

**MANAWATŪ—WHANGANUI**

**CLIMATE CHANGE**

**ACTION**

**PLAN**

**2023**

## Te Ao Māori

Across the Manawatū-Whanganui rohe that encompasses the principle homes of many Iwi and Hapū, acknowledging a vast range of important maunga, awa, moana, ancestral sites / sacred areas and significant environmental entities in each of these different places, we acknowledge that the Māori worldview has foundations, ethics and understandings that differ from those that developed in Europe and its colonies.

These foundations include the notions that:

1. The universe is holistic and dynamic; there is within it an ongoing process of **continuous creation** and recreation.
2. Everything in the universe, inanimate and animate, has its own whakapapa, and all things are **ultimately linked** to the two primal beings of Ranginui and Papatūānuku.
3. There is no distinction or break in this cosmogony, nor in the whakapapa between supernatural and natural. Both are part of **a unified whole**.
4. The bond this creates between human beings and the rest of the physical world is both **indisputable and non-severable**.
5. Uri share this **descent from the elemental atua or vast range of environmental entities**, other supernatural guardians including taniwha and other spiritual beings<sup>1</sup>.

This worldview has contributed to the development and practice of a unique environmental ethic, which holds Te Taiao as intensely central to human/environmental wellbeing. This ethic is sacred and remains in special places and spaces across the rohe. Tangata whenua relate to Te Taiao through genealogical connections from time immemorial. This is highlighted in meaningful ways because they live it as tangata whenua on their marae and remain embedded within nature.

Māori have traditionally ensured sustainability through the handing down of a sophisticated system of customary practices, developed over several generations. Connections to the land, sea, air, and water are recalled in layers of oral tradition; they are closely linked to customary rights and authority over an area defined by ahi kā. This is the continuous period of time the fires of an Iwi have burned within their domain, undisturbed by conquest and despite the impacts of colonisation and environmental decline. Such long associations establish an intimate relationship between tangata whenua and the local environment, centred on sustainable use and guardianship of all kin therein. Knowledge is passed on to the next generation through oral traditions and practical observations – practices that remain vital for Māori wellbeing and cultural survival.

Tikanga varies between tribal groups, according to their own traditions and kōrero tuku iho and as an ongoing expressions of self-determination.

## Who We Are

In 2021, in recognition of the urgency of responding to climate change, our region's eight councils agreed to form the Manawatū-Whanganui Climate Action Joint Committee. Iwi across this wide region were invited to identify nominees to join the committee. The seven Iwi-nominated members each contribute unique skills and experience; collectively, they ensure that a Māori perspective is reflected in the committee's work.

This action plan draws on both Māori and Western worldviews to work together in response to climate change. It is an action plan that embraces Te Ao Māori and views the complex issues through the lens of our relationship with the environment. Te Taiao must be healthy for communities to thrive, therefore action to restore balance that traverses the environmental, cultural, social and economic realms, is urgent and critical.

The committee acknowledges the authority of individual Iwi and Hapū, and the importance of Treaty principles in relationships between councils and tangata whenua. These include partnership, reciprocity, autonomy, active protection, and equal treatment.

### Committee members are:

Chris Shenton, Hannah Rainforth, Huhana Smith, James Kendrick, Jill Sheehy, Jonathan Proctor, Lorraine Stephenson, Andrew Tripe, Andy Watson, Bernie Wanden, Grant Smith, Helen Worboys. Rachel Keedwell, Tracey Collis, Weston Kirton

The committee acknowledges the contribution of Hamish McDouall and Don Cameron, members of the Climate Action Joint Committee until October 2022.

## Supported by



<sup>1</sup> Ko Tā Whanganui Titiro/Whanganui Hapū/Iwi World View: Outstanding Natural Landscapes Cultural Assessment Report Prepared by Te Rūnanga o Tamaupoko & Te Rūnanga o Tūpoho to inform the Whanganui District Plan Review – Proposed Plan Change 48.

