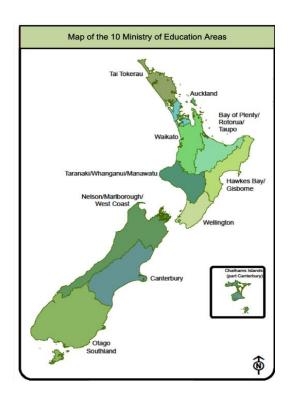
Whakawhanaungatanga – as you arrive

- Nō hea koe? Where are you from?
- How are you experiencing climate change in your school and community?
- How are people in your school and community taking action on climate?



Chat to your neighbours / use the post-its



Educational leadership for a climate-changing Aotearoa New Zealand

Rachel Bolstad, Chief Researcher

NZ Principals' Federation Conference Wellington, 8-10 September, 2025





How can schools and educational leaders play an active, positive role in responding to climate change?

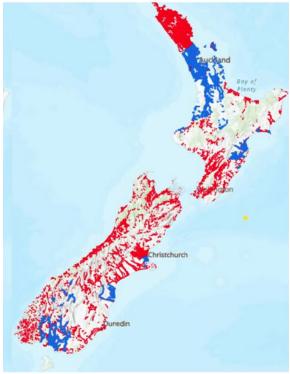
What we're experiencing now, and what we can expect in the future

What schools and leaders can do

What policy and system settings are needed?



NZCER National Survey of Primary Schools 2024 (Li & MacDonald, 2025)

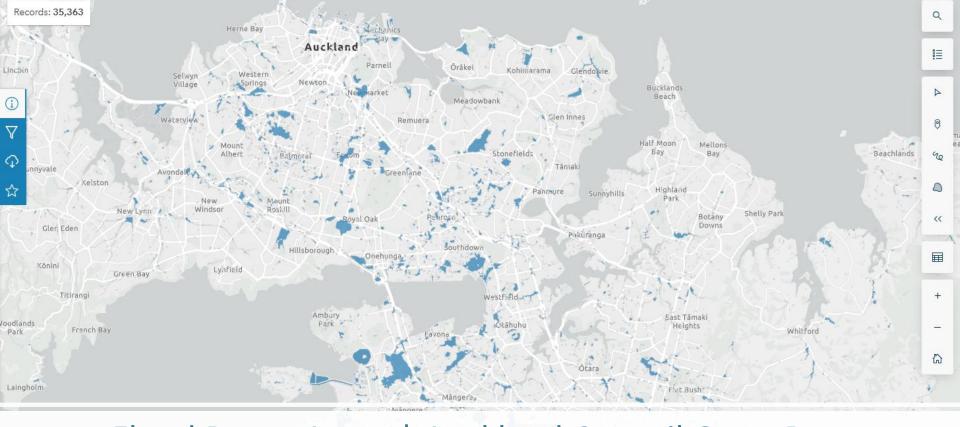


(Red and blue are flood risk areas)

Estimated number of homes that could be impacted

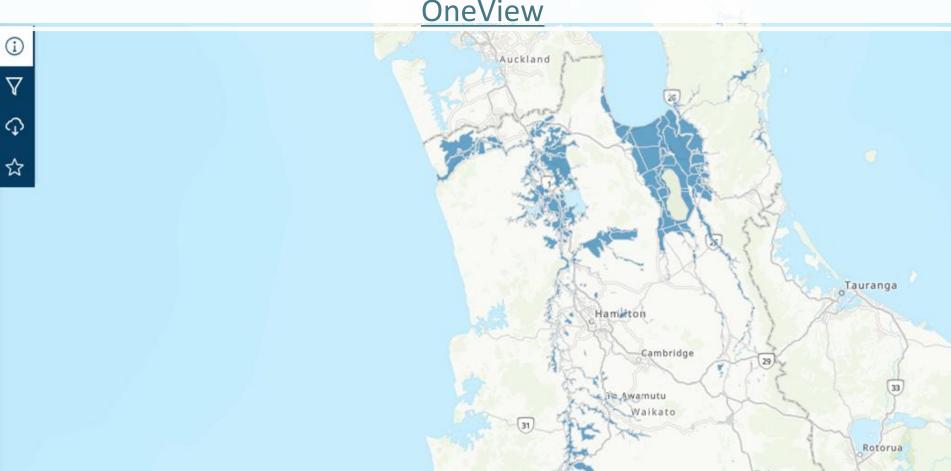
5-year increments	Estimated number		
	Low	Medium	High
2026 - 2030	300	700	1,700
2031 - 2035	300	700	1,900
2036 - 2040	300	800	2,000
2041 - 2045	300	800	2,100
2046 - 2050	300	800	2,200
2051 - 2055	300	800	2,300
2056 - 2060	300	800	2,300
TOTAL	2,200	5,300	14,500

