



TIM FLANNERY

EXPLORE YOUR WORLD

ART BY
SAM CALDWELL

WEIRD
WILD
AMAZING!

PIRANHAS

Piranha means 'tooth fish' in Tupi, an indigenous language of Brazil. It's no surprise they were named after that particular feature – they have seriously fearsome grins. They live in freshwater lakes and rivers, including the Amazon River, and they can also commonly be found in the nightmares of people petrified of being eaten alive while swimming. True, piranhas are incredible hunters that are attracted to the smell of blood, but you'd be surprised at the things they'd choose to eat before sampling your toes!

SCAREDY FISH

Piranhas have huge teeth, but there are still plenty of larger, fiercer predators that can eat them, including caimans – relatives of alligators. Travelling in crowds makes them feel less open to attack – there's safety in numbers!

A FISH OR A DOG?

Red-bellied piranhas bark to frighten off predators.

WHERE CAN I SEE A PIRANHA?

Piranhas live in South America.

A GROUP OF PIRANHAS IS CALLED A SHOAL.

WHAT DOES A PIRANHA EAT?

Piranhas are known for having a taste for flesh, but plants are actually a common part of many piranhas' meals. Some of them are even vegetarian!

- ▶ Seeds, nuts and riverweeds make tasty snacks for piranhas.
- ▶ Meaty prey commonly includes things like worms, crustaceans, snails, fish and any dead animals or birds that they find in the water.
- ▶ If there isn't much food around, they can turn to cannibalism and start eating each other!

CRUNCH!

Wimple piranhas swim quickly at their prey, barrelling up and taking a firm bite before their hapless prey knows what's hit them. They aren't actually going after flesh, though – their favourite food is fish scales. They ram into fish to dislodge their scales, which they crunch down on as their frightened prey swims off (a few scales lighter!).

TEAMWORK MAKES THE DREAM WORK

Red-bellied piranhas are great at sharing! They look for food together, often lurking in underwater plants and waiting to spring out to surprise unsuspecting prey. When one fish comes across something meal-worthy they let the rest of the shoal know, and everyone gathers around to take turns tearing a

CAN A PIRANHA EAT ME?

A piranha certainly wouldn't turn its nose up at nibbling on human flesh, but the human would have to be dead or very close to it before piranhas made a proper meal of them. They generally only go after large prey such as humans or capybara if they're dead or severely injured. If there isn't a lot of other food around and you splash noisily into a piranha-infested river with a bleeding foot, you might be risking a piranha bite. That said, people regularly swim in rivers with piranhas without it turning into a bloodbath.

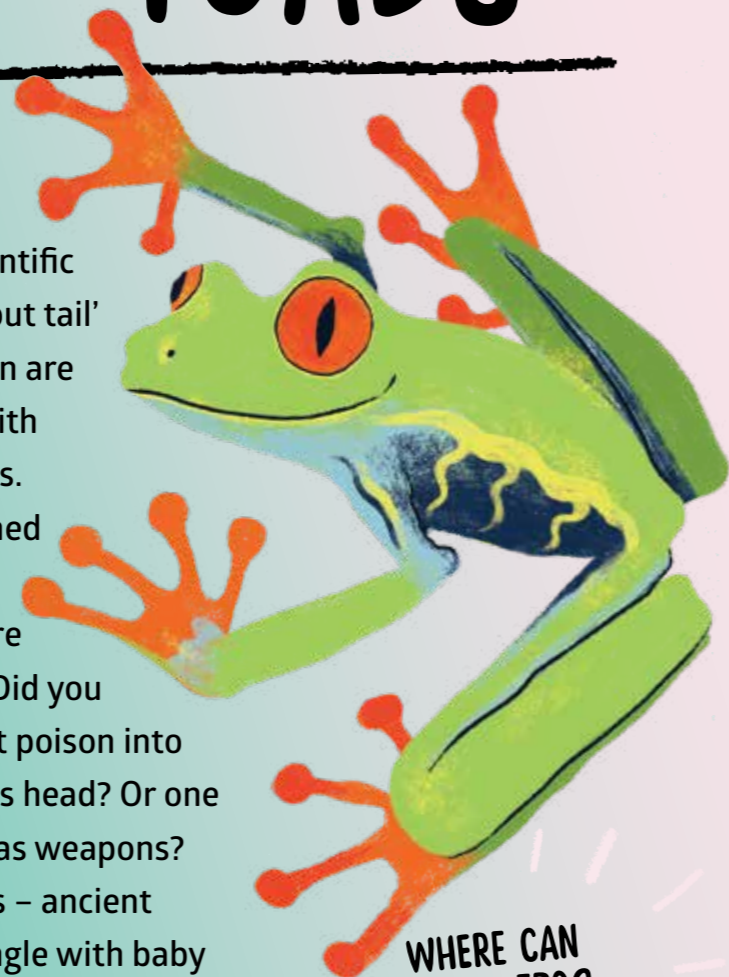
YUM!



