Ngāti Rārua
Te Rūnanga o Ngāti Rārua

Ngāti Rārua

Climate Strategy

Te Rūnanga o Ngāti Rārua
C/- Pou Taiao
Tokomaru House, 65 Scott Street
Blenheim 7201, New Zealand
Telephone +64 03 577 8468
www.ngatirarua.iwi.nz

Photography: Naomi Aporo-Manihera

This Draft Climate Strategy document is prepared in partnership with the Tokomaru Research Centre and is mandated by Te Rūnanga o Ngāti Rārua.

Adopted July 2024

Mahea te rangi e tū nei
Mahea te papa e takoto nei
Mahea ngā tai o Paneiraira
Mahea ngā wai o Huriawa
Kia whakamanahia te puna mauri ora
Kia atawhaitia te tangata
Kia pai te noho!
Haumi e, hui e
Taiki e!

Clear the sky above
Clear the ground below
Clear the tides of Paneiraira
Clear the water ways of Huriawa
To feed the source of wellbeing
To care for our people
To live well
Forward together!

Content

He Kupu Whakataki

Introduction

E wehi ana ki a Ihoa
Te tīmatanga o te whakaaro nui
E whakahōnore ana i te Kīngi Māori
E noho mai nā i tōna ahurewa tapu
Kei ngā mate taruru nui o te wā
Haere, whakangaro atu rā
Tātou te hunga ora e tau nei
Paimārire ki a tātou katoa

Ngāti Rārua has a long established record of working proactively and with a commitment to long term horizons, to ensure the best possible outcomes for whānau, hapū, marae and the iwi. This Climate Change Strategy continues this responsibility to address present and future challenges and opportunities.

The Ngāti Rārua Iwi Trust was established in 1992 in order to seek Treaty settlement with the Crown on behalf of Ngāti Rārua descendants. Over twenty years later, on 13 April 2013, Te Rūnanga o Ngāti Rārua (TRoNR) signed their Deed of Settlement with the Crown. TRoNR has governance responsibility for the Ngāti Rārua estate and taonga comprising: mauri ora (cultural capital); hononga (social capital); taiao (environmental capital); and mahi ohaoha (economic capital).

In 2020 TRoNR established Kia Pai Te Noho, the Ngāti Rārua Strategic Plan 2020-2040, as the foundation for the ongoing mahi to support the needs and aspirations of our marae and our people, and create a prospering, self-sufficient, thriving iwi in line with our guiding kaupapa: Kia pai te noho. The development of a viable Ngāti Rārua economy, culture and society by the year 2040 is the TRoNR strategic goal.

In May 2023, the Tokomaru Research Centre was launched, with the aims of embedding evidence based research in shaping our future strategic directions and focus, increasing Ngāti Rārua mātauranga, and building capacity to strengthen the knowledge and skill base of Ngāti Rārua.

This Climate Change Strategy – alongside other TRoNR strategies for whenua and moana – will help Ngāti Rārua to achieve the aims and objectives of Kia Pai Te Noho and the Tokomaru Research Centre, to support our whānau and marae, and to protect and grow ngā taonga tuku iho for the benefit of today's whānau and future generations. It will support practical, evidence based actions to respond effectively to changes impacting our wellbeing, health, prosperity and natural environment through to the end of the century and beyond.

Te Pūtake

Purpose

To protect, strengthen and enhance the taonga tuku iho of Ngāti Rārua and secure the continued wellbeing and prosperity of Ngāti Rārua whānau and marae through the impacts of climate change.

Te Whakakitenga

Vision

Ngāti Rārua are strong in our identity and leadership, and in our ability to protect, strengthen and enhance our taonga, assets and interests through the impacts of climate change. Ngāti Rārua are well informed with relevant climate science, information and mātauranga as the basis for resilience, preparedness and planning for the immediate and longer term needs and aspirations of whānau, marae and iwi.

Ngā Uara

Values

Kotahitanga | Unity:

- Ngāti Rārua are united and strong as whānau and as an iwi in our commitment to build resilience and to protect, enhance and grow our taonga tuku iho in response to climate change.
- Ngāti Rārua works closely and collaboratively with the other iwi of Te Tauihu to support our collective responses to climate change.

Manaakitanga | Support:

- Ngāti Rārua prioritises and focuses on practical, efficient, real world actions to sustain and strengthen our whānau and marae and support them to get through the challenges of climate change.
- The people and marae of Ngāti Rārua are proactively involved in shaping and determining their own responses and options for future climate-resilient development.
- Climate response actions are fair, equitable, affordable, enduring and empowering for Ngāti Rārua whānau and marae.

