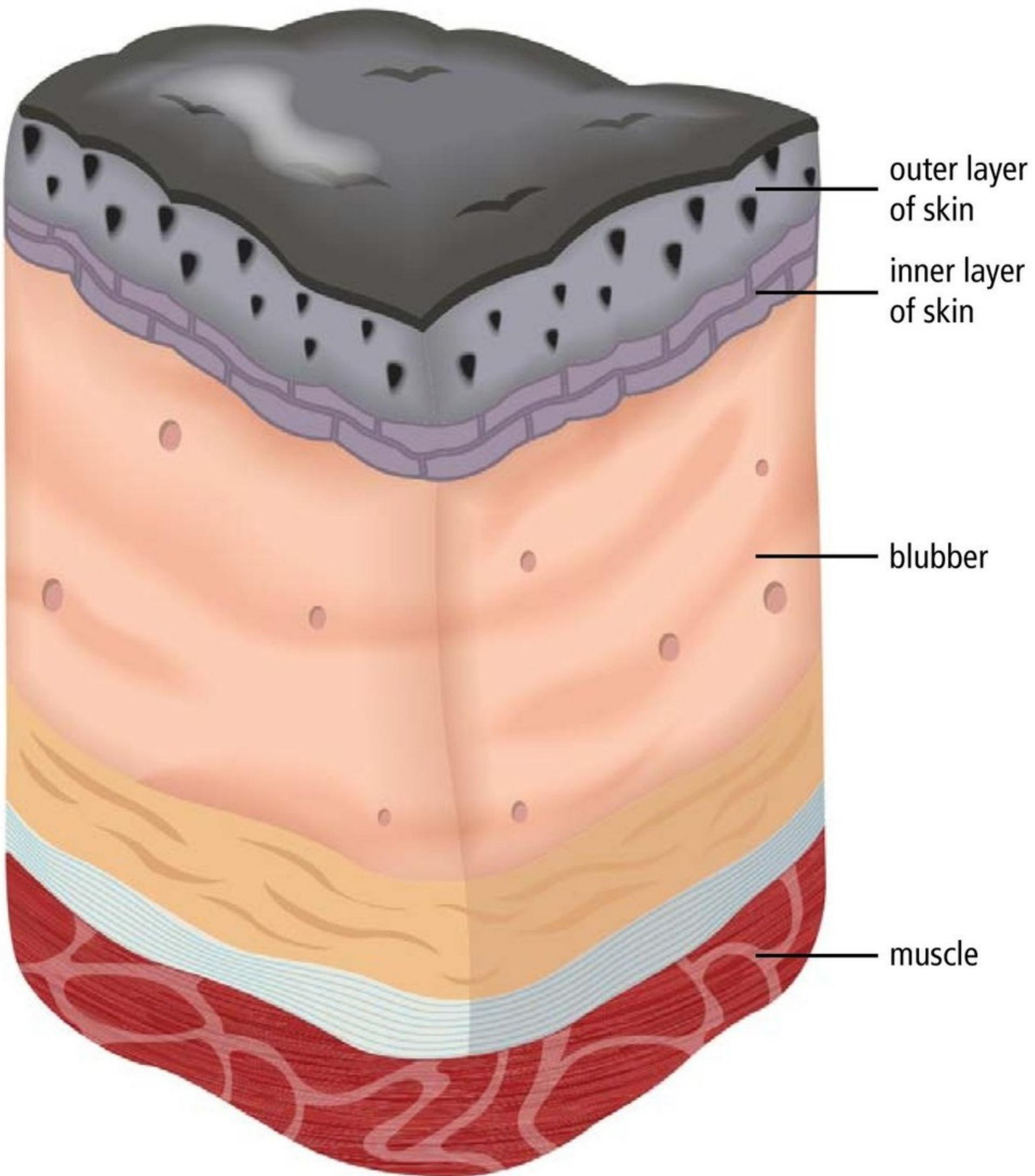


Whale watchers look for flukeprints on the water's surface to locate whales.



