

Elephant seals

Elephant seals get their name from the adult males, which have a nose that looks rather like a short elephant trunk.

Southern elephant seals are found all around Antarctica and breed on sub-Antarctic islands including South Georgia, Peninsula Valdez, Heard Island, and Macquarie Island.

Adult male southern elephant seals can weigh up to 3000kg and adult females around 300kg. Together with the male walrus, they are the largest of the pinnipeds, which is the family of seals, sea-lions and walrus. Females reach about 900kg just before giving birth. Pups weigh about 40kg at birth. They are weaned (stop drinking milk) after 24 days, by which time they weigh between 120kg and 220kg.

Elephant seals breed in groups called harems. The strongest males each control a harem of up to 50 females. Once a harem grows to more than this, the dominant male will allow some less strong males to live with the harem. Harems can grow to over 1000 females with over 30 males. The breeding season is September to November. Elephant seals do not feed during the breeding season, so their thick layer of blubber keeps them going during that time.

Southern elephant seals feed on squid and fish. Generally alone, they travel long distances. They dive constantly while at sea. They can dive to over 1500m in depth and can stay underwater for up to 2 hours. However, most dives last about 30 minutes to depths between 300 and 800m. In between dives they spend just a few minutes at the surface. Adult elephant seals return to sub-Antarctic islands some time during January to April to moult.

Elephant seals were once hunted for their blubber, which was almost as prized as that of the sperm whale. The blubber was boiled down into oil, which was used for lighting oil lamps, among other things.

Leopard seals



Leopard seals are also known as the sea leopards. They are solitary (live on their own), and inhabit Antarctic and sub-Antarctic regions, but sometimes roam as far north as South America, Australia and New Zealand. They are named for the spotty patterns on their fur and are known as fierce hunters of prey.

They have long, slender bodies and large heads and jaws. The shape of their heads is almost reptilian in appearance. They have large jaws with long and sharply pointed canine teeth, unlike those of most other seals. Males are about 2.8m long and generally weigh 300-600kg, while the females are a bit heavier, between 400-500kg and about 3.5m long.

Leopard seals will eat almost anything and are aggressive hunters.

Unlike any other species of seal, they hunt and kill warm-blooded animals, as well as fish and krill. The favourite food of the leopard seal is the penguin. They chase and grab penguins in the water and thrash them to and fro until the skin peels away, then eat the carcass. They also leap onto the ice to grab their prey and return to the water. The only natural predator of the leopard seal is the killer whale, or orca.

Because they are solitary animals in a vast, isolated place, very little is known about leopard seals, including their breeding. The female leopard seal is pregnant for nine months, and gives birth between November and January. Female leopard seals jump onto the pack ice when it is time to give birth. The baby seals weigh about 40 kg and double in size within the first three months of life. Baby leopard seals are rarely seen.

Adelie penguins

Adelie Penguins are the smallest of the Antarctic penguins, about 70 cm tall and 5.5 kgs in weight. Their main predators in the sea are leopard seals, which often lie in wait beneath rock ledges to grab the first penguin into the water. Their main predators on land are skuas, birds that break and eat the eggs, or prey on the small chicks. They come ashore in October to breed in the few weeks of summer.



There is fierce competition for nest sites on high ground in the middle of the colony where it is safer from skuas. Soon after laying 2 eggs in a rocky nest, the female returns to the sea to feed, leaving the male for up to ten days. Nests cannot be left unattended in the intense cold, so males and females take turns incubating the eggs. After 30 days the chicks hatch, and parents take turns to feed them. At 4 weeks old, they are as big as adults and both parents must hunt together to get enough food to feed them. The colony's chicks wait together in the care of a few adults. Adult birds gather in large numbers at the water's edge waiting for the right moment to take the plunge. There are about 2.5 million Adelies in Antarctica.

Emperor penguins

The Emperor penguin is the largest of the 17 different kinds of penguin.

It stands at just over 1 metre tall and is up to 30 kg in weight. Males and females look very similar, with black cap, blue-grey neck, orange ear-patches and bills and yellow breasts. Emperor penguins live and breed in Antarctica, where there is little or no shelter, at the coldest time of the coldest, most severe winter in the world.

Protection against the cold

To protect them from the cold they have a thick layer of fat under their skin, a dense layer of woolly down (fluffy feathers) and a layer of waterproof outer feathers. Only the strongest winds ruffle these feathers. Small flippers and bill help them conserve body warmth.

Other adaptations are special nostrils so they don't lose warmth when they breathe out and a circulation system that recycles body heat. Emperor penguins stand, which leaves just a small part of the body in contact with the icy ground. They are not active through the deepest part of winter, and huddle together for warmth.

Emperor penguins can dive more than 300 metres deep, and stay underwater for up to 20 minutes. They travel at speed by 'porpoising', or leaping in and out of the water like dolphins without having to change their breathing. On land they do not walk well, but waddle. Whenever they can, they slide on their bellies.

Emperor penguins spend summer feeding and gaining fat to last them through the breeding season. They assemble early in winter at breeding areas, shortly after the Antarctic sea ice has started to form. Unless one of the pair has died during the year, each penguin returns to the same partner. By the time the sea has frozen during the severe winter, the colonies may be up to 100 kms away from open sea.

Eggs are laid in winter, May – June, so that by the time the chicks hatch and grow it is the time when there is most food. Each female lays just one egg because it is too difficult to rear more than one chick in such a harsh environment. As soon as the female lays her egg, she passes it to the male who incubates it. The female travels across the ice to spend the winter feeding at sea. She must feed heavily so when she returns she will be able to feed a hungry chick. The male incubates the egg, positioning it on top of his feet so it doesn't touch the frozen ground, covering it with a specially warm fold of his skin and feathers, called a brood patch. Incubation takes nearly two months, during which time he does not feed. During the long sunless Antarctic winter, the males huddle together, sleeping to conserve energy because they are not feeding. They take it in turns to be in the middle of the huddle where it is warmer. In temperatures lower than -60°C with winds of 180km per hour, the temperature in the centre of these huddles can be 20°C higher.