# CONTENTS

<b>OVERVIEW .....</b>	<b>4</b>
<b>KEY POINTS .....</b>	<b>5</b>
<b>OUR REGION .....</b>	<b>6</b>
<b>HOW WE DEVELOPED THE PLAN.....</b>	<b>7</b>
<b>LOCAL IMPACTS.....</b>	<b>8</b>
<b>ALIGNING NATIONAL AND LOCAL ACTION .....</b>	<b>10</b>
<b>MANAWATŪ-WHANGANUI PRIORITIES.....</b>	<b>12</b>
<b>ACTIONS WE CAN ALL TAKE .....</b>	<b>14</b>
<b>CASE STUDIES .....</b>	<b>16</b>

# CLIMATE CHANGE

4

**The climate in our Manawatū-Whanganui region is changing now.**

**Flooding and damage to homes and transport networks are increasing. Many of the things we value are vulnerable to climate change. Without action, existing social and environmental issues are likely to get worse.**

**This plan is about understanding how we will respond to climate change in the Manawatū-Whanganui region and working together to reduce potential harm.**

The Māori worldview (Te Ao Māori) acknowledges that all living and non-living things are interconnected and the principles of kaitiakitanga (guardianship of the land) should guide us. This means caring for the land given to us by our ancestors, restoring mana to the land, and leaving it in a better state for future generations. It's about putting our local environment at the heart of our multi-faceted responses to climate change.

A healthy environment is critical for the social and economic wellbeing of everyone living in Manawatū-Whanganui. We need to look to the future of low-lying coastal communities, protect against flooding, preserve burial sites and other important cultural places and ensure the future of native species.

We also need a healthy environment to support a vibrant local economy – a changing climate will impact fisheries, farming and forestry, as well as transport networks and supply chains.

We must take action to adapt and reduce carbon emissions. The sooner we act, the more options we will have for building our community's resilience and preserving our environment.

It's about central Government, local authorities, tangata whenua, businesses, communities and individuals working together to get the best results for our region.

Many council and community projects are already underway, including flood protection, improved town water supplies and better public transport, cycleways and walkways.

The *Manawatū-Whanganui Climate Change Action Plan* builds on this work and makes recommendations to councils and communities on ways we can collaborate on issues we can't solve on our own. A well-designed plan means our efforts are aligned – locally and nationally.

This plan looks at changes we can make that will improve our lives, strengthen our economy and help reduce adverse impacts on the environment at the same time.

We have numerous opportunities to take a lead in developing and delivering new technologies that will change how we travel, eat and interact with each other in the future.

As one of our consultation participants noted 'We still have the luxury of choices in our part of the world'. Let's choose the sort of future we want and work together to achieve it – sharing lessons learnt and celebrating success along the way.

**Dr Huhana Smith  
Dr Rachel Keedwell**

*Co-Chairs Climate  
Action Joint Committee*

# KEY POINTS



Rangitikei – GNS

**1** The changing climate is happening now. Over time, it will affect our whānau, farms, businesses and communities in many different ways.

---

**2** Climate change is one aspect of the relationship between people and the environment. Supporting a healthy environment by actively enhancing Te Taiao is at the heart of our response to climate change.

---

**3** Councils will work with communities, tangata whenua and central Government to adapt to the changing climate, make our region more resilient and reduce emissions.

---

**4** As we adapt to climate change, councils are committed to making changes in a fair and equitable way and upholding the principles of the Treaty of Waitangi.

**5** This report makes recommendations to the eight councils in the region and includes proposals to reduce our contribution to climate change and adapt to its effects in Manawatū-Whanganui.

---

**6** Councils also need central Government's support to adapt and transition.

---

**7** There are things we can all do now, to make the things we care about more resilient to the impacts of a changing climate. Each of us doing what we can to reduce our carbon footprint will also reduce the severity of those impacts.

---

**8** Taking action now to adapt and reduce carbon emissions will give us more options to respond as the climate changes.

# OUR REGION

*The Manawatū-Whanganui region extends from Ruapehu in the north and Horowhenua in the south, to Whanganui in the west and Tararua in the east.*

6

We have  
**7 DISTRICTS**  
and approximately  
**89%**  
of our ratepayers live  
in urban centres