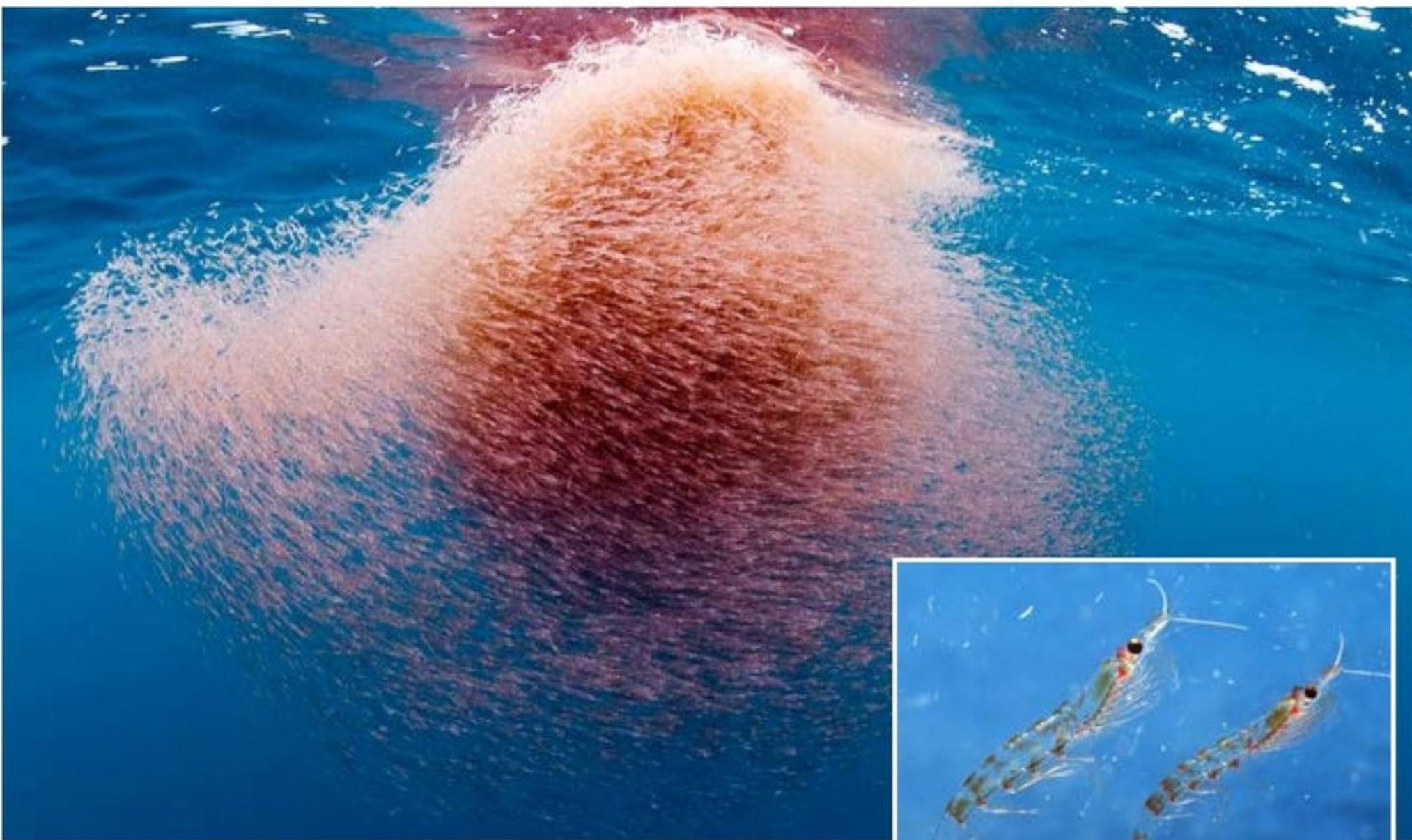
A whale breathes in and out several times at the surface before beginning a dive. It uses its flexible spine and wide tail **flukes** to navigate through the water. Flukes are made up of tissue, not bone, so they are flexible. Blue whales leave circles called “flukeprints” on the water’s surface when they dive. These whales usually cruise along at 5 miles per hour (8 kmph), but they can travel as fast as 20 miles per hour (32 kmph).

Blue whales can stay underwater for about thirty minutes. They are considered shallow divers because they rarely go deeper than 700 feet (213.4 m). In contrast, sperm whales dive about 3,280 feet (1,000 m)—more than four times deeper!