Chicks hatch out of the eggs in early September, the beginning of spring, and stay in the protective warmth of the male's brood patch. Females return in spring to change places with their mates, by which time the males have lost about one third of their body weight. The adults find each other by recognising their own distinctive call. The chick is moved from the father's feet to the mother's. The move must be completed very quickly or the chick will die in the extreme cold. The males must now travel up to 100 km across the ice to reach the open sea in order to feed.

Adults feed only their own chicks, recognising its distinctive call. Once they are about 7 weeks old, chicks join together in a crèche protected by a few adults. The chicks huddle together for warmth. They cannot swim until they have shed their down and have grown their waterproof feathers. By midsummer, they are independent and can look after themselves.

Emperor penguins can live more than 20 years, but many chicks do not survive. Large birds prey on eggs and chicks, and later when they go to sea, orca whales and leopard seals prey on them. If they survive long enough, they are ready to breed at 4-8 years of age.

The blue whale;

So, the largest animal on Earth feeds almost entirely on the smallest creatures in the sea, krill. At certain times of the year, blue whales consume almost 4 tonnes of tiny krill per day. The largest animal also does the largest poop! It's bright orange, the colour of krill, and it comes out in a long, thin stream near the surface of the ocean. It brings nutrients from the deepest part of the ocean and also to the the ocean floor when it sinks.

Blue whales are found in all the world's oceans

The whales are usually on their own but sometimes in pairs. They have grey-blue skin with light spots, but when seen underwater they look blue. Blue whales generally leave the icy polar areas in winter and migrate to warmer temperate to subtropical areas, where females give birth, and then return to the polar regions for spring and summer.

Blowholes on the top of a whale's head are how it exhales. Like all baleen whales, the blue whale has two blowholes close together. When you have held your breath for a while, you breathe out, or exhale. Whales exhale through their blowholes. The blow, or spout of air and steam that spurts from a blue whale's blowholes, can be nearly 9 metres high.

When it is newborn, a blue whale calf is *already* one of the biggest animals on earth!

Newborn blue whales are 8 metres long and 2,700 to 3,600 kg in weight. Calves suckle on their mother's milk, which is very rich so that they gain weight and a layer of blubber quickly, ready for the return to icy polar waters. Calves gain about 90kg a day, and when they stop feeding from their mothers 7 months later, they are 18 metres long and weigh about 23 tonnes!

Blue whales can live for about 80 years.

The the fifth largest animal on Earth



The humpback whale is the fifth largest animal on earth, growing to a length of 15 metres and weighing up to 45 tonnes. They are the most commonly seen whales in Australian waters, but are found in all the world's oceans. They migrate each year from winter in the polar regions to warmer waters closer to the equator.

Humpback whales have massive heads. Along the underside of their necks they have up to 22 throat pleats which expand when they are feeding.

They have a very rough skin, with many knobs and lumps on which barnacles grow.

Humpbacks have huge pectoral fins which can be up to a third the length of their entire body.

Humpbacks get their name from their habit of showing a large part of their backs out of the sea as they dive.

They are the most acrobatic of all of the big whales, leaping, rolling and breaching (leaping right out of the water and falling backwards, making a loud noise as they hit the water), which provides great viewing for humans. Adult humpbacks sometimes breach as many as 30 times in a row, every 10 seconds or so. They are inquisitive, and often lie on their backs with flippers in the air, or with heads out of the water, looking around above the surface.

Singing

Humpback whales are famous for their complicated whale songs, particularly during breeding season. The songs are series of cries, clicks, howls and other noises, which can go for hours. The sound travels great distances through the water. Scientists are not sure why they sing, but it is probably to attract a mate and to communicate with other humpback whales.

Killer whales, also called **orcas**, hunt everything from fish to walruses – seals, sea lions, penguins, squid, sea turtles, sharks and even other kinds of whales are all on their menu. Depending on the season and where they are, their diet varies – some eat plenty of fish and squid, others feast mostly on seals and penguins. But wherever they are in any of the world's oceans, average-sized killer whales may **eat about 227 kilograms of food a day!**

These mega marine mammals have many hunting techniques, and bumping seals off ice is just one of them. Often referred to as '**wolves of the sea**', killer whales live and hunt together in 'pods', or family groups, much like a pack of wolves.

Working together as they hunt, groups of killer whales cooperate to herd fish into a compact area so that they're easier to gobble up. They will also slap their tails onto the water's surface, causing a wave to wash prey (such as penguins or sea lions) off ice floes and into the water.

Sometimes, a pod of whales will join forces to surround a larger animal, such as a blue whale. They **chase, bite and wear it down** until it becomes weak enough for them to feast on.

Killer whales have around **45 teeth** (each around 7.6 centimeters long), which are shaped for ripping and tearing prey. Instead of chewing their food, they take one big gulp – and believe it or not, these brilliant beasts can swallow small seals and sea lions whole! Bigger prey is ripped into chunks before being eaten.

Scientists believe the colour pattern of killer whales may help them **sneak up on and attack their prey**. Their backs are black, and their stomachs are white. Animals looking down on this powerful predator from above, such as a seal on an ice floe, might not see it because the whale's dark back **blends with the water below**.

On the other hand, the killer whale's white underside blends with the light streaming down into the sea from the surface, making it hard to spot from below. Such cool camouflage means prey like fish, penguins and seals are likely to miss the danger heading their way. Crafty, eh?!