The New Zealand Curriculum

LEVEL 3

School Journal

August 2017

TITLE	READING YEAR LEVEL
The Subantarctic Islands	6
Te Tiriti o Waitangi	5
The Possum Problem	6
Dog Training	5
How Hemi Cleaned His Room	5
Wild Things	5
Low Tide	6

This Journal supports learning across the New Zealand Curriculum at level 3. It supports literacy learning by providing opportunities for students to develop the knowledge and skills they need to meet the reading demands of the curriculum at this level. Each text has been carefully levelled in relation to these demands; its reading year level is indicated above.

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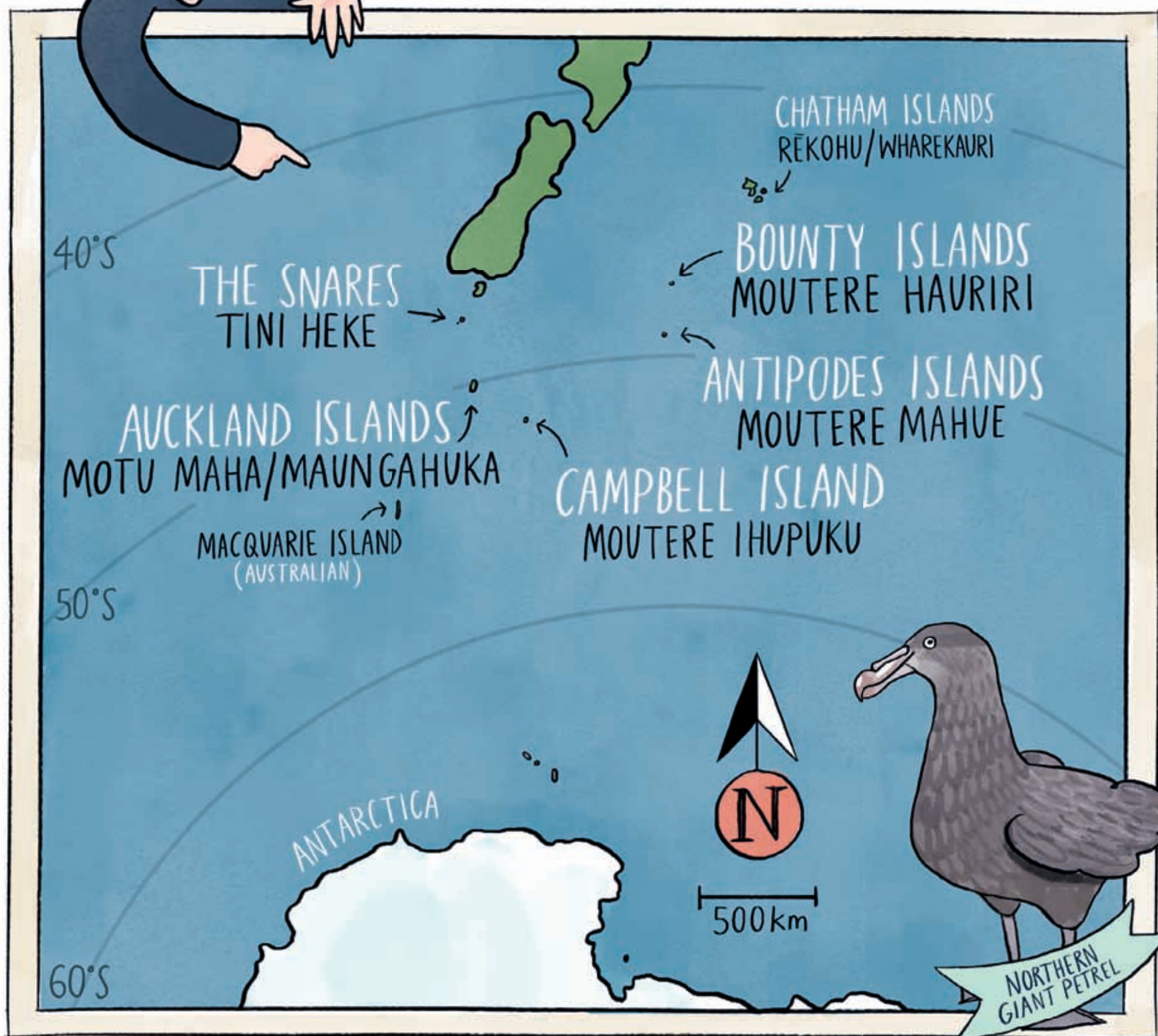
Ministry of Education

New Zealand is a bunch of islands, but do you know how many? More than a thousand! Some of these islands are a long way out to sea. They include the Kermadec Islands in the north, the Chatham Islands to the east, and way down south...

the SUBANTARCTIC ISLANDS

This is me, Giselle Clarkson.

There are five island groups in the subantarctic region of New Zealand.



New Zealand's Subantarctic Islands are protected nature reserves. They're recognised around the world as extraordinary habitats filled with an amazing variety of flora and fauna.

Nobody lives on the islands, although rangers and scientists can stay there. Visitors are allowed if they have a permit.

THE ISLANDS

LATITUDE SOUTH

THE BOUNTY ISLANDS / MOUTERE HAURIRI

47°

The Bounty Islands are so exposed there are no plants at all! You'd think nothing would want to live here, but the Bounties are a vital breeding site for hundreds of thousands of seabirds! The islands were named by Captain Bligh, who sailed past on the *Bounty* not long before the famous mutiny.

THE SNARES / TINI HEKE

48°

The Snares are a group of small, bush-covered islands with steep cliffs. The islands are home to their very own penguin – the Snares crested penguin. These penguins can climb trees and will often roost 2 metres off the ground.

THE ANTIPODES ISLANDS / MOUTERE MAHUE

49°

The Antipodes stand like rocky fortresses with towering cliffs. There are no trees, but the tussock is enormous! "Antipodes" means "opposite". They were named this by an English explorer because if you dug a hole straight through the centre of the Earth from London, this is where you'd arrive!

THE AUCKLAND ISLANDS / MOTU MAHA / MAUNGAHUKA

50°

Auckland Island is covered in southern rātā forest. It's the biggest island in the Auckland Islands group and also New Zealand's biggest subantarctic island. English settlers once tried to live here, but they weren't prepared for the harsh environment. Their colony only lasted a few years. Many New Zealand sea lions live on Enderby Island, part of the Auckland Island group. The species is the rarest sea lion species in the world.

CAMPBELL ISLAND / MOUTERE IHUPUKU

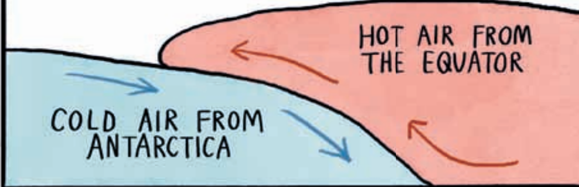
52°

Wild and mountainous, Campbell Island is home to its very own endemic duck, six different kinds of albatross, and one tree: a single sitka spruce planted over a hundred years ago. Jacquemart Island, near Campbell Island, is the southernmost place in New Zealand.

A WORD ABOUT THE WEATHER...

This wind is caused when hot air from the equator meets cool air from Antarctica. Warm air is lighter than cold air, so when the two meet, warm air always rises. This leaves a space, which the cold air rushes into – movement otherwise known as wind!