Mauri Ora | Identity, Histories and Traditions:

- Ngāti Rārua mātauranga, history and cultural knowledge are the foundation for development of strategy and practical measures to address climate change, weaving together the wisdom and experience of our tupuna with the strategy and opportunities of the future.
- Ngāti Rārua are actively exercising our traditions and tikanga at the core of decision making.
- The focus of climate response planning and resilience actions will be on connections and whanaungatanga to strengthen who we are as Ngāti Rārua.

Kaitiakitanga | Sustainability:

- Ngāti Rārua are committed to fulfilling our kaitiaki responsibilities for the natural taonga, places, waterways, coasts and oceans of Te Tauihu, including measures to protect, restore and enhance the mauri and mana of these taonga.
- Ngāti Rārua develops and implements climate response actions and interventions that are nature-based and sustainable over the long term.
- Ngāti Rārua develops and implements actions and technologies to ensure independence in water, kai and liveable environments for our whānau and marae.

Whakamana | Economic and Interests:

- Ngāti Rārua leverages our iwi assets and business interests to support whānau and marae to establish effective measures for climate resilience and prosperity.
- Ngāti Rārua proactively explores and supports opportunities for new business developments for our whānau that contribute to climate preparedness and resilience.
- Ngāti Rārua advocates strongly for the protection and enhancement of our iwi and Tiriti rights and interests, mana and rangatiratanga as they relate to the impacts of climate change and effective climate responses.

Ngā Whāinga

Objectives

Te Rangatiratanga me Te Whakarautaki

Leadership and Strategy:

- Ngāti Rārua are prepared for future climate shocks and opportunities, and have the leadership and frameworks to manage them.
- Ngāti Rārua are supported by strategic planning that is updated to make the most of new opportunities and respond effectively to new climate challenges.
- Ngāti Rārua is meaningfully engaged with our communities, local government, Crown agencies, and research entities working on climate change, and takes a strong stand when necessary to secure positive social, cultural, economic and environmental responses.

Te Manawaroa me Te Whakaauaha

Resilience and Innovation:

- Ngāti Rārua have plans and practical measures in place to support the resilience and wellbeing of our whānau, marae, and taonga tuku iho, including freshwater, marine and coastal, kai, homes and businesses, and the natural environment.
- Ngāti Rārua proactively seek out and explore options for innovation and creative new ways of maintaining wellbeing, protecting our taonga, and adding value.

Te Takatūtanga

Preparedness:

- The people and marae of Ngāti Rārua are supported to live their best lives with practical, cost-effective measures to protect their health, taonga, homes, businesses and communities from the adverse impacts of climate change.
- Ngāti Rārua whānau and marae are supported by and participate in an ongoing climate communications programme to ensure everyone is up to date with what is happening and alerted to any emergency events.

Te Arotake Mātauranga Pūtaiao

Mātauranga, Science and Monitoring:

- Ngāti Rārua mātauranga, history, traditions, and cultural knowledge are at the centre of our preparedness and resilience to climate change, through wānanga and research.
- Ngāti Rārua are well informed with up to date information about climate change science, risks, resilience options and practical responses.
- Ngāti Rārua are proactively engaged in monitoring of key indicators to understand the risks and effects of climate change in our rohe, and changes over time, for our whānau wellbeing, communities, businesses and marae.

Ngā Hohenga Me Ngā Whakaritenga

Actions and Planning

Te Huri o Te Tai

Shifting circumstances:

Our knowledge about climate change and its multiple impacts – and options for resilience and effective responses – are continually evolving. New information, new research and new innovations are emerging all the time.

Some climate change impacts are already with us, and evident in the increasingly severe weather events that have devastated Te Tauihu in recent years. Other climate effects are as yet further away in time.

Ngāti Rārua capacities and resourcing are also evolving, and there is work to be done to build knowledge, skills and understanding of climate change and its impacts.

Te Pūāwaitanga o Te Rautaki

An evolving strategic framework:

Accordingly, this Strategy is structured as a living plan – a framework to support action, learning and investment that will grow and become stronger and more focused over time.

The following areas for priority action are structured around the four delivery pou of Kia Pai Te Noho – mauri ora (cultural), hononga (social), taiao (environmental) and mahi ohaoha (economic). At this stage many areas will need scoping work to determine the most practical, most effective options. Once more information is available, decisions can be made for the next stages. Some of the priority areas are outlined over three time horizons:

- What can we set up / achieve / influence now (1-2 years)?
- What do we need more information / preparation for (3-5 years)?
- What can be advanced on a longer-term development path (6-10 years)?

A monitoring and updating process will be built in to the Strategy delivery process, with regular reviews to integrate new information (local monitoring, scientific studies, innovation options) and assess progress and achievements.

