

Why are koalas so well suited to life in Australia?

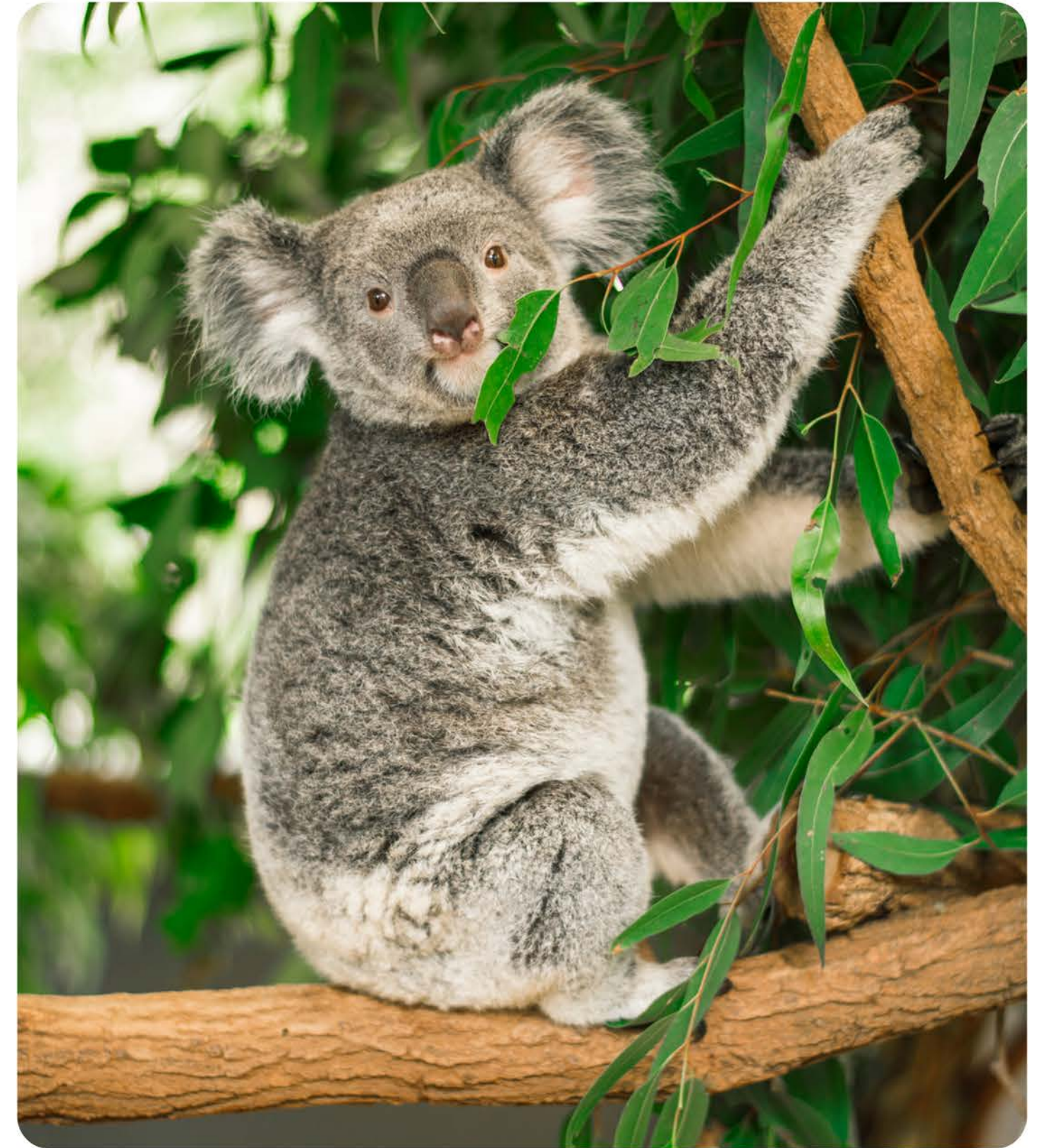
Year 5 Science



Adaptations

To survive and thrive in a the harsh Australian environment for millions of years koalas have evolved both **physical** and **behavioural** adaptations.

Lets take a look at some of these...