In this part of the world, there's very little land to get in the way and slow the wind down.



The strong, incessant subantarctic wind causes some of the wildest seas on our planet. In the days of sailing ships, sailors used these reliable winds to travel quickly around the southern part of the globe. But it was a risky business, and shipwrecks were common.

It might sound like an unpleasant place to live, but the local plants and animals are well adapted to the harsh conditions.

They wouldn't survive in a warmer, drier, more temperate climate.

MEET the LOCALS

There's nowhere else in the whole world quite like the New Zealand Subantarctic Islands. Their location and isolation make them absolutely one of a kind. The plants and animals that live on the islands are as unique as their habitat. Many of them are endemic species.

Each group of islands has many of its own species. These include:

ENDEMIC versus NATIVE

A native species can live in different places, but an endemic species has only one home.

Snares Island tomtit

Antipodes Island parakeet

Campbell Island teal

Auckland Island wētā

Bounty Island shag

ADAPTATIONS

Over a long time, the subantarctic environment has caused many of the local species to adapt. For example, there's an unusually high percentage of flightless moths and beetles in the region. When you're very small and live on a very windy island, flying can be a perilous activity!

After accidentally arriving on the islands, most insects that dared to fly were blown out to sea. **Forever.**

Those that chose to stay under cover survived. They had offspring. Eventually these species lost the ability to fly altogether.

Think of it as evolution caused by weather!

OH NOOOOOOOOOOOOOO....

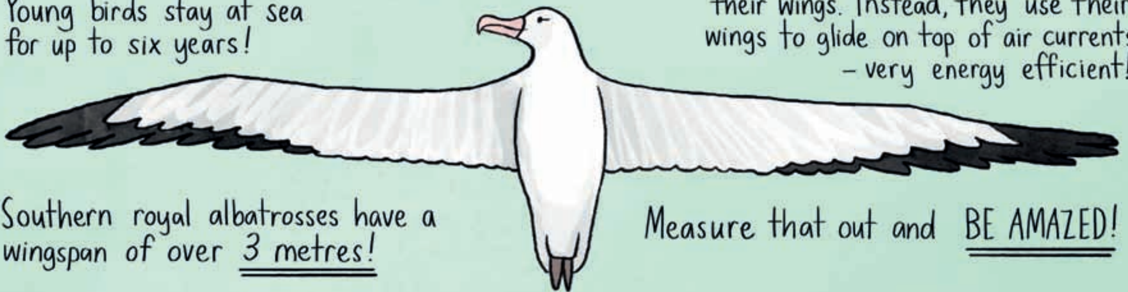
Like I always say, walking is good for you!

ALBATROSSES

A lot of albatross species live in the New Zealand subantarctic region. Six of them are endemic to the islands.

Albatrosses are pelagic. This means they live at sea and only return to land when it's time to breed and raise a chick. Young birds stay at sea for up to six years!

When you're as big as an albatross, it takes a lot of effort to get airborne, but after take-off, albatrosses don't need to flap their wings. Instead, they use their wings to glide on top of air currents – very energy efficient!



Southern royal albatrosses have a wingspan of over 3 metres!

Measure that out and BE AMAZED!

PENGUINS

There are four species of endemic penguins breeding on the New Zealand Subantarctic Islands. You'll notice that they all have very stylish eyebrows!

These penguins live in large, sociable colonies, except for the hoiho. Hoiho are very shy and like their privacy. They nest under bushes where their neighbours can't see them!

PENGUIN AIR CONDITIONING

Have you ever noticed the way penguins often stand around with their flippers sticking out?

Penguins are built for surviving in really cold water, so it's easy for them to overheat on land. They stay comfy by directing blood into their flippers and letting them cool off in the breeze.

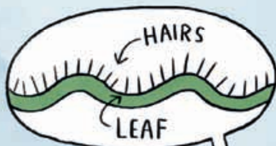
MEGAHERBS

The megaherbs are a family of plants endemic to the Subantarctic Islands. With their enormous, bright flowers, megaherbs look like they belong in the tropics, but they're perfectly adapted to local conditions.

Brightly coloured flowers absorb more heat than pale flowers. Insects are attracted to their warm surface. While they're there, the insects take care of pollination.

Like all plants, megaherbs need warmth to grow. But it's so cloudy in the subantarctic, they have to make the most of any heat they can get from the sun. They have large leaves to absorb as much heat as possible. Grooves and hairs on the leaves' surface hold the heat there.

The soil on the islands is boggy. It's also acidic, fertilised by lots and lots of seabird poop! Only plants that have evolved to these soil conditions will thrive here.



You can see megaherbs at the botanical gardens in Invercargill, but you might not be impressed. The soil, the temperature, and the weather conditions aren't quite right. The megaherbs grow, but not to their full potential.

Stilbocarpa polaris

Some of the megaherbs were bigger than me!

Pleurophyllum speciosum

Anisotome latifolia

Bulbinella rossii

OUR IMPACT

When I visited the Subantarctic Islands, I saw extraordinary beauty – but on Campbell Island, I saw something terrible as well: the remains of an albatross chick that had died of starvation the year before. Among the bones and feathers were the pieces of plastic it had swallowed, including the lid of a spice jar.

Even though the Subantarctic Islands are a long way from us, small decisions we make have an impact on life there.

Like the lid of that spice jar: I wonder how it got to Campbell Island, one of the most pristine places in the world. Could it have come from my kitchen?

Pollution on the land, in the sea, or in the air begins and ends with us.

Because the flora and fauna of the Subantarctic Islands are so suited to their natural habitat, any sudden or significant change could spell the end for many of them. Climate change is a serious risk for these ecosystems.

Our Subantarctic Islands are home to many rare and wonderful species. It's an incredible privilege to have these islands in our care – but a huge responsibility too.

Will we do our best for them?

Te Tiriti o Waitangi

by
Ross Calman

Every year on 6 February – Waitangi Day – we remember the signing of New Zealand's founding document: the Treaty of Waitangi. This was an agreement between the Queen of England and more than five hundred Māori chiefs. So why was a treaty needed, and what does it say?

First Arrivals

Māori first came to New Zealand between 1250 and 1300. For around five hundred years, they had Aotearoa to themselves. Then, in 1769, Captain Cook came and put the country on the world map. In the 1790s, Pākehā arrived to hunt seals and whales. **Missionaries** from England and France came a few years later, as did trading ships.

By the late 1830s, around two thousand Europeans – most of them British – were living in New Zealand. Many more people in Britain wanted to come here to start new lives, and pressure was building on their government to take control of New Zealand, just as it had done with Australia. Those British people already in New Zealand also wanted their government to bring law and order, and some Māori agreed. They thought this would give them protection, too, especially from those Pākehā who were dishonest or unruly.

Back in Britain, a company had plans to buy land in New Zealand and to send boatloads of settlers to live here. This forced the British government to take action.

Whalers in Kaikōura

An artist's impression of the arrival of *Tory*, a passenger ship, in Wellington harbour

One People

Queen Victoria

At the time, Britain was a powerful country that ruled over an **empire**. It decided that New Zealand should become part of the British Empire, too. That way, Britain could make the rules about things like **colonisation** and the purchase of land. These rules would be for everyone, including Māori.

