NZEI
TE RIU ROA

AKO

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FOR EDUCATION
PROFESSIONALS

SUMMER 2021

THE ENVIRONMENT ISSUE

Connection, citizenship, community

ENVIRONMENTAL EDUCATION
Supporting tamariki

TE AO MĀORI
Climate and Rangatiratanga

COMMUNITY
Journey towards action

Te Riu Roa

Kia tū tahi ai tātou i Riu Roa

The long valley in which
we all stand together

A te wā kōrero ai,
kua rangona whānuitia
a tātou reo pāoro mai i te riu

In this valley, when we speak,
our voice echoes through
for all to hear

A tātou reo pāorooro
hei reo whakakotahi ai

Our combined voices
reverberate out as
a unified voice

Kia tūhono ngā reo katoa,
kia rongo ai he reo kotahi.

We are many voices
coming together,
all voices heard.

This year you might start to notice NZEI Te Riu Roa looking a little different. Our new look takes inspiration from the rich symbolism of our ingoa Māori: Te Riu Roa.

The change isn't just about better reflecting who we are as a union. It's part of a wider transformation that will include a new website and better tools to help us build collective strength and win our campaigns.

Watch this space!

NZEI
TE RIU ROA

nzei.org.nz
nzei@nzei.org.nz
0800 693 443

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REGULARS

LONG READS

THE AKO TEAM

MANAGING EDITOR
Stephanie Mills
stephanie.mills@nzei.org.nz

EDITOR
Sarah Barnett
ako@nzei.org.nz

DESIGN
Alice Bell, Meredith Biberstein

CONTRIBUTORS
Nadia Abu-Shanab, Sarah Barnett, Heeni Collins, Rachel Dobric, Dr Bronwyn Hayward, Kahu Kutia, John McRae, Bill Manhire, Liam Rutherford, Melissa Schwalger, Sophie Schwalger, Sarah Wilkins

PHOTOGRAPHY
Distant Sea Photography, Hanna Andrewes Photography, Alice Veysey, Putaanga Waitoa

COVER PHOTO
Alice Veysey

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ADVERTISING
akoadvertising@nzei.org.nz

ADDRESS
13th Floor, Education House
West Building, 178 Willis St
Wellington 6140, New Zealand

WEBSITE
akojournal.org.nz

NZEI HELP
0800 693 443

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EDITORIAL

Looking to the opportunity ahead

Kia ora koutou.

I'm not sure if it's the increase in grassroots movements, or the current government's desire to highlight climate change, but in the education sector there's a real thirst to be lifting our game. That's why we have chosen to focus this issue of *Ako* on our relationship with the environment, and especially on climate change. Trust me, we are not short on content and so we've decided to go wide.

In a memorable 1994 episode of *The Simpsons*, Lisa tells her father Homer that the Chinese use the same word for both crisis and opportunity. Homer responds, "Yes! Crisitunity!" While both Lisa and Homer were wrong (the Chinese term for crisis, wēijī, is frequently misinterpreted as meaning "danger-opportunity"), Homer's spontaneous word does convey the idea that when solving difficult problems we are often simultaneously presented with an opportunity.

After the Covid-19-shaped year that was 2020, and increasing urgency to act against climate change, we should look to the *crisitunity* ahead. With major social and economic restructuring in our future, we have an opportunity to make that future better. There is a genuine opening for us to use our recovery from Covid-19 – at a national, local and personal level – to put solutions front and centre that limit carbon emissions, strengthen workers' rights and ensure job security and fair pay.

This issue of *Ako* highlights some of the climate threats that are already facing educators and tamariki. Within their stories though, there is always the *crisitunity* to talk to young people about climate change in a way that inspires action and optimism – and in this issue you'll find many examples of how schools, kura and ECE centres are planting the seeds of environmental citizenship. There is also a piece on how Te Maramataka (the Māori lunar calendar) can be used in an education setting to help staff and tamariki reconnect with the environment and themselves.

Another article explores the "Just Transition" taking place in Taranaki as the region moves from a fossil fuel to a carbon-neutral economy. NZEI Te Riu Roa members on the ground are helping to support Taranaki's transition by highlighting the important role that ECE and schools play as change agents within communities. Climate change needs short-, medium- and long-term solutions from all of us. We hope the stories in *Ako* support you to find those solutions.

Ngā mihi,

Liam Rutherford
National President/Te Manukura
NZEI Te Riu Roa

The environment issue

"If we want children to flourish, to become truly empowered, let us allow them to love the earth before we ask them to save it."
– David Sobel

This issue explores the role of the environment in the lives of tamariki, educators and our communities.

Gumboots and Gloves: Coming together in the face of climate threat

For many communities in Aotearoa the impacts of climate change are already being felt. *Ako* talks to educators about floods, droughts and hurricanes, and how they get through.

01

WRITER
John McRae

PHOTOGRAPHY
Distant Sea Photography

01 The old St. Clair Kindergarten sandpit now sits unused in a lot next door after the flooded kindergarten had to be rebuilt.

“When the lives of families are turned upside down by floods, drought or hurricanes, schools and early childhood centres remain islands of stability.”

Katrina Robertson well remembers 3 June 2015. She had woken to heavy and persistent rain. By midday, there was significant ponding around Bathgate Park School in South Dunedin where she is principal.

“Our school was quickly becoming an island in the middle of a lake,” she recalls. “On either side of us are Bathgate and Tonga parks and they were filling with water. People were kayaking on one and hundreds of gulls were sitting on the other. It was clear that we had to evacuate, so we began contacting all of our families.”

Bathgate Park School had only been open for three years so the emergency was the first test of its systems.

“Fortunately for us things went fairly smoothly and we were able to clear out the school quite quickly. There were a few cases where contact numbers didn’t work, but families were getting the news from other sources.”

As the rains fell it was obvious to everyone in the district that this weather event was a big one. Everywhere, wastewater systems were overwhelmed, roads were flooded and businesses and homes were beginning to take in water. Across Dunedin, emergency services kicked into action. Rest homes were evacuated and the New Zealand Army began sandbagging as the city prepared for high tide at 4.30pm.

Rain continued to fall into the night and by the following morning, when the skies cleared, more than 1,200 South Dunedin houses and businesses had been damaged. Thousands of locals had been forced to leave homes that were no longer habitable. Fortunately, Bathgate Park School was largely undamaged.

“If you look at the historic aerial footage at the height of the flooding, you can see our buildings totally surrounded by water,” says Robertson. “The flood stopped rising a couple of metres short of our doorways and apart from a few leaks caused by the intensity of rain, we were okay. Like everywhere else we had sewage contamination, but we were very lucky.”

The school closed for two days while staff mobilised, going into the community to do whatever they could to assist families. They helped move furniture away from still rising water and offered a hand moving families as well.

“We had a huge number of displaced families,” says Robertson. “Some found themselves split up and scattered across the city.”

“That was hard for them,” says Robertson. “People had lost possessions in the rising water and now, they were homeless. It was fortunate that school was able to open quickly and provide some normality for our children and families.”

Of the twenty-four kindergartens run by Dunedin Kindergartens (Mana Manaaki Puāwai o Ōtepoti), three were not so fortunate. While all were impacted by the flooding, St. Clair Kindergarten was hardest hit.

“The damage at St. Clair was so great that in the aftermath we decided restoration wasn’t a viable option,” says Dunedin Kindergartens General Manager Christine Kerr. “Instead we decided on a complete rebuild.”

Teachers and support staff working in flood-damaged centres faced additional work and stress over days and weeks. Teaching materials were rescued and there were days of clean-up with bark and sand having to be replaced because of sewage contamination.

Insurer IAG estimated the economic and social cost of the event at $138m while schools and social services saw the damage to the emotional wellbeing of families. “Anxiety and trauma became visible very quickly and continued for months afterward,” says Robertson.

“Thankfully, the insurance companies played ball in 90% of cases, but for others there was a battle for restitution. Some of our people, who were in rental accommodation, couldn’t get their landlords to repair the water damage. That remained an ongoing issue because houses remained damp for months and often mould became a problem as well. We felt that in our school with elevated health needs.”

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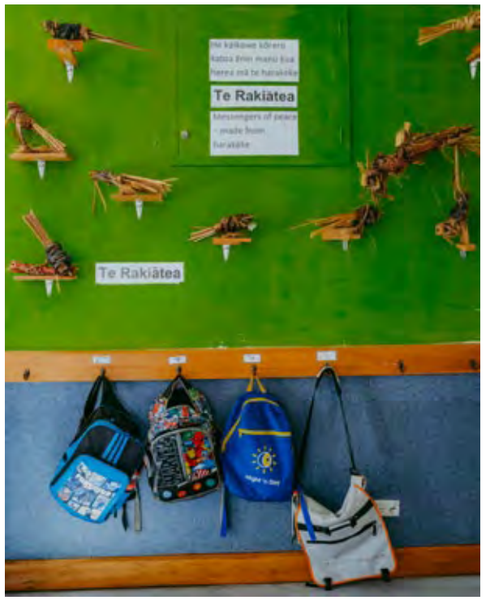
03

02 Bathgate Park School Principal, Katrina Robertson.

03 Tonga Park and Bathgate Park under water in the 2015 flood. Photo: Otago Daily Times.

“The flood stopped rising a couple of metres short of our doorways – we were very lucky.”

– KATRINA ROBERTSON



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04 After the flood, Bathgate Park School was able to open quickly and provide some normality for children and families.

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The stress of the flood was compounded by the worry that another one might be just around the corner. "Every time it rained, for about a year after the June flood, you could sense stress levels rise in our families," says Robertson. "Our children picked up on that. Students who had been forced out of their homes or been separated from family members during the flood were particularly anxious, believing it might happen again. Teachers worked hard to comfort and reassure them."

The fears were real. The flooding of 2015 had exposed the vulnerability of the community to the ravages of weather and climate change. Major weather events in 2017 and 2018 reinforced the severity of the problem.

South Dunedin was once wetland edging the sea and a catchment for water draining from the neighbouring hills. Reclamations of the wetlands first began in the 1860s when Chinese settlers, drawn to Otago by the gold rush, began to drain pockets of swamp around St. Clair and establish market gardens on the land.

By the turn of the century the reclaimed area amounted to 155 acres, upon which intensive housing for a growing working class, commercial buildings and an array of community facilities were crammed. A carpet of concrete and asphalt made much of the area impervious to seepage, but also hid the fact that just below was a water table that would respond to every change in climate or land use over the years.

Following the 2015 flood, a series of investigative bores identified the median depth of the water table has been rising for many years and a major downpour brings it closer to the surface. Unlike most aquifers, the water table is connected to the sea so that when the tide rises, so does the groundwater. Failures in the wastewater system also amplify the danger of flooding. That is what happened in June 2015 – a build-up of debris at the entrance to the major water treatment plant at Tahuna (combined with maintenance failures of mud tanks) turned South Dunedin into a giant lake.

Once the waters receded after "the big flood", Dunedin City Council worked quickly to identify the failures in the wastewater system and fix the problems with the mud tanks and the screen at Tahuna. It also began plans to relieve the pressure on South Dunedin by building a major pipeline to divert wastewater from the hill suburbs to a new facility at Green Island. At the same time the Council has encouraged property owners to take their own mitigation measures.

"There is general agreement amongst experts that that even with infrastructure maintenance and renewal, climate change impacts on South Dunedin will grow."

"The Council's been very good at working with groups like us," says Kerr.

"After the big flood, they said we should expect more ponding in the region and we have certainly seen that around our kindergartens. With advice from local tradespeople we've improved drainage and where necessary we've installed pumps."

The condemned St. Clair Kindergarten was rebuilt well above specifications so that it was on higher platforms and the kindergarten's management is considering building options, should they be required at other facilities. Kerr says that future buildings may have to be relocatable in preparation for the worst scenario.

There is general agreement amongst experts that even with infrastructure maintenance and renewal, climate change impacts on South Dunedin will grow. Some have suggested that city planners ought to be focussed on moving residents in the worst affected areas to higher ground.