In addition to keeping whales warm, blubber also helps them float better and swim faster.

Ocean water can be frigid at such depths, but that's not a problem for blue whales. Like all sea mammals, blue whales have a layer of fat called **blubber** just beneath their skin. The blubber **insulates** them from the deep water's chilly temperatures.

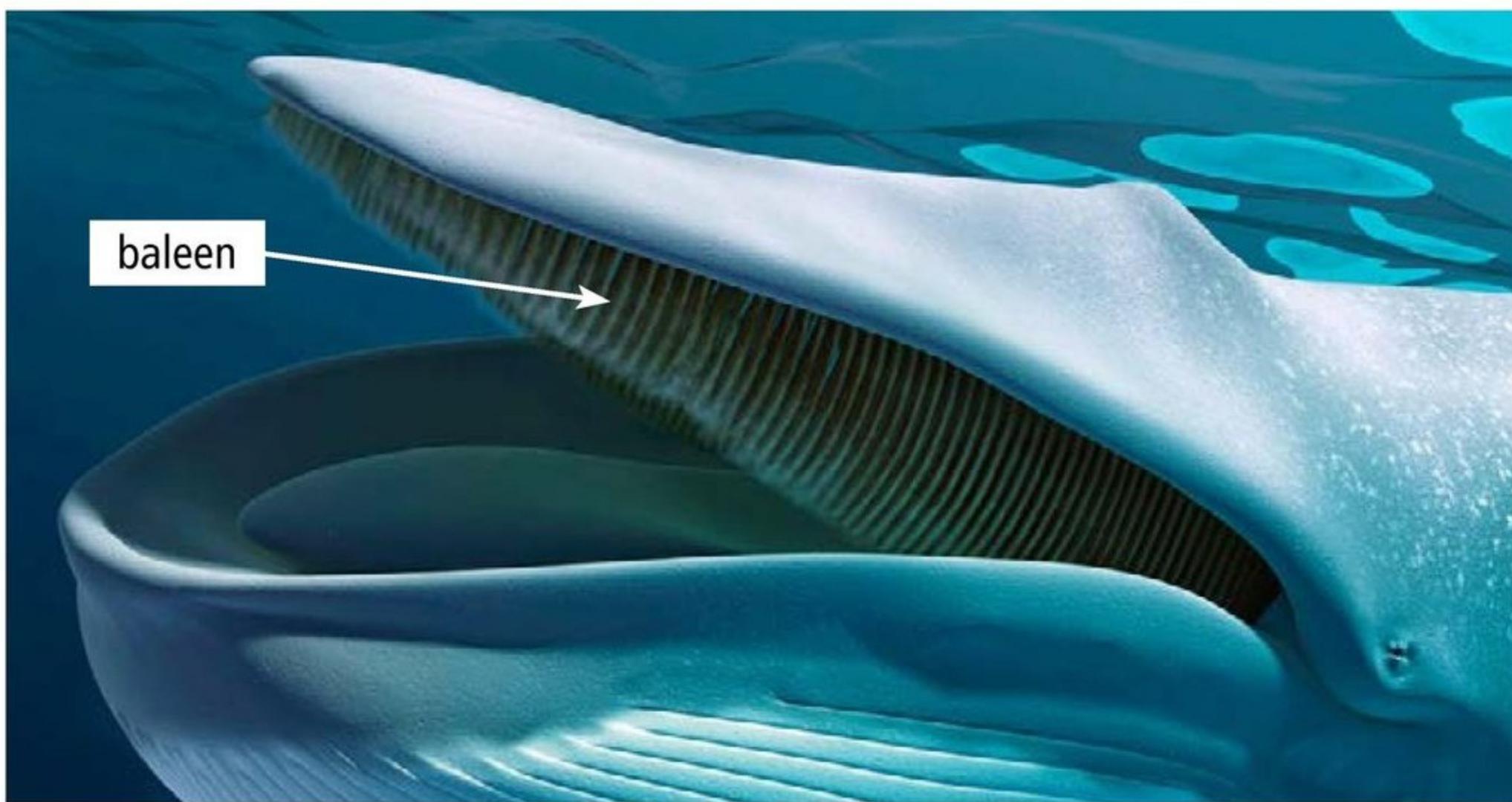


Krill (inset) is the main food in a blue whale's diet. Krill often swarm near the water's surface.