In late January 1840, a British official named William Hobson arrived in the Bay of Islands. Hobson had been sent to secure British rule over New Zealand, and he set to work writing a treaty. At the time, very few Māori spoke English, so a missionary named Henry Williams and his son Edward translated the Treaty into te reo Māori. They did this in just one night. Then Hobson invited Māori chiefs – most of them from Northland – to a hui at Waitangi.

William Hobson

Hōne Heke Pōkai

Hobson wanted the chiefs to sign the Treaty, but there was much debate at the hui. Some were suspicious. They thought a treaty would be bad for Māori, and they advised against signing it. But two important chiefs – Hōne Heke Pōkai and Tāmati Wāka Nene – said the Treaty was a good thing because it would stop intertribal warfare. They also believed it would make trade between Māori and Pākehā easier and fairer.

Tāmati Wāka Nene

The next day, 6 February, the chiefs met again. Hobson wasn't expecting a hui that day and was wearing casual clothes. He had to quickly put on his naval hat in order to look more official. The Treaty was read aloud, and then around forty chiefs signed it. As they did this, Hobson said, "He iwi tahi tātou." ("We are one people.")

A number of copies of the Treaty were made and taken around the country. Not all iwi got to see the Treaty, and some chiefs decided against signing. Others were fearful about what the Treaty would mean but signed anyway. Over the next seven months, over five hundred chiefs signed their names or moko – almost all of them on the te reo Māori version.

An artist's impression of the signing of the Treaty of Waitangi on 6 February 1840

THE TREATY

The Treaty of Waitangi is in three parts. These three parts are called articles. There are some significant differences between the articles in English and the articles in te reo Māori.

Differences in meaning between the two versions of the Treaty

	English version	Te reo Māori version
ARTICLE ONE	The Māori chiefs agree to give up their "sovereignty" to the Queen of England. (This meant Māori would give up their independence – the right to make their own decisions and to do things for themselves. Instead, they would be ruled by the Queen of England.)	The chiefs agree to give the "kāwanatanga" (translated, this means governorship) of New Zealand to the Queen of England.
ARTICLE TWO	The Queen of England promises Māori "possession" of their lands, forests, and fishing areas for as long as they wish. (This meant Māori would still own these places and be able to catch birds and fish and grow their own food.)	The chiefs are promised "tino rangatiratanga" (absolute chieftainship) over their whenua (land), kāinga (villages), and taonga (treasures).
ARTICLE THREE	In both versions, the Queen gives Māori "her royal protection" and "all the rights and privileges of British **subjects**".	

Debate

Over the years, some parts of the Treaty have caused a lot of debate. This debate is about the te reo Māori words used in the Treaty. Did those words really mean the same thing as the words used in the English version of the Treaty?

In the first article, Māori agree to give up their kāwanatanga (governorship) to Britain. Is kāwanatanga the same thing as sovereignty? Did Māori really understand that they were agreeing to give up their independence? Most chiefs wouldn't have known what governorship meant. (The nearest **governor** lived in Sydney, Australia!) These chiefs probably thought that being British subjects wouldn't affect them.

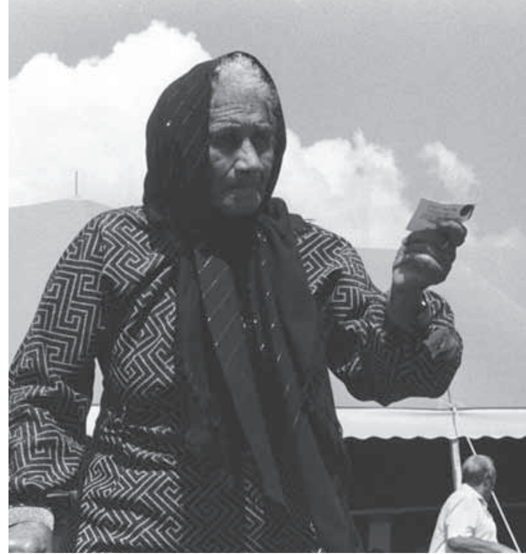
Some people now think that tino rangatiratanga is a better term for the idea of sovereignty than kāwanatanga. Māori understood the concept of tino rangatiratanga – it referred to the role and power of a chief – but this term was only used in article two. Perhaps Henry Williams and his son thought that if they used "tino rangatiratanga" in article one, then the chiefs wouldn't sign.

Keeping Promises

The government didn't always honour the Treaty. Only a few years after the Treaty was signed, promises were broken. For example, the government didn't ensure that Māori kept their land. By 1900, a lot of Māori land had been **confiscated** because of the New Zealand Wars, or it had been bought very cheaply or unfairly. Without land, many Māori couldn't grow or catch enough food to feed their families. No land also meant fewer opportunities for earning an income.

Over the decades, Māori continued to protest against the loss of their land. The Māori King Movement (Kīngitanga) and Māori Parliament (Kotahitanga), which were supported by many iwi, were both ways for Māori to speak out, especially on land issues.

In 1960, a law was passed that made 6 February New Zealand's national day to acknowledge the importance of the Treaty. In 1974, the day was renamed New Zealand Day and became a national holiday. Some Māori thought this was disrespectful of the Treaty, and the name was changed back to Waitangi Day. By this time – the 1970s – Waitangi Day had become a day of protest. Māori called for the government to "honour the Treaty", meaning to keep its promises.



Dame Whina Cooper spent her whole life fighting for Māori land rights. Here, she is speaking at Waitangi in 1985.

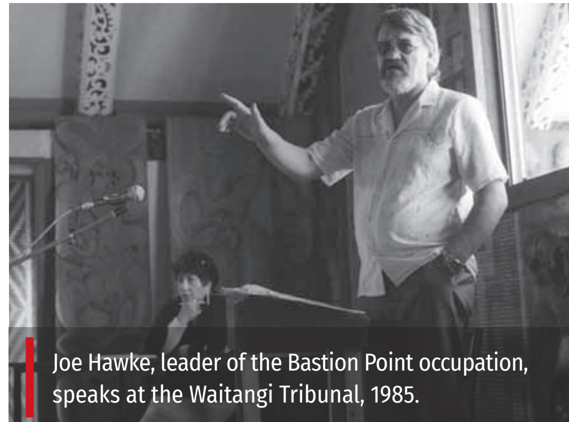
Protesters arrive at parliament, Waitangi Day, 1986.

The Waitangi Tribunal

In response to calls by Māori, the government set up the Waitangi Tribunal in 1975. This is a kind of court that investigates whether the government has broken Treaty promises. Māori are able to make **claims** to the tribunal, and tribunal members listen to evidence, just like a jury. At first, the tribunal couldn't look into claims about issues before 1975. This rule changed in 1985, and now the tribunal can investigate as far back as 1840.

During a hearing, evidence is given by lawyers, historians, and iwi members. Afterwards, the tribunal writes a report. The reports are used by the government to reach agreements with iwi, called Treaty settlements. Settlements often include an apology for the wrongs of the past as well as money, which is paid as **compensation**. More than two thousand claims have been made to the tribunal.

These days, most New Zealanders understand that the government and Māori are the Treaty partners. Together, the two work to ensure that promises in the Treaty are respected. As our founding document, the Treaty will always remain relevant. It defines who we are as a country and helps make us unique.