05 St. Clair Kindergarten Head Teacher, Karen Cameron.

06 The archway from the old St. Clair Kindergarten was incorporated into the new build.

07 Bayview Road, which runs between Bathgate Park School and St. Clair Kindergarten, flooded in 2015. Photo: Otago Daily Times.

08

"Cracked Ground" by AgriLife Today, CC BY-NC-ND 2.0; flic.kr/p/vpV26M

Senior Communications Advisor for Dunedin City Council Jamie Shaw says that there is plenty more that can be done to make South Dunedin viable before consideration is given to wholesale repatriation.

"There's an assumption that we either keep things as they are and focus on pumping water away, or we close the suburb and walk away. Neither of those options is going to happen."

Shaw says that moving 10,000 people and abandoning billions of dollars invested in South Dunedin would be massively difficult and disruptive. As the largest area of flat land in the city it has strong recreation and mobility values. It's also an area with a proud working class history and a strong sense of community.

"People have deep ties to the area," says Shaw. "They can't be expected to just move on."

Council's strategy is to seek adaptations that will allow locals to "live with climate change". Thirty-five million has been set aside for research into mid-term responses which might involve the construction of canals, lagoons and lakes – restoring parts of the landscape to wetlands. Other ideas being floated include progressive urban design: roads that tilt towards the centreline, raised walkways, redesigned social housing and adaptable housing.

"South Dunedin has serious social deprivation," says Shaw. "A lot of the housing stock is run down and there is high unemployment. So, in addressing climate change we can also grapple with those issues and make it a better place, with a better quality of life."

"It got to the stage that schools in our district had to close because they were very low on water. But the community at large has been doing it tough for a long time."
– Vern Stevens

Key to the Council approach is deep engagement with the community, including holding regular hui across the suburb to inform, educate, get feedback and listen to ideas. "What we are doing here is building a sustained, trusting relationship where the community is informed and part of the long-term plan," says Shaw.

While Dunedin was spared major flooding in 2019–20, the ravages of climate change struck Northland with force. Between January and April 2020, the region suffered its worst drought in more than seventy years – the sixth declared in Northland since 2009, but the most unrelenting that Vern Stevens had seen in his community of Dargaville.

"This time it got to the stage that schools in our district had to close because they were very low on water," says Stevens who is Principal at Selwyn Park School. "But the community at large has been doing it tough for a long time."

In 2018 the region experienced a dry winter, and a dry year in 2019 set the area up for the drought that was declared in early February 2020. Dairy and beef farming, the backbone of the Dargaville region, were hard hit.

"Schools serving those farming families felt the pain," says Stevens. "When families can't grow enough grass and meet the payments, there's worry and depression and the kids feel it and that comes into the school. They start to behave in different ways and we have to take care in how we deal with that, so that we don't place extra stress on those families."

08 *In 2020, Northland suffered its worst drought in more than seventy years. Photo: Stuff Limited.*

09

Photo: Stuff Limited

Stevens was impressed by the response of the Ministry of Education to the water shortage. At the height of the drought the Ministry supplied schools with water tanks, which will assist them in future dry seasons.

While the big dry was felt right across Te Tai Tokerau, it was the east coast of the region that experienced record rainfall in mid-July 2020. Two hundred millimetres fell in ten hours, flooding rivers, washing out roads and inundating buildings. Evelyn Henare who lives in Tikipunga, a suburb of Whangārei, abandoned her home when water began to flow into it, wading out through deep water with a few possessions. At the same time, Te Kura Kaupapa Māori o Te Rawhiti Roa, where she is Tumuaki, was taking in water.

"School had never experienced flooding before, so when a staff member went to check and found water flowing through the classrooms, they were shocked," says Henare.

Four junior classrooms and ablution blocks, the library, resource rooms and a newly refurbished staffroom were all damaged so the reopening of school for Term 3 was delayed. For a couple of days staff donned gumboots and gloves and salvaged what they could, throwing contaminated resources and furniture into bins.

When junior students did return to school, it was to doubled-up classes and portable toilets as damaged buildings underwent weeks of repairs.

"We're soldiering on, but it has been a really hard year for students and staff alike," says Henare.

"We still must close from time to time, not because the school's in flood, but because of flooding in the community. Weather events are very stressful for our families."
– Paul Barker

Further north in Kaeo, principal Paul Barker laughs wryly at a weather expert's comment that the July 2020 flood was a 500-year event.

"The 2007 flood was a 100-year event," he says. "People's memories are short."

Kaeo is a town famous for flooding. The 2007 event saw three floods in just six months with fifty-five homes flooded, most of which were uninsured. For Barker, newly installed as Principal, the impact was shocking.

"Our school was awash. Water was knee-deep in the hall. The pool complex was smashed over."

Work done by the Council over several years to reduce flooding around the school has prevented a repeat of the 2007 event, but flooding remains a regular event for the town.

"To some extent the problem has been moved further down river, more to the residential area," says Barker. "It hits people where they live rather than where they come to school. So, we still must close from time to time, not because the school's in flood, but because of flooding in the community. Weather events are very stressful for our families."

Barker explains that families are reluctant to send their children to school if there is a chance of flooding, because getting to and from school can be a problem. He also worries about the effects of weather events on the health of families.

"This is a poor town. People are living in homes where there are holes in the floors and walls. A few years ago, we worked to get running water into the home of one of our families."

09 *Heavy rain caused flooding, slips and damage to houses and roads near Whangārei. Photo: Stuff Limited.*

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Kaeo is one of twenty-six catchments in the Far North where flood reduction work is being undertaken. Many of these were hit by the July flooding, an event that climate scientist James Renwick attributed to climate change. Professor Renwick says that Northland should expect increased frequency of weather events at both ends of the scale, with more heavy rainfall and an increase in droughts.

Any article that considers the impact of climate change on our students and families must include some mention of climate change in the Pacific Islands.

The 2019–20 cyclone season was the deadliest for five years with major impacts in Tonga, Samoa and the Cook Islands. Each event impacted Aotearoa New Zealand's Pasifika communities, which have strong cultural and familial ties to those places.

Aotearoa New Zealand's Tuvaluan community is particularly conscious of the crisis at home. Many people in Tuvalu have had to leave their homes because of encroaching sea and move to the main island Funafuti, placing severe strains on housing, infrastructure and employment.

Auckland community leader Fala Haulangi says that Tuvaluan people fear for the future. "It's about my people surviving in this world. They wonder where they can go. There is a shortage of fresh water and they can't plant crops now in many places, because of the salinity of the soil," she says.

As people are forced to leave their villages in Tuvalu, Kiribati and parts of Fiji, the wellbeing of communities and individuals is impacted both in the islands and in Aotearoa New Zealand.

"Land is the anchor of identity and culture in Pasifika communities," says Olivia Yates, a researcher on psycho-social impacts of climate change. "Loss of land has a strong impact on the psycho-social wellbeing of individuals and communities." Though they are thousands of miles away, Aotearoa New Zealand's Pasifika communities have strong connections to their family land, which makes climate change a very immediate issue.

In all the communities of Aotearoa impacted by climate events, schools continue to play a critical role. When the lives of families are turned upside down by floods, drought or hurricanes, schools and early childhood centres remain islands of stability. Even when a school is damaged as many were in the Dunedin and Northland floods, educators adapt and quickly re-establish routine and structure.

"Principals, teachers and support staff have worked together to provide certainty for children in very uncertain times," says Katrina Robertson. "Alongside that they use the power of their quality relationships with students and whānau to give support and build resilience."

Achieving that means creating opportunities where children can safely explore their feelings and build their understanding of what is happening around them, which helps them comprehend the world in which they live. ●

10 During climate threat, educators and support staff work together to provide certainty for children.

Kahu Kutia

E kore au e ngaro / I shall not be lost

Where I come from, the kererū is revered. A food for royalty and women. Our kaumātua describe how the sky would get dark as clouds of kererū flew overhead, sounding like a loud helicopter as they flapped their wings through our echoing valleys. This memory from long before I was born was a sign of abundance. I imagine our wāhine talking smack with lips covered in fat while they took their share. My father told me that ngahere always provides, takes care of it.

I think about the centuries of understanding that has been harvested on my whenua in Te Urewera. The signs that heralded hard times or good times to come. What valleys to visit for healing, what to listen for on the wind. When my dad and his best friend ran away from school at fifteen to live in the bush, they had everything that they needed. In my whakapapa I am the first link that doesn't know these things.

The world that we live in is complex, and so are the causes of my own disconnection. But I'll name a few factors. In 1867 the Native Schools Act was created, and premised on the idea of assimilating a supposedly savage race and beating out of us all of the customs that make us who we are. My dad was a student of a native school and spoke to me about the beatings he got for speaking Te Reo Māori. He never spoke Te Reo to me until I finally begged him into it as a university student. This was six months before he passed. In 1907 the Tohunga Suppression Act was created in response to the movements assembled by the likes of Rua Kēnana. Indigenous medicine outlawed, along with the spiritualities that were woven into it. Our people forced to abandon the health frameworks that had always been the most beneficial to us. In 1954 when my father was ten years old they made Te Urewera a national park. They said it was for our own good and told us we need to take care of the environment. As if we had not already been doing that for centuries. Our people could not eat nor live from these lands anymore, could not harvest rongoā to heal nor rākau to carve. Ways of being that are outlawed soon fall out of practice.

Today, polluted water bubbles forward even from the middle of the middle of nowhere in my home. The contexts in which we have always understood our world are shifting. Our language. Our identity. The places we call home. Once upon a time the kererū made a spectacle of the sky, and now I feel blessed to see one bird on a power pole in the city.

Climate change cannot be understood separately from colonisation. And climate action cannot be enacted separately from indigenous sovereignty. When we understand the international picture of the colonial project we see how lands, waters, peoples and livelihoods became capital for exploitation. And every little action mattered.

Climate change is very much a sequence of emerging environmental disasters. Severe droughts and flooding in Te Matau-a-Māui is climate change. Water quality rapidly declining is climate change. Disappearing islands in the Pacific is climate change. I think we can all understand this. But when you understand how a history of colonial violence in rural Māori communities led to the urban drift of our people in the 60s and 70s, you understand that disconnection from culture and urbanisation is connected to climate change. The rates of Māori youth suicide are linked to disconnection from our healing practices and communities and therefore linked to climate change. Inequitable health outcomes for Māori are linked to climate change.

You will hear scientific research that says we have eight years or ten years, or twelve years before the run-on effects of climate change become unstoppable. This in itself is alarming. But in actual fact, marginalised communities have no years. We are already suffering the consequences and are making plans to adapt. I have taken part in land occupations, youth climate marches and wānanga all to do with climate change. I've made art about it, written about it. I travelled to the United Nations climate change talks in Poland with a group of Māori and Pacific youth called Te Ara Whatu. I returned home to advocate to government and council. I do this because climate change is already affecting our lives deeply.

Young people already have a deep understanding of the world that they have been brought into. They often feel frustrated at being placated by older generations who interpret our very real burden as irrational fear about the future. I encourage you to listen and think about how you can help support their journey towards action that will benefit us all. If they want to start a club, or petition council, or spend time with their kaumātua, celebrate that. It's so important that we have a clear picture of what we do want for the future and feel empowered to act upon that vision.

Some of the most inspiring moments I have witnessed in activism have been at the hands of rangatahi. I think of groups like 4 Tha Kulture and their work connecting climate change to social inequities in their communities in a way that many who have spent decades in the climate scene have failed to understand. I have witnessed a five-year-old lead a chant in a march of thousands. I have seen youth in their art convey realities of climate change and genuinely connect people over a cause that will eventually affect us all. Young people have a real power, and in your critically important roles as guides in their journey, you have power too.

My work as a climate activist very much comes from a place of despair at the colonising history of Aotearoa, and the ways that it has affected my understanding and place in the world as a Māori person. However, no work is sustainable without hope. Let us return to the knowledge of indigenous peoples, because we have always considered ourselves a part of the land and the sea, rather than separate. If our whenua and our waters thrive, so too do we.

I imagine a world where resources are created to be accessible to everyone. Where we are able to practice sovereignty over our kai and know where it comes from. Where fast, safe, sustainable transport methods are available to us. Where thriving lands are prioritised over capitalist greed. Where rural communities are supported to navigate environmental shifts, disappearing shorelines, droughts and floods. I envision a world where we can meet each other kanohi ki te kanohi to share knowledge and story. This world requires radical reinvention from us all, because we cannot fix climate change within the system that invented it in the first place.

