REDUCING OUR FOOTPRINT

by Sarah Connor

We all know what's happening. Parts of the world face more frequent flooding; others endure constant drought. The ice sheets are melting, the sea level is rising, birds are changing the way they migrate, and more than a few people are freaking out ...

Earth's atmosphere is made up of oxygen, nitrogen, and greenhouse gases. In past centuries, the amount of greenhouse gases stayed more or less the same. But now, the concentration of these gases is rising at an alarming rate. Our planet is warmer, and this affects our climate – and our future.

Globally, the biggest source of greenhouse gas emissions comes from burning fossil fuels for electricity and heat (just over 30 percent). We're lucky in New Zealand. Most of our electricity is generated by using water. But we still have a problem: almost half of our greenhouse gas emissions come from agriculture. This is significant given how much of our country's income relies on farming. And then there's our use of petrol-powered cars. In 2018, they produced just over 10 percent of New Zealand's emissions.

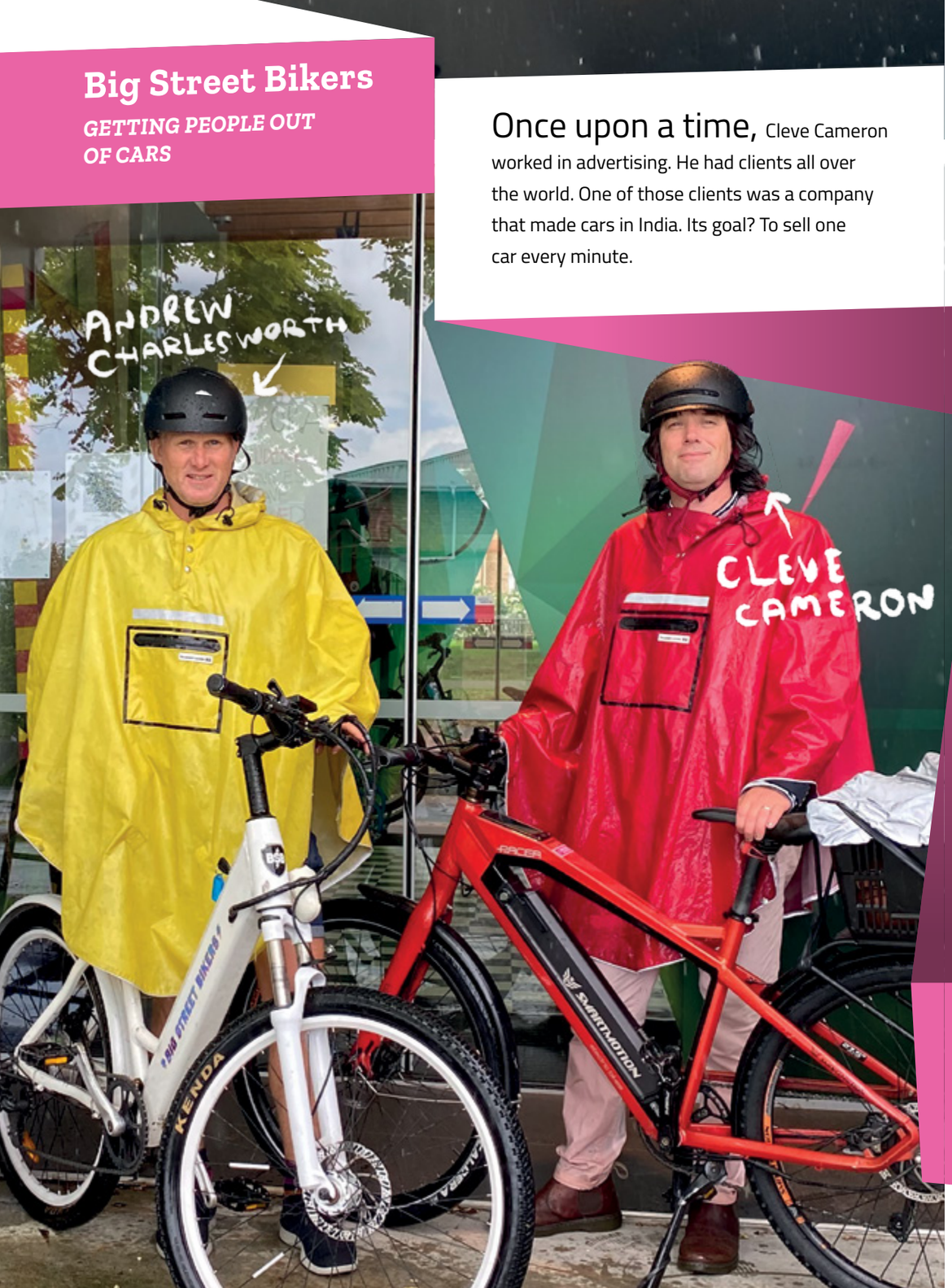
None of this has an easy fix, which means that thinking about climate change can be overwhelming. It's a relief we can do a number of small things to reduce our carbon footprint: switching off lights; buying local; reducing, reusing, recycling. But are these actions enough? Don't we need to take bigger steps to save the planet?