Joe Hawke, leader of the Bastion Point occupation, speaks at the Waitangi Tribunal, 1985.

GLOSSARY

claim: a request for something you believe belongs to you or is your right

colonisation: when a country takes control of another country and sends people to live there

compensation: a payment for something that was wrongly taken or for harm done

confiscate: to take something away as a punishment

empire: a group of countries ruled over by one country

governor: an official who represents the British monarch and has the same powers as a government

missionary: a person sent by a church to spread their religion in another country

subject: a person under the control and protection of a king or queen

Dog Training

Dad would snap at us
if we gave the dogs food:
Don't feed them at the table!
It turns them into beggars!

The dogs slip like shadows
through the woolshed door
to hide in the shade

out of Dad's sight.
He's shearing in a hot haze,
handpiece buzzing and humming
– on again – off again –

we have to keep sweeping,
sticky with grease
from carrying fleeces.
We watch the clock tick down

to smoko. The dogs doze,
heads on their paws.
Their eyes shine in the dark.

They're watching Dad.
He bites his sandwich in half
and throws – Snap!
Joe snatches it out of the air.

Marty Smith

19138

How Hemi Cleaned His Room

by Steph Matuku

CHARACTERS: HEMI · TIA · POPOTO · MUTANT FISH (played by two actors) · RUBBISH

Scene: *__HEMI__ and __TIA__ are at the beach.*

HEMI. Hey, Tia! Why are you wearing my shorts?

TIA. Hey, Hemi! Why are you wearing my hat?

HEMI. Because I couldn't find *my* hat. Our bedroom is a mess – your stuff is everywhere!

TIA. Your stuff is everywhere, too!

HEMI. Maybe we should ask Mum to buy a bigger house. Then we wouldn't have to share a room.

TIA. Doubtful. They cost like a million dollars. Mum can't even afford to buy me some decent shorts. I'm stuck with these ugly ones.

HEMI. Those are my shorts!

TIA. True. That explains why they're so ugly.

HEMI. That's it. There's no option. I'm getting my own land so I can build my own place.

TIA (*amused*). Sure you are. How do you plan on doing that?

HEMI. I'm going to pull it up from the bottom of the ocean, just like Māui.

TIA. My hat must be too tight for you. It's squishing your brain, isn't it?

HEMI (*ignoring his sister*). I have it all figured out. Look.

> **HEMI** *takes a jawbone from his pocket. It's attached to a piece of string.*

TIA. Yuck! Where did you get that?

HEMI. From the beach. It's a baby whale's jawbone.

TIA. A sheep's jawbone, more like.

> **HEMI** *holds the string and throws the jawbone into the sea.*

HEMI. Now we just have to wait for a bit.

TIA (*shaking her head*). Sometimes I can't believe we're related.

HEMI (*excited*). He ika nui kei taku aho! I've got a big fish on the line!

__HEMI__ tugs on the string, and the __POPOTO__ appears, wrapped in a fishing net.

POPOTO. Help! Get this thing off me! Bad hug, bad hug!

TIA. It's a dolphin in a net! Quick!

__TIA__ and __HEMI__ unwrap the dolphin.

POPOTO. Thanks! These stringy jellyfish are very clingy. I was swimming along, minding my own business, and it came up and gave me a big hug. "Oh, that's nice," I said, "but your hug's a bit tight, get off!" The more I wriggled, the more it hugged me. I can only conclude that stringy jellyfish lead sad, isolated lives.

TIA. It's not a stringy jellyfish!

POPOTO. What is it, then?

HEMI. It's a fishing net. People use them to catch heaps of fish.

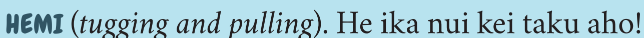
POPOTO. A net? That doesn't sound fair. People are obviously very greedy. I eat one fish at a time. I only take what I need. Anyway, thanks for your help. I might leave while I have the chance.

The __POPOTO__ swims away, and __HEMI__ throws the jawbone again.

TIA. Maybe that dolphin has a point …

HEMI (*not listening*). Come on, new land! Come on, new bedroom!

TIA. Come on, new brother!



HEMI (*tugging and pulling*). He ika nui kei taku aho!

> *HEMI is struggling, so TIA helps him.*
> *They pull up the MUTANT FISH.*

TIA. Ew. What is that?

MUTANT FISH HEAD 1 (*offended*). I'm a fish, of course.

HEMI. With two heads? And four flippers?

MUTANT FISH HEAD 2. So? You've got two heads and four flippers.

TIA. We're two different people! And these aren't flippers – they're arms.

MUTANT FISH HEAD 2. Arms? Never heard of them.

HEMI. Do your parents look like you?

MUTANT FISH HEAD 1. Only when they're swimming back to back. It all happened when I was just an egg –

MUTANT FISH HEAD 2 (*interrupting*). And I was just an egg. A giant cloud of floating sludge drifted over me and changed me.

MUTANT FISH HEAD 1. And me! I hatched into …

> *The MUTANT FISH spins around, showing off.*

MUTANT FISH HEAD 2. Ta da! This! I can swim very fast, but sometimes I argue with myself.

MUTANT FISH HEAD 1 (*pointing to the left*). I want to go this way.

MUTANT FISH HEAD 2 (*pointing in the same direction*). I want to go this way!

MUTANT FISH HEAD 1. No. This way!

TIA. It's the same way!

MUTANT FISH HEADS 1 *and* **2**. Who asked you? Come on. Let's go.

The **MUTANT FISH** *swims away.*

TIA. The wonders of the deep! Are you going to try again?

HEMI. I suppose so. But this is the last time. I'm getting a sore arm. Cross fingers.

HEMI *throws the jawbone. He gets a bite.*

HEMI. He ika nui kei taku aho!

HEMI *and* **TIA** *pull up a big pile of* **RUBBISH**.

TIA (*holding her nose*). Pooh! What a pong!

RUBBISH. Rubbish!

TIA. Exactly.

HEMI (*to the rubbish*). You shouldn't be in the ocean.

RUBBISH. Why not? There's heaps of other rubbish to hang out with, although we prefer the term marine debris. We're a serious threat to fish, seabirds, marine reptiles, marine mammals … (*proudly*) we've got it covered!

HEMI. That's terrible!

RUBBISH. Rubbish!

TIA. Exactly.

RUBBISH. Not exactly. I've already told you – it's marine debris. Stop minimising our efforts! We're not called the Great Pacific Garbage Patch for nothing.

TIA (*exasperated*). That's it! Hemi?

HEMI *understands his sister's look and wraps his piece of string around the* **RUBBISH**. **TIA** *helps.*

RUBBISH. Oi! Get off.

HEMI. No way. You're coming with us! Let's go, Tia.

TIA. What about your new land?

HEMI. To be honest, I think the best option is to clean up the land we've already got. Don't you agree?

TIA (*nodding*). We can start with our bedroom – that'll give us more space.

HEMI. All right, but we'll take this rubbish to the dump first. What time does it close? (*He looks at his watch.*) I wish it wasn't so late. The sun's almost setting. You know, Māui once –

TIA. No.

HEMI. Got more hours in the day by –

TIA. No!

HEMI. But I know how to make flax ropes!