We have one of the largest areas of  
hill country in New Zealand and

**HIGHEST  
PROPORTION OF  
HIGHLY ERODIBLE  
LAND OF ANY  
REGION**

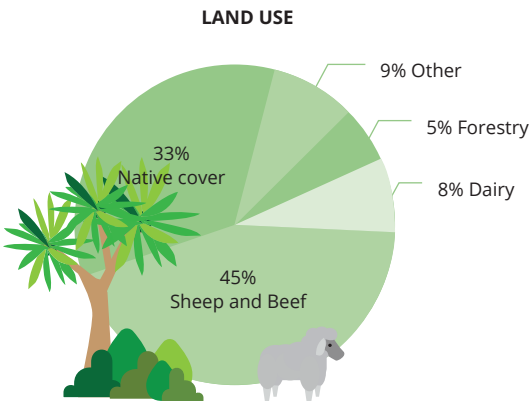
Around  
**250,000 PEOPLE**  
call it home

Almost a quarter  
of our region's  
people identify as Māori.  
There are many Iwi and  
Hapū and more than

**60 MARAE**

**206,000  
HECTARES  
OR 18%**  
of the nation's versatile  
soils are in the region

We have  
**3**  
major river systems  
**2 COASTS**  
and the Central Plateau



The Horizons Region  
is made up of

**2.2 MILLION  
HECTARES  
OF LAND**

8% of New Zealand's total  
land area, plus 31,000  
hectares of marine area

There are over  
**35,000KM**  
of waterways in the  
Horizons Region

Approximately  
**109,000**  
ratepayers contribute to  
our work programs

We have  
**230 LAKES**  
This includes 67 dune,  
44 riverine, 24 landslide, 7 volcanic  
lakes and 88 artificial reservoirs

Mean annual rainfall in  
the region ranges from  
**900MM TO OVER  
2,000MM**

There are  
**40 ESTUARIES**  
in our region, including Manawatū  
Estuary, an internationally  
recognised RAMSAR site

# HOW WE DEVELOPED THE PLAN

---

**Over the course of 2022, the Climate Action Joint Committee developed the *Manawatū-Whanganui Climate Change Action Plan*.**

We drew on the *Manawatū-Whanganui Regional Climate Change Risk Assessment* published in September 2021, information about the region's emissions profile and emerging central Government policy. We considered our key regional climate change challenges and how we can work together more effectively.

Tangata whenua told us about how they are responding to climate change through efforts to care for the environment and communities. We spoke with Palmerston North and Whanganui youth councils to better understand the perspectives of younger people.

Those conversations – like this action plan itself – are just the beginning of ongoing dialogue with our wider community about our changing climate.

A reo Māori version of the *Manawatū-Whanganui Climate Change Action Plan* has also been made available.

*'Our plan focuses on how we can work together – councils, tangata whenua and communities – to collectively tackle the issues we can't resolve alone.'*

*Dr Huhana Smith*

# LOCAL IMPACTS

The impacts of climate change are wide-ranging, rippling out beyond weather patterns to affect people's assets and community infrastructure, biodiversity and human health.

The *Manawatū-Whanganui Regional Climate Change Risk Assessment* highlights specific risks for the districts of our diverse region.

8

## IMPACTS

**A Hill Country:** Transport networks damaged by landslides and soil erosion. Extreme weather events cause crop damage and economic disruption. Increased fire risk.

**B Plains:** Damage to housing, public spaces and infrastructure from flooding. Crop damage caused by drought.

**C Estuaries:** Erosion and coastal inundation in some coastal areas – damage to commercial and residential buildings, and energy infrastructure.

**D Social Impacts:** Risk of inequitable outcomes as costs and impacts fall unevenly across the community.

**E Tourism:** Reduced snow and ice cause economic disruption. Extreme weather events impact tourism.

**F Urban Areas:** Landslides, soil erosion and inland flooding highest risk to urban areas like Palmerston North. Extreme weather events. Water supplies affected by reduced rainfall and drought.

## IMPACTS

**G Tohu\*** change and are less reliable, affecting planting, resource gathering and hunting.

**H** Damage to culturally significant **marae and urupā** from flooding and erosion.

**I** **Loss of taonga species** (in freshwater systems, on land, and along the coast) as the climate warms.

**J** **Manaakitanga** threatened if manuhiri cannot be offered local delicacies and marae are damaged.

**K** Loss of **tikanga and mātauranga** around resources, affecting future generations.

## CASE STUDIES

**1-5** See pages 16–23 for case studies of Climate Change actions already underway.

## ADDITIONAL IMPACTS ON MĀORI

Climate change is likely to have a bigger impact on Māori because of their relationship to the environment, the things that are culturally significant to them, and the ongoing effects of our colonial past.