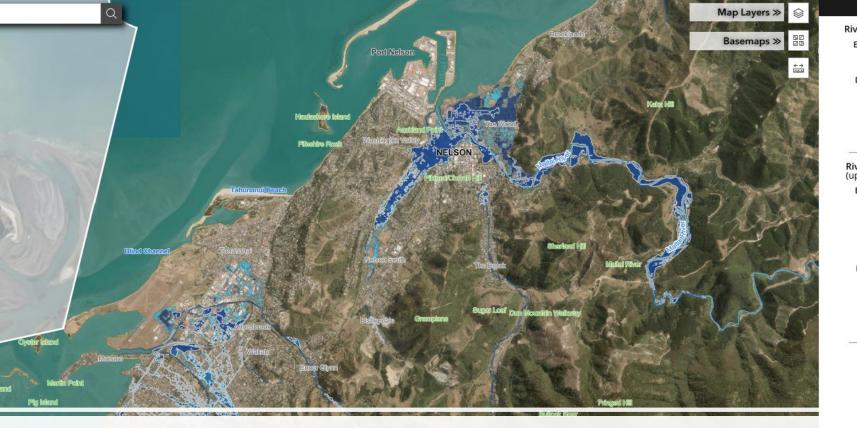
Storey et al. (2025) Estimated number and valuation of residential properties within inundation/flood zones impacted by climate change. Report prepared for the Ministry for the Environment



Flood Prone Areas | Auckland Council Open Data

Waikato Region Flood Hazard | Waikato Open Data and OneView





Nelson River Flooding

Nelson City Council and Tasman District Council and Land Information NZ | Statistics NZ | Nelson City Council, Tonkin + Taylor, WSP Powered by Esri

Legend River Flooding Present Day Extent Flood hazard overlay Depth River Future Flooding Ever (up to the year 2130) Extent High flood hazard ove Flood hazard overlay North Nelson hazard Depth



Hot days/heatwaves



Hot nights can disrupt sleep and impact health.

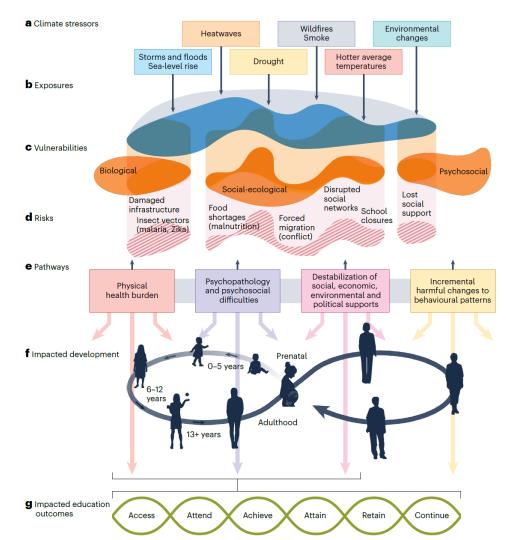
Babies and children are more vulnerable to heat-related illness.

Heatwaves are expected to increase in New Zealand (Lewis et al., 2025)

In 2024, heatwaves affected an estimated **171 million students** worldwide. (UNICEF, 2024)

In a 2024 NZCER survey:

- 28% of primary principals disagreed that "we are able to keep all our learning spaces cool on very hot days".
- 19% reported experiencing excessively hot days that disrupted student learning or physical activity.
- These schools were often in the same regions already grappling with flood risks.



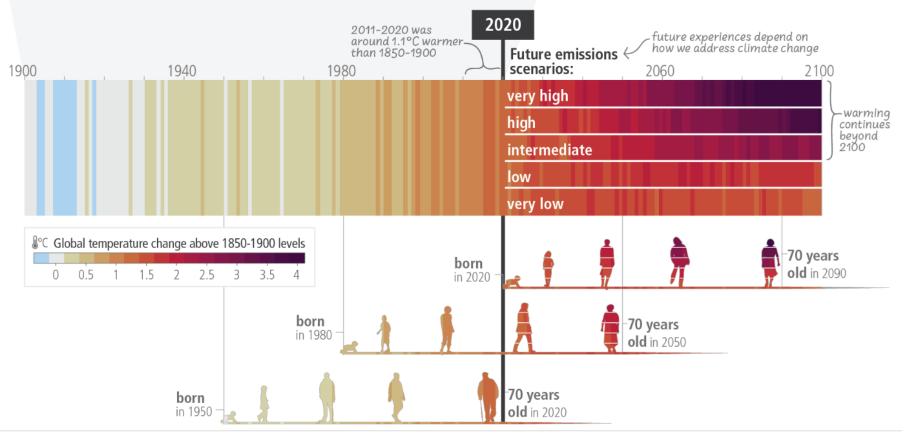
Education outcomes in the era of global climate change.