mouthful out of their shared dinner. Piranha dinnertime isn't always so polite, though. These fish can go into a feeding frenzy when they're hungry and come across prey in the water, with masses of fish thrashing and flipping around to fight for a bite before their friends gobble it all down.

FROGS AND TOADS

Frogs and toads are more similar than you'd think. They're both amphibians and even share a scientific name, Anura, which means 'without tail' in Latin. Anurans with smooth skin are usually called frogs, while ones with warty skin are usually called toads. But both smooth and warty-skinned types can occur within the one Anuran family. Frogs and toads are a lot more brutal than they look. Did you know there's a frog that can inject poison into its attackers using the horns on its head? Or one that breaks its own bones to use as weapons? And they're only the modern ones – ancient species were tough enough to tangle with baby dinosaurs!



WHERE CAN I SEE A FROG OR TOAD?

Frogs live on every continent except Antarctica.

A GROUP OF FROGS IS CALLED AN ARMY, A GROUP OF TOADS IS CALLED A KNOT.



BIG AND SMALL

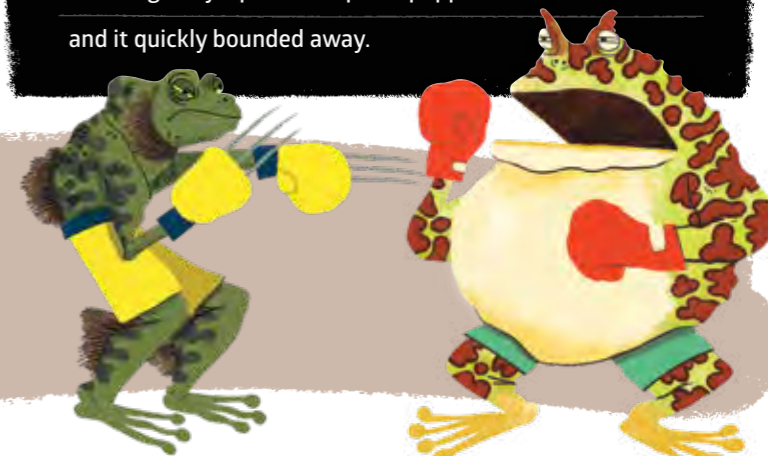
The smallest frog is the *Paedophryne amauensis*, which only grows up to 7.7 millimetres long. The entire frog is the same size as a pea!

The largest frog is the **goliath frog**, which is about 30 centimetres long and can weigh more than 3 kilograms – the same as a brand new human baby, but a whole lot slimier.

FLANNERY FILE

Some time ago I was working in a very remote village in New Guinea. One day, a woman brought in a gigantic frog and sat it down on the table in front of me. This frog was the size of a dinner plate! I thought maybe it was dead, because it was completely still. Then, with no warning, it leapt off the table and onto my chest! It got me right around the throat with its arms, kind of like a big frog-hug. Everyone in the village screamed – they thought I'd been attacked by this giant frog. But I couldn't stop laughing – the frog was just like a big baby. I picked it up and popped it back on the table, and it quickly bounded away.