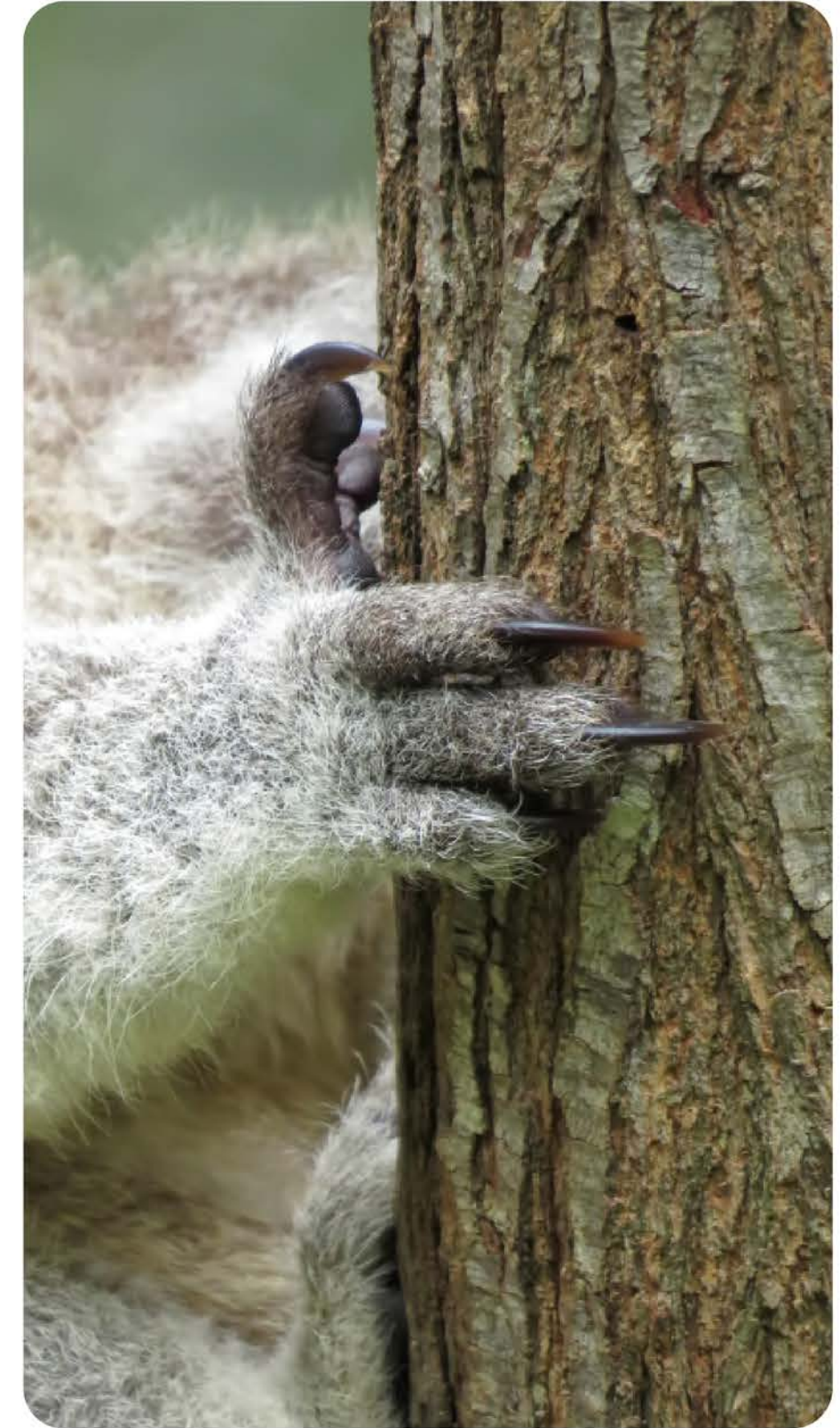
Physical Adaptations

Claws

Koalas have long, sharp claws that help them to climb the tall, often smooth, trunks of gum trees without falling.

Their sharp claws also help them to look after their coats and groom their thick fur.

They may use their claws to protect themselves from predators or in a fight with another koala.



Koala hand and sharp claws

Physical Adaptations

Thumbs, lots of them!

