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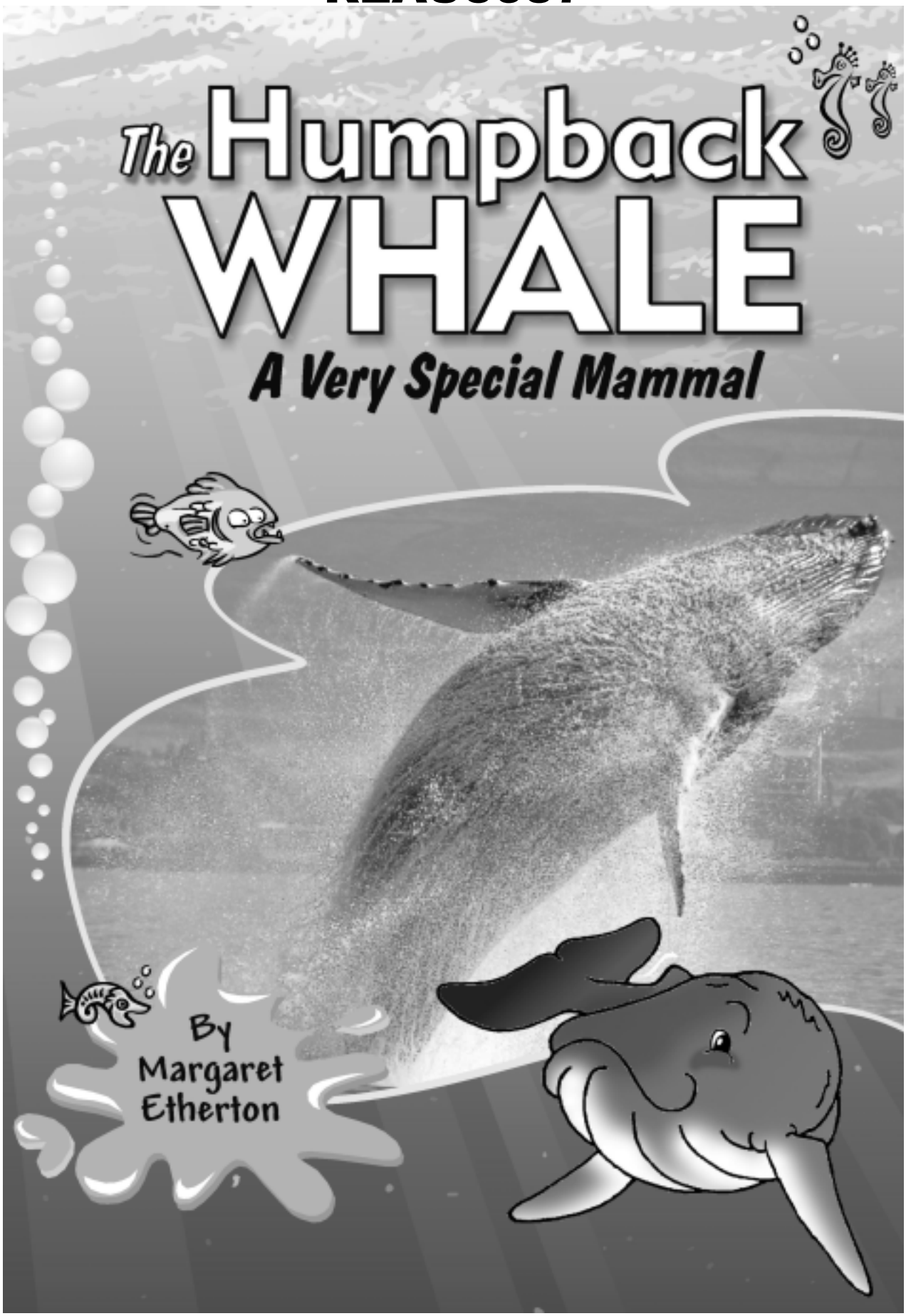
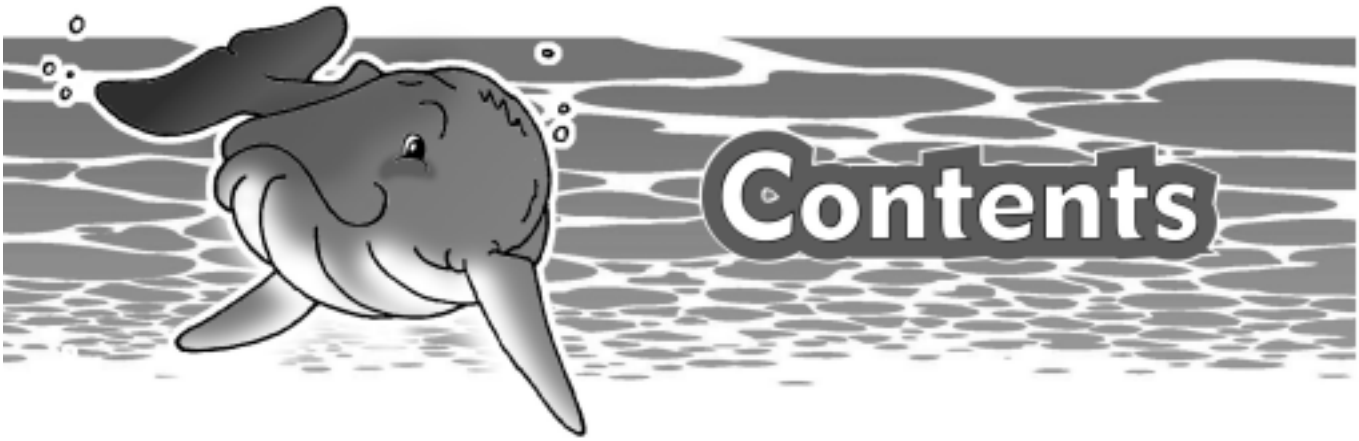