THE PERFECT NAME



- ▶ **Rocket frogs** have a pointy nose that looks like the tip of a rocket ship – and they can launch like a rocket, too. The Australian rocket frog can jump 4 metres high!
- ▶ **Ornate Pac-Man frogs** have super-wide jaws, just like the famous yellow computer game character they are named after. They snap up their prey just as enthusiastically, too!
- ▶ **Venezuelan pebble toads** have bumpy, pebble-coloured skin. When these tiny mountain-dwelling toads feel threatened they roll up and bounce away downhill just like a loose pebble.
- ▶ **Little devil frogs** are bright red, the same colour as a cartoon of the devil, and they're packed full of poison, too.
- ▶ **Mossy frogs** have lumpy skin that is covered in mottled green patches. They look just like a tiny, moss-covered rock!
- ▶ **Glass frogs** have completely see-through skin, so when you're looking at them you can see all of the organs working away inside.
- ▶ **Wolverine frogs** are also known as hairy frogs or horror frogs. They have masses of hair-like growths sticking out near their back legs, a bit like Wolverine's shaggy sideburns. But that's not all! Just like the comic book character, these frogs have the ability to snap their own bones and force the bone spikes out through the skin of their feet to protect themselves. Once they've neutralised the threat they pull the broken bones back inside their bodies and start to heal.

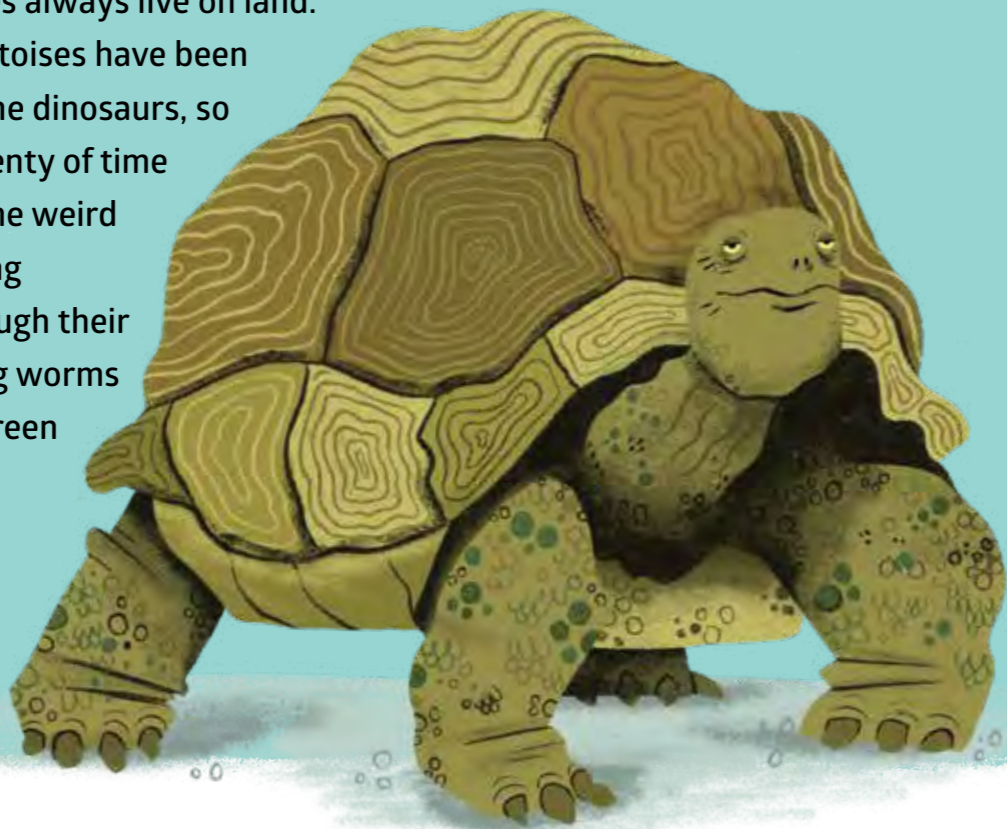
INCREDIBLE!