Ngā Āpitihanga

Additional information:

The Strategy and actions are supported by additional information summaries in the appendices:

- The science of climate change
- Policy contexts – Te Tauihu, Aotearoa NZ, and global.

Tokomaru Research Centre

Tokomaru Research Centre aims to embed evidence based research in shaping our future strategic directions and focus while increasing Ngāti Rārua Mātauranga. Building research capacity amongst our members in order to develop a Ngāti Rārua corpus of talent is equally important for us.

Pou Mauri Ora

Cultural

Ngā Tohu Angitū

Indicators for success:

- Ngāti Rārua whānau and marae maintain strong connections to develop plans and take climate action.
- Wānanga and other forums build knowledge and understanding of climate change, how it impacts Ngāti Rārua taonga and wellbeing, and what can be done.
- Mātauranga, Rāruatanga, tikanga, traditions and manaakitanga as the foundations for effective strategy and climate responses.
- Whānau and marae are supported to determine their own climate action priorities and plans.
- Ngāti Rārua marae are well resourced as community centres in times of emergency or extreme weather events.
- Ngāti Rārua marae are assessed for their vulnerability to sea level rise, flooding and other climate impacts.
- Ngāti Rārua leadership and advocacy to protect iwi, whānau and marae rights and interests in the face of climate change and to promote effective responses.
- Ngāti Rārua maintains good connections with local authorities, Crown agencies and other entities in Te Tauihu working on climate change and resilience.
- The Tokomaru Research Centre (TRC) supports research into regional climate impacts and solutions.

Ngā Aronga

Areas for action and planning:

- Wānanga to learn more and discuss priorities.
- Online network to share information and ideas.
- Tokomaru Research Centre: scoping research priorities.
- Marae: requirements for emergency centre responses.
- Marae: review vulnerabilities to climate impacts.
  - » 3-5 years: discussions about need for future relocations.
  - » 6-10 years: scoping options for new locations where necessary.
- Leadership and advocacy to councils, Crown agencies, research entities.
  - » 3-5 years: Ngāti Rārua representation on climate forums & policy bodies.

Pou Hononga

Social

Ngā Tohu Angitū

Indicators for success:

- Ngāti Rārua whānau and marae communities are strong, involved, and well resourced to deal with climate change.
- Programmes are in place to provide for the needs of those particularly vulnerable to climate change.
- Marae, housing and papa kāinga upgrades to deal with summer heat waves.
- Solar panels and efficient battery systems to ensure energy independence for marae.
- Transport options to ensure whānau connectedness and access to services.
- Practical experience and information are shared and strengthened to build knowledge, skills and capabilities over time.
- Employment and internships for whānau in climate action programmes.

Ngā Aronga

Areas for action and planning:

- Risk assessment – vulnerabilities including flooding, road access, communications, electricity, access to health services.
- Identification of whānau vulnerable to climate change (kaumatua, families with young children, people with special needs).
  - » 3-5 years: programmes in place to support vulnerable whānau.
- Review options for housing upgrades, solar panels and battery systems, cost effective transport – scope external funding available.
  - » 3-5 years: begin upgrades and solar, trial transport options.
- Workshops and online portal sharing.
- Scope options for whānau employment, internships and new business developments to address climate needs.

Pou Taiao

Environmental

Ngā Tohu Angitū

Indicators for success:

- Ngāti Rārua leadership in environmental management in our rohe, applying Ngāti Rārua values, tikanga and mātauranga.
- Environmental management in the Ngāti Rārua rohe is integrated ki uta ki tai.
- The mana, mauri and wairua of wai freshwater is protected, enhanced and restored.
- Wetlands and coastal ecosystems are protected, enhanced and restored to build resilience to climate impacts and extreme weather events.
- Taonga tuku iho, wāhi tapu and urupa are protected where necessary from the impacts of climate change.
- Mahinga kai is protected, maintained and managed to enable sustainable use and customary practices.
- The mauri of Tangaroa is protected, enhanced and restored.
- Programmes to respond to wildfires in the natural areas and indigenous forests of our rohe, including water storage and training.
- Iwi monitoring utilising cultural health indicators to build climate resilience and to protect and manage the natural environment and ngā taonga.
- Audit of Ngāti Rārua carbon footprint.
- Climate risk assessments and risk management plans for Ngāti Rārua businesses.