Contents

What are mammals?

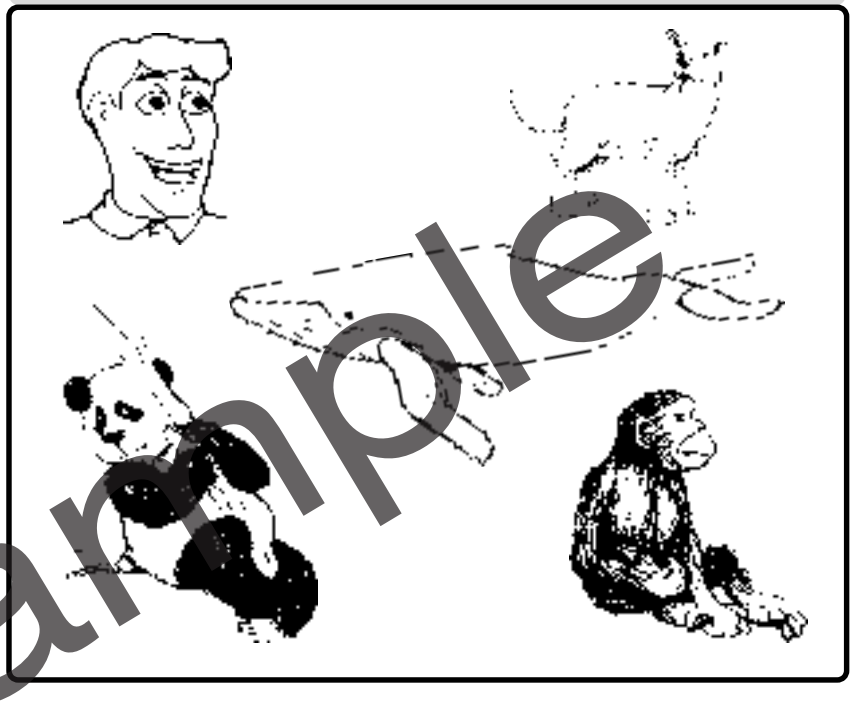
Mammals are animals which live on land and in the water. A whale is a mammal just like you are.