I think of the birthright I am not able to inherit, the legacy of kererū and how much they mean to us. It's not that I hunger to eat the kererū, I hunger for a world in which I can be sure that she and I will not be lost. ●

Kahu Kutia was born and raised on her homelands in Te Urewera. She is a storyteller, artist and activist interested in kaupapa Māori and climate action work. She is the host and co-creator of the RNZ podcast ***He Kākano Ahau***, which weaves together the stories of Māori in urban places.

PHOTOGRAPHY
Nicole Hunt

Planting the seed of environmental citizenship

Early childhood centres are educating and empowering tamariki on how to make their world a better place. The work is changing mindsets and behaviour far beyond centre walls.

WRITER
Melissa Schwalger

PHOTOGRAPHY
Alice Veysey

01

Years after the tamariki of Katikati Kindergarten adopted a neglected reserve, many of them still pick a snack from one of the fruit trees they planted as they pass on their way to college.

Head Teacher Cushla Scott says the Bay of Plenty community loves and values the area of Gilfillan Reserve now known as the Kati KaiWay.

"Some of them [past kindergarten children] have gone off to work now at part-time jobs, and one boy in particular has donated us some money – $60 for us to plant some more trees," she says.

Teacher Jizzy Green spearheaded the initial project alongside Scott and teacher Biddy Hudson. They worked with the New Zealand Tree Crops Association and the Western Bay of Plenty District Council for nine months before the first tree was planted in 2012. They continue to take groups of children to the Kati KaiWay with their gloves and rubbish bags. Donya Feci, who joined the team after Green's departure, now oversees the care of the garden beds and is passionate about the importance of healthy soil.

"They pick up rubbish, they pull out weeds around the beds. In the early days we had to water the trees because they were all quite small. We take small groups up there and they learn to love it and enjoy it, and get heavily involved in the whole process," says Scott.

"And it's a food source for children that may not always be able to access fresh fruit readily. There're plums, citrus, nashi, guavas, feijoas. We've got persimmons, walnuts and almonds. The almonds are producing for the first time this year, which is very exciting!" she says.

The Kati KaiWay was a significant factor in the kindergarten being awarded the prestigious Enviroschools "beyond Green-Gold" status in 2018 – an award which recognises commitment to the environment that embraces the wider community.

Katikati Kindergarten's enthusiasm for sustainability and environmental education began years earlier, Scott says, when they decided to replace the brightly-coloured, rotting playground with an environmentally friendly playground.

An adobe specialist was brought in to run a workshop with parents about how to work with adobe. It took eight days to create a beautiful playground that included a hobbit house with mosaics and a living roof.

That was followed by underfloor insulation, energy efficient lighting and solar panels being installed in the kindergarten, which reduced electricity costs. Inspired Kindergartens – a

01 From left, Katikati Kindergarten Head Teacher Cushla Scott with teachers Donya Feci and Biddy Hudson.

network of kindergartens in the Bay of Plenty – and a power company helped with the solar panel installation costs. They were also supported by Nik Gregg from Sustainability Options whose key priorities are community, social and environmental concerns. He is still working with Inspired Kindergartens on their goal to become a self-sufficient organisation by 2025.

Katikati Kindergarten share their solar electricity via a buddy programme in which ten Inspired Kindergartens with solar panels sell their excess to thirteen other kindergartens.

"It's a win-win. We sell the power to our buddies at 7c per unit, which is less than they would pay Trustpower, and equal or more than we would receive if we had to sell the surplus power back to Trustpower," says Scott.

The kindergarten is also involved in Grow On Katikati, a community-led regenerative food cycle project that grew out of the Covid-19 pandemic and lockdown. The teachers and children plant seeds and gift the seedlings to families in the community, encouraging local food security by sharing knowledge and produce.

Teacher Donya Feci says the children are heavily involved in recycling and composting at the centre, growing vegetables and harvesting the heritage seeds, which are given away or sold.

"They love the seed saving, and they pack them up in the little envelopes and put them in our little shop. Or they decant the worm wine and put the labels on. They're quite entrepreneurial like that," says Feci.

Feci and Scott laugh that the days of leaving the hose running in the sandpit are long gone, and the children are quick to dob in parents who don't turn off the tap at home while cleaning their teeth.

"We're trying to empower them to take action … and learn about ecology and working with the environment and not against it."
– Cushla Scott

The environmental focus of Katikati Kindergarten and many other like-minded centres ties in strongly with the principles of the early childhood curriculum *Te Whāriki* – whakamana/empowerment; kotahitanga/holistic development; whānau tangata/family and community and ngā hononga/relationships.

Te Whāriki describes Environmental Education for Sustainability (EEfS) as going beyond simply caring for the environment. To quote the curriculum, EEfS "is about the

02 Teachers and tamariki gift seeds to the community.

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"We *can* teach kids this young how to care for each other and the planet."

– MARY GROGAN

03 Tamariki decant worm wine at Katikati Kindergarten.

04 The hobbit house with its living herb roof.

global, social, cultural and economic wellbeing of all people – as well as our planet, and the biodiversity that relies upon it", which includes global citizenship and democracy as part of caring for the environment.

In an early childhood context, EEfS includes "sustainability, climate change, critical thinking, identity, community and kaitiakitanga". Kaitiakitanga or "stewardship, protection and preservation" is especially important as one of the taonga of Te Tiriti o Waitangi, but also because the idea evokes personal and group stewardship and includes people as part of the natural world. To care for the environment is also to care for ourselves.

Of the three dimensions to EEfS, the third dimension – education for the environment – is where the impact of learning is most substantial and sustainable. The dimension includes:

- Education in the environment – for example, visiting a place of environmental interest
- Education about the environment – for example, researching places, things and events (including cultural narratives)
- Education for the environment – for example, tamariki as active citizens (civic actors) and agents of change with a degree of action competence to advocate for a healthy environment and society.

But how do you talk to young children about environmental issues when the problem leaves many adults feeling fearful and unable to make a difference? Scott and her team focus on being proactive and empowering tamariki to do what they can in their world rather than burden them with things like climate change.

"They fully grasp it when you take them out into your local neighbourhood, and you look at a drain and you find cans, plastic bags and bottles. So we're not afraid to tell them about if it goes down to the drain, and they know if it goes down to the drain, where is it going?"

"It's going to the sea. And then they'll tell you that turtles might think it's kai, and they'll eat it and get a stomach ache. We're trying to empower them to take action and feel empowered to look after everything and learn about ecology and working with the environment and not against it."

Collectively Kids, an ECE centre in Point Chevalier, Auckland, also has environmental education at the core of its philosophy.

Owner and team leader Marina Bachmann

"For me, it's trying to be clear, staunch, but also creative and making it fun, and making it real for them."
– Marina Bachmann

strongly believes that tamariki have the right to an environmentally sustainable present and future.

"For me, it's the main issue because the climate crisis and environmental degradation is really the biggest challenge that we face, and mitigating our mistakes should be our main focus really, because it's our job to ensure that future generations have a planet they can live on."

She says anyone who thinks under-fives are too young to understand or get involved in environmental issues "would be really underestimating our children."

"It's really about how you address those things with them. For me, it's trying to be clear, staunch, but also creative and making it fun, and making it real for them. There's no point terrifying them."

Bachmann and her team talk to the children in terms of "adults haven't done a good job of looking after the environment."

"I don't usually go that much deeper, but we do look at things like polluted oceans, unfairness, fair trade. Also, we do things like support the City Mission and we have books about homelessness, so I guess what we try and do is explain the issue and then combine that with an action they can take to make that better."

"We do quite a lot of work around critical thinking, particularly around behaviour and actions that we take as people."

The centre has a strong advocacy and citizenship focus, and the children have contributed to letters to politicians about their concerns and put environmental displays on their fence.

"Developing a coherent and consistent climate crisis curriculum across all education sectors is key to ensuring that our tamariki and rangatahi have the skills, knowledge and dispositions to navigate an uncertain future," says Bachmann.

She says it was an easy decision to join the Strike for Climate marches, and the children understood what they were marching for.

"We didn't go to the big marches, but we have a big banner – actually from a climate march that the Collectively Kids community attended several years ago. We take that out on Carrington Road quite regularly. We invited Unitec, and a lot of parents came. The children love marches, they sing waiata and chant," she says.

It was Professional Learning and Development some years back about Te Tiriti-based practice and bicultural practices that set

05 From left, teacher Donya Feci, previous teacher Jizzy Green and parent Emma Millar with tamariki at Kati KaiWay.

06

the team in their current direction focusing on kaitiakitanga and social justice. Then, a few years ago, the Collectively Kids teachers took part in Tamsin Hanley's project, *A critical guide to Māori and Pākehā histories*, a professional development package aimed at educating teachers about accurate histories of Aotearoa New Zealand.

Bachmann says the six-book Curriculum Programme Resource (CPR) is amazing, and while it's a little difficult to implement in an early childhood context, its value was in giving the teachers an accurate understanding of Aotearoa New Zealand history, from both Māori and Pākehā perspectives.

Local parent Mary Grogan chose Collectively Kids for her two children because staff were warm, welcoming and inclusive. The environmental focus has been the cherry on top.

"CK's focus on everything that they do has really impacted us, and we wanted that for Clara (8) and Leo (4) and their future. They [CK staff] walk the talk in every way," says Grogan.

For instance, the centre's exclusive use of cloth nappies has a large impact on the amount of rubbish produced. Even families that don't use cloth nappies at home receive one each day to take home so their child can wear it to their next session. Grogan likes that the children get involved in hanging out the clean nappies to dry and then putting them into the cupboard.

"We *can* teach kids this young how to care for each other and the planet. So I would love for more of the CK policies to be part of the everyday life of every centre. It's really hopeful to think that not only are they caring for the child, they're caring for the world in general."

"I think we're all … realising that we have to be responsible and we're not the only species on the planet and our life depends on the world."
– Jacqui Forbes

Empowering ECE services, marae and other organisations to operate sustainably and environmentally is the purpose of Para Kore (Zero Waste) – a programme delivered with a Māori worldview. Para Kore works with 207 marae, twenty-six regular events and another 246 organisations including thirty-two kōhanga reo, to increase the reuse, recycling and composting of materials and reduce the extraction of natural resources and raw materials from Papatūānuku.

General Manager Jacqui Forbes has been with the project since its inception in 2009, first as a part-time project between Xtreme Waste and Waikato Regional Council and full-time since 2016.

"In the Māori worldview, we are the tēina, the youngest progeny of Tāne Mahuta, which means that our place in the world is one where we're the youngest in the family, so we know our place. That's a different paradigm of interconnected relationship, rather than saying 'oh these are resources, and let's make profits and let's manage these resources so we can get what we want'," she says.

Para Kore has kaiārahi in most parts of the North Island who are available to work with organisations that want to reduce their waste. They are also building relationships to expand into the South Island.

"We also work with early childhood centres, like kindergartens and playcentres. We work with anyone!" says Forbes.

"Our kaupapa is like a health and wellbeing kaupapa, and it has contributed to lots of policy decisions by the whānau of the kōhanga reo to help the parents go litterless in terms of what they're sending to kōhanga," she says.

Forbes conservatively estimates that the project has diverted more than 500 tons of waste from landfill over the past decade.

"I think we're all learning and realising that we have to be responsible and we're not the only species on the planet and our life depends on the world, you know. We're part of a system, we're part of a family." ●

MORE INFORMATION

Katikati Kindergarten: inspiredkindergartens.nz
Kati KaiWay: www.facebook.com/Kati-KaiWay-508229822536413
Collectively Kids: www.collectivelykids.com
Para Kore: parakore.maori.nz
Enviro Schools: enviroschools.org.nz

06 Jacqui Forbes at Te Kōhanga Reo o Whāingaroa. Photo: Supplied.

Te Maramataka: A way to live and know

As mātauranga Māori is more widely recognised, schools and kura are using Te Maramataka to connect with the environment and themselves.