Ngā Aronga

Areas for action and planning:

- Continuing leadership and advocacy to councils, Crown agencies and research entities working in environmental management.
- Continue to uphold principles of Ki uta ki tai and Te Mana o te Wai.
- Identify wetlands, estuaries, lagoons and coastal ecosystems important for climate resilience, and scope restoration options.
  - » 3-5 years: Strengthen and extend existing restoration programmes.
- Identify wāhi tapu and urupa vulnerable to coastal erosion, flooding and wildfire.
  - » 3-5 years: Scope appropriate measures to protect wāhi tapu and urupa – actions if necessary for urgently at risk taonga and sites.
- Identify mahinga kai locations vulnerable to climate change.
  - » 3-5 years: Strengthen and extend restoration programmes.
- Scope options for rainwater harvesting and storage, and training for first responders for wildfires and extreme weather events.
- Monitoring of key climate change indicators and biosecurity risks, utilising mātauranga Māori and Western science.
- Audit of Ngāti Rārua carbon footprint – scope options for emissions reduction towards net zero certification.
- Climate risk assessments and risk management plans for Ngāti Rārua businesses.

Pou Ohaoha

Economic

Ngā Tohu Angitū

Indicators for success:

- Ngāti Rārua whānau are empowered to integrate climate change risks and resilience into their financial planning and decision making.
- Ngāti Rārua iwi investment decisions include the risks of climate change and medium and long term cost benefit analysis of options for resilience and risk reduction.
- Priority is given in Ngāti Rārua investment decisions and allocations to innovations and new ways of doing things that will help build resilience, reduce emissions and minimise climate risk. Ngāti Rārua takes a long term horizon to consider options that may be outside the box now but may become more relevant in future.

Ngā Aronga

Areas for action and planning:

- Integrate climate risk and resilience into the existing Ka Uru Ora programme.
- Continue and strengthen the frameworks for evaluating climate implications in investment decision making and allocations.
- Support innovation and creative thinking in scoping and evaluating options for future development and for implementation of this Strategy.

Appendices

1. What is Climate Change?

Climate change is an overall term for the effects on our planet's climate conditions, weather, ecosystems, oceans, food production, human societies and infrastructure, of the emissions of carbon and other gases into the atmosphere. Since pre-industrial times (the early 1800s) and particularly since the second half of the 20th century, atmospheric carbon dioxide (CO2) has increased to levels not seen for hundreds of thousands of years[1] (Figure 1).

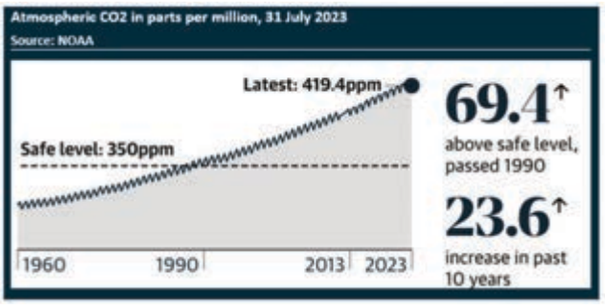


Figure 1. Atmospheric carbon dioxide in parts per million

Heating:

Along with other greenhouse gases, CO2 traps heat radiating from the planet's surface, causing the atmosphere to steadily heat up. Temperatures have already increased by 1.1oC over the last 120 years[2] (Figure 2).

This results in multiple weather impacts, including extreme heat, drought, wildfires, heavier rains, flooding and tropical storms[3]. Evidence of these climate disruptions is seen in the last few years with heat waves, storms and flooding across Europe and the Americas, and devastating wildfires in the Mediterranean, Canada, Hawaii and California costing many lives[4] and billions of dollars of damage[5].

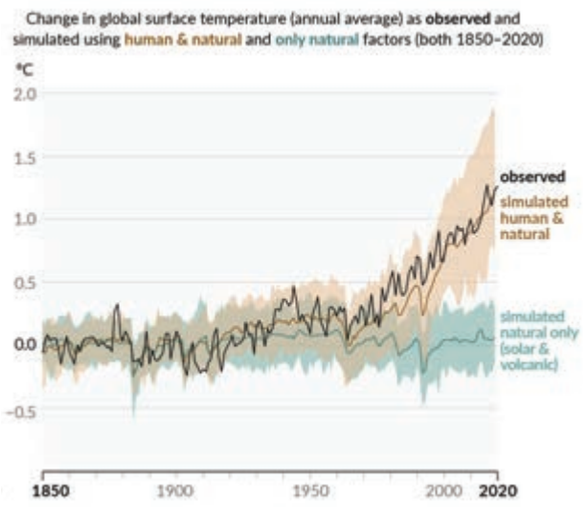


Figure 2. Global surface temperature increase over 120 years

Oceans:

Climate change also impacts our oceans, which have absorbed 91% of the increased heat and 25% of the CO2 from the atmosphere[6]. This drives sea level rise, which is already affecting low lying coastal areas in Aotearoa NZ and around the world[7] (Figure 3).