__TIA__ ignores her brother and leads the __RUBBISH__ offstage.

HEMI (*calling after his sister*). I've already got the jawbone!

TIA (*from offstage*). No!

HEMI. Sisters!

__HEMI__ exits, looking glum.

illustrations by Allan Wrath

Wild Things

by Renata Hopkins

It was getting late when we arrived at the bach. Dad's workmate had described it as rustic. Rusty, more like. The flaking paint looked like a skin disease, and the roof was ancient.

"Seriously?" Fleur said. "Marina's bach has two storeys and a pool."

"This one has electricity and running water," Dad said. "Flash, eh?"

Fleur did an epic eye roll like she was trying to see her own brain. "Can you just unlock it?" she asked. "I'm busting."

Dad pointed at something half-hidden in the trees. Fleur's face went hard. "Is that what I think it is?"

"Depends," said Dad. "Do you think it's an elves' clubhouse or a long drop?"

"You are not funny!" Fleur screamed. Dad looked at me, hoping for backup, but I hate long drops, too, because … you know … wētā. Actually, the whole place was creeping me out. The bach felt gloomy and secretive, as if it had snuck off into the bush to die.

While Fleur stomped off to the loo, Dad found the bach keys. Inside smelt of mice and old jigsaw puzzles.

"It'll freshen up once we've opened some windows," Dad said. His voice sounded cheerful, but his face didn't match.

It was dark by the time we'd unpacked. Fleur moaned the whole time. First, because there was only one bedroom. Then because she found fresh mouse droppings under the beds. "Don't blame me if a mouse runs up the duvet and over your face while you're asleep," she said to Dad.

But it wasn't a mouse that woke us. It was another noise. It sounded as though someone with asthma was choking on a mouthful of cornflakes right outside my window. I froze.

"What the unholy is *that*?" Fleur's voice came out of the dark, making me jump. She crept over to my bed and climbed across my legs.

"Ow!" I whispered, but Fleur ignored me and twitched back the curtain. Outside, we saw a dark shape hunched on the picnic table.

"Whoa," Fleur hissed. "That's a monster."

"What kind of monster?" I was so petrified that my fingertips prickled.

"A possum, you doughnut," Fleur said. The creature turned its head, and its eyes glowed demon red in the moonlight.

Suddenly, Dad sat bolt upright and made a loud woofing noise. Fleur and I gaped at him. “Dad just barked,” Fleur said, and we both started to laugh. In no time, we were doubled over, snorting and hiccupping, with tears running down our cheeks. Meanwhile, Dad had climbed out of bed and gone into the lounge. We heard rummaging in a cupboard, some grumbling, and then the sound of the sliding door opening.

“Clear off!” Dad shouted. Through the window, we saw something fly towards the possum. We scrambled off the bed and ran outside in time to see Dad hiff another knobbly missile. A potato.

“That’s like feeding it!” Fleur squawked. “It’ll want an apple for pudding!”

“No, look,” Dad huffed, chucking another spud. “I’ve got it on the move.” The possum had loped off into the mānuka, but it was still there, waiting.

“Try barking again,” Fleur sniggered, but this time, I didn’t join in. I felt like the possum was sending a telepathic message: This place is mine. Get lost.

The next morning, Fleur and I went looking for Dad's ammo. We found one spud on the lawn and another in the scrub.

"It hasn't even had a nibble." Fleur sounded disappointed. "What a fussy eater." She walked further into the trees. "Attention, mutant possum," she said, loudly. "We have a trap and are not afraid to use it."

"Do we?" I asked, but Fleur was focused on her imaginary audience.

"We also have a large dog called Dad," she added. "Be very afraid."

"Do we really have a trap?" I repeated.

Fleur's eyes went all sharp and ferrety. "Let's make one," she said.

Honestly, I didn't want anything to do with the possum. Even in the daytime, last night still felt like a bad dream come to life.

"It knows we're here now," I said. "It probably won't come back."

Fleur smirked. "You're scared of it," she said.

"Am not."

"Prove it." She grabbed me by the wrist and towed me towards the back of the bach. "Help me dig a trap."

"Dig one?" I said, but Fleur didn't explain until she'd found a shovel and spade in the wonky lean-to.

"Here's the plan," she said. "We dig a hole on that little path through the trees where it ran off last night. Then we cover it with sticks and newspaper and leaves and stuff."

I felt sorry for the possum then. I wouldn't want Fleur after me with her evil, mastermind brain. On the other hand, digging a trap sounded quite commando and cool.

It took ages. Fleur kept saying it had to be deeper, otherwise the possum could jump out. Dad reckoned the possum would sense the hole with its superpowers and go round it. But he also thought he could read in peace if he just let us dig.

"We'll bait it before bed," Fleur said once we'd finally finished. "With some fruit."

"But what if we actually catch it?" I asked.

"We'll train it to do tricks," Fleur said. "Or make a pie. We can decide later." She hadn't moaned about the bach all day.

That night, we were woken by a noise. For one half-asleep second, I thought it was the possum again, but it was just Dad snoring. Fleur got out of bed and headed for the door.

"Where are you going?" I whispered.

"To check the trap."

"We'd hear scuffling if we'd caught it," I said, but Fleur the big-game hunter was already gone. I grabbed the torch from under my pillow and followed.

We were halfway to the trap when we heard it – that hideous gargling sound somewhere above us. I swung the torch beam round the horror-movie trees until we found the possum perched on a branch. Those feral eyes looked like they could shoot lasers.

Things went a bit crazy then. Fleur picked up a broken branch and threw it like an actual spear. It smacked into the tree trunk right next to the possum, which took a flying leap. We both screamed. I dropped the torch. There were scuffling noises as the possum landed in the next tree, then the sound of a branch snapping, then a thud. Fleur snatched up the torch, and I saw the possum scurry into some ferns.

Behind us, we heard the door slide open. "What's going on?" Dad shouted.

"Come on! It's escaping!" Fleur charged after the possum, and I followed, but a branch caught my T-shirt, yanking me back. As I fought it off, there was a crashing sound to my left, followed by a loud swear word.

"Fleur!" I shouted. "Bring the torch!"

We found Dad sitting on the edge of the trap, rubbing his ankle. "I could have broken my leg," he growled.

"Sorry," I said. "We thought you knew where the hole was."

“The camouflage was too good,” Fleur said, proudly. “I knew it’d work.” Dad looked pretty feral himself then, but Fleur didn’t seem to notice.

“Can we have a midnight feast?” she asked. “Since we’re all awake?”

The next morning, Dad made us fill in the hole. Next, Fleur wanted to search for possum burrows, but Dad said no more pest control. That night, he made earplugs for everyone out of rolled-up tissues. He said we’d had enough nocturnal drama and we had a long drive home in the morning.

After breakfast, we carried stuff out to the car. That’s when we found the message from the possum: a small greenish-brown nugget, right in the middle of the bonnet. Fleur looked impressed. “You win,” she announced to the trees. “But we’ll be back.”

Dad could have rubbed it in, about how anti she’d been, but he just smiled. I hoped we would come back. The bach was still weird and scabby, but whatever. When the others went inside, I found an apple in the food box and rolled it into the scrub. Possums sleep in the day, but I sent ours a present anyway. Not bait, I told it. Pudding.