WRITER
Heeni Collins
(Ngāti Raukawa)

PHOTOGRAPHY
Putaanga Waitoa (Ngāti Kahungunu, Ngāti Porou, Kūki Āirani)

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When the Tainui waka left Rai'atea near Tahiti, there was concern that the day it departed was close to a day named Tamatea. In the maramataka (the Māori lunar calendar), this day is associated with stormy weather, writes historian Pei Te Hurinui Jones (Ngāti Maniapoto) in his book *Ngā Iwi o Tainui*.[1]

People called from the beach as the waka left the shore: "*E Hotu e, taihoa e haere, ko Tamatea tēnei!*" But waka commander Hoturoa replied confidently, "*Tukua atu māua ko Tamatea, ki te moana whawhai ai!*" Let Tamatea and I fight it out at sea![2]

This is an example from Tainui waka traditions of the importance of knowing and living by the phases of the moon (ngā mata o te marama), a practice held in common amongst all our iwi in Aotearoa, with variations. Stars such as Matariki, Puanga and Rehua are also important, as their appearance is associated with the Māori New Year. As these traditions become better known, many people are hungry to learn more.

The maramataka was used not just for daily food-associated activities like planting, harvesting and fishing; it was also used for planning important hui and battles, says researcher and kaumātua Henere Tumapuhia, also known as Ockie Simmonds. He is one of the earliest members of the Society of Māori Astronomy Research and Traditions (SMART). According to Simmonds, the first four Māori kings (1858–1912) were endorsed at the time of Rākaunui, or the full moon.

The maramataka continued to be practiced well after the Europeans arrived, and in some whānau it has remained in continuous practice. In his childhood, during the 1950s–1970s in the Waikato region, Simmonds remembers his elders organising whānau fishing expeditions between the last quarter and new moon phases, when

1 *Pei Te Hurinui Jones and Bruce Biggs,* Ngā iwi o Tainui: the traditional history of the Tainui people: nga koorero tuku iho o nga tuupuna *(Auckland: Auckland University Press, 1995), 31.*
2 *Jones,* Ngā Iwi o Tainui, *30–1.*

01 Students at Hiruharama School make relishes and jams with foraged fruit.

02 Hiruharama School teacher Michelle Haua uses the maramataka in her classroom.

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huge quantities of fish were caught (for instance, over 100kgs in one night) and distributed widely amongst several whānau.

While this knowledge was nearly lost in his whānau, his interest and research over the last decade has supported his niece Shirley Simmonds to also revive her connection to the maramataka and pass it on to her two boys, Tamihana (aged 11), and Raukawa (aged 9) in their reo-speaking home.

"For me as a gardener, it's helped me find more balance," Shirley says. "If the maramataka says it's not a good day for planting, I'll do something else like prepare the ground for planting, dig a hole for a tree to go in, and so on. In the past I felt I had to dig the hole and plant on the same day. It's taken the pressure off – do one thing at a time, use your energy sustainably."

A growing interest in the maramataka within kura and schools is supporting tamariki and whānau to connect with the natural environment, which will surely benefit our planet, and also our wellbeing as Māori and non-Māori.

Maramataka expert and tohunga Rereata Makiha (Ngāti Mahurehure, Te Aupōuri, Te Arawa) has been running workshops on the maramataka for schools and kura for several years now, particularly in the Auckland and Northland regions, but also in Wellington and the South Island. There is no funding from the Government for this mahi – he does it on a voluntary basis (mahi aroha).

"Do one thing at a time, use your energy sustainably." – Shirley Simmonds

Many kura kaupapa Māori, in particular, are interested in learning and teaching about the maramataka, including it in their curriculum and sometimes even in their school philosophy and purpose. As Makiha says, "They don't have to redesign their curriculum to include it. So most of the kura like in Kaikohekohe, Whirinaki, down here Manurewa, and some kura in Rotorua use the maramataka in their schools."

"The most brilliant one for preschools is in Rotorua, Te Pākārito. Everything they do is by the maramataka – teaching the children how to read the environment. They're urban-based, so a lot of what they observe are imported plants. Like they've got a magnolia, but they align it with the maramataka, and it flowers every year on those maramataka days."

In the Far North, near Kaitāia, a kura named Te Kura Kaupapa Māori o Tututarakihi has based its philosophy on the maramataka, and even aligns its school terms to fit the lunar calendar, having its holidays in June and July.[3] Fishing, gardening and hunting are the main activities, through which language, science and mathematics are learnt. The school curriculum

3 "Kura Kaupapa to align education & activities with Maramataka," Te Ao Māori News, July 29, 2020, www.facebook.com/watch/?v=1153010695071990

03 Rereata Makiha. Photo: Supplied.

04 Shirley Simmonds and sons. Photo: Supplied.

is based on over thirty years of research, says a founding member Heeni Hoterene.

Heeni and her husband Reuben Taipari have taught the maramataka, which came from his grandfather Ihaka Poata, to over 5,000 people nationwide over the last fifteen years, she says. “My expertise is being able to translate ancient knowledge into a relevant context that can be applied practically in a modern-day context. I have worked teaching planning by the maramataka for over sixteen years now with both Māori and mainstream – health, sport and fitness, creative, government departments, kōhanga reo, kura auraki (mainstream schools) and whare wānanga.”

Hoterene and Taipari lead a group of ECE teachers in the Far North who have established over ten early childhood centres based on the maramataka, she says.

Michelle Haua, a teacher at Hiruharama School, near Ruatōria, says she’s been gradually introducing maramataka concepts to her class and learns along with the children. “We’re all learning together. I see a lot of potential in it in terms of understanding the seasons, collecting kai, growing kai, using it to monitor the energy levels and phases of the moon, how it affects us.”

Making use of freely available local kai was already practiced at the school, and that theme was emphasised during the Covid-19 lockdown. “We foraged and got plums and peaches, brought them to school, made relishes, jams, chutneys, and gave them to kaumātua. We usually do that two or three times a year.”

“When Covid-19 came, what they were doing at home was far greater than being in the classroom. They were going out hunting and fishing and would take photos (and tell us). They didn’t realise they were actually learning, having a relationship with parents, whānau. It was powerful in terms of development of relationships and key competencies.”

Haua plans her classroom activities to fit with the energy levels predicted by the maramataka. “If it’s a low energy day, I might not test that week. We’ll do meditation, mirimiri [massage]. I slowly build their learning up, and by the time of high energy days we know the kids will be energetic. You’re not fighting with the children, it’s a win-win, for both the children and myself. Your outcomes are better.”

Certain days are associated with atua and realms like Tāne Mahuta (the bush) and Tangaroa (the ocean). Those are days which are good for the children to be in those realms, to observe, listen and sometimes “give back”. One example of “giving back” comes from Summerland School in Henderson, Auckland, which has been learning about the maramataka with Rereata Makiha.

“We’ve got a predator-free group and they’ve been using the maramataka, with specifics about rats, and aligning trapping with the maramataka.”
– Blair Giles

Summerland School Principal Blair Giles says, “We’ve got a predator-free group and they’ve been using the maramataka, with specifics about rats, and aligning trapping with the maramataka.” He also spoke of linking a local experience in the bush with learning about global warming. “We took our kids into the bush and asked, ‘What are you noticing?’ It’s cooler in here. What connections can you make about how trees affect our world, for example global warming?” he says.

On that outing, one child came to a realisation about the importance of a healthy environment for human wellbeing. Giles recounts: “Then a bright little kid said, ‘Everyone’s asking one question [about the external temperature]. I’m noticing something in myself!’ He made a really powerful personal connection around hauora.”

Health agencies such as Healthy Families East Cape and Te Hau Ora ō Ngāpuhi have begun incorporating the maramataka into their programmes relating to mental, physical and spiritual health, say Haua and Makiha.

Te Hau Ora ō Ngāpuhi has used the maramataka to develop a strategic model of four pou – “wai, kai, whenua and whare,” says Makiha. “Whānau groups are working with kura kids to become the scientists and researchers and do observations. A lot are using techno stuff. Kura in Kaikohekohe are using it as basis for revival of papakāinga.”

In the eleven years since Makiha and Ockie Simmonds helped form SMART, the growth of interest in the maramataka has been huge. For example, last winter Makiha, Hoturoa Barclay-Kerr (Tainui) and Rangi Matamua (Ngāi Tūhoe) gave a lecture on Matariki in Auckland in a 500-seat theatre. Matariki is the start of the New Year in the Māori lunar calendar – a time to remember those who have passed on over the year, and to set resolutions for the future year. “It was packed out; people were standing in the aisles and doorways. Huge interest!” says Makiha.

Recent petitions calling for a Matariki public holiday were signed by over 30,000 people and

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“Phases of the moon” by Sandeep Gangadharan, CC BY-NC 2.0: flic.kr/p/5BmYhv

05 *Laura O’Connell Rapira and friends. Photo: Supplied.*

06 *Michelle Haua plans her classroom activities to fit with the energy levels predicted by the maramataka. Artwork by tamariki reflects their natural environment.*

organised by Laura O'Connell Rapira and others from Action Station. Sixty-three percent of New Zealanders agree that Matariki should be made a public holiday in a poll commissioned by the organisation, O'Connell Rapira says.[4]

"Lots of Wellingtonians now understand what Matariki is about," says Labour MP Paul Eagle, who accepted the petition in July. In September, Prime Minister Jacinda Ardern announced that Labour will make Matariki a public holiday from 2022.

Interest in the maramataka has spread beyond the Māori community, to both the wider community and scientists in Aotearoa New Zealand and overseas. Scientists around the world are recognising the value of indigenous knowledge, not just to observe nature and any significant changes in the natural world, but also to help find solutions to global problems.

4 Brittney Deguara, "30,000-strong petition to make Matariki a public holiday moves onto next stage," Stuff.co.nz, July 24, 2020, https://www.stuff.co.nz/pou-tiaki/122241314/30000strong-petition-to-make-matariki-a-public-holiday-moves-onto-next-stage.

"Scientists around the world are recognising the value of indigenous knowledge."

Makiha continues: "We've been working with the maramataka (in the Bay of Islands) for a while now on the restoration of fish species up around Paroa and areas north of Whangārei. We use the maramataka to detect the arrival of the fish eggs. We don't know what species, so they're introducing DNA sequencing to find out. Hundreds and hundreds of them [eggs] are released, and you only get twenty minutes in the whole year and it's gone."

"Scientists will be at this wānanga for the first time – four who specialize in DNA sequencing, some environmental scientists from DOC and Auckland University, to see how this mātauranga Māori can work in the Pākehā system," Makiha says.

Climate scientists are also looking to indigenous communities, including Māori, to observe changes in the natural world. Because these communities have stayed in the same place for generations, they are good witnesses of change.

Dr Pauline Harris (Ngāti Rakaipaaka, Ngāti Kahungunu, Rongomaiwahine), a lecturer at Victoria University and chair of SMART is leading a team of researchers visiting iwi and hapū throughout the country to capture mātauranga about many different plant and animal activities. "We're asking whānau if they've noticed anything changing in places like forests over the last fifty years, capturing this using voice recorders and writing it down," she says.

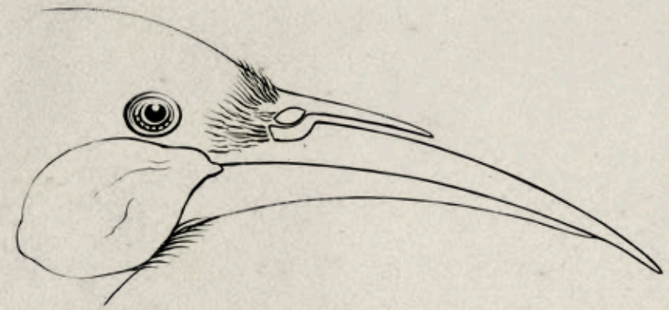
An example that Makiha has noticed is the kohurangi (*brachyglottis kirkii var. kirkii*) flowering earlier in recent years: "The kohurangi used to flower towards the end of August. In the last ten years it's been tracking down and this year they flowered from 7 July. The significance of that is the kohurangi means there'll be no more damaging frost, so you can go plant your crops."