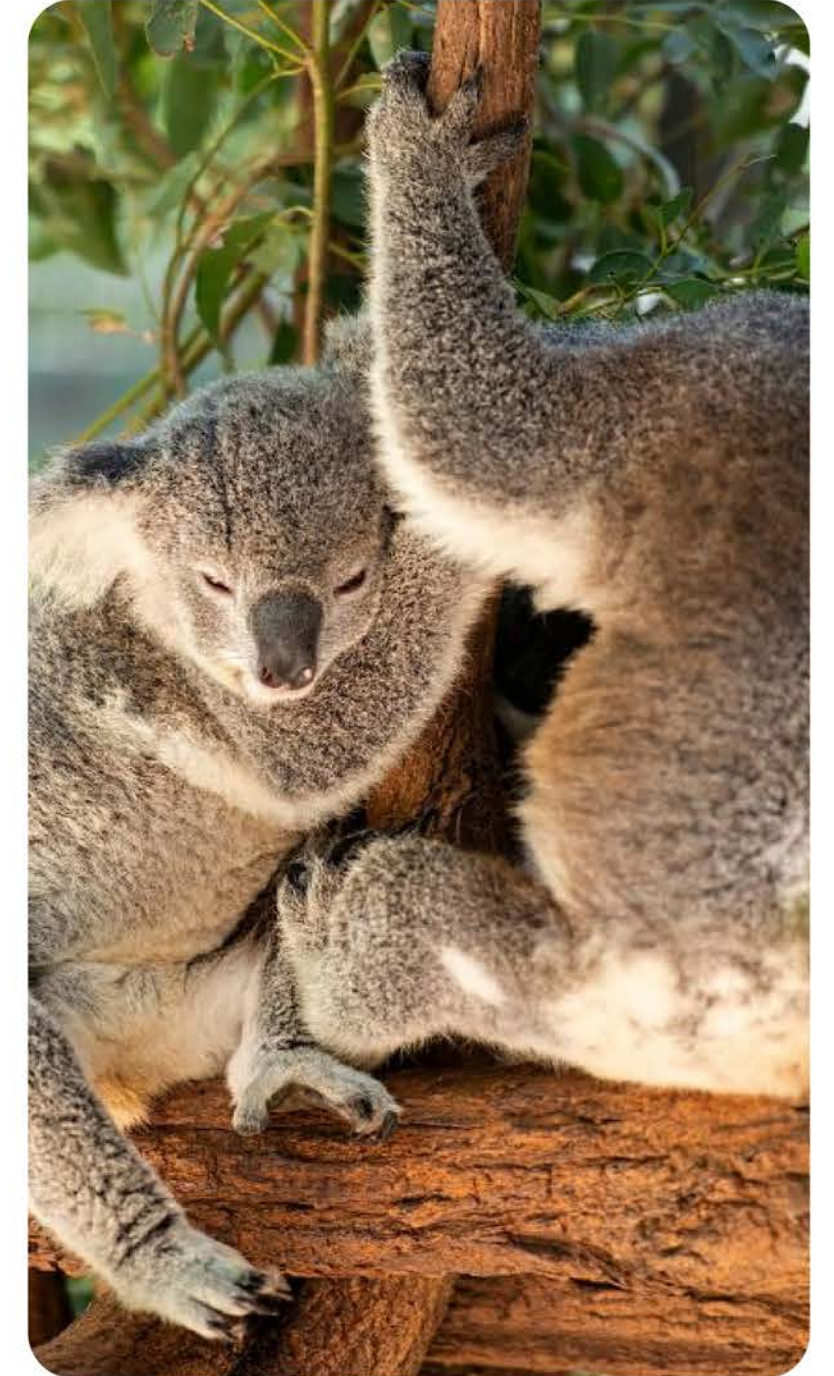
Koalas spend almost all of their life in trees, so climbing well is a must!

To help with this, they have two thumbs on their hands to help them grip tightly onto branches.

They also have a thumb on their hind feet, similar to other **arboreal** (tree dwelling) mammals, that provides extra traction.



Koala fore hand
with two thumbs



Koala rear foot
with a thumb

Physical Adaptations

Fur

Koalas, being **mammals**, have hair on their bodies. Koala fur is very thick and acts to keep them warm in cold conditions and cool in hot weather. It also acts as a raincoat, keeping them dry during the rain.

The colour of their fur is also excellent **camouflage**, helping to hide them from predators.