Here are some of the special characteristics scientists use to decide if an animal is a mammal or not:

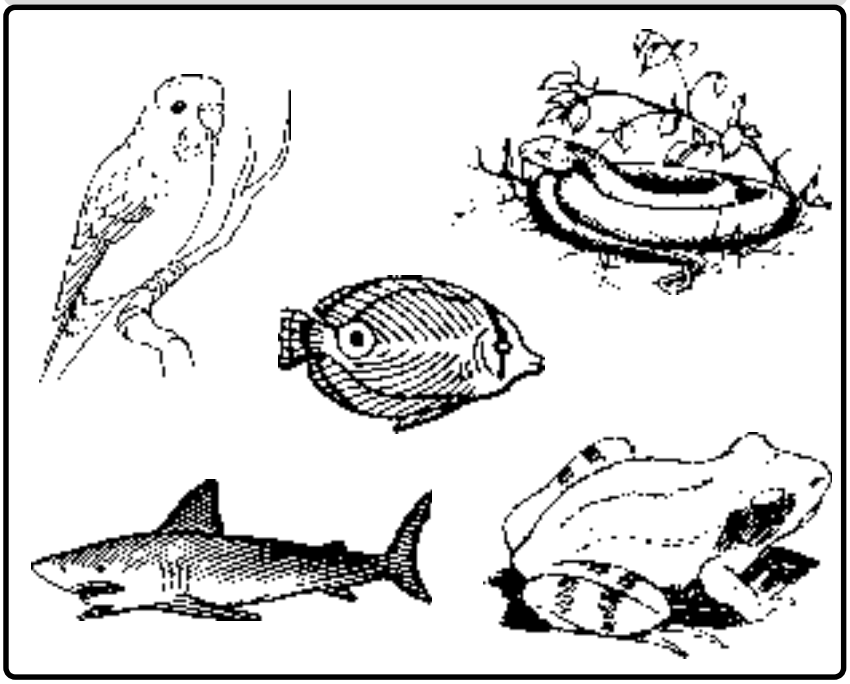
- *A bony skeleton*
- *Warm-blooded*
- *Long fur covering most of its body*
- *Lungs to breathe with*
- *A large brain able to learn many things*
- *Babies are born fully formed, not hatched from an egg*
- *Babies drink milk made inside the mother's body*
- *One or both parents look after the young*
- *Four limbs – arms and legs*

Not all mammals have every characteristic.

These are all mammals:



But these animals are not:



Wikipedia.org/wiki/Image:Humpback_Whale_underwater_shot.jpg, Public domain.

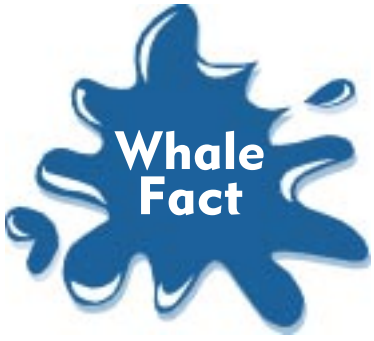
Water based mammals, such as whales, don't have gills like fish so they have to come to the surface of the water to take breaths of air.

Whales have two blowholes to take in air and blow it out again – just like a human's nostrils. One difference is that their blowholes are on top of their heads!

Whales don't have scales like fish. Their skin is smooth like rubber. They don't have fur covering most of their bodies, either. They only have a few hairs like whiskers poking out of the lumps on their backs, so they are different from many other mammals. Humans are a bit different too. They have fine hair – not fur – over their bodies and only grow long hair on their heads!

The brain of a humpback whale is large compared to other animals. In fact, scientists have discovered some of the cells inside a humpback's brain are similar to those in a human's!

Warm blooded animals are able to maintain their internal temperature to keep themselves warm on cold days and cool on hot ones. They do not depend on the temperature of the environment. This takes energy and they have to get this energy by eating lots of food.