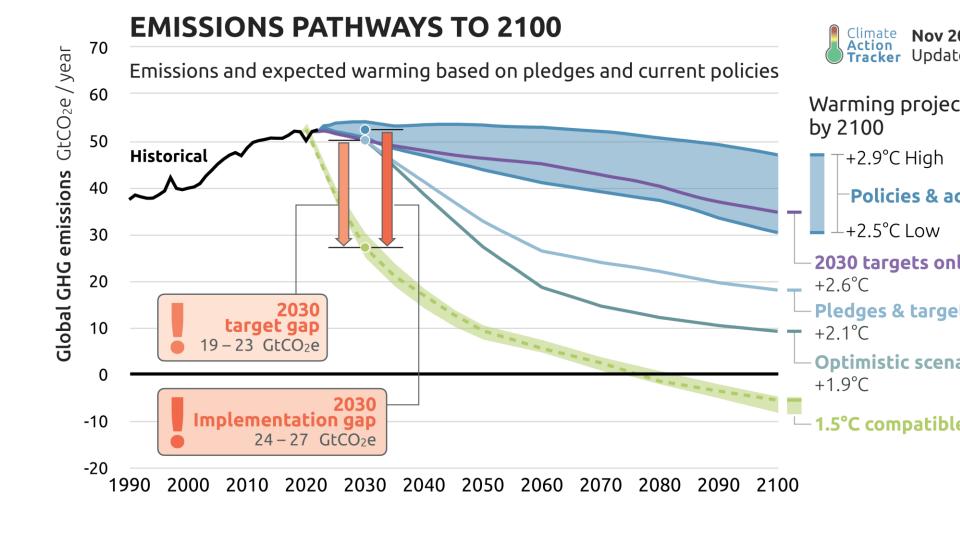
Prentice, C. M., Vergunst, F., Minor, K., & Berry, H. L. (2024).

"Children are particularly vulnerable due to their physiological and neurocognitive immaturity and the greater number of future life years in which to be exposed to current and worsening climate change" (p. 214)

Impacts are inequitably distributed

c) The extent to which current and future generations will experience a hotter and different world depends on choices now and in the near-term





Three key climate response concepts

Mitigation

(emissions reduction)

Taking action to reduce emissions to net Zero



Adaptation

Preparing for the consequences of climate change



Just Transition "Just" as in justice

Ensuring the transition to a climate-changed, low-carbon future is **equitable**, **fair**, **socially**



Education can impact (at least) these domains:

Material "Things"

Buildings. Energy. Transport.
Waste. The objects, materials, and products we use and consume. Living systems we create and care for.





Immaterial "Ideas and ways"

Knowledge, skills, values and capabilities for action. (UKD)
Reflections on how we live and relate to the world. Preparing for a different future. Visions and aspirations for the future, and how to achieve them.







Ki te ako āhuarangi tōnui ki Aotearoa | Towards flourishing climate education in Aotearoa New Zealand

Ngā rangahau whakapūaho mai i ngā mātākōrero Case studies and perspectives from the literature

Rachel Bolstad and Keita Durie

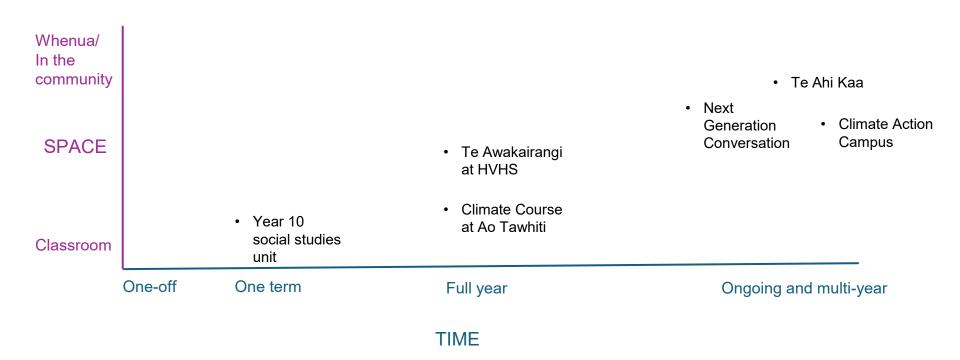


This report draws on literature from te ao Māori and Western/global perspectives to explore the question, "What does it look like when climate education is flourishing?".