Wet koala

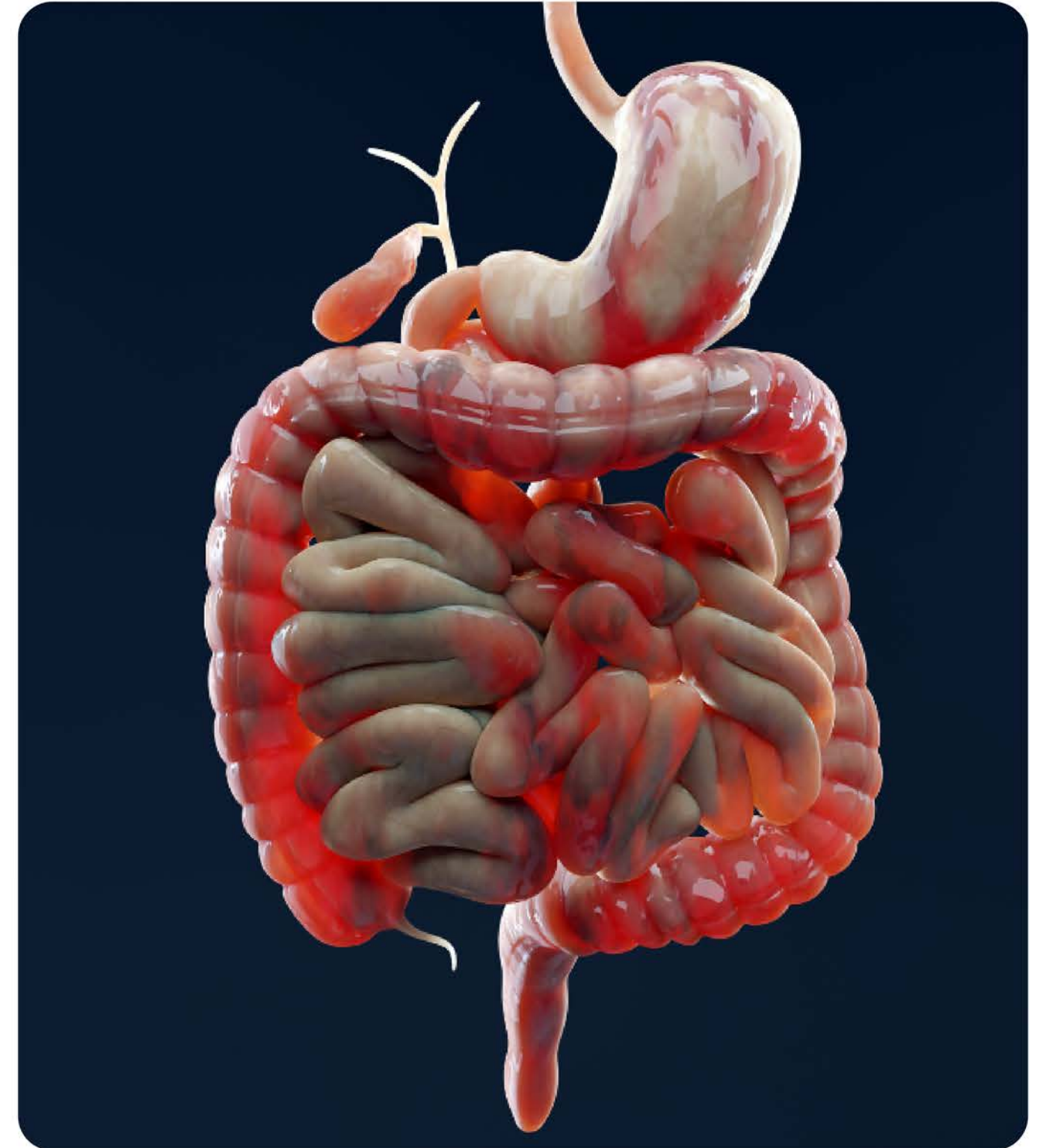
Physical Adaptations

Special digestive systems

Koalas have a special **digestive tract** that helps them get water from eucalyptus leaves they eat.

Inside their digestive tract, there are **bacteria** that break down the tough parts of the leaves and release water. Koalas also have clever **kidneys** that save water from their urine.

This helps koalas stay hydrated and happy in their often dry leafy homes.



Physical Adaptations

Pouches

Koalas are a special type of mammal, called a **marsupial**.

They give birth to a jellybean sized baby, called a joey, which crawls into the mother pouch and drinks milk until it is old enough to emerge.

Raising babies this way is a great advantage in Australia's often harsh environment.