More and more inventive New Zealanders are looking for ways to do just that. And some have already taken those bigger steps. Their mahi is helping more of us make meaningful changes so we can take responsibility for the future ...

Big Street Bikers

GETTING PEOPLE OUT OF CARS

Once upon a time, Cleve Cameron worked in advertising. He had clients all over the world. One of those clients was a company that made cars in India. Its goal? To sell one car every minute.



Cleve visited Delhi. He has a few stand-out memories, including the day it took two hours to drive 5 kilometres across town! "I had an epiphany," he says. "People getting around cities in cars that use petrol is all wrong." Now Cleve's on a mission. He wants to get us out of cars, not help sell them.

Back home in New Zealand, Cleve was excited to see more and more Kiwis choosing to go electric, especially when it came to bikes. (In 2019, we imported 65,000 electric bikes and scooters – a record number.) But while electric bikes are an easy, smart way to travel shorter distances – they're expensive. A basic e-bike costs about $2,500. "This means they're still a luxury," Cleve says.

Cleve wanted to make e-bikes more affordable. His solution, along with business partners Andrew Charlesworth and Matt Weavers, was to open Big Street Bikers. For a little more than $30 a week ("the price of a weekly bus fare," says Cleve), people can commute on a Big Street bike. Even better, they can own that bike after eighteen months through the company's ride-to-own scheme.

People enjoy all kinds of services offered by Big Street Bikers. The company now has a network of Locky Docks. These are free, secure bike parks where any kind of bike can be locked and where e-bikes can be charged – for free – using an app. They've also opened a solar-powered bike service station in Auckland, with plans to build more around the country. Cleve describes the service station as a cross between a bike shop and a clubhouse. People can test-ride an e-bike or get their e-bike serviced or simply charged. "Because we rely on solar power, people who charge their bike at our service station are literally riding on sunshine!" he says.

Compare this clean energy with petrol-fuelled cars. In 2018, they produced around 9 million tonnes of carbon dioxide in New Zealand. A 20-kilometre commute on an e-bike, five days a week, reduces a person's carbon footprint by almost a tonne of carbon dioxide a year. "It's pretty clear what we need to do," Cleve says, "and it's so simple. With more bums on e-bikes, we can change our cities, change our lives – and change the world!"

PEOPLE WHO CHARGE THEIR BIKE AT OUR SERVICE STATION ARE LITERALLY RIDING ON SUNSHINE!

Regen

SMART TECHNOLOGY FOR FARMERS

Talk to any farmer, and they'll tell you there are loads of things they can't influence – like the weather. Luckily, the amount of nitrogen in their soil is different. And thanks to Bridgit Hawkins and her software company, Regen, controlling nitrogen levels on a farm is now a whole lot easier.

Nitrogen is a natural element that's found in all living things as well as in water, air, and the soil. It's essential on a farm because it helps grass grow, which is why most farmers spend thousands of dollars every year on nitrogen fertiliser.