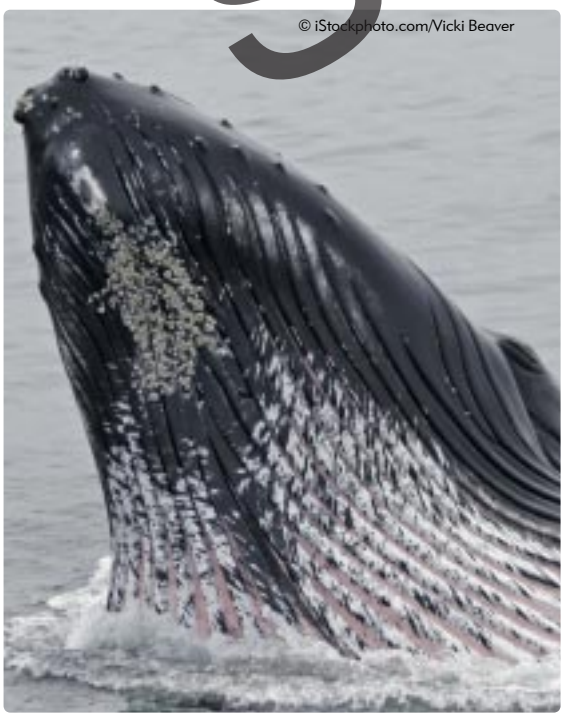
One of the closest living relatives to a whale is a cow.

The humpback – a very special mammal

Today thousands of humpback whales exist across the seven seas. They are such big animals, yet not many people have seen them. Someone saw the humpback whale leaping out of the water, with its back curved, and gave it the name 'humpback'. This name is still their common name but marine biologists call them *Megaptera novaengliae*. This means 'big whale with wings'. Some people even call them 'the humans of the sea'! Can you guess why?


Image courtesy of NOAA


© Simon Elwen / WCS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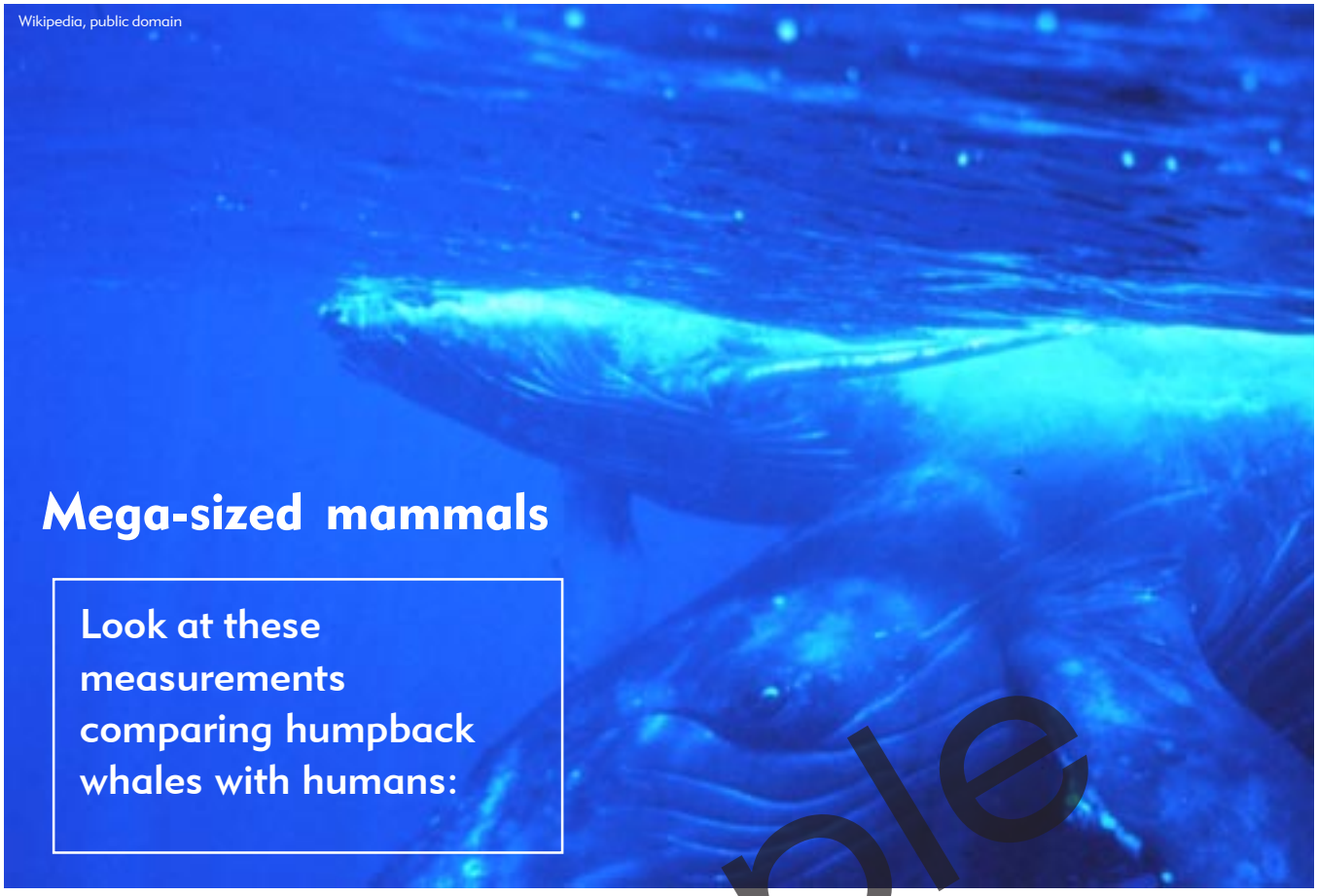
Looking at the humpback