Koala joey

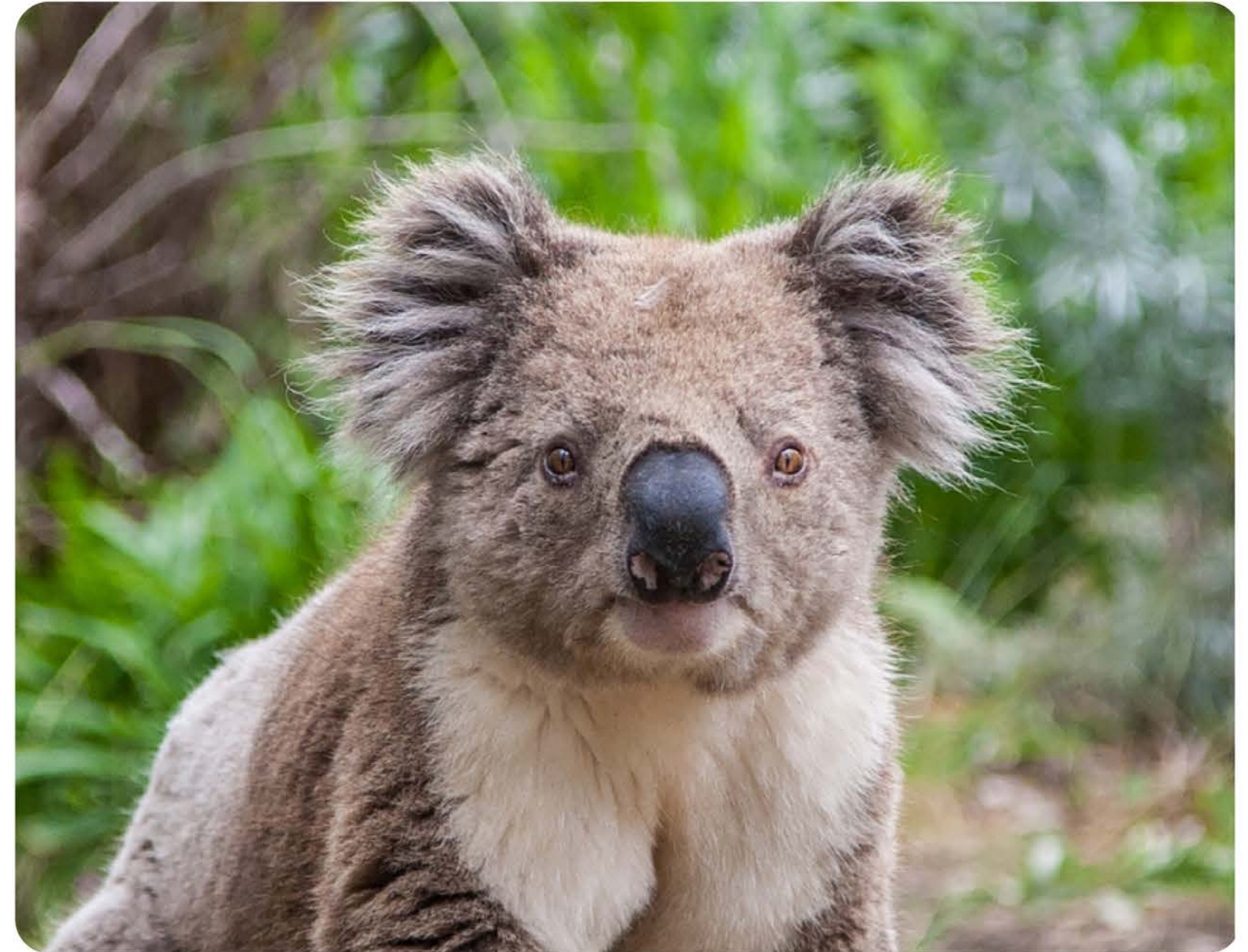
Physical Adaptations

Large noses

If you look at a koala's face you will notice it has small eyes and a big nose!

They have poor eye sight but can smell very well.

This helps them survive by being able to sniff out the best leaves. It also helps them smell other koalas across the bush.



Koala face

Physical Adaptations

Sleeping

Koalas eat a diet consisting almost exclusively of gum leaves, which contain very little energy.

To save energy koalas sleep for almost 20 hours a day. This is an important part of their survival strategy.



Koala sleeping

Physical Adaptations

Tree dwelling

Koalas spend almost their entire life in trees. Trees provide koalas with everything they need; a home, water and food.

Living high up in trees also allows koalas to avoid ground dwelling **predators**.