ILLUSTRATIONS BY DARON PARTON

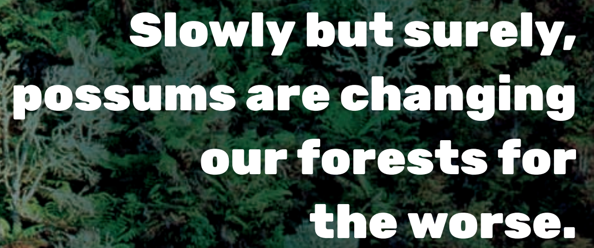
THE POSSUM PROBLEM

by Johanna Knox

Possums. You hardly ever see them, but they're all around: in the bush, on farms, in parks. They might even be in your garden. During the day, possums stay in their dens. These are dry, hidden places where they won't be disturbed. Possums emerge after dark, millions upon millions of them, all across New Zealand. And what do they do? They eat.

Possums devour the fruits and flowers that many of our native creatures need to survive. They also devour the native creatures. These include birds, bats, and insects. Possums like leaves too, especially new growth on rātā and kāmahi. Losing their leaves eventually causes the trees to die. Slowly but surely, possums are changing our forests for the worse.

Of course, this isn't what the settlers had in mind when they brought these furry **marsupials** to New Zealand.


Slowly but surely,
possums are changing
our forests for
the worse.

A fondness for fur

When the first British settlers arrived in Aotearoa, there were no animals that could be hunted for their fur. Australia had the brushtail possum, and hunters there made good money selling the creature's warm, silky fur. Hunters here wanted the same opportunity, so they decided to ship possums from Australia. The plan was for the animals to breed and start colonies. Then New Zealand could have a fur **industry**, too.

Our first shipment of possums arrived in 1837. A few decades later, small populations of possums dotted the country. Fur hunters were delighted. No one could guess at the environmental disaster to come. After all, possums hadn't caused problems in Australia. Why would things be different here?

Fur hunters were delighted. No one could guess at the environmental disaster to come.

A "HARMLESS ANIMAL"

The idea to introduce possums here was supported by special groups called acclimatisation societies. These societies, which sprang up in the 1860s, wanted to supply all the important species that New Zealand was "missing".

Species were chosen for a variety of reasons. Deer, rabbits, and trout were shipped over for sport. Horses and bullocks were brought for transport. Blackbirds and oak trees were chosen because they reminded the early settlers of home.

Acclimatisation societies also believed in supporting new industry. They were very much in favour of possums because the species would help to establish a fur trade. For over fifty years, acclimatisation societies organised the shipment and release of hundreds of possums in New Zealand. Writing about this work in 1917, one enthusiast said, "We shall be doing a great service to the country in stocking these large areas with this valuable and harmless animal."

Possum skins being sorted and stamped before they are sold

Ticket to paradise

Back in Australia, life was hard for possums. They endured an extreme climate, with harsh cold and searing heat. In summer, wildfires tore through the bush, incinerating everything in their paths.

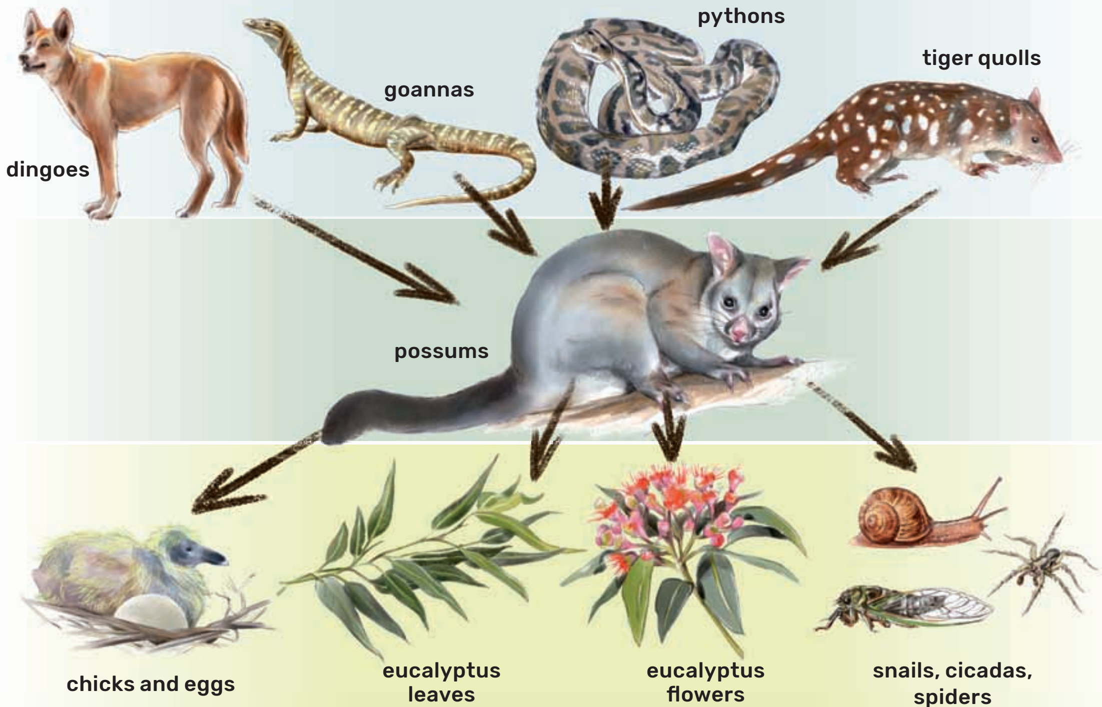
Australia was also packed with predators, all of them competing for food. Eggs and small animals were a rare, protein-rich treat for possums. Mostly they lived on leaves, bark, and flowers – but even maintaining this diet could be hard work. The Australian bush was thinly spread. Any kind of food was hard to find.

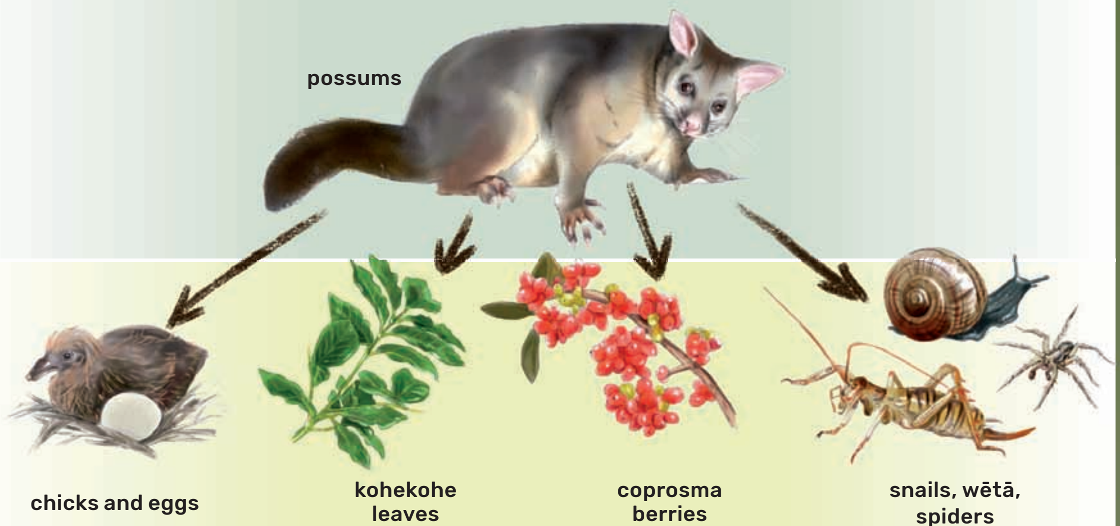
Other predators weren't just competition for food, either. The bigger species, such as pythons, dingoes, and goannas, saw possums as prey. Tiger quolls – cat-sized marsupials – killed possums with a bite to the neck, even though the two species were the same size.