\* **Tohu** are indicators (the blossoming of a flower, the departure of a migrating bird, the appearance of a star in the predawn sky) developed and used by Māori to track changes in the natural environment.

<https://environment.govt.nz/facts-and-science/climate-change/how-climate-change-affects-maori/>

[https://www.horizons.govt.nz/HRC/media/Data/20210902\\_Horizons-CCRA\\_Report-signed\\_1.pdf](https://www.horizons.govt.nz/HRC/media/Data/20210902_Horizons-CCRA_Report-signed_1.pdf)



This map shows the highest risks for specific districts but these risks may impact more widely across the region.

9



# ALIGNING NATIONAL AND LOCAL ACTION

10

---

**IN DEVELOPING OUR ACTION PLAN, WE HAVE DRAWN ON THE EVOLVING NATIONAL AND INTERNATIONAL CONTEXT.**

*Local leaders recognise the need to work constructively with central government to address climate change. There will be issues to work through as national policy develops, to ensure that it meets local needs.*

The [National Adaptation Plan \(NAP\)](#) was released in August 2022. It aims to ensure communities have the information and support they need to prepare for the impacts of climate change.

The first plan focuses on setting out what the government will do to enable better risk-informed decisions, drive climate-resilient development in the right locations, help communities assess adaptation options (including managed retreat) and embed climate resilience into all of the Government's work.

Actions in the NAP focus on reforms already underway, including resource management reform to foster collaboration between local and central government, the local government review, three waters reform.

Central government has committed to explore co-investment with local government in flood protection.

The NAP identifies three main roles for local government:

**PROVIDING LOCAL INFRASTRUCTURE, AND ENSURING IT IS RESILIENT TO CLIMATE CHANGE**

---

**PLANNING AND REGULATING LOCAL DEVELOPMENT**

---

**BEING THE AGENCIES CLOSEST TO EXPOSED COMMUNITIES**

---

*'We believe central government and local government need to work together to resolve funding questions and make processes more efficient – improved alignment will support local communities in their response to climate change.'*

*Dr Rachel Keedwell*



Manawatū River

---

## **IN MAY 2022, THE GOVERNMENT RELEASED FINAL EMISSIONS BUDGETS FOR 2022-35 AND AN EMISSIONS REDUCTION PLAN (ERP).**

### **The ERP implies several strengthened or new expectations of councils:**

- Funding local infrastructure.
- Delivering Te Ao Māori-centred, nature-based solutions.
- Driving towards a circular economy, and preventing organic waste from entering landfills.
- Reducing vehicle kilometres travelled (including specific targets for Palmerston North).
- Providing walking and cycling infrastructure, including active transport plans around schools.
- Supporting community based transition plans.
- Supporting increased public transport use.
- Reducing high-emissions energy generation and support renewables.
- Supporting sustainable construction and renovation of existing buildings.
- Implementing national direction under the proposed Natural & Built Environments Act and National Planning Framework, including planning for compact, functional urban form.

---

## **THE ERP INCLUDES A FOCUS ON EMPOWERING MĀORI.**

### **The Government undertakes to work with Māori to:**

- Embed partnership and representation.
- Support Māori-led strategy and alignment, elevating Te Ao Māori within the climate response, in a way that is aligned with Māori customs and protocol (tikanga and kawa).
- Fund kaupapa Māori and tangata Māori actions and solutions.

Strategic planning legislation is also being developed and will potentially be a useful tool in our climate response. Regional spatial strategies will, however, only be as good as the data and discussions that inform them. The work we do now will help to ensure spatial planning is effective.

# MANAWATŪ- WHANGANUI PRIORITIES

12

**PUTTING THIS PLAN INTO ACTION WILL REQUIRE INVESTMENT TO IMPROVE TRANSPORT NETWORKS AND STORM-WATER MANAGEMENT, ADDRESS RISKS AND ENCOURAGE CLIMATE-RESILIENT DEVELOPMENT.**

**SOMETIMES, THIS WILL REQUIRE RETHINKING HOW WE HAVE DONE THINGS IN THE PAST. INVESTMENT WILL BE REQUIRED IN RELATIONSHIPS, TOO, AS LOCAL COUNCILS SUPPORT COMMUNITIES THROUGH THE TRANSITION AHEAD.**

Groups across the region are already working to tackle climate change: some of these initiatives are illustrated in the case studies on the following pages. Local councils, iwi and communities are working with Massey University to develop climate response plans at Tangimoana and Pūtiki. A similar project has been completed with the community at Anzac Parade in Whanganui.