And do you think that's a sign of global warming, mātua? Makiha says, "It's got to have something to do with it!"

And what days of the month did the recent extreme storm weather occur in late September? Tamatea, of course! ●

MORE INFORMATION

Maramataka: The Māori calendar learning resource: www.tepapa.govt.nz/learn/for-educators/teaching-resources/maramataka-maori-calendar-learning-resource



Huia

by Bill Manhire

I was the first of birds to sing
I sang to signal rain
the one I loved was singing
and singing once again

My wings were made of sunlight
my tail was made of frost
my song was now a warning
and now a song of love

I sang upon a postage stamp
I sang upon your coins
but money courted beauty
you could not see the joins

Where are you when you vanish?
Where are you when you're found?
I'm made of greed and anguish
a feather on the ground

+

I lived among you once
and now I can't be found
I'm made of things that vanish
a feather on the ground

Bill Manhire is a prize-winning poet and fiction writer and was Aotearoa New Zealand's inaugural poet laureate. "Huia" is from his latest book, *Wow*.

Image: Huia head (*Heteralocha acutirostris*), John Buchanan, 1865–1885 (Museum of New Zealand Te Papa Tongarewa).

How to effect change

Once you identify that you want to take climate action, how do you get everyone on board? *Ako* asks educators who have succeeded how they created change.

The science is clear: climate change will impact all aspects of our society – including education.

We are coming to terms with what this will mean for our tamariki, communities and ourselves. A 2020 New Zealand Council for Educational Research (NZCER) report on climate change and sustainability in primary and intermediate found 79 percent of teachers and principals thought climate change would have moderate to major impacts on the places and communities where their schools are located within their students' lifetimes. Unless we limit warming to 1.5ºC (the target in the Paris Agreement and Zero Carbon Act), the impacts on our people and communities will be profound. In 2018, the Intergovernmental Panel on Climate Change said even 2ºC of warming would drive hundreds of millions more people into poverty, especially in coastal regions. Many Aotearoa New Zealand schools and communities are low lying and coastal, and risk being uninsurable within the next decade.

Avoiding these impacts and adapting to impacts we fail to avoid will define our pupils' lives. The School Strike for Climate movement shows tamariki understand this already. Oxfam New Zealand suggests our fair share of limiting warming to 1.5ºC would be cutting emissions by over 80 percent by 2030. Practically, that's not possible – so they say we'll need to support other countries to cut emissions too. Many educators feel this urgency, but face barriers when trying to make concrete shifts in their schools and centres. How can we effect change and bring fellow educators along with us?

Niki Burtenshaw is a Lead Teacher at Monrad School and an environmental education champion. You name it, she's done it: waste audits, stream clean ups, school chickens and even a student-led environmental carnival that made the local paper. But in her experience "it's hard to get things going, and to get momentum." Passionate individuals like her, she says, are still largely responsible for environmental education in our schools – and these people face "barriers in place everywhere."

Some barriers are about workload and resourcing, others are about workplace culture and attitude – but often, they're about both. Fourteen percent of educators NZCER surveyed "pushed back" on the suggestion climate change can or should be a systemwide focus for primary and intermediate schools. Their reasons largely aligned with Burtenshaw's assessment that "they're barriers of time, money and workload" – but these also interplay with differing political views and, in some cases, an assumption that schools aren't the right place for children to learn about these issues.

This assumption partly comes from a concern that teaching children about the climate crisis will have mental health consequences. However, Indigenous youth climate advocate India Logan-Riley (Ngāti Kahungunu) says the true damage lies in not showing our tamariki we can change things to achieve justice within and between generations: "That's where we see negative mental health impacts," they say. Logan-Riley states our children understand the scale of the challenges we're facing, and need to

WRITER
Rachel Dobric

ILLUSTRATOR
Sarah Wilkins

see that solving them can start with people like themselves sitting around a table and deciding they're going to do something. "That's what happened at Ihumātao," they note.

As well as barriers to starting projects, there are continuity challenges. Most initiatives Burtenshaw knows of have been precarious. In one school, there had been a thriving environmental group a decade ago – but staff leaving meant the work was abandoned. She's seen the same elsewhere: "When they leave, everything leaves," she says. Her passion has become finding ways to future-proof sustainability projects in a school environment by asking, "how am I going to make it sustainable even if I'm not around forever?" and "how is it going to look when I'm not there?"

Working at Manchester Street School in Feilding gave Burtenshaw insights into how things could be done differently; Manchester Street is a Green-Gold Enviroschool, the highest tier of recognition for a school's work toward being sustainable and environmentally friendly. Her key motivation there was to learn first-hand what it looks like when environmental education is truly embedded into a school, and she's since taken these learnings to two other schools.

Burtenshaw says the first step to breaking through barriers and creating something lasting is building alliances as broadly as you can. Alliances offer expert knowledge and opportunities to get funding for sustainability projects – easing the pressure to find money elsewhere. Wayne Jenkins is Principal of Ross Intermediate School, which made an ambitious commitment in 2018 to become carbon neutral. Students and teachers partnered with a non-profit social enterprise, Ekos, to develop a free calculator for schools to work out their carbon footprint. They've continued to use the tool to help their students learn where the school's emissions come from and how they can reduce them, and they pay for carbon offsetting where it's still needed. Both Jenkins and Burtenshaw cite the Enviroschools community as a strong support for the work they do, and Jenkins's school has also built relationships with the local council.

Within your school, Burtenshaw says, it's important to build a network of keen staff and to meet regularly – even if these staff don't want to take a lead role, you'll know they believe in your values and will back up your ideas. Having your senior leadership on side can really help, as at Ross. Even in the context of competing priorities, Jenkins believes "the survival of our planet isn't a luxury, it's an immediate need." As Principal, he's acted on this belief, fostering an environment where children and staff feel supported to pursue initiatives they're passionate about. In addition to being carbon neutral, the school's curriculum focuses heavily on sustainability, and students work on an ongoing basis alongside the school's Environmental Education Team to strengthen and develop its sustainability work.

A second step Burtenshaw endorses is working with your network to create an environmental education strategic plan for your school, taking it to management to endorse and embedding it in the school's workplan. These living documents can provide a clear framework for staff, students and communities to hold themselves to account, and for each person to see the role they can play.

For those starting out, Burtenshaw recommends where possible, "of course" you should set up an environmental group. It's a way to get tamariki on board and hear their voices – but also to learn what they want to see change. She and Jenkins are both passionate about students seeing the impact they can have on the "big issues". Rather than letting an environmental group become just another interest group, Burtenshaw says, it's key to ensure the students see they have agency and can break down barriers. This is where enacting fun, tangible ideas – food forests, rongoā gardens, using the maramataka and even chickens – come into play. She works with her students to set goals and prioritise ("What's achievable in the quickest time? The 'next step' time? The longest time?") and matches their strengths to the tasks that need to be done. One child might want to do the design, another the digging.

"The first step to breaking through barriers and creating something lasting is building alliances as broadly as you can." – Niki Burtenshaw

Logan-Riley says for educators, a key way for our tamariki to grow a sense of agency is by learning about climate change and sustainability issues through an intersectional lens – in other words, how different social and political factors such as race and class intersect with climate change. Rights frameworks help us to learn how we can look after one another well ("because we need to do that in times of crisis"), and in respectful ways – including with respect for one another's cultures. Logan-Riley says many young people today already "instinctively" understand the intersectionality of climate change and can see how it relates to issues like poverty and education inequality.

"It's reassuring for young people to see ways forward to address these big-scale issues – especially when they look back through our history in Aotearoa, for instance to Te Tiriti and indigenous rights issues, and see we haven't dealt with many of our intersectional challenges well for multiple generations," Logan-Riley says. They assert that people power drives climate action: "We can teach our children about social movements that have won in the past and that are winning now – these are educational and inspirational movements that are holding back the fossil fuel industry right now."

In schools where getting an environmental group over the line is a challenge, Burtenshaw suggests one way to get traction is to focus within your own classroom. She turned her own into an environmental class, where she can "just work constantly at things on all levels" and advance her students' goals more quickly than her environmental group could do alone. She uses an inquiry-based approach to scaffold her students' learning.

Jenkins values how much our curriculum has "opened up" and allowed students to focus on climate change and environmental education, but he and Burtenshaw still want to see these move to a more prioritised, better resourced part of our curriculum. Principals in NZCER's report supported this view, and the report suggests one way to do this is to make climate change a compulsory component of the New Zealand Curriculum. Another is placing greater emphasis on problem solving and creativity. One principal saw the latter as key for the challenges ahead stating, "We need to continue to develop critical thinking skills so that the children can make sensible conclusions based on available information."

"We can teach our children about social movements that have won in the past and that are winning now." – India Logan-Riley

Educators know there's more to be done around sustainability in our schools, but Jenkins is positive; it's "very much a different landscape now" compared to even a few years ago, he says. In the NZCER report, 88 percent of principals reported kaitiakitanga as a school-wide focus, and almost half said their school connects with local and/or regional organisations that take climate action.

We now know addressing the climate crisis will take more than individual actions. The big changes we need are challenging. Preventing the worst of this crisis and securing a just transition to a safe climate future will require a thorough, systematic transformation in the way we all live, work and even learn.

Dr Bronwyn Hayward

How do we support tamariki as citizens growing up in a chaotic climate?

As a political scientist interested in children's futures and serving on the IPCC (Intergovernmental Panel on Climate Change), an international science body that produces regular reports on the state of the world's climate, I worry a lot about our changing climate and the implications for children and future generations. What I am grateful for however is the support, interest and mahi of teachers and colleagues working in Early Learning in the English and Māori medium. Their efforts are vital to helping support children who will face increasingly chaotic climates in their lifetime, including risks of more severe storms, flooding and coastal erosion impacting homes, droughts and increased wildfires, the spread of new diseases and heat stress.

I have conducted studies with children and young people aged 8–24 living in in Ōtautahi/Christchurch which were published in *Children, Citizenship and Environment* in 2012 and updated in a new #SchoolStrike edition just released for 2021. In those studies, we identified three very different ways children see their citizenship and their relationship to their community and wider environment. I call these the FEARS, SMART and SEEDS models of citizenship. Here I want to argue that the SEEDS model is most useful for children. The skills and attributes of the SEEDS citizenship model also fit most closely with the underlying philosophy of the *Te Whāriki* curriculum. However, as teachers we also need to understand the FEARS and SMART citizenship ideas that influence the action and expectations of many children.

In a rapidly changing climate we need people who feel they can make a difference and speak up about the support and action they need. Sadly, not all children are learning to think of themselves as citizens who can make a difference in their community. Some children struggle to experience citizenship as any form of democratic participation or belonging. Their daily experiences of domestic violence, poverty, increasing securitisation and threat of environmental risk and disaster can inhibit their capacity for citizenship. I call this a FEARS model of citizenship.

Children who experience citizenship as FEARS express a "*Frustrated sense of agency*" – feeling they are unable to effect change in their local community for the reasons noted above. These children also often feel "*Excluded*" from their environment. Perhaps they simply can't reach the park because of "big" roads, but less obviously and more concerning we are seeing an international rise of exclusionary policies that seek to build walls and create divides between those children and whānau who are accepted as members of "our" community and those who aren't.

In this situation, feeling powerless and excluded, citizens of all ages often look for strong "*authoritarian leadership*", someone who can sort things out, and problem-solving skills are reduced to an angry sense of "*Retributive justice*" (looking for a person or a group to blame). In this pathology of FEARS children often experience a "*silencing of political imagination*": they simply can't imagine how to effect change. More troubling, we are also starting to see how in their FEARS, citizens can be more at more risk of believing conspiracy theories or disinformation.

Luckily, not all children experience being a citizen in a changing world in ways as troubling as the FEARS model. In our studies we have identified about a third of children who have more positive experiences and often see themselves reflected in what I call the SMART model of citizenship. This model involves children taking personal responsibility and exercising "*Self-help agency*", that is, feeling they can make an individual difference to issues they care about. Children often learn how to do this by engaging in "*Market participation*", such as learning to shop ethically and developing new greener products. When children are socialised into this SMART model of environmental citizenship they are also encouraged to develop contract ideas of justice of "*A priori justice*" – learning how to undertake actions in expectation others will also play their part and do the right thing (I will if you will). This SMART model of citizenship also encourages children to think being a good citizen means we regularly vote ("*Representative decision-making*"), and their political imagination is encouraged to focus on "*technological transformation*" or creating new innovative ways to address common problems.