After the tough Australian environment, the New Zealand bush was paradise. It was lush and damp with mild temperatures. The kinds of trees that possums found most delicious grew in abundance. There was also plenty of easy meat: New Zealand's native animals had never dealt with a predator like the possum before. Most of them were no good at hiding or escaping. Some native birds couldn't even fly – although their chicks were the most vulnerable.

What's more, here in New Zealand, the new arrivals had a guaranteed spot at the top of the food chain. There was plenty for the possums to eat and nothing to eat them. Possums also had a new trick. In Australia, a female possum gave birth to one young a year. She'd only have a second **joey** if there was lots of food to eat. Usually there wasn't. In New Zealand, there was so much good food, a female could easily have two babies a year. In this way, possum numbers built up fast. Soon they would produce a population explosion.

After the tough Australian environment, the New Zealand bush was paradise.


AUSTRALIA
dingoes
goannas
pythons
tiger quolls
possums
chicks and eggs
eucalyptus leaves
eucalyptus flowers
snails, cicadas, spiders


NEW ZEALAND
possums
chicks and eggs
kohekohe leaves
coprosma berries
snails, wētā, spiders

Trouble

Dead trees, their foliage stripped by possums

At first, settlers didn't notice what possums were doing to the forests, but they did see the harm to their fruit trees and gardens. With no predators about, possums boldly came out of the bush to explore. They found their way into farm crops, orchards, and backyards. Then they had a feast.

By the 1920s, people were arguing about possums. Many had finally begun to notice possum damage to the forest, and farmers and gardeners were fed up. They demanded the right to kill possums (at the time, only trappers with a licence could do this), and they wanted no more possums to be brought here. Fur trappers were against these ideas. Their income came from selling possum skins. They didn't want things to change.

For several decades, the government tried to keep everyone happy. Laws were changed again and again, but the negative effect of possums on the environment had become impossible to ignore, and more people cared about stopping it. In 1947, after much debate, the government removed all restrictions on the taking of possums. The species was no longer protected, and people were allowed to use poison to **control** their numbers. At the same time, the government began working on its own plan to reduce the possum population.

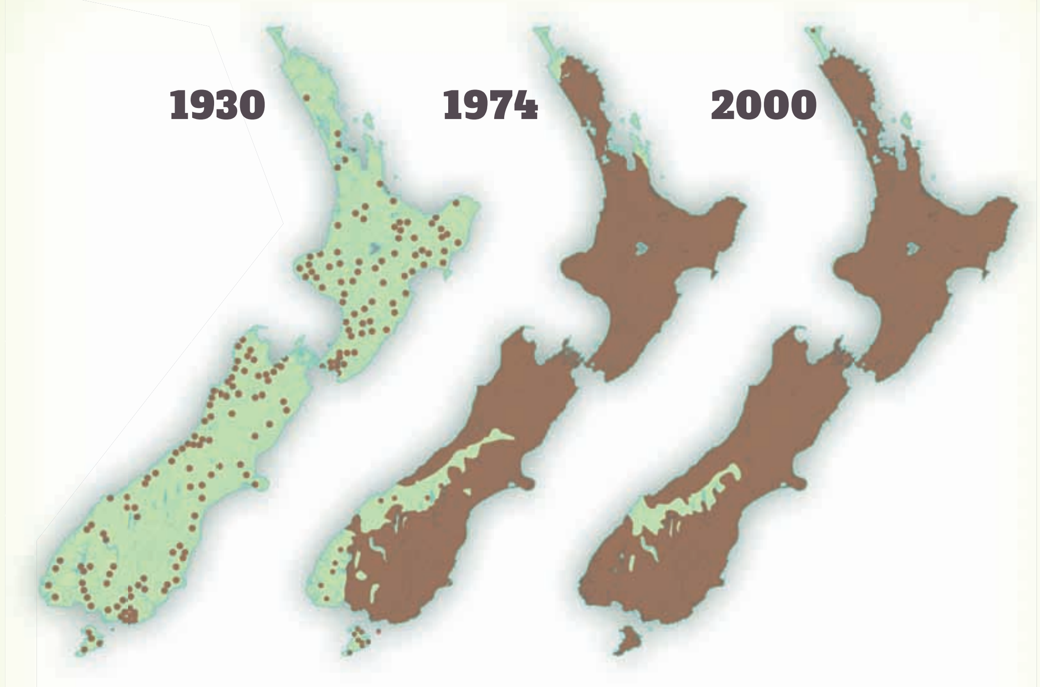
POSSUMS AND BOVINE TUBERCULOSIS

In the 1960s, yet another possum problem emerged. Scientists realised that possums were carrying and spreading **bovine** tuberculosis (TB), a disease they caught from infected cattle. Bovine tuberculosis spreads very easily, and cows can become reinfected after sniffing and licking infected possums that have come out of the bush to die. In the past, large numbers of cows became infected with the disease and needed to be killed. This cost farmers millions of dollars. Now, thanks to possum control and herd testing, the extent of the problem has been greatly reduced.

The possum problem

Over the next four decades, despite people's hard work, the number of possums grew. By 1980, possums were found in over 90 percent of the country. Around one third of them now live in the South Island; the rest are in the North Island, which has more of the kinds of trees that possums prefer.

These days, many groups, such as regional councils, the Department of Conservation, and conservation groups, work together to reduce the possum population. Hunters and farmers trap possums, too. People use a variety of methods for control, including shooting, trapping, and poison. The best method depends on how easy it is to get to the possums, the number of possums in the area, and what other non-target species are around.



Possums were first released in New Zealand in 1837. Since then, they have slowly but surely colonised most of the country. Possums only reached the northern tip of the North Island and south-west Fiordland in the 1990s.

There are risks with using poison. Some poisons occasionally kill native animals or people's dogs. However, a lot of people believe that a small amount of **by-kill** is acceptable. The number of native creatures saved from possums is far greater than the number killed by poison. And scientists are constantly working on new ways to make sure only the pests eat the poison.

Self-setting traps are one of the new ways to fight our possum problem.

Today around 30 million possums live in New Zealand. That's a lot, but it's a big improvement on the 1980s, when there were twice as many. Although the number is going down, most scientists believe our furry friends are here to stay. Getting rid of every last one would take too much time and money. One day, there might be a breakthrough. In the meantime, we can only control the possum population so the damage they cause isn't too great.