This action plan will inform councils' future decisions, in consultation with affected communities, about priorities, approaches, and funding. It provides a foundation for us to work together to respond to climate change and ensure our region remains a great place to live for future generations.

**The Climate Action Joint Committee recommends that councils in the region commit to the following actions:**

- Prioritise nature-based solutions in response to flooding, coastal issues, storm water, and erosion.
- Incorporate projected changes in rainfall patterns (drought, flood, and erosion risk), and impacts on biodiversity into integrated catchment management (Regional Council).
- Review planning provisions to encourage on-site storm-water management and (on-farm) water storage.
- Limit exposure to hazards by preventing development in areas at heightened risk of flooding or erosion as a result of climate change.
- Reduce the need for short car trips by developing compact, well-designed urban centres and prioritising active transport infrastructure (Territorial Authorities).
- Assess and manage climate related risks to local services and critical infrastructure.
- Redouble efforts to address existing issues that will be exacerbated by climate change such as freshwater health, biodiversity loss, flooding and erosion.

**COUNCILS IN OUR REGION RECOGNISE THAT CLIMATE CHANGE REQUIRES URGENT AND COLLECTIVE ACTION. OUR ACTIONS FOCUS ON FOUR KEY AREAS:**

- Empowering communities
- Working with nature
- Addressing known issues
- Supporting good decisions



*Manawatū River, Palmerston North*

- Work with at-risk communities to develop local adaptation plans (including community-led initiatives).
- Measure and reduce emissions from council activities.
- Incorporate carbon emissions and a preference for nature-based solutions into council procurement policies.
- Work with Joint Committee members to engage with youth, community, and tangata whenua groups in support of local climate action.
- Allocate resource to drive action forward, build relationships with tangata whenua, and engage with communities.
- Respond proactively to Government direction that enables further local action on climate change.
- Embed this joint response into each council's own plans at a local level.
- Identify and prioritise information we need to guide future decisions (such as adaptation planning, development strategies, and investment decisions).
- Incorporate projected changes in rainfall intensity into storm-water, drainage and flood risk modelling for population centres and areas where growth is planned.
- Identify communities with the greatest need for support in responding to a changing climate.
- Work to better understand impacts on tangata whenua and how local government can best help.
- Produce and implement a region-wide waste strategy.
- Engage central government support for our region's transition, and align the region's response to government direction.
- Monitor the effectiveness of this joint action plan and update it as new information comes to hand.

**The Climate Action Joint Committee proposes to lead several joint initiatives:**

- Support sharing of mātauranga-based responses to climate change.
- Make widely available information that supports individual and community action.
- Investigate:
  - Ecological impacts of a changing climate in our region and how we can support healthy, connected ecosystems and indigenous biodiversity.

- Ways to ensure food supply (including mahinga kai) is resilient to a changing climate.
- Options to improve the energy efficiency and climate resilience of buildings.
- Best use of forestry, including native reforestation, as part of the region's climate response (incorporating biodiversity, pest control, carbon sequestration, erosion, fire risk, and other outcomes).

**The Climate Action Joint Committee acknowledges the leadership role of the Regional Transport Committee in reducing the region's transport emissions. Integrated transport planning can support wider climate action by:**

- Increasing use of public transport.
- Reducing dependence on private motor vehicles for short trips.
- Helping to make active transport safe and convenient.
- Improving use of rail and port infrastructure.

# ACTIONS WE CAN ALL TAKE

14

*There are actions we can take to make our communities and households more resilient, reduce our carbon footprints, and improve our lives at the same time.*

## Building community and household resilience



### Water

Store rainwater for emergencies and to ease shortages in summer.



### Plant trees

Many trees provide shade in hot summers.



### Building or renovating

Expert advice and financial support is available to help make homes and other buildings warmer, drier and cheaper to run as well as reducing their emissions.



### House and contents insurance

Provides peace of mind as we face more storms and flooding.



### Well-installed insulation

Keeps your home warm in winter and cooler in summer. Government [Warmer Kiwi Homes](#) grants are available for insulation and/or an efficient heater for lower-income households.