Of course, farmers also have their own source of nitrogen – cow manure. They collect it from milking sheds and store it in purpose-built effluent* ponds before pumping it over paddocks. It's the perfect system … with one hitch. The amount of effluent spread needs to be just right. Too little means the grass won't grow. But if there's too much effluent, the excess nitrogen can leach into nearby waterways and even into the underground water supply, causing pollution. Fines for getting this wrong are big. The damage done to our natural resources is even worse.

So how do farmers know how much effluent to spread? And when? And how can they tell which paddocks need it the most? Making these calculations takes time, and there's a lot riding on getting it right. In 2010, Bridgit Hawkins started Regen. She wanted to use her knowledge of science and technology so farmers could better control the nitrogen levels in their soil. The breakthrough came when she hit on the idea of making recommendations based on the data farmers already had.

Bridgit knew that a lot of farmers were using sensors to measure rainfall, the soil's moisture content and temperature, and the level of effluent in their ponds. "The sensor technology is fantastic," she says, "but people just didn't have time to figure out what the data meant." Farmers who use Regen are sent a daily text. This collates the data from each sensor, then recommends the amount of effluent to spread and where. It's a smart and efficient system that allows farmers to look after the environment and help shape the future.

"Natural resources are under pressure," Bridgit says. "The future depends on us all acting sustainably. We want to help farmers hold their heads high, knowing they're doing right by the land."

WE WANT TO HELP FARMERS HOLD THEIR HEADS HIGH, KNOWING THEY'RE DOING RIGHT BY THE LAND.

* Another word for liquid waste, including cow manure

Kaibosh

ZERO FOOD WASTE

Nobody likes wasting food,

especially when so many people don't have enough. Plus, of course, dumping it in a landfill produces greenhouse gases.

A few years ago, a Wellington cafe wanted to donate unsold sandwiches and salads to a local charity, but they didn't have anyone who could drop them off. Robyn Langlands worked as a volunteer for that charity, and she and her husband, George, offered to collect the food. They kept it in their fridge overnight, then delivered it the next day.

Robyn and George were aware that many food businesses, including supermarkets and bakeries, often had surplus food. But the couple didn't have enough time in their day (or space in their fridge!) to help everyone. Still, they were determined to make their vision of zero food waste and zero food poverty a reality. "A lot of people hated throwing their food away," says Robyn, "but there were few alternatives."

In 2008, Robyn and George got funding to start Kaibosh, New Zealand's first food rescue organisation. They bought a refrigerated van. They rented space to sort and store donated food, and they found their first employee. A team of volunteers worked in shifts to pick up and deliver food. Robyn heard that some businesses worried they'd be held responsible if someone got sick from eating their leftover food. "We had to guarantee that wouldn't happen," she says, "so we designed a health and safety checklist to ensure all our food was safe to eat." Kaibosh also worked with the government to change the laws so that businesses donating food for a good cause were better protected.

Kaibosh started in central Wellington but now operates in the Hutt Valley, Kapiti Coast, and Horowhenua. A small team of staff and over 270 volunteers collect and sort food from over fifty businesses. The food is distributed to over ninety charities and community groups, including food banks, childcare centres, marae, boarding houses, drop-in centres, mental health support services, and refugee and migrant support services.

The statistics say it all. Over the past twelve years, the people at Kaibosh have rescued more than 1,800,000 kilograms of food, provided the equivalent of more than five million meals, and reduced carbon emissions by over 600 tonnes. "Our organisation has a direct and positive impact on our community – and the environment," says Robyn.

OVER THE PAST TWELVE YEARS, THE PEOPLE AT KAIBOSH HAVE RESCUED MORE THAN 1,800,000 KILOGRAMS OF FOOD.

Kanapu

GROWING THE CROP OF THE FUTURE

Isaac Beach (Ngāti Porou, Ngāti Rangitihi, and Ngāti Kahungunu) grew up in Manutuke, a small rural community inland from Gisborne. His whānau couldn't afford to buy fish, so they caught their own. They grew their own fruit and vegetables, too.