A Whole Lot of Little

When blue whales dive, they are searching for their favorite food—**krill**. Krill are tiny shrimplike creatures that live in large groups. Swarms of krill can be found near the water's surface as well as at ocean depths greater than 6,000 feet (1,829 m).

It may seem strange that the largest animal in the world feeds on one of the smallest. Blue whales are gargantuan, but their throats are actually very narrow. Their **esophagus** is only inches wide, so they cannot swallow anything large. Blue whales also have no teeth for chewing. They must swallow their food whole.

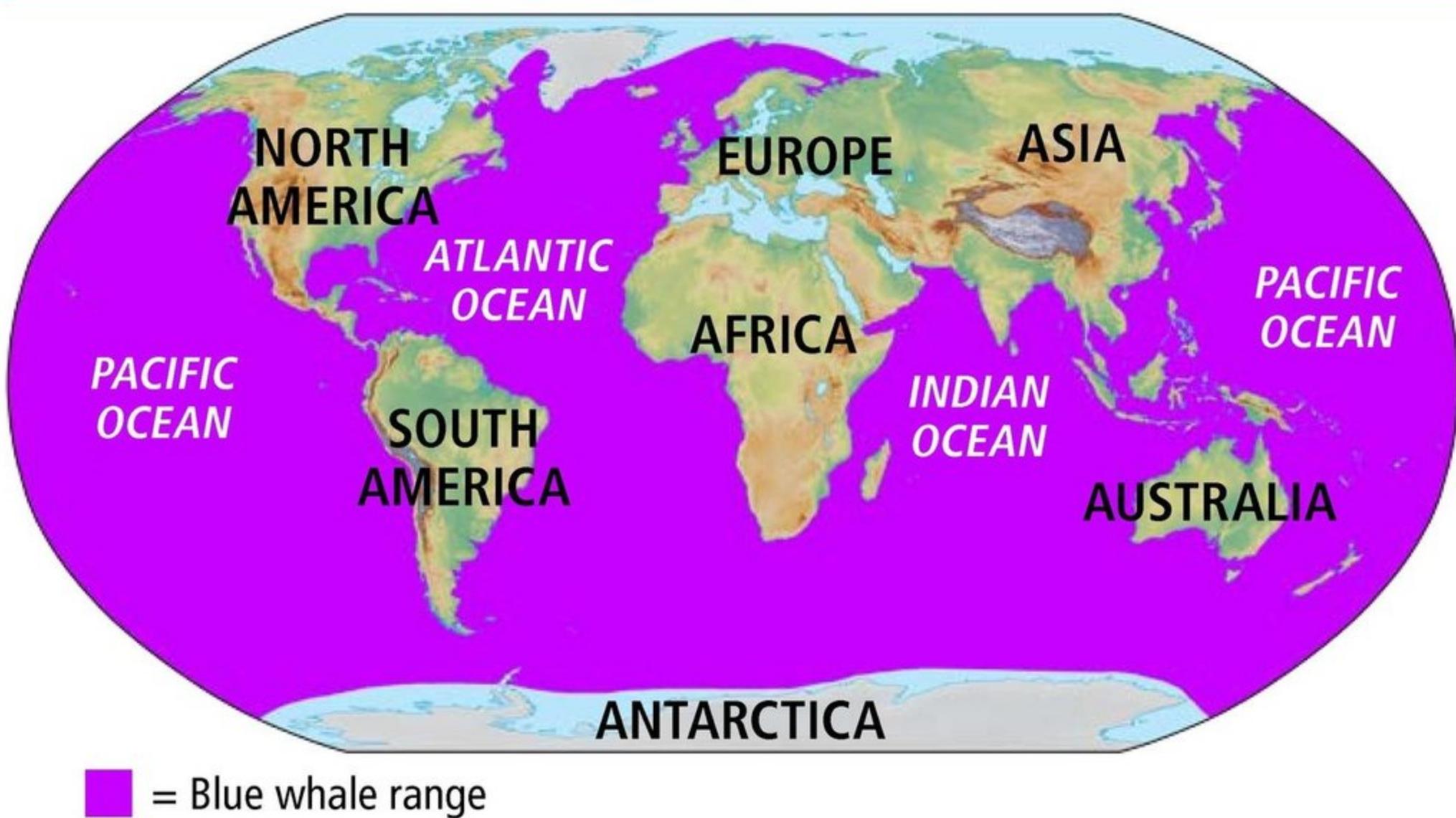


A blue whale has up to eight hundred baleen plates in its mouth.