GLOSSARY

bovine: relating to cattle

by-kill: any species that is killed by mistake (also called by-catch)

control: to reduce numbers of a pest to a level at which they don't cause unacceptable damage

industry: a group of businesses, factories, and individuals that make a similar product or provide a similar service

joey: a young possum or kangaroo or any other marsupial

marsupial: an animal (always a mammal) that is carried in its mother's pouch after birth so it can finish growing

POSSUM CONTROL AT HOME

LOOK FOR:

- possum runs (narrow tracks of flattened grass worn down because possums are using a regular route)
- claw marks around the base of tree trunks; smooth patches on bark
- torn leaves (especially new leaves), missing buds on fruit trees, damaged skin on unpicked lemons
- munched vegetables in the garden
- small, cigar-shaped possum poo.

WHAT TO DO:

- get rid of potential nesting places (anywhere dry and dark, such as sheds or under bushes)
- wrap the bottom of tree trunks in a sheet of metal (this creates a slippery surface that possums can't climb over)
- buy possum traps.

The grumpy man in the high-vis vest gave them an hour to get their stuff. Dad tried to negotiate, but the man wasn't having it. "Five minutes gone, fifty-five minutes left," he said. So Dad gave up and parked the car, and they walked down the hill to the house they'd been forced to abandon eighteen hours earlier.

Now it was bang on low tide, and from the outside, things didn't look so bad. The entire garden was trashed, of course, and Manu's old sandpit was now a tidal pool – but their house was still standing, and only one window was broken.

It was a different story when Dad unlocked the ranchslider. A whiff of seawater hit them first, then the subtler smell of decay. The tide had drained away, leaving behind a stinking, sodden wasteland.

"Look at the mud!" said Dad. "It's everywhere."

"It's silt, actually," said Manu. "Silt is what you call the stuff that gets left behind when something's been flooded."

"Silt," said Dad. "OK." His face was blank, as though he didn't know what to think – but Manu did. Their house had been his refuge, from other kids and from school, and now that refuge was gone. He let out a low noise. It wasn't quite a sob, but Dad recognised it.

"Right, then," he said, pressing something round into Manu's hand. "Mum's stopwatch from athletics. You're in charge. How long have we got?"

"Forty-seven minutes," said Manu.

"Forty-seven minutes," Dad repeated. "Think we can do it?"

They each had a list of the things they wanted. Mum had written hers last night before she'd gone into work: her jewellery box and army knife, their duvet, Nana's silver teapot, her new camera. Dad wanted the camp stove and all the records he could rescue. Stupid. What would he play them on?

Mikey – that's all Manu cared about.

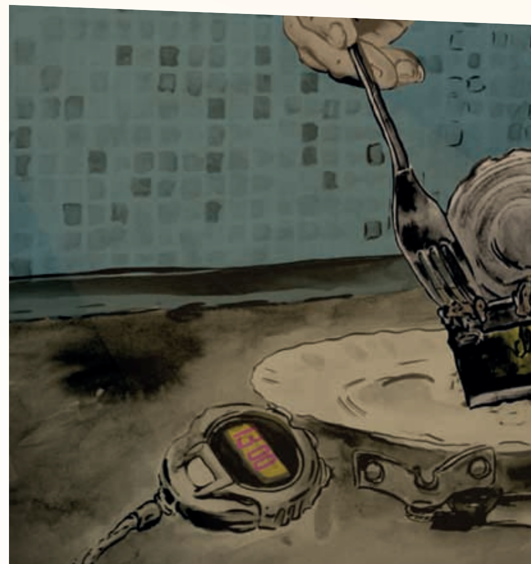
There had been no time last night. The water had surged in so quickly. Dad had pulled Manu out of bed, Mum had grabbed his hoodie, and they were gone. They'd ended up at his school in an army tent, one of twenty-seven, all identical. Manu counted them twice on arrival and checked again the next morning. He'd woken to an unfamiliar green light and thought of Mikey. Cats can swim, he told himself. He'd seen it on TV. But here in their ruined house, which stank of silt and the sea, there was no sign of him – and time was ticking by.

"Mikey!" he called, searching the rooms before checking the back garden and then the front. No response. "Mikey!"

"He'll be hungry," said Dad. He watched as Manu peered into the once-shiny broadleaf. "Why don't you put out some food? I'm going to take this next load up to the car. Wish me luck!"

That didn't make sense. You didn't need luck to climb a hill. It was merely a matter of energy and physiology. But all the same, Manu said good luck and went to find some cat food. He searched the kitchen until he found a single-serve can of skipjack tuna – the one with the yellow label. It was tucked away on a top shelf. He pulled the tab, and it snapped off too soon.

What to do? Manu remembered the night of the big storm last year, when the power was out and the electric can opener wouldn't work. Dad had shown him how to use an old-fashioned opener on a can of corn.



It was awkward turning the wheel: the opener kept slipping. But Manu persisted, and he was able to slide the tines of a fork under the ragged edge and prise it up. The smell of tuna rose from the can. Surely it would tempt Mikey out of hiding.

Thirteen minutes to go. Dad was back. Manu scraped the fish out of the can and onto a dinner plate – Mikey's bowl was gone – then he walked around the house, calling the cat's name.

Eleven minutes. The ruined lounge. No sign of Mikey. No one would ever sit on this furniture again. Bathroom, toilet, kitchen, laundry – all the rooms, nothing. Eight minutes. Manu went to his bedroom and carefully set the plate down on his favourite duvet cover, right in the middle of Jupiter. The duvet showed the view of the planet from its biggest moon, Ganymede. Manu wanted to go there one day. In the next room, he could hear Dad on the phone talking to Mum. She would be working late at civil defence again. Manu wouldn't get to say good night. He got up to shut the door and sat back on the bed.

The edge of something poked out from under his bed. Manu reached down and pulled it out: his tablet, damp and grimy. He tried to turn it on and got no response, but a faint noise came from right above his head. He looked up. At the top of the wardrobe, a small, pointed face looked hungrily down.

Three minutes. “Dad!” he yelled. “Dad!”

By the time the stopwatch began to beep, Mikey was safe in Manu’s arms, fed, though not exactly purring. “It’s time to go,” Manu said. “We have to go now.”

“Five minutes won’t do any harm,” Dad said.

And even though Manu worried about the high-vis man, his dad was right. As they left the house for the final time, waves were just starting to slop through the wide gap where the seawall had been breached. They didn’t look so dangerous. But the tide would be even higher tonight – a king tide – and who knew how their house would be in the morning.

“Why didn’t they fix the seawall while the tide was out?” Manu asked as they trudged up the hill.

“They’re more worried about protecting the city centre,” said Dad. “That’s Mum’s problem now.”

“Can’t the engineers just build a bigger seawall?” By then, they’d reached the car. Mikey was squirming in Manu’s arms, and Dad didn’t answer.

The man in the vest tapped his watch and looked annoyed, but he didn’t say anything. Dad opened the passenger door, and Manu clambered in. Mikey hated the car, and he wriggled and meowed to get away, but Manu wouldn’t let him go until the doors were locked. Mikey slinked under a damp sleeping bag. He stayed there all the way back to the school.

That night, the wind blew, flapping the canvas above their heads. It took Manu a long time to fall asleep. He woke later to a familiar voice. Mum was back. Reassured, he drifted off again, a small, furry figure pressed against his side. As they slept, the king tide slowly receded, taking everything it could find: a gold earring … the sleeve of a record … an empty tuna can.

illustrations by Elliemay Logan

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