Have a look at the magnificent humpback whale! It's big all right.

- *It looks as if it has two wings but they are really flippers with scalloped edges called pectoral fins.*
- *Its head is squished flat, with two small eyes, one either side of its wide head near the end of its mouth.*
- *It has a smaller fin on its back, close to the tail, called the dorsal fin.*
- *Its neck has folds, like the pleats of a skirt, which reach down to its belly button. These folds expand out when the whale fills its mouth with water to catch its seafood dinner.*

- *Its tail, called a fluke, is big too and has a scalloped edge.*
- *On its back you can see some funny lumps which have whiskers growing on them, which act as a type of sensor.*
- *Some of the bumps on its body have barnacles – a type of shellfish – stuck on them.*
- *Under their skin whales have blubber to help to keep them warm in the icy water.*

A humpback's handy flippers are similar to human arms and hands with lots of bones. It can use these pectoral fins to wave about and slap the water. They are so useful a mother can almost hug her calf with her fins!



Wikipedia, public domain

Mega-sized mammals

Look at these measurements comparing humpback whales with humans:

	Length (metres)	*Weight (kilograms)*
Male Whale	11.6	20,000
Male Human	1.7	65
Female Whale	12.1	30,000
Female Human	1.6	52
Baby Whale	5	2,000
Baby Human	.50	3.3

Did you notice that the female whale is heavier and longer than the male whale?

A baby whale is more than 600 times heavier than you were when you were newborn. It's ten times longer too!

Why are humpback whales so enormous?

Here are some of the reasons whales grow so big:

- *Water supports their great weight so they don't need legs and muscles to hold them up.*
- *They can store more fat.*
- *A bulky body loses less heat than a smaller one.*
- *They eat from the bottom of the food chain which gives them more energy to grow big.*

Whale Fact

Blue whales are bigger than the dinosaurs.

What do humpback whales need to survive?

All animals (including you!) need food, water and somewhere safe to live. They must have oxygen in the air to breathe.

For food, humpback whales need:

- *krill, small fish and plankton to eat.*
- *sunshine (see Food Chains, Page 20).*

Humpbacks don't need to drink their water like you but they have to live in it. They need:

- *quiet seas without too much noise.*
- *clean water free from plastic, chemicals and other pollution.*
- *correct water temperature.*

For a safe place to live they need:

- *a secure place to have babies.*
- *a habitat where predators can't attack them.*