Instead of teeth, blue whales have plates of **baleen** on their upper jaws. Baleen is made of **keratin**, the same material in our hair and fingernails. Baleen plates are like a mustache growing inside a whale's mouth.

Baleen works like a filter. A blue whale opens its mouth and takes a gulp of seawater full of swimming krill. The whale's throat expands to hold thousands of gallons of seawater. Then the whale closes its mouth and uses its tongue to push the seawater through the baleen and back out into the sea. Because krill cannot pass through the baleen, they stay trapped inside the whale's mouth and are swallowed whole. A blue whale eats about forty million krill each day.

Where Blue Whales Live



■ = Blue whale range

From Sea to Shining Sea

Blue whales can be found gliding through the depths of every ocean on our planet. They travel alone or in pairs, going wherever krill live. During the summer months, blue whales feed in polar waters. When winter comes, both the krill and the whales migrate toward the equator. A favorite gathering spot for many blue whales is the Costa Rica Dome, off the southern coast of Central America.

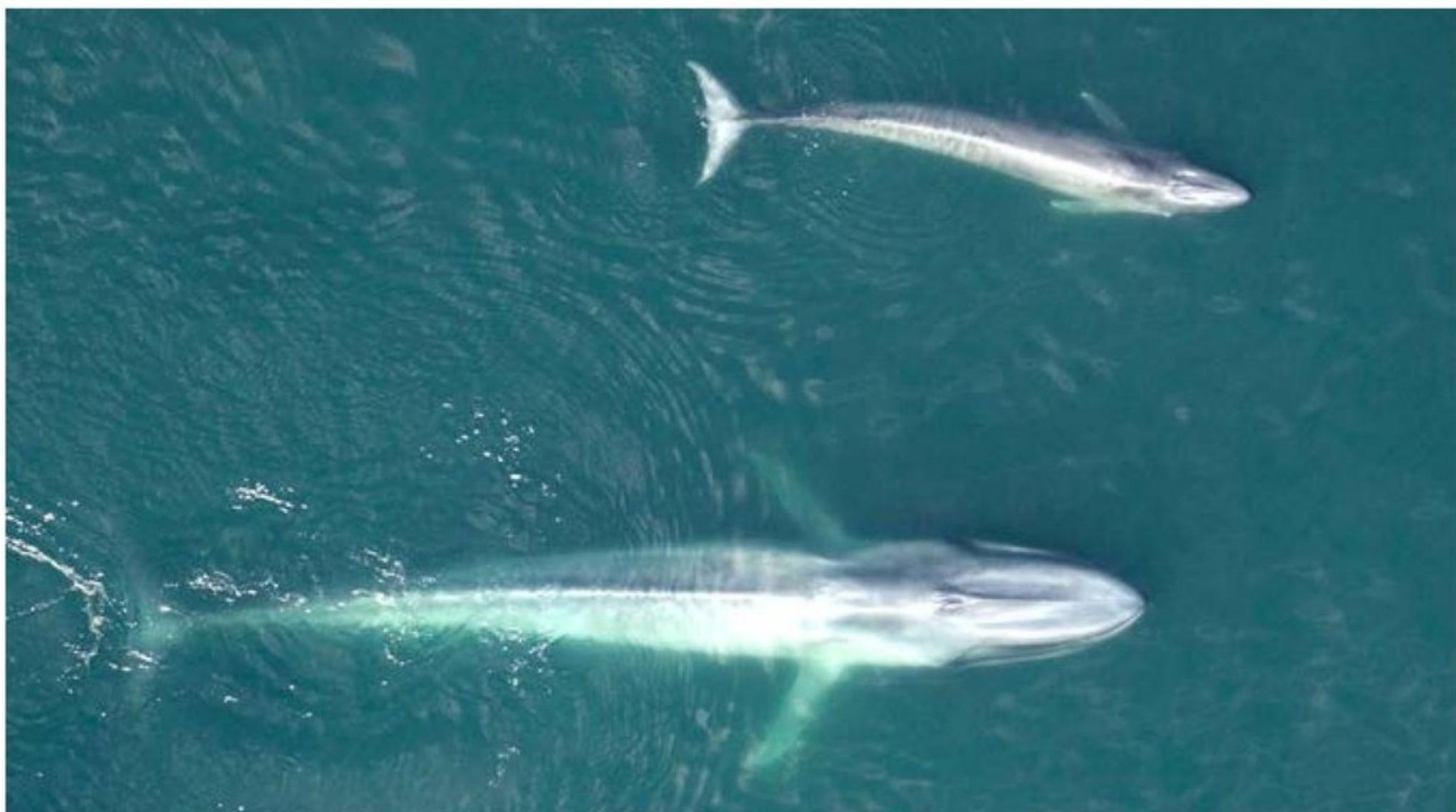
Wowser!