Don't get me wrong, we desperately need citizens who can take personal responsibility and we need new thinkers who can invent new products. But I argue the net effect of teaching SMART citizen education is a thin environmentalism in which children can feel overwhelmed by the large, complex problems like climate change. They also don't learn about how to address the underlying drivers of environmental and social injustice, so the causes of our changing climate remain unchallenged.

Luckily not all the children and young people we interviewed were fearful or expressed thin environmental citizenship. Some have had opportunities to learn about citizenship in ways which I argue offer more promising foundations in times of dangerous climate change. I summarise these experiences as the SEEDS of strong ecological citizenship. These experiences include: Social agency, Environmental education, Embedded justice, Decentred deliberation and Self-transcendence. I briefly introduce these experiences here.

"*Social agency*" is where children learn how to take action and make a difference with others. Climate problems are big problems and tackling them as an individual can leave people feeling burnt out or helpless so learning how to act *with* others to make a difference is vital. "*Environmental education*" points to how it is important that children and young people learn about the science behind our human and non-human environments, but they need more: they also need a chance to develop a sense of place, learning "*environmental education*" by appreciating local areas including cultural stories about those places as well as science facts. Given how messy and complex the world is, children also need the skills to tackle "*Embedded (or everyday) justice*" – that is, learning how to make fair decisions in a planet of limited resources. Moreover, because the actions we take will have an impact on the lives of children far away, they also need to learn how to discuss issues in local places and listen to the insights of others who are different from them. In politics we call this "*Decentred deliberation*", but it is simply learning to listen and share stories.

Finally, given how challenging the issues we face are, children and young people need the skills of "*Self-transcendence*" or the ability, as citizens, to think for the long term, beyond their immediate concerns and experiences, and to find support perhaps through older peers and grandparents, from religion or love of place to help sustain action over time.

I hope the new edition of *Children, Citizenship and Environment* (Routledge London) is useful for teachers and parents, and I thank the students, school strikers, activists and educators who have contributed exemplars and examples in the new edition. ●

Dr Bronwyn Hayward is a Professor in Political Science and International Relations at the University of Canterbury. She was a lead author for the IPCC special report "1.5°C" and is a coordinating lead author of the IPCC global chapter on cities and infrastructure. She was awarded a 2019 Kiwibank New Zealander of the year Canterbury local hero award in 2019 for her work on climate and youth.

Making Transitions

As Taranaki makes a "Just Transition" from fossil fuels to a carbon-neutral economy, educators, whānau and tamariki must transition as well.

WRITER
John McRae

PHOTOGRAPHY
Hanna Andrewes

01

01 Tamariki from Waitara in north Taranaki practise kaitiakitanga of their streams and wetlands.

02

In April 2018 Jacinda Ardern announced that no more permits would be issued for offshore oil and gas exploration. Onshore permits would continue for now, but the time had come for Aotearoa New Zealand to shift away from using fossil fuels.

"Unless we make decisions today that will essentially take effect in thirty or more years' time, we run the risk of acting too late and causing abrupt shocks to communities and our country," Prime Minister Ardern said to gathered reporters.

While Ardern framed the policy as a measured approach, others were not as calm. Opposition leader Simon Bridges declared that the Government was "taking a wrecking ball" to regional economies and Chair of the Taranaki Mayoral Council Neil Holdem described the announcement as "a kick in the guts".

Initially, Taranaki communities experienced some anxiety. As reports noted, the province is the heart of the oil and gas industry, with twenty fields currently operating, both onshore and offshore. Around 4,300 people in Taranaki are directly employed in the industry, with other jobs reliant upon revenue from the sector. PEPANZ, the association that promotes the interests of petroleum exploration and production, put the cost of the decision to the Taranaki economy at $40 billion by 2050. They forecast that average household incomes would fall and up to 6 percent of local jobs would be lost.

Schools and early childhood centres across Taranaki felt the initial waves of concern. At Waitoriki School in Inglewood, Principal Teresa Jones noted that families were worried about an uncertain future.

"Families are concerned about potential job losses and are having to consider changes of careers or retraining," she said. "Like anything that unsettles home, this impacts student learning, behaviour and wellbeing, which in turn influences the school culture."

02 Students from Waitara East School in Taranaki where there has been a growth in green activism.

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04

03 Waitara East School, Taranaki.

04 A new wind farm will be located in South Taranaki. Photo: "Te Apiti" by Luke Milliron, CC BY-NC-ND 2.0: flic.kr/p/7H38An.

05

In response to the media and industry narrative, the Ardern Government reiterated that the change process was a long-term one. People in Taranaki were beginning a decades-long transition, rather than suddenly having their jobs taken from them.

"We have seen that happen once in the 1980s and we don't want to see that again," commented Prime Minister Ardern, referencing the last time a Labour Government undertook a major restructuring of the economy. That thorough deregulation, undertaken by the Lange ministry, was done at speed and created massive disruption, both economically and socially. Thousands of jobs were destroyed and entire communities were wiped out as industries closed. The damage was felt by an entire generation.

Prompted in part by history, but also by nervous Taranaki residents, the government committed to a "Just Transition" where the destructive impacts of economic restructuring could be avoided. No group would find themselves cast aside in the interests of the economy.

A "Just Transition" unit was established within the Ministry of Business, Innovation and Employment (MBIE) to oversee a smooth conversion from an emission-producing economy to a greener future. Its job is to build a partnership between government, unions, iwi, community groups, education and business to "make sure those who are most affected by a transition are given opportunities to change as the world does."

The first visible sign of the policy in action was the Just Transition Summit, held in New Plymouth in May 2019. A glittering affair, the conference drew together all parts of the community and featured an announcement by the Prime Minister of $27 million in funding for Ara Ake – a Future Energy Development Centre in Taranaki. The centre will lead the development of clean energy technologies and help businesses create high-paying local jobs. Work is now underway researching wind and wave power, geothermal development and hydrogen-based energy.

"This is the right time to be launching into this space," said Prime Minister Ardern at the summit. "Taranaki for some time to come will continue to be a key player in the oil and gas industry, but we must plan for the future because the future is upon us."

Supporters of "Just Transition" point to numerous examples overseas, where partnerships have managed the closure of polluting industries while limiting damage to communities. One of the best-known examples is Germany's move away from coal. Once the supplier of fuel to much of Europe's heavy industry, the German coal industry is now slated for closure in accordance with the Paris climate accord. The last mine producing high carbon black coal closed in 2018, while brown coal production and associated coal-using plants will end in 2038.

At its height, the higher-polluting black coal industry employed 607,000 miners but was already in decline when the government announced the decision to close it down. In agreement with owners and unions, long-term plans were developed that aimed to keep everyone in work. Pits were closed progressively, and new jobs were created in the mining communities. New transport infrastructure and universities were built, waterways rehabilitated, and mine sites converted into parks, exhibition centres and museums. Older workers were able to retire on generous pensions. Not a single miner was sacked.

The plan to close the remainder of the industry, as well as Germany's nuclear power plants, will see the country move to solar, wind, biomass and hydroelectric energy.

On the ground in Aotearoa, Venture Taranaki is driving the "Just Transition" process. Justine Gilliland, Chief Executive of Venture Taranaki, acknowledges that "transitioning is going to be a really hard journey for New Zealand and the world", but believes deep community engagement is critical to success.

"It is about every single voice being heard," she says. "It is also about a single voice not having more power, more say, than another voice."

The voices of NZEI Te Riu Roa members have been some of those engaged in the "Just Transition" discussion. Barb Curran, a member of the National Executive, says that it is critical the union is part of any deliberation about climate change.

"Climate change is the most enduringly serious issue of our time and it's going to impact all of our teachers, support staff and the children we work with." – Barb Curran

"Climate change is the most enduringly serious issue of our time and it's going to impact all of our teachers, support staff and the children we work with," says Curran. "We cannot care about those children without caring about the current and future impacts of climate change upon them. That's why supporting a just transition in Taranaki and elsewhere is so important. We can't just rely on the market to take care of our families."

Tom Alesana, (Ngāti Kuia, Rangitāne o Wairau, Ngāti Apa ki te Rā Tō, Taranaki Tūturu, Hāmoa) a National Executive member, says that NZEI Te Riu Roa is well placed to bring a strong Māori voice to the discussion. In the past, Māori have suffered the worst effects of economic restructuring, he says, and points

05 Waitara East School Resource Teacher of Māori, Tiri Bailey.

to the decimation of the Taranaki community of Patea during the 1980s.

"Back then Māori were not part of the conversation and so they were not part of the solution, so I applaud the fact that Māori are now being actively consulted and are taking part in planning the way forward. It's vital that a Māori world view is at the table because we are talking about more than the economy," says Alesana. "Māori view the environment as a living organism and take kaitiakitanga very seriously. When we advocate for the environment, we are upholding the life force of our ancestors."

As part of the "Just Transition" process, Venture Taranaki held thirty workshops across the region where individuals and groups contributed ideas. There was also a day-long workshop where students from eleven schools engaged in a creative competition.

Gilliland describes the process as one of co-creation and the most visible outcome from the workshops has been the production of a 2050 Road Map: an infographic depicting a carbon neutral, green and prosperous Taranaki.

Pat Swanson, a specialist science teacher at Highlands Intermediate in New Plymouth, was an NZEI Te Riu Roa representative at the workshops. He believes the process has been valuable.

"The workshops helped to build a sense of what we might do differently. Sure, at times it seemed like we were talking pie in the sky, but 2050 is a long way off and progress is going to be gradual. I think there's a change happening in the community and that people are beginning to think that Taranaki has an opportunity to lead the way."

The roadmap identifies twelve pathways to the future, ranging from energy through to health and wellbeing, the Māori economy, the arts, infrastructure and travel. "Everyone has a part to play and no group is left behind," says Gilliland.

Each of the twelve pathways now have an action plan detailing goals for the next three to five years. "That's helped to give us a sense of confidence about where we are heading," says Gilliland. "At the same time, we cannot minimise the challenge ahead of us. It is going to require a massive ongoing effort and considerable investment."

Sarah Roberts, a teacher active in Taranaki Energy Watch says "Just Transition" happened at a time when confidence in the oil and gas industry was waning.

"There's been a lot of talk about the fact that there have been no big new finds of oil and gas. Several of the existing fields including Maui and Kapuni are quite old and in decline, so I think there's been a sense for a while now that diversification is on the way."

06

"We need to grow the presence of climate issues in the curriculum. That's not just about teaching, it is also about support."
– Sarah Roberts
Photo: Pip Guthrie.

At Highlands Intermediate in central New Plymouth the impacts are being felt. "We have seen some families moving back overseas because of greater job opportunities and because of the uncertainty in the New Zealand oil and gas industry," says Swanson. "For some locals working in the industry, there's a sense that they may need to look for alternative career options."

On the southern side of Mt. Taranaki, Teresa Jones says there has been a drop off in fundraising at Waitoriki School, probably because of nervousness surrounding the energy industry. "Directly and indirectly the oil and gas industry supports a lot of local families," she says. "There's a fear that the industry might be wound down before large-scale alternatives are developed."

At the same time as schools offer support to children and whānau, they are developing curriculum responses. Most schools have long included climate change in teaching and learning programmes, but there is a general sense there needs to be a greater focus to match the times.

Swanson says there is an effort to build a greater awareness of sustainability issues into Highlands Intermediate's science programme.

"We're encouraging students to look towards an alternative future. There's a growing sense in this region that Taranaki can lead the way and I think that primary and intermediate schools are the ideal place to begin that discussion," says Swanson. "Students are always keen to look at different ways we can live our lives, whether it is around how we access our food and our transport networks, or how we power our homes."