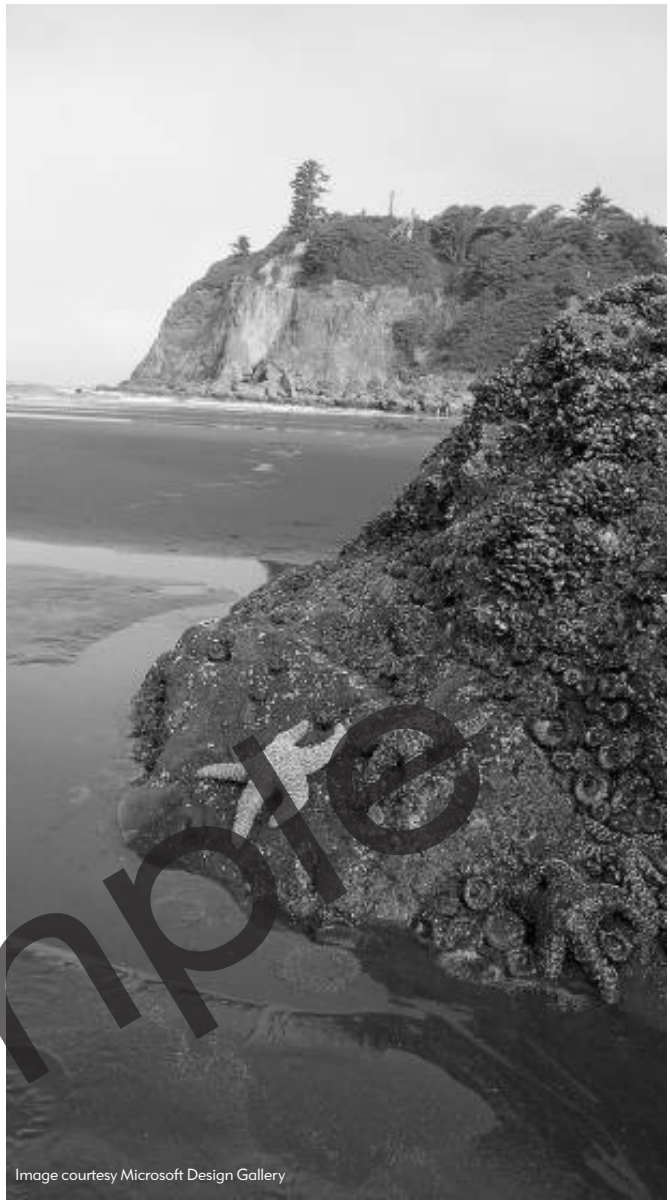


Image courtesy Microsoft Design Gallery

Whales need plenty of sunshine to survive.

Here are some more things whales need to survive in their watery world:

- *ocean currents during migration to help them get to the safe lagoons.*
- *family to teach and guide them until they mature. A whale baby needs support just like you do. If left alone it will die.*
- *a clear passage for their migration paths. These are like whale superhighways! They need to be free from the traffic of large ships or they might have a collision.*

How do whales breathe?

Whales take a breath of air at the water surface, then glide or dive underwater for 10 to 15 minutes, but sometimes for longer intervals of up to 30 minutes. They breathe in through two blowhole passages. These are similar to nostrils, just like you have! When they breathe out they send a blast of air, some water and some oil shooting into the sky. This spray or 'blow' travels faster than a speeding bullet – an incredible 450 kilometres an hour. In less than two seconds they breathe in and fill their lungs again.

Most of the time humpbacks swim close to the surface when they are migrating, but marine biologists now know they sometimes cruise along deep underwater as well.

A watery world

Humpback whales live in every major ocean in the world. They are also found in the Arctic and Antarctic regions. In the northern hemisphere there are four separate populations and in the southern hemisphere there are seven. Because whales migrate they have many habitats, which range from icy to tropical waters. They spend their time playing at the surface or swimming along just below. Sometimes they dive and travel in deep waters, at other times they live in shallow waters.

East Australian humpback whales spend part of their life down south in Antarctica and migrate north to the Great Barrier Reef when the water gets too cold. Another group of humpback whales migrate up the west coast of Australia. When east Australian humpbacks are migrating they hug the coast. Other humpbacks cross great oceans to visit New Zealand or the Cook Islands.

Humpback whales in the northern hemisphere do everything in the opposite direction to the ones around Australia. They live in the Arctic Circle to feed and migrate south towards the equator to breed.

Humpback Migratory Patterns