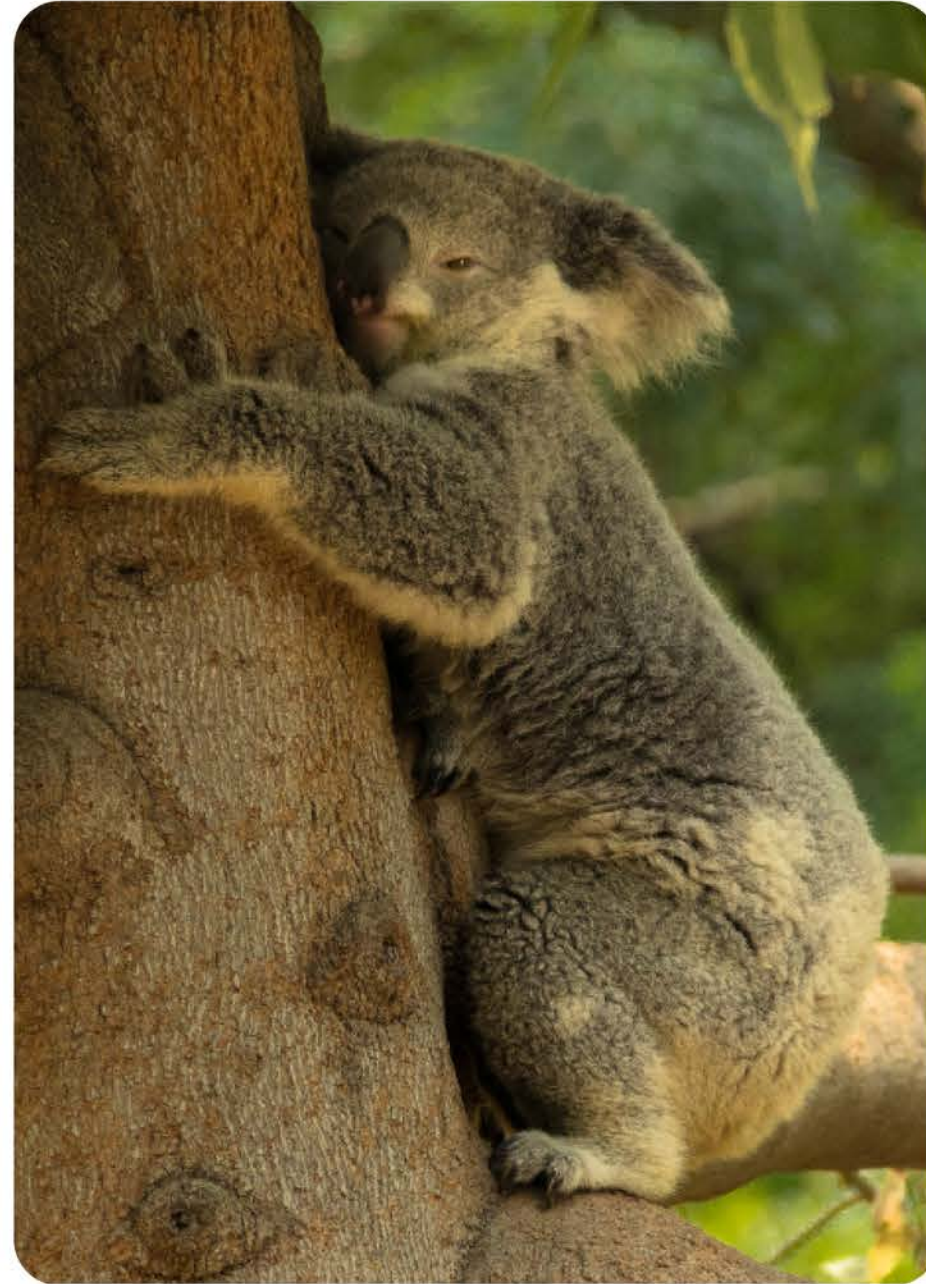
Koala in a tree

Physical Adaptations

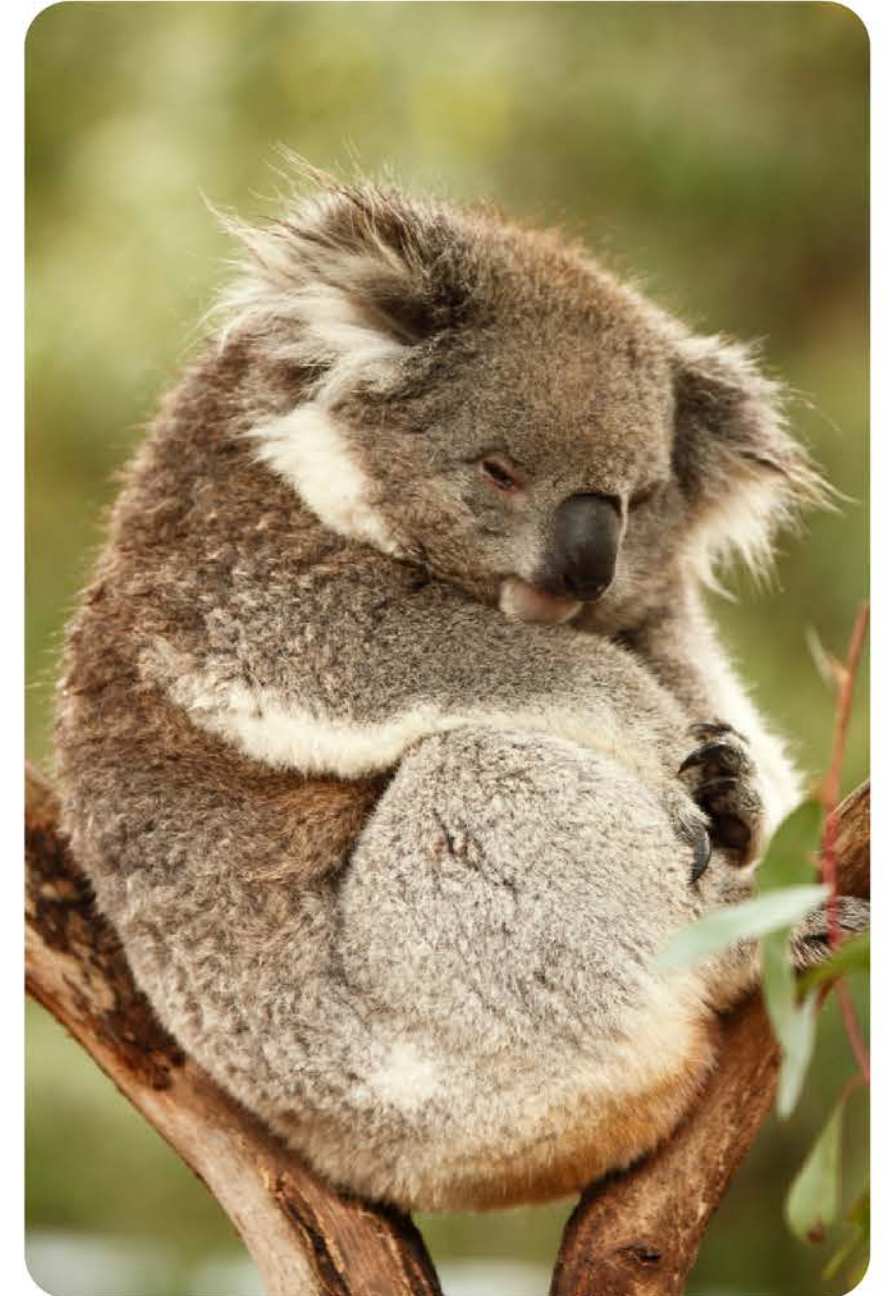
Body posture

In hot weather, koalas like to cuddle up to tree trunks. The cool, shady bark helps them cool down by touching it. This way, they can stay out of the sun and lose some of their heat through the tree.

Just like us, koalas will try to conserve heat when its cold by curling their bodies into a ball.



Hugging cool trunk



Curled up

So why are koalas endangered now?

Let's dive into some of the reasons there are less and less koalas every year...



Working
together to
protect
koalas



Hunting

Aboriginal people lived with koalas for tens of thousands of years. When European people arrived in Australia however, millions of koalas were killed for their coats, almost wiping them out.

Hunting was banned in the 1920s and koala numbers slowly increased again in some areas.



Habitat Loss and Fragmentation

Even though hunting koalas is now illegal, it's the loss of forests that poses one of the biggest threats. Trees are cleared for the timber, or to make way for more houses, roads, and people.

When trees are left for koalas, they are left in pockets or **fragments**. This means less homes and food for koalas. It means they need to leave the safety of the trees to find food and other koalas.