In Waitara – just fifteen minutes north of New Plymouth – Resource Teacher of Māori, Tiri Bailey is witnessing a growth of green activism at a community level and at Waitara East School where she teaches. She says that changes to the economy and the impact of Covid-19 have refocused hapū on their local environment and traditional methods of food production. She points to a growth of community gardens using the maramataka, the traditional Māori lunar calendar. Schools are partnering with whānau in predator-free programmes while engaging in kaitiakitanga around the health of streams, revival of wetlands and care of awa.

Waitara is a community that has been battered by economic changes in the past. In the 1990s and early 2000s, large numbers of young Māori left the area as industries downsized or were closed. Many emigrated to Australia.

"No group is left behind," says Justine Gilliland of the Venture Taranaki 2050 Road Map.

Years later, deprivation levels remain high in the town. While hapū and iwi are engaged with the "Just Transition" process, there is a grassroots response as well.

"There's a sense that families and communities need to take more responsibility for their own wellbeing," says Bailey. "People are looking after what we have got, and it is the job of schools to help in this."

Justine Gilliland says that the involvement of educators in the "Just Transition" process has been especially important and will continue to be so in the future. Educators have a critical role in building citizens ready for the challenges of a changing world.

"Increasingly, our children need to have entrepreneurial mindsets so they can see the opportunities to make positive changes," says Gilliland. "They need to be resilient, optimistic and have an analytical approach if they are to see the possibilities ahead and meet the challenges that will face them."

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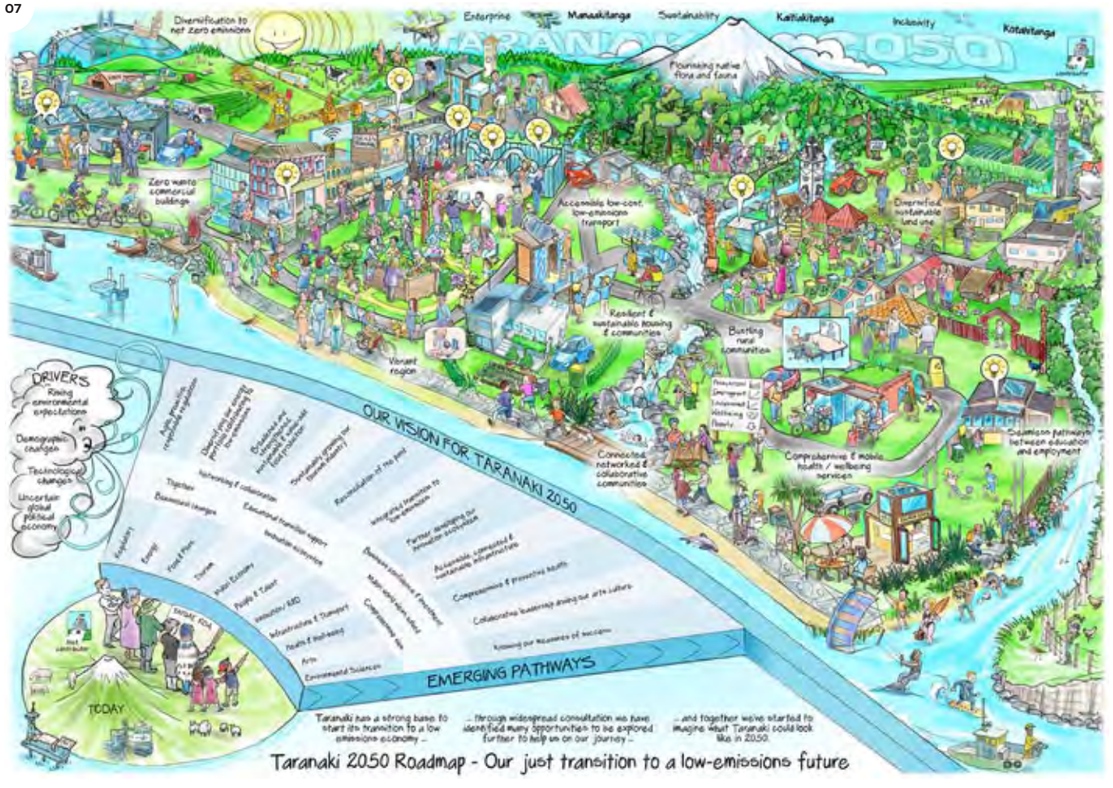

06 Pat Swanson at Highlands Intermediate, New Plymouth. Photo: Stuff Limited.

07 For more information visit: about.taranaki.info/Taranaki2050/Taranaki-2050-Roadmap.aspx

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08 "People are looking after what we have got, and it is the job of schools to help in this," says Tiri Bailey.

09 In Waitara, schools and whānau partner in predator-free programmes.

10

"Most schools have long included climate change in teaching and learning programmes, but there is a general sense there needs to be a greater focus to match the times."

10 Hapū in Waitara are engaged with their local environment and traditional methods of food production.

FAIR'S FAIR

MANA TAURITE PAY EQUITY

AN EXCITING NEW ERA FOR **PAY EQUITY** IN EDUCATION

Making a pay equity claim became a whole lot simpler when the Equal Pay Amendment Act came into force on 6 November 2020.

Because the education sector is 85% female, the Act opens up major opportunities for all NZEI Te Riu Roa members. The Act gives us a much clearer path to pay equity for the many female-dominated roles that have historically been undervalued because they involve "women's work" and the care and education of children.

That's why we've initiated pay equity claims for 10 groups of employees represented by NZEI Te Riu Roa and are discussing potential claims with other members.

To find out more about the path to pay equity, visit **fairsfair.org.nz**

NZEI
TE RIU ROA

“It needs to be talked about right across the nation … Climate change and the transition to a sustainable future is everyone’s issue.” – SARAH ROBERTS

Almost two years on from the Prime Minister’s announcement about offshore exploration in Taranaki, there is still an unsettled feeling on the ground. Locals spoken to by *Ako* acknowledge that the plan for a “Just Transition” provides the basis for a way forward, but point to considerable unease in the community. Some involved in the exploration industry feel that they have been unfairly cast as the villains in a political drama. Many of those approached for comment declined to participate for fear of offending others in their communities.

Teacher and activist Sarah Roberts has spent years debating issues around energy, and says that in a region where oil and gas permeate the community, open discussion is exceedingly difficult. It is one of the reasons why she believes that the conversation ought to be nationwide and for all ages.

“It needs to be talked about right across the nation, because what is produced in Taranaki is piped north and south and is consumed throughout the rest country. Climate change and the transition to a sustainable future is everyone’s issue.”

Roberts believes that, long-term, children will provide the solutions to the quandary of climate change.

“There’s a temptation, when we consider a just transition, to be very adult focused. But we also need to be taking a longer view and helping our children to understand their future in a world of climate change. We need to grow the presence of climate issues in the curriculum. That’s not just about teaching, it is also about support, because so much of the public discussion about climate change can make our young people feel the world is ending.”

She points to countries where the conversations have been had and local communities are taking responsibility for generating their own green energy, becoming self-sufficient. She believes that Aotearoa New Zealand can do the same.

“We all need to join in because we all live on the same planet. And there is no planet B.”

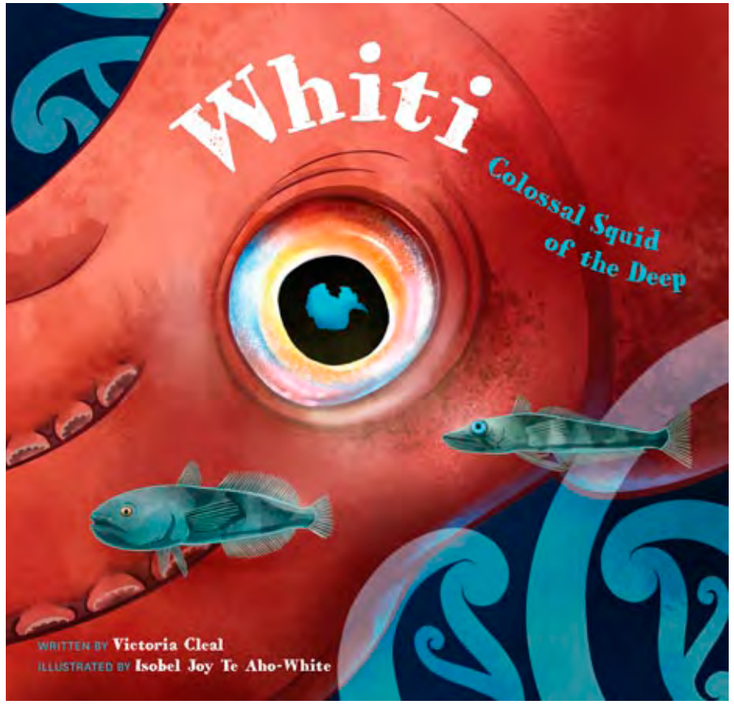
11 *Revival of wetlands and care of awa is important to the Waitara community.*

REVIEWS

#NoFly: Walking the Talk on Climate Change

Shaun Hendy (Bridget Williams Books)

What happens when a leading Aotearoa scientist stops flying for a year? That is the question asked – and answered – by *#NoFly*. The book recounts Hendy’s 2018 *#NoFly* experience as well as giving a concise history of climate change science and politics (and how science communication can do more to bring people along). The strength of the book is it covers these topics from an Aotearoa New Zealand perspective and in Hendy’s straightforward and accessible voice. Written pre-Covid-19, the sections that suggest how our work habits might change feel prescient. The last chapter asks, “Where Next?” and Hendy provides a lot of inspiration and information. He also suggests that for Aotearoa New Zealand to reach a zero carbon 2050, it’s our actions as well as our words that must do the speaking. – *Sarah Barnett*



Whiti: Colossal Squid of the Deep

Victoria Cleal and Isobel Joy Te Aho-White (Ngāti Kahungunu, Kāi Tahu) (Te Papa Press)

In this beautifully illustrated picture book we follow the lifecycle of Whiti the colossal squid. She begins as a “bulgy-eyed” baby squid, freshly hatched from an egg, and grows into the most massive invertebrate in the world. The story travels with Whiti through her deep-sea adventures including escaping from a sperm whale and finding a mate.

While the book focuses on Whiti, her story introduces the creatures who live in her Antarctic world – lantern fish, jellyfish, Adélie penguins and many more. It visits the scientists who are “Antarctica’s guardians” and who are learning about the effects of climate change. A Te Papa Press book about squid would not be complete without also telling the story of the colossal squid that was caught in 2007, and that is on display at Te Papa – the only one in the world! Detailed and packed with facts, *Whiti* is a book to return to again and again. – *Sarah Barnett*

Kuwi & Friends: Māori Picture Dictionary

Kat Quin and Pānia Papa
(Illustrated Publishing)

Kuwi & Friends is a large, hardback dictionary for those wanting to learn everyday words in te reo Māori. While this pukapuka is filled with cute illustrations – seemingly aimed at younger readers – it will be useful for tamariki of any age. The categories and words covered are comprehensive and include te kura (school), different parts of the home, the natural environment, ngā tau (numbers), ngā kākahu (clothing), te pātaka (the pantry), te marae, te ao (the world), te ao tukupū (the universe), te tinana o te tangata (the human body) and much more. The pukapuka includes a pronunciation guide (with dialectal variations for different iwi) and a guide to formal and informal greetings. Extensive, charming and easy to use. – *Sarah Barnett*

Extensive, charming and easy to use – this book will be useful for tamariki of any age.

Taking the Lead: How Jacinda Ardern Wowed the World

David Hill and Phoebe Morris
(Penguin Random House NZ)

I think it was a great idea to do a book about Jacinda Ardern. She's a great person and has done so much for New Zealand. She's also a huge inspiration for girls because she shows any gender can be a world leader and girls can do just as much as boys. And just showing that a little kindness can do a lot. In this book I learned a lot about Jacinda Ardern. I learned about what it was like for her when she was a kid and what the people around her were like. I know she's an amazing person now and I predicted she was an amazing person back then, but now I know for sure.