TURTLES AND TORTOISES



Turtles and tortoises are both types of Testudines (say that tongue twister three times fast!). 'Testudines' means 'shell', and you can't miss that feature on these creatures – their shells cover most of their bodies. So how do you tell the difference between turtles and tortoises? It all comes down to where they live – turtles can spend time on land, but they generally prefer the water. Some live in the ocean, others prefer fresh water. Tortoises always live on land.

Turtles and tortoises have been around since the dinosaurs, so they've had plenty of time to develop some weird habits, including breathing through their butts, imitating worms and growing green mohawks.



WHERE CAN I SEE A TURTLE OR TORTOISE?

There are turtles or tortoises on every continent except Antarctica.

HOW DO TURTLES BREATHE?

Some turtles come to the water's surface regularly to breathe, but certain freshwater turtles hibernate all winter underwater, and others barely come up for air year-round. So, how do they do it?

- ▶ The **mata mata turtle** uses its bizarrely long snout like you would use a snorkel.
- ▶ The **common musk turtle** has a special tongue which is covered in little buds that draw oxygen out of the water, so it breathes through its tongue as it swims.
- ▶ The Australian **Fitzroy River turtle** absorbs oxygen through its cloaca, or, in simple terms, it breathes through its butt. Yes, seriously.

CLEVER!

STINK ATTACK

Musk turtles, also called stinkpot turtles, are small enough to sit in your hand. When they feel threatened, they release an overpoweringly bad smell from musk glands underneath their shell. It smells so bad that most predators will back off.



WHAT'S FOR DINNER?

Tortoises eat plants, and some turtles are partial to plant-based snacks as well, but for the most part turtles are carnivorous – and they've come up with some pretty ingenious ways to catch their meals.

- ▶ The **alligator snapping turtle** lives in rivers and lakes in the United States. It has a sneaky way of hunting that involves poking out its long, pink tongue and wiggling it around so it looks like a worm. Passing creatures that are lured in to try to eat the 'worm' get snapped up in the turtle's powerful, beak-like jaws.
- ▶ **Leatherback turtles** have a whole lot of spiny barbs inside their throats that help them eat jellyfish. The barbs point towards their stomach so it's easy for jellies to slide down, but if they try to slither back

out they get spiked! These turtles can eat more than 100 kilograms of jellyfish each day, so they play an important part in controlling jellyfish populations.

- ▶ **Cantor's giant softshell turtles** bury themselves in the mud in the water, leaving just their eyes and mouths poking out. They only go to the surface to breathe twice a day! They stay completely still, and then when a fish or crab wanders past they snap it up with lightning speed. Their dinner never sees them coming.
- ▶ **Wood turtles** love eating worms, and they've developed a clever way to catch them. The turtles stomp their feet to imitate the sound of raindrops hitting the ground, luring earthworms out into the open where they can be gobbled up by the waiting turtle.

SNEAKY!

WHAT ARE TUSKS FOR?