Six case studies include:

- Te Ahi Kaa, Taita College
- Climate justice in Year 10 social studies
- Climate Action Campus, Ōtautahi
- Climate course, Ao Tawhiti
- Students from Next Generation Conversation, Ōtautahi
- Sustainability and climate learning at Hutt Valley High School

The case studies



Climate Action Campus, Ōtautahi

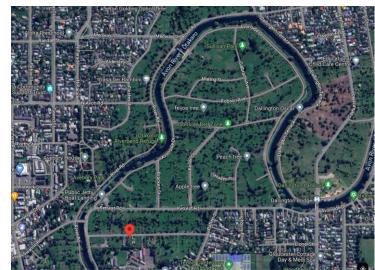
It's a place people see as a bit of an innovation hub to try things in terms of climate resilience. (Learning advisor)

















Message Climate Action Campus, Ōtautahi





CLIMATE ACTION CAMPUS



Tuakana-Teina Year 13 students teaching Year 5-6 about deforestation and the importance of reforestation for the climate







NCEA CLIMATE ACTION COURSE





Often the teachers and their kids that come here are quite siloed in their schools, perhaps the only one in their schools teaching climate or that feel it is important—so it's validating what they are doing and their desire to do it in the classroom. (Catherine, Learning advisor)

We learned heaps since we got there about the community and being part of that. Like we learned that being a community is like, helping out other people, it's just like ... a very community campus. (Year 7 students)

Can you imagine if every school had a climate administrator or teacher, and their one role was to make those connections in the community and bring people together? (Intermediate teacher)

Te Ahi Kaa – Taita College (Taitā)

We are tangata whenua, we need to be on the land. (Kaiako)





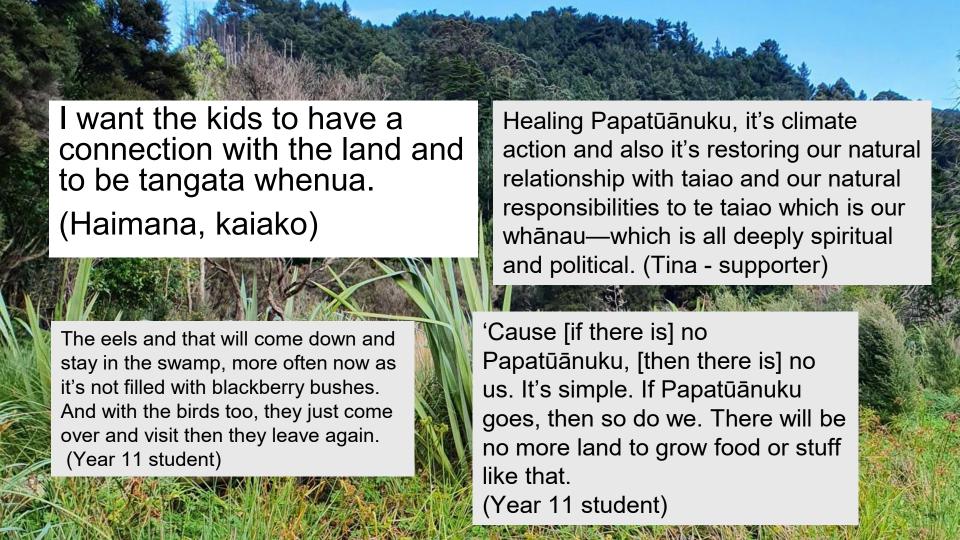




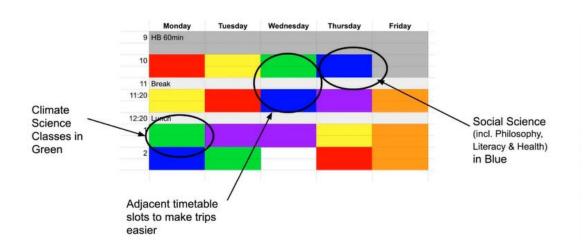








Āhuarangi | Climate course Ao Tawhiti (2022)



Innovative interdisciplinary course

Co-taught by 3 teachers

- Science
- Philosophy
- Social studies

Aimed at L1 NCEA but uptake was from younger students

Course design included a workshop the year prior, to ask students "what would you want in a climate course?"