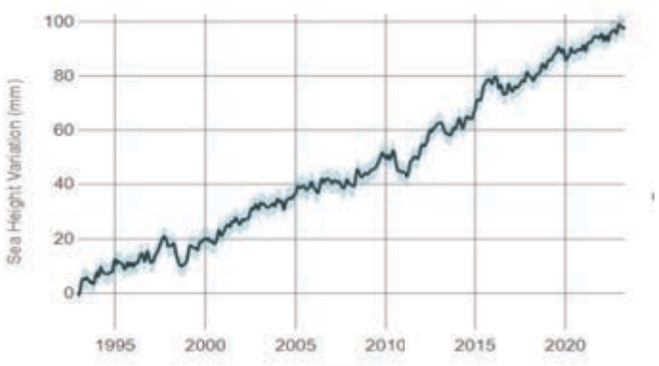


Figure 3. Sea height variation 1995-2023

1 gml.noaa.gov/ccgg/trends

2 www.ipcc.ch/report/ar6/wg1/downloads/figures/IPCC_AR6_WGI_SPM_Figure_1.png

3 www.noaa.gov/news-release/carbon-dioxide-now-more-than-50-higher-than-pre-industrial-levels

4 www.theguardian.com/environment/2023/jul/10/heatwave-last-summer-killed-61000-people-in-europe-research-finds

5 carboncredits.com/wildfires-cost-emissions www.c2es.org/content/wildfires-and-climate-change

6 www.ipcc.ch/report/ar6/syr

7 climate.nasa.gov/vital-signs/sea-level

Ocean heating results in generally warmer waters and regional marine heat waves impacting biodiversity and ocean chemistry, and contributes to more extreme weather events battering our coasts. Increasing acidification of seawater from CO2 levels is impacting growth and survival of shellfish and other marine organisms[8].

Further impacts are seen in the Antarctic with rapid and accelerating losses of sea ice and ice shelves[9], with the potential to add significantly to sea level rise, and other adverse effects on marine and terrestrial ecosystems and essential food chains[10].

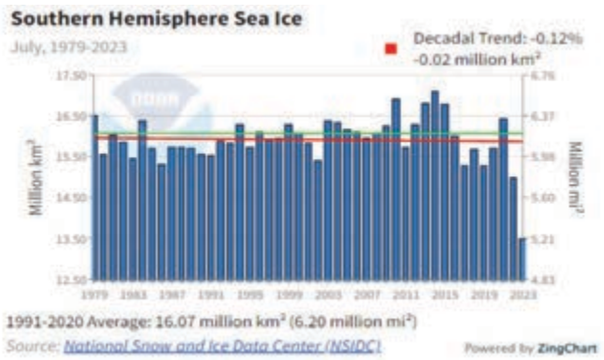


Figure 4. Loss of sea ice in the Southern Hemisphere

8 www.whoi.edu/know-your-ocean/ocean-topics/climate-weather/ocean-warming

9 www.ncei.noaa.gov/access/monitoring/monthly-report/global-snow/202307

10 www.scar.org/library/scar-publications/occasional-publications/5758-acce-decadal-synopsis/file

2. Research and Policy Responses

Over the last few decades there has been extensive research, publications, advocacy, legal actions, protests, new legislation and policy attention to climate change here in Aotearoa NZ and around the world. This section gives a very brief summary of some key initiatives, with links for you to follow up if you want to learn more.

Global context:

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organisation and the United Nations to provide governments with scientific information to develop climate policies: www.ipcc.ch. The IPCC provides major reports explaining the science, impacts, vulnerabilities and risks of climate change, and options for adaptation and mitigation, equity and inclusion, governance and policies, finance, technology and international cooperation: www.ipcc.ch/report/sixth-assessment-report-working-group-ii ; www.ipcc.ch/report/sixth-assessment-report-working-group-3. Some IPCC reports focus on particular challenges including:

- The goal of limiting global warming to 1.5oC above pre-industrial levels: www.ipcc.ch/sr15/;
- Climate change and land, desertification and land degradation, food security and terrestrial ecosystems: www.ipcc.ch/srccl; and
- Oceans, marine environments, low-lying islands and coasts, high mountain areas and Polar regions: www.ipcc.ch/srocc.

The Paris Agreement is a legally binding treaty adopted by 196 countries at the United Nations Climate Change Conference in Paris in 2015, with the goal of holding global warming to "well below 2oC above pre-industrial levels" and pursuing efforts to limit warming to 1.5oC: unfccc.int/process-and-meetings/the-paris-agreement. Countries must commit to take actions to reduce their emissions of CO2 and other greenhouse gases, and must report on reductions every five years.