They made the book before 2020 so there's nothing about the amazing things she did in lockdown. She made brave choices and smart moves and that's why we're doing great with Covid-19 in New Zealand. Also, she won the election. I hope for her to do more amazing things in the future. – *Sophie Schwalger, age 9*

12 Huia Birds/12 Manu Huia

Julian Stokoe and Stacy Eyles
(Ngāti Porou) (Oratia)

A new bilingual edition (Māori and English) of this illustrated story about the extinction of the huia. Aimed at younger readers, the book uses gentle rhyme to capture its audience, as well as dynamic and colourful illustrations. As the book counts down from twelve huia to none, the story shows why the bird became extinct – people, dogs, rats, possums, cats, weasels, fire and finally greed. With a clear environmental conservation message, the book reminds us that by telling the story of the huia we can, in some small way, keep the huia alive. – *Sarah Barnett*

The Nature Activity Book: 99 Ideas for Activities in the Natural World of Aotearoa New Zealand

Rachel Haydon and Pippa Keel
(Te Papa Press)

This extensive and whimsically illustrated activity book is a must-have science companion for young New Zealanders. Split into sections of "Shapes and Patterns", "Environment and Spaces", "Experiments and Enquiry", "Sense and Mindfulness" and "Action and Kaitiakitanga", the book explores the natural world in a way that is inclusive of te ao Māori and sees humans as part of the natural world.

The activities encourage curiosity and scientific investigation, but also wonder and awe. "Why is that flower so beautiful?" the book asks. Most importantly, the book encourages environmental citizenship and invites readers to think how they can make things better for the planet. Activities cater to a wide age range and could be adapted to settings from early childhood through to late primary. Bunting made of autumn leaves; food chains; natural dyes; mandalas; the tamariki of Tāwhirimātea, and much, much more. – *Sarah Barnett*

Ako has five copies of this book to give away in our "Giveaways" section.

Imagining Decolonisation

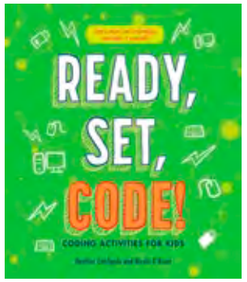
Rebecca Kiddle (Ed.), various authors
(Bridget Williams Books)

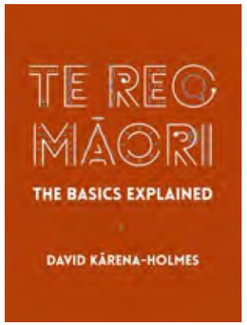
What does decolonisation even mean!? If you're time-poor but curious, these authors have done you a solid. With five short chapters, the book is less intimidating academic investigation than an invitation to those of us who aren't academics.

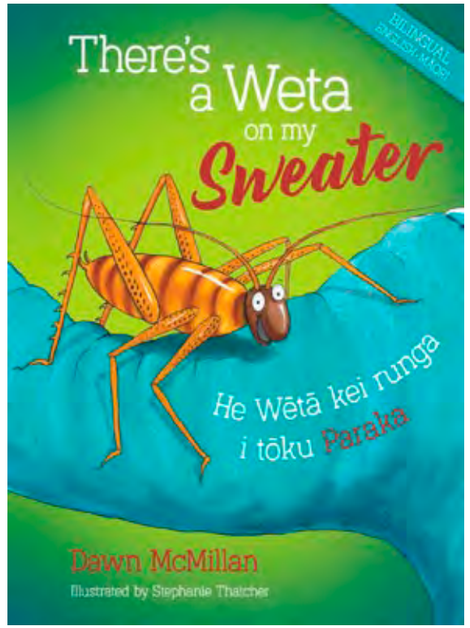
The chapters cover the basics of decolonisation, from how colonisation "sucks for everyone" to a hopeful and poetic close from the legendary Moana Jackson. All the writers do an impressive job of grounding big ideas and challenges in a real-world context. The learner in me appreciated the generous use of anecdotes and storytelling. The teacher in me appreciated the fact that the book itself is a resource with its own questions for reflection and practical suggestions.

Our schools and early childhood services are at the forefront of questions about how we understand our relationships with each other and this land. Young Māori and non-Māori learners alike are demanding more from us all in this space. They want to usher in something better, and they deserve it. Whether we're talking about how we advance Te Tiriti o Waitangi in our environments or thinking about what stories we tell in history class, these questions require our attention.

With such big questions, it's easy to feel daunted. This book is a timely reminder that we can and must go there. As Moana Jackson strongly urges us, there is joy and collective possibility in this process of restoration. – *Nadia Abu-Shanab*







Ready, Set, Code! Coding Activities for Kids

Heather Catchpole and Nicola O'Brien (CSIRO)

Ready, Set, Code! introduces students to coding and computational thinking with illustrated step-by-step instructions. As well as sections on sensors, robotics and data, the hands-on coding projects include topics such as art, music and poetry which means they often link to multiple curriculum areas. Most of the projects use the programming language Scratch which is free to use and download. Other projects use micro:bits which, albeit inexpensive, need to be bought (although these projects can be completed using an online micro:bit simulator).

The benefit of the book (over online coding lessons) is a student can easily refer to the book while working on the computer, and they can work through the projects at their own pace. The book also includes a guide for staying safe online and tips for parents and teachers. While the lessons are based on the Australian Curriculum, the content is relevant to *Digital Technologies Hangarau Matihiko*. A good little starter for learning to code. – *Sarah Barnett*

Te Reo Māori: The Basics Explained

David Kārena-Holmes (Oratia)

Published in response to a surge in people wanting to learn and speak te reo Māori, seasoned author and language teacher David Kārena-Holmes makes the process clear and enjoyable in this book. Written in everyday language, Kārena-Holmes uses a methodical approach – he explains in simple terms the building blocks of grammar and pronunciation and shows how to create phrases, sentences and paragraphs. He encourages spoken practice and the book looks at the relationship between spoken and written te reo Māori. No prior knowledge is assumed, and the book uses real-life examples to illustrate how Māori grammar works day-to-day.

While *Te Reo Māori: The Basics Explained* provides a concise explanation of the significant differences between te reo Māori and English, its true goal is to teach that learning te reo Māori is not learning an English translation – that within each language resides a world view and to learn te reo Māori is to also learn te ao Māori. An accessible and excellent guide to the basics which will make the perfect companion to spoken practice. – *Sarah Barnett*

There's a Weta on my Sweater/ He Wētā kei runga i tōku Paraka

Dawn McMillan and Stephanie Thatcher (Oratia)

A wonderful bilingual (Māori and English) rhyming picture book, *There's a Weta on my Sweater/He Wētā kei runga i tōku Paraka* will engage readers young and old. The story follows a wētā and his creature friends as they take a trip to school, as well as the different tamariki that discover them – there's a centipede on the bus and a stick insect by the swimming pool! The interactions between tamariki and insects encourage readers to see the insects as friends who are part of our natural environment. – *Sarah Barnett*

Wildlife of Aotearoa

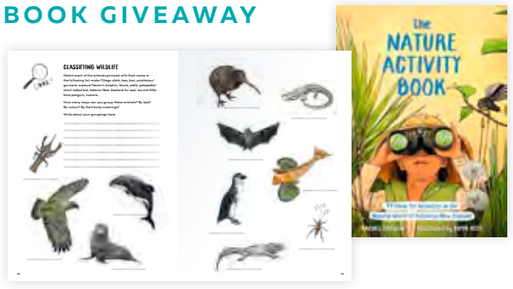
Gavin Bishop (Tainui, Ngāti Awa) (Penguin Random House NZ)

This spectacular hardback picture book by writer and illustrator Gavin Bishop won the *New Zealand Booklover's Best Children's Book Award 2020* and the *Storylines Notable Non-Fiction Award 2020*.

The book celebrates the diverse creatures and ecological systems of Aotearoa through illustrations and fascinating facts – the fish, seabirds and life along our shoreline; the wetlands and rivers; the bush and mountains. The book also explores how settlement of Aotearoa New Zealand has changed the land. A wonderful double-page spread shows the wildlife that live in our houses – from pōpokorua (ants) and kiore (house mice) to bed bugs! Throughout there is an environmental message as Bishop highlights the threats to our oceans, the extinction and decline of different species, and threats to the flora and fauna of Aotearoa. While the book is a feast for the eyes, it's also a reminder to care for what we have. – *Sarah Barnett*

> *The book is a feast for the eyes – it's also a reminder to care for what we have.*

BOOK GIVEAWAY



The Nature Activity Book: 99 Ideas for Activities in the Natural World of Aotearoa New Zealand

Win one of five copies of *The Nature Activity Book* – a must-have natural science activity book for young New Zealanders from Te Papa Press. From experiments and observation to conservation and mindfulness, this appealing, activity-packed book stimulates curious minds and encourages children to relate to the natural world around them.

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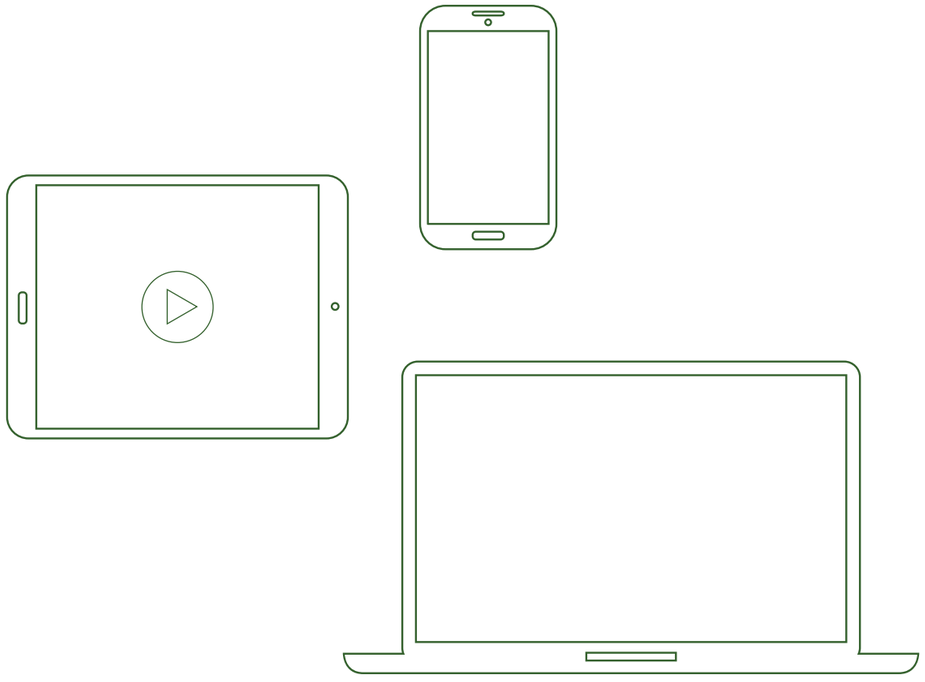

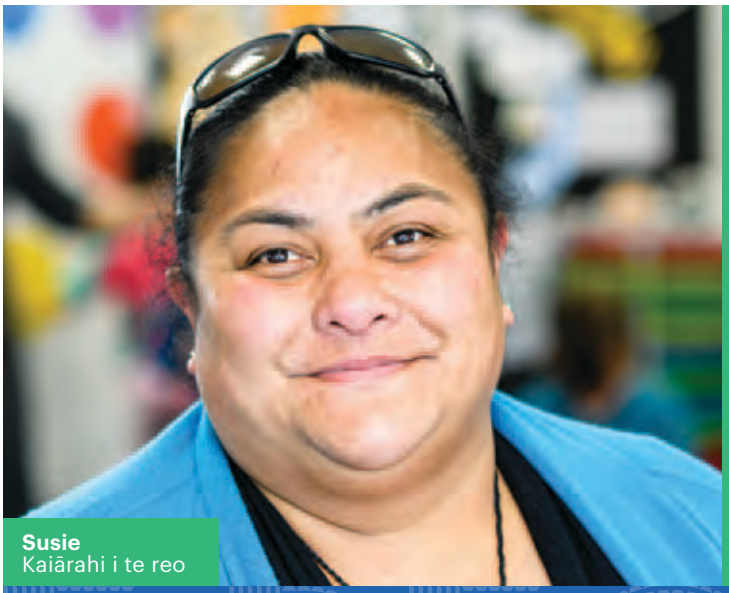

Susie
Kaiārahi i te reo

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