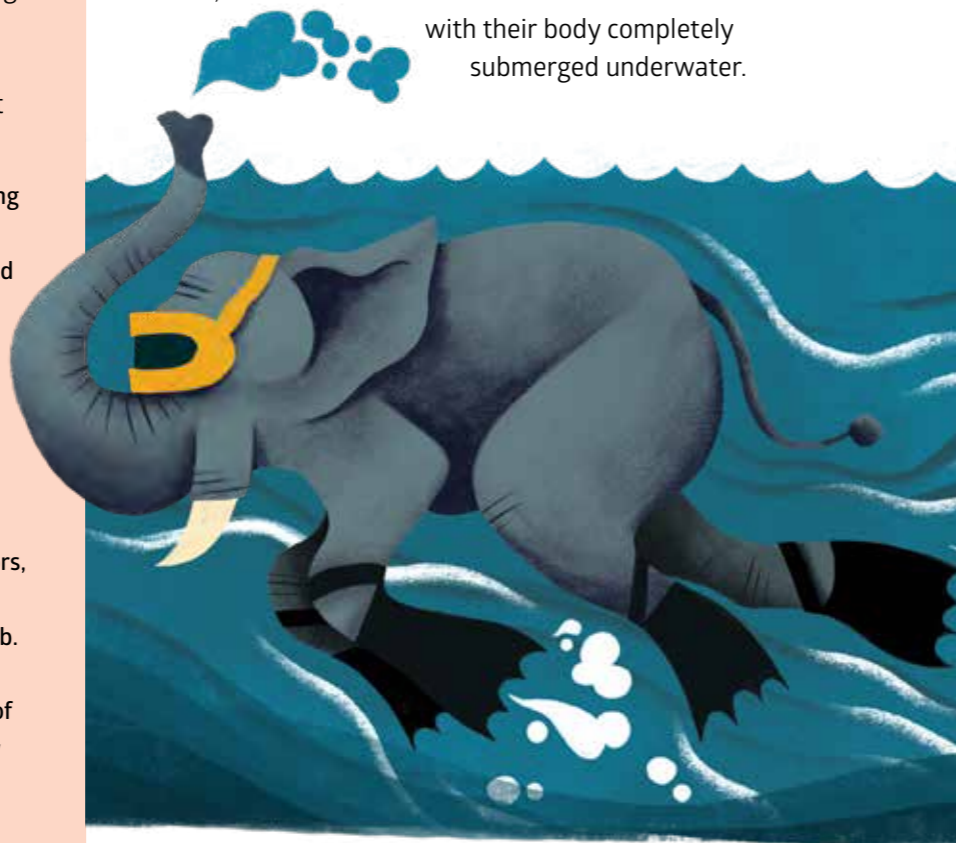
Tusks are kind of like the elephant version of a pocketknife – they're strong, pointy and can do a whole lot of nifty things. **African elephants** have the biggest tusks.

- ▶ Tusks are perfect for digging up roots to eat or drilling down to reach underground water.
- ▶ Elephants can use their tusks to strip the bark off trees so that they can munch on it.
- ▶ If an elephant needs to intimidate or fight predators, or even other elephants, tusks are perfect for the job. As you can imagine, being on the other end of a pair of long tusks would be pretty terrifying!

MOVE OVER, MICHAEL PHELPS!

Elephants are excellent swimmers. In fact, they're the best swimmer of any land mammal – except for professional human swimmers! They are able to float quite well in the water, and can also use their trunk like a snorkel and swim

with their body completely submerged underwater.



CONSERVATION STATUS

ENDANGERED

Asian elephants are endangered and African elephants are threatened.

CLIMATE CHANGE

Different elephant species used to breed with each other, and sharing their genes in that way helped them become stronger and more able to adapt to living in different places. Scientists worry that because the last three living elephant species no longer breed outside of their own species, they may be less adaptable and more vulnerable to climate change.

MUD BATH

Elephants love to swim in water, but they'll also wallow around very happily in a pool of mud. A mud bath helps elephants to keep cool and rid themselves of bugs. The mud has another special benefit, too – it coats their skin and helps protect them from the hot sun. Yes, even elephants can get sunburnt!

FLANNERY FILE

Once I was in a bush camp in Botswana, and there was a little swimming pool there. A young elephant came right into the camp and started playing with a hose that was being used to refill the pool. The people running the camp were a bit nervous – they said an elephant had never come into their camp before. But it turned out to be harmless – and hilarious. The elephant was having so much fun! He grabbed the end of the hose out of the pool and squirted himself all over, and then started waving it around wildly and squirting everything else! I was standing a few metres away from him, so I got completely drenched.

FULL OF FEELINGS

Elephants are incredibly clever, sensitive creatures. They have excellent memories and can recognise up to 1,000 other elephants! They have been known to remove spears from wounded friends and cry when a loved one dies, just like humans do. They often bury their dead; in one case, a group of elephants broke in and raided a shed filled with the body parts of illegally slaughtered elephants, removing the ears and feet (which were destined to be turned into umbrella stands) and burying them.

GOT MILK?

Baby elephants survive on their mother's milk for two years. When they're being weaned they throw tantrums that rival those of the wildest two-year-old humans, screaming, trumpeting and poking their mothers with their tiny tusks.