Aotearoa NZ is a party to the Paris Agreement: www.mfat.govt.nz/en/environment/climate-change/working-with-the-world/building-international-collaboration. In 2021 Aotearoa NZ updated our national target for the period 2021-2030, to a 50 percent reduction of net emissions below our gross 2005 level, by 2030: environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/nationally-determined-contribution/.

Key Principles

Discussion of climate change is often focused around two essential principles:

Mitigation – reducing the severity of harmful effects, and limiting our impacts on the environment, by reducing use of fossil fuels and other emissions of greenhouse gases, and by sequestration or storage of these gases, notably through forests and other natural ecosystems (whether planting new forests or protecting existing areas that absorb CO2):

environment.govt.nz/facts-and-science/climate-change/measuring-greenhouse-gas-emissions/measuring-forest-carbon;

unece.org/forests/carbon-sinks-and-sequestration#:~:text=Forests%20sequester%20carbon%20by%20capturing,litter%20and%20in%20forest%20soils.

Adaptation – measures to adjust to and prepare for changes in present and projected climate, including assessments of risk, development of plans and infrastructure to minimise risk, and development of alternative ways of sustaining life, communities and ecosystems impacted by sea level rise, extreme temperatures, extreme

weather events, droughts, wildfires and floods. Even if emissions are drastically cut back, and greenhouse gases in the atmosphere are stabilised, there are changes already locked in to the global climate that will continue and intensify for decades to come:

www.ipcc.ch/report/ar6/wg1;

www.pnas.org/doi/abs/10.1073/pnas.0812721106;

www.space.com/carbon-removal-does-not-reverse-climate-change-effects;
www.newweather.org/2023/04/10/why-i-wrote-hothouse-earth.

Aotearoa NZ – Mitigation:

In 2019 the Climate Change Response (Zero Carbon) Amendment Act was passed: zerocarbonact.nz. This set targets for Aotearoa NZ to reduce greenhouse gas emissions (except methane) to zero by 2050, with separate targets for biogenic methane. It also established the Climate Change Commission, and required government policies for climate change adaptation and mitigation: environment.govt.nz/acts-and-regulations/acts/climate-change-response-amendment-act-2019.

He Pou a Rangi, the Climate Change Commission, was set up in 2019 to provide independent, evidence-based advice to government on climate issues, and to monitor and review progress towards Aotearoa NZ's emissions reduction and adaptation goals: www.climatecommission.govt.nz/our-work/advice-to-government-topic.

In May 2022 the Government released Aotearoa NZ's first Emissions Reduction Plan setting out targets, and actions for a low-emissions, climate-resilient economy across major sectors including transport, energy and industry, building and construction, agriculture, forestry and waste: environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan.

Government policy initiatives have increasingly focused on decarbonising Aotearoa NZ's transport, industry, and energy systems.

Examples include:

The Infrastructure Commission's 30-year strategy: tewaihanga.govt.nz/the-strategy/6-a-thriving-new-zealand-what-we-need-to-do/6-1-enabling-a-net-zero-carbon-emissions-aotearoa

The Productivity Commission's Low Emissions Economy report (2019): www.productivity.govt.nz/inquiries/lowemissions.

Aotearoa NZ's emissions profile:

Aotearoa NZ has a distinctive emissions profile compared to other countries, with 49% of our emissions coming from agriculture: environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-19902021-snapshot.

Aotearoa NZ is responsible for just 0.17% of global greenhouse gas emissions: environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-1990-2020-snapshot.

However our CO2 emissions per capita (each person) are relatively high, at 15.7 tons CO2 equivalent in 2021: environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-19902021-snapshot. At the global level, the average CO2 emissions per person was just 4.69 tons: www.statista.com/statistics/268753/co2-emissions-per-capita-worldwide-since-1990.

Aotearoa NZ – Adaptation:

In 2020 the Government released the National Climate Change Risk Assessment: environment.govt.nz/publications/national-climate-change-risk-assessment-for-new-zealand-main-report. This identified priority risks across five value domains: natural environment, human and social, economic, built environment, and governance systems.

In 2022 the Government released Aotearoa NZ's first climate adaptation plan: environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/adapting-to-climate-change/national-adaptation-plan. This Plan acknowledged the increasing severity and frequency of extreme weather events, flooding, heatwaves, drought and wildfires, and the need to plan for medium term change as well as longer time horizons. It set out Government's policies and proposals to support adaptation and reduce the harms of climate change. The Plan will be reviewed every six years along with an updated national climate change risk assessment.