Learning about solutions

We learned heaps about seaweed—how big it grows, how fast, it puts out heaps of oxygen, if you feed it to cows, it reduced their methane release. You can use it as a fuel for cars. There's heaps of other things, it's incredibly healthy, things live in it, it would be good to put some in the ocean, it can create heaps of jobs for people. (Student)

Looking at how to effect systems

We have also gone into different political systems, capitalism, socialism, communism and how all of that can also affect climate change. Because, a lot is driven by [the] capitalist society we're in and how we just want to consume and consume, all that stuff. (Student)

Pluralistic classroom discussions

We have had good conversations that have taken a whole hour sometimes. Its good, because you gain more knowledge, gain other person's views, you question each other. (Student)

It's been useful to talk it out in a class setting where there is lots of different points of view where you can listen and figure things out for yourself, you know? (Student)

Wellbeing

Kate taught us how to knit and sew and repair our clothes, that was a good one. We brought things in to fix, we watched videos online how to do it, you're just chill and relaxed and fixing things, and it felt like you're achieving something. (Student)



Survey of secondary schools EM (2020)

- Whole-school approaches and responses were not common
- Schools often support student leadership on enviro/climate
- **Science** and **social science** subjects were the most likely to address climate change, but we found examples from every learning area.
- Common to focus on causes/impacts and personal actions
- Less common to focus on collective and systemic actions
- The least common focus was "students' career options and pathways in a 'green' or 'transition' economy".

Other uncommon focuses:

- Mātauranga Māori/indigenous knowledges
- the specific impacts of climate change for Pacific peoples
- local or regional adaptation or mitigation activities



Teachers' resource gaps and wishlists Resources that:

- Fit specific needs and contexts
- Support tikanga and mātauranga Māori
- Support students to lead climate and sustainability activities in the community

"Many of our young people are better informed than the adults in their lives"

Access to

- Experts and networks
- locally-relevant connections
- PLD

"More access to climate scientists...more access to city councillors to explain the work they are doing...to prepare for... climate resilience"

Opportunities for education in a changing climate

Themes from key informant interviews

Rachel Bolstad





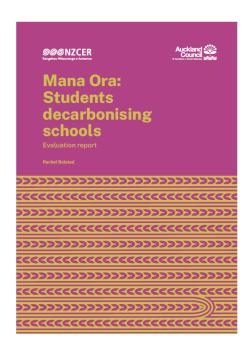
(2020) Key interviewees said:

- Education offers an important opportunity to engage diverse young people in <u>positive</u>, <u>solutions-focused</u> climate learning and action.
- BUT
- Often down to individual teachers, students, and schools choosing to make it a focus - needs to be a more visible priority across the education system.

Five "stories of practice" are shared at the end of the report

- Secondary students are engaged to give "voice" to the community in local government climate response planning.
- Students creating localised zero-waste food systems through STEM (biochar, hydroponics, aquaponics, growing food, having biodigestors to cook the food).

Mana ora: Students decarbonising schools (Auckland)



- 2023 Auckland Council project to empower students to plan and implement action projects linked to decarbonisation
- 18 projects in ECE, primary, and secondary schools and kura
- Five theme areas:



- Students found it "empowering" to take action on climate change and sustainability issues within their own school.
- Lead teachers said it boosted their confidence and knowledge to support climate action learning.

https://www.nzcer.org.nz/research/publications/mana-ora-students-decarbonising-schools-evaluation



It gives you a great opportunity to plan the whole thing. It asks you as a student to put your creativity into reality and see how things go. It also gives you an opportunity to see how planning changes— especially changes of timeline—we are changing ideas and changing steps [in the plan] all the time. (Year 12 students)

My self-confidence has grown hugely from this. Initially I felt like it was just me that cared and that this is a project I will have to try to do on my own. I have since met so many people who are keen to get on board. I have connected with lots of different organisations outside the school that have wanted to come in and help. (Secondary teacher)

Key messages for school leaders

- Climate education and action can be deeply rewarding, empowering, & community-building
- You can support, enable, empower your climate "leaders" and "innovators" (staff, students, community partners)
- Climate change won't go away if we don't talk about it or engage with it
- We have moral responsibilities to future generations (as well as those in front of us today).

Policy and system settings

Resilient schools

- How will the school property network be planned and managed in relation to climate change?
- How will schools be supported in their roles as community hubs and supports during and after climaterelated impacts?
- Who is monitoring the impact of climate stressors on our schools and learners?

Curriculum

- What is the Curriculum's "vision" for young people and the future?
- How will the curriculum support opportunities for engaging, solutionsfocussed climate learning and action?
- How will the curriculum develop knowledge and skills for mitigation, adaptation, and just transitions?

ITE and PLD

 What do teachers and school leaders need to know and do to teach for a climate-impacted, low-emissions future?

Pathways

 How will school learning support learner pathways for a climate-impacted, lowemissions future?

Youth voice

 Are young people having a voice in shaping policies that affect their future?