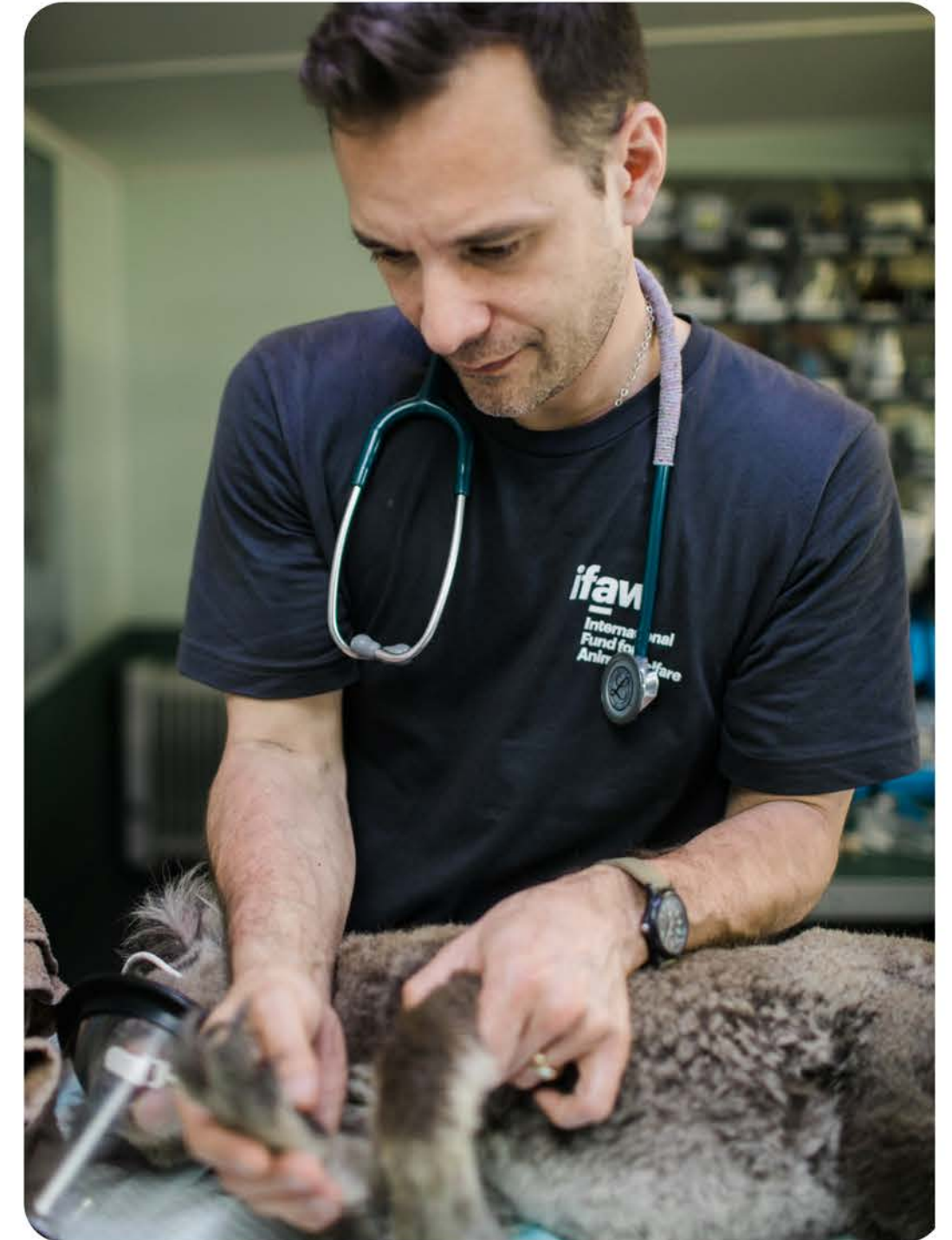


Disease

Koalas can get sick, just like people.

One sickness they can get is called chlamydia, and it can make them very ill. Koalas with chlamydia have trouble seeing, going to the toilet too much, and have trouble having babies. When a group of koalas have chlamydia the **birth rate** for new koalas drops.

There is a new sickness emerging in koalas called mange which is caused by tiny mites, and makes them lose their fur. Researchers are testing new **medicines** for mange in koalas.



Koala with vet

Dog attacks

When dogs and koalas meet, it can be dangerous for koalas. Dogs protect their territory and can hurt or even kill koalas.

As koala habitat decreases and they are left with small patches of trees here and there, they need to come down to the ground and walk from tree to tree. When they are down on the ground they are vulnerable to dogs and other predators.



Bushfires

Sometimes, there are big fires in the bush. Small fires help the Australian landscape, getting rid of dead vegetation, putting nutrients back in the soil and helping seeds to **germinate**.

Big fires are dangerous for koalas. They burn the **canopy** of the trees. In the 2019-2020 bushfires, 60,000 koalas were impacted. If the koalas survive the fire, they are left in a home with no food, no water, and no shelter.



Bushfire

Car collisions

When koalas need to move from one patch of trees to another it can be very dangerous for them. Koalas move trees often at **dusk** or **dawn** and their grey fur makes them very hard to see on our roads. Habitat destruction and fragmentation further increases the risk of car collisions.

Sometimes cars and koalas accidentally meet and koalas are hurt or even killed. Sometimes the baby survives in the mother's pouch and needs to be rescued and cared for by people.



Climate change

The weather is changing and, in some places, getting warmer, and it's causing problems for koalas.

The trees they eat are not growing as well because there isn't enough rain, and sometimes there are really big storms that can damage the trees and make it hard for koalas to find food.

When it gets too hot, koalas can also get sick or even die because they can't cool down with their thick fur.



So how do koalas stay cool in the heat?

Unlike us, koalas can't take off their thick coats and they can't sweat. Here are some other behaviours they use to stay cool:

- choose shady trees out of the sun
- panting to let heat out through their mouths
- lick their arms to help them cool off as the moisture evaporates
- become more active at nighttime.

With less trees and other growing threats, some of these behaviours are increasingly challenging for koalas.



How will koalas cope with climate change?

We can't be completely sure, but we have some ideas about what might happen to koalas because of climate change. When it gets hotter and drier, koalas might struggle because they could get too hot, have trouble finding their favorite trees to eat, and face more dangerous bushfires.

To deal with these challenges, they might need to learn to eat different foods, find ways to stay cool, move to new areas and start drinking more water. But these **adaptations** only happen over long periods of time.



Can koalas adapt?

What extra adaptations would help koalas survive in our changing world?

Can you think of **behaviours** and **features** that would help them survive?