Other government agencies have developed specific climate change adaptation strategies, including:

Ministry of Housing and Urban Development: www.hud.govt.nz/our-work/national-adaptation-plan/;

Department of Conservation: www.doc.govt.nz/our-work/climate-change-and-conservation/adapting-to-climate-change; and

Infrastructure Commission: tewaihanga.govt.nz/recommendations/prepare-infrastructure-for-the-impacts-of-climate-change.

The reforms of the Resource Management Act through 2022-23 included a proposed Climate Adaptation Act: environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/about-new-zealands-climate-change-programme. However this was not progressed, and in August 2023, following the devastation of Cyclone Gabrielle, the Minister for Climate Change Hon James Shaw announced a Select Committee Inquiry into managed retreat and adaptation funding: www.beehive.govt.nz/release/government-proposes-select-committee-inquiry-community-led-retreat. This inquiry will continue past the 2023 General Election into the next Parliamentary term: environment.govt.nz/publications/community-led-retreat-and-adaptation-funding-issues-and-options.

Some policy and information initiatives around options for responding to sea level rise include:

- The Environmental Defence Society (EDS) paper on managed retreat: eds.org.nz/resources/documents/reports/aotearoa-new-zealands-climate-change-adaptation-act-building-a-durable-future-principles-and-funding-for-managed-retreat-working-paper-1.
- The Parliamentary Commissioner for the Environment's reports: pce.parliament.nz/publications/changing-climate-and-rising-seas-understanding-the-science/; https://pce.parliament.nz/publications/preparing-new-zealand-for-rising-seas-certainty-and-uncertainty; pce.parliament.nz/explore/sea-level-rise/coastal-flooding and information on ice sheets, erosion, groundwater, regional elevation maps, and planning.
- NZ SeaRise providing projections of sea level risk and land subsidence for every 2km of coastline to the year 2300: www.searise.nz.

Aotearoa NZ's National Science Challenges have also had a strong research focus and continue providing valuable information, including:

- NZ's Biological Heritage – biosecurity, mitigate CC effects on biodiversity: bioheritage.nz;
- Our Land and Water – primary sector production and productivity, resilient land and water use: ourlandandwater.nz;
- Resilience to Nature's Challenges – vulnerable coastlines / SLR: resiliencechallenge.nz;
- Sustainable Seas – marine ecosystems sustainability: www.sustainableseaschallenge.co.nz; and
- The Deep South – role of the Antarctic and Southern Ocean in determing Aotearoa NZ's future climate and impacts on key economic sectors, infrastructure and natural resources – enabling New Zealanders to adapt, manage risk, enhance resilience and exploit opportunities: deepsouthchallenge.co.nz.

Iwi strategies:

A number of iwi have been proactive in developing their own strategies and responses to climate change, either as a specific initiative or integrated into iwi environmental plans and other strategies:

- Ngāti Rārua storymap: storymaps.arcgis.com/stories/1f5579b66f354dfdb14c84e713ebaddc;
- Te Rūnanga o Ngāi Tahu:ngaitahu.iwi.nz/environment/policy/climate-change-strategy;
- Ngaa Rauru Kiitahi: environment.govt.nz/publications/ngaa-rauru-kiitahi-climate-change-strategy;
- Te Arawa: tearawa.io/climate-change;
- Maketu Rūnanga: maketu-runanga.iwi.nz/assets/Maketu%20Climate%20Change%20Adaptation%20Plan%20-%20He%20Toka%20Tu%20Moana%20Mo%20Maketu.pdf – this initiative won the 2023 NZ Planning Institute's Best Practice Award in non-statutory planning: www.scoop.co.nz/stories/AK2304/S00305/maketu-iwi-collective-wins-nzpi-best-practice-award-for-community-led-climate-change-adaptation-plan.htm;
- Ngāti Kahungunu: www.kahungunu.iwi.nz/cyclonegabrielle;
- Ngāti Mutunga: ngatimutunga.iwi.nz/wp-content/uploads/2022/06/Pages-from-Ngati-Mutunga-Iwi-Environmental-Management-Plan-Part-1.pdf;
- Ngāti Toa Rangatira: www.ngatitoa.iwi.nz/climate-change-sustainability.

Others have worked in partnership with their local councils on climate strategies:

- Te Tai Tokerau: catt.org.nz/wp-content/uploads/2022/04/Te-Tai-Tokerau-Climate-Adaptation-Strategy-Final-Version-05-4-2022.pdf;
- Whanganui: www.whanganui.govt.nz/files/assets/public/initiatives/climate-change/climate-change-strategy.pdf.