Spending a lot of time outside, and relying on the sea and the land for food, taught Isaac the importance of taiao. "If our environment is healthy, we're healthy," he says. Isaac studied business at university. Then he became interested in hemp as a building product. That didn't work out, but Isaac was reluctant to walk away. "I could see that the plant had so many possibilities," he says. So he and his wife, Kirby Heath, began talking with friends Simon and Lou White. Simon is a fourth-generation crop farmer in Ōtāne, Hawke's Bay. He and Lou grew wheat, barley, and peas, but they were keen to experiment. Now the two families run Kanapu, a company that sells hemp-seed oil and hemp-seed flakes. Both are considered nutrient-dense superfoods.

Unlike most food crops, hemp can be used to make things other than food. Hemp fibre is turned into textiles, clothing, rope, paper, insulation, bioplastics, and biofuel. "In fact," Isaac says, "there are many great things about the plant. It's very efficient at removing carbon dioxide from the atmosphere, and it's also good for the soil. The plant's deep roots help to build soil structure, and its leaves and stems are an excellent source of compost." Once the plants are harvested, any leftover parts are returned to the soil. "This green waste is rich in nutrients and nourishes the soil, which increases the quality of future crops."

The list of benefits goes on. Hemp can be planted in dense clusters, leaving space for other crops, and it's quick to grow. The plant is pest resistant, which means farmers don't need to use pesticides, and it's drought tolerant. "This is welcome news for farmers in places like Hawke's Bay," says Isaac. "The region will become even drier because of climate change, and this is something we're already beginning to see."

Isaac especially loves the idea that the people involved with Kanapu grow food and protect the environment at the same time. He points out that almost half of Aotearoa's greenhouse gas emissions come from agriculture. "Hemp helps to turn this story around. We can grow nutritious food at less cost to the environment and set an example for the rest of the world."

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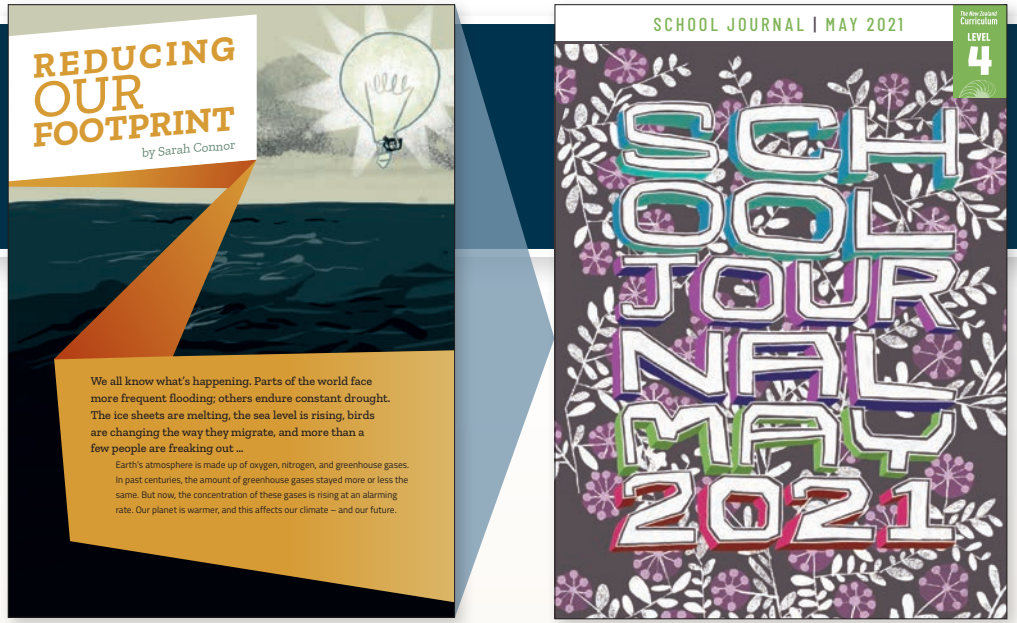

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