The grooves on a blue whale's throat expand to help it gulp up to 17,000 gallons (64,352 L) of water at a time.



Those Big Baby Blues

Female blue whales give birth when they are in warmer water. Their **gestation** period lasts approximately ten to twelve months. A female whale gives birth every two or three years. Baby blue whales, called *calves*, weigh more than 5,000 pounds (2,268 kg) when they are born. Within minutes of birth, a calf swims to the surface with its mother for air.



Blue whales give birth in warm waters. Calves have little insulating blubber when first born.

The calf and its mother have a strong bond. They remain together for many months while the calf drinks milk and gains over 200 pounds (90.7 kg) a day. After about a year, it leaves its mother and becomes independent.



Whale songs are too deep and low for humans to hear without special equipment.

Song of the Sea

Blue whales are not only the largest animals in the world, they are also the loudest. These whales can produce sounds louder than a jet engine! Whale “songs” can travel for miles through the water. Even though whale sounds are loud, they are impossible for people to hear without special equipment.

Some scientists think whales use **sonar** to help them find their way through dark ocean waters, much the way bats navigate. Other scientists think whales sing to communicate with each other.

Scientists do know that only male whales sing. They have also discovered that whales in different parts of the world sing slightly different songs.

Conclusion

Whale songs are just one of the behaviors of blue whales that scientists hope to better understand. Much is still unknown about the habits of these enormous creatures.

In the early to mid-twentieth century, so many blue whales were hunted that they were nearly driven to extinction. Their numbers have only slightly recovered since then. As an endangered species, blue whales are protected by the International Whaling Commission. Despite these efforts, it is estimated that only ten to twenty-five thousand of these magnificent creatures survive today.

Scientists continue their research, hoping to acquire new knowledge about these gentle giants to help ensure their survival for many generations to come.

Once, over three hundred thousand blue whales lived in the world's oceans. Now there are only about ten to twenty-five thousand.



Glossary

baleen (<i>n.</i>)	a material in the mouth of certain whales that filters food from ocean water (p. 11)
blubber (<i>n.</i>)	fat under the skin that keeps marine mammals warm (p. 9)
esophagus (<i>n.</i>)	the muscle-lined tube that carries food from the throat to the stomach (p. 10)
flukes (<i>n.</i>)	the two halves of a whale's tail (p. 8)
gestation (<i>n.</i>)	the period when a baby develops inside its mother's body before being born; the development that occurs during this time (p. 13)
insulates (<i>v.</i>)	prevents the transfer of heat (p. 9)
keratin (<i>n.</i>)	a strong material produced by the bodies of some animals that makes up hair, hooves, claws, feathers, and fingernails (p. 11)
krill (<i>n.</i>)	tiny crustaceans that live in oceans and are food for many other animals (p. 10)
sonar (<i>n.</i>)	a system that sends high-frequency sound waves through water and registers the vibrations bounced back by an object (p. 14)

Words to Know

baleen

blubber

esophagus

flukes

gestation

insulates

keratin

krill

sonar

Cover: A blue whale feeds off the coast of Mexico.

Title page: Two blue whales filter feed off the coast of California.

Page 3: A blue whale raises its fluke in preparation for a deep dive.

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