Research has focused on the effects of climate change on iwi, hapū and Māori, including projects supported by Ngā Pae o te Maramatanga:

- He huringa āhuarangi, he huringa ao: a changing climate, a changing world (2021): www.maramatanga.co.nz/index.php/project/he-huringa-huarangi-he-huringa-ao-changing-climate-changing-world ;
- Examining the contribution of mātauranga Māori to climate health in Aotearoa (2023): www.maramatanga.co.nz/index.php/project/22MR15 ;
- Conference keynote on indigenous climate justice: from decarbonisation to decolonisation and relational restoration, Assoc Prof Rhys Jones: www.maramatanga.co.nz/index.php/node/1607.

The National Iwi Chairs Forum has established a climate change Pou, Pou Take Āhuarangi, led by Mike Smith and Lisa Tumahai: iwichairs.maori.nz/aa-matou-korero-our-kaupapa/pou-and-ilg-contacts; www.rnz.co.nz/news/political/483547/co-governance-and-climate-to-top-agenda-as-pm-meets-iwi-chairs-forum.

In 2022 the Minister for Climate Change Hon James Shaw established a Māori Climate Platform, developed in collaboration with the Iwi Chairs Forum, to support Māori-led climate action, planning and solutions, and ensure that Aotearoa NZ's climate response reflects the perspectives of Māori: environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/maori-climate-platform.

Te Tauihu responses:

The Ministry for the Environment provides climate change projections for Nelson-Tasman region (although these have not been updated since 31 May 2018): environment.govt.nz/facts-and-science/climate-change/impacts-of-climate-change-per-region/projections-nelson-tasman-region.

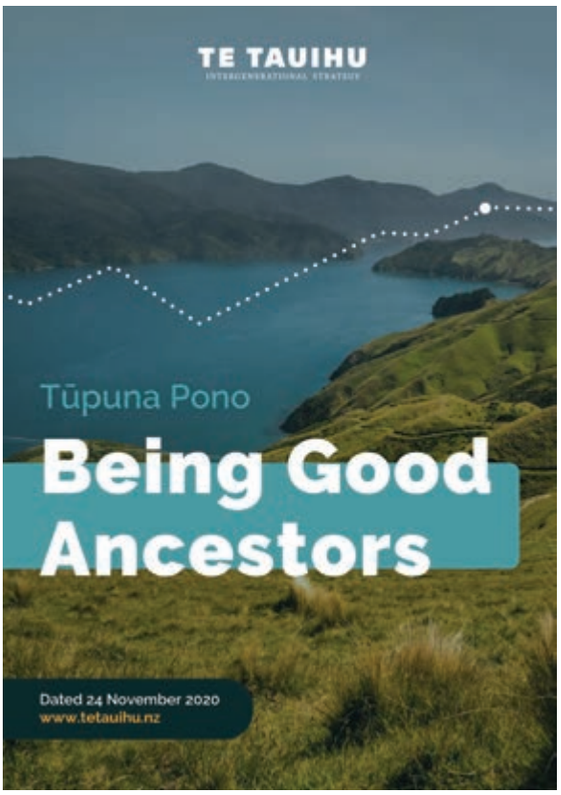
The three Te Tauihu territorial local authorities each have climate change programmes:

- Nelson City Council: www.nelson.govt.nz/climate-change/councils-climate-change-action;
- Nelson Climate Change Advisory Group, established in March 2023 by the City Council to work with community organisations on preparation of a Council Strategy: our.nelson.govt.nz/stories/new-climate-change-advisory-group;
- Tasman District Council: www.tasman.govt.nz/my-region/climate-change ;
- Marlborough District Council: www.marlborough.govt.nz/environment/climate/climate-change.

In March 2023 Wakatū Incorporation hosted the Tūpuna Pono: Being Good Ancestors Summit in Nelson: www.wakatu.org/news-stories/2023/3/15/media-release-tpuna-pono-being-good-ancestors. This featured a range of presentations on all aspects of climate resilience, and a group of international manuhiri from the Denmark Klimatorium: stateofgreen.com/en/solution-providers/klimatorium.

The Cawthron Institute is also active in climate change work, with:

- The 2023 Annual Cawthron Lecture given by Prof Tim Naish and Prof Richard Levy focusing on sea level rise and the Antarctic ice sheets, and the 2022 lecture from Prof Bronwyn Hayward on climate and intergenerational issues: www.cawthron.org.nz/about-us/connecting-with-our-community/annual-lecture-collection;
- In August 2023, the climate Change Resilience in Aquaculture Symposium: www.cawthron.org.nz/our-news/climate-change-aquaculture;
- Research work on challenges to ecosystems, communities and the blue economy: www.cawthron.org.nz/science-as-a-solution; and
- Work with Pacific Island communities: www.cawthron.org.nz/climate-resilient-pacific-communities.



Notes

Notes

Ngāti Rārua

Te Rūnanga o Ngāti Rārua

www.ngatirarua.iwi.nz