### Plan emergency housing

How might climate change affect your home? What would you do in an emergency? How would you keep your family safe?

## Reducing our carbon footprint



### Shopping

Planning meals for the week will help cut down on takeaways and the stress of deciding what to cook. Shopping 'retro' can save you money and help keep clothes and other items in circulation for longer.



### Travel

Using public transport, walking or biking can reduce carbon footprint – and it might improve your health and wellbeing, too. 19% of New Zealand's emissions are from transport: changing how you get to work just one day a week would make a difference.



### Encouraging others

Take the time to talk to friends and family members about our changing climate and actions we can take. If you've saved money by installing insulation or riding your bike to work, tell them about it!



### Eating

Consider a meatless meal once a week. University of Otago research estimates emissions from the typical Kiwi diet could drop by 7% if we ate vegetables instead of meat for one meal a week.



### Around home and on the marae

Plant trees, reduce water use, recycle and avoid wasting electricity. Switching your lightbulbs to LEDs will save energy and cut down your power bill.

# 'DOING WHAT WE CAN INDIVIDUALLY IS A STEP TOWARD SYSTEMIC CHANGE'

*Dr Rachel Keedwell*

EECA's [Gen Less website](http://Gen Less website) has lots of ideas about how to reduce your carbon footprint. There is also advice and tools for businesses: [genless.govt.nz](http://genless.govt.nz)

The Ministry for the Environment also has good tips for cutting emissions on the marae and at home: [environment.govt.nz/what-you-can-do/](http://environment.govt.nz/what-you-can-do/)

Visit the Horizon's Regional Council website for more ideas about things you can do – or to find out if funding is available for your project: [horizons.govt.nz/climate](http://horizons.govt.nz/climate)

[Clean Car Discount](#) supports change to low or zero emission cars to reduce emissions

[Future Fit](#) provides a snapshot of your impact on the planet, and helps you make positive changes in the way you live to help reduce your personal carbon footprint.



# NATURE-BASED CLIMATE RESILIENCE

*Full tide by the Ōhau River where spawning of inanga/whitebait takes place and where enhanced constructed wetlands shall be expanded with extensive native planting.*

16

## **CONSTRUCTING WETLANDS IS A RELATIVELY LOW-COST WAY TO PROTECT AGAINST FLOODING AND MAKE LOWER REACHES OF LAND TOWARDS SEA MORE CLIMATE RESILIENT.**

An example of this type of restoration is Tahamata Incorporation's coastal farm, south of Levin, an Iwi/Hapū led enterprise which traverses both banks of the Ōhau River.

*The Board decided it needed to act to protect the operation against the risk of flooding and the increase in frequency and intensity.*

### **479-HECTARES**

Dairy farm runs 520 cows.

### **ENVIRONMENTAL ISSUES STARTED IN 1972-1974**

when the Ōhau River was diverted or cut for the development of coastal farmland.

Adjacent swamps and wet areas were drained and whilst intensive dairying was profitable, mana whenua became increasingly concerned about pollution in the Ōhau River remnant lagoon and its poor water quality. Kaumātua reported the loss of bountiful supplies of fish, and healers were reluctant to use the water because of pollution.

Iwi/hapū led research assessed a range of adaptation strategies for the farm and three surrounding land holdings in Māori tenure, with the changing climate making these issues increasingly urgent. For the Tahamata case study, researchers recommended re-creating wetland ponding systems, in areas where the pastures were marginal along the Ōhau River.



*Kuku Ōhau Estuary with loop area marked in dark green, constructed wetlands marked in white within the wider area marked in light green requiring coastal protection and enhancement from climate change impacts, including protecting significant ancestral landscape features.*

*The Board is exploring innovative land uses, such as flax production for fibre, with additional projects that aim to use natural dyes.*

**Ponding systems**

Ponding systems are successfully used in the Waikato and the board wanted to build on this work, while incorporating tried and proven Mātauranga Māori approaches that had been activated since 2002. The Kuku ponding systems were co-designed and co-developed with a freshwater engineer, a climate modeller, a Māori designer and Māori researchers, who were supported by the Māori Farm Board, food gatherers and Māori shareholders.

**Wetland construction**

Constructing wetland ponds is relatively simple and low-cost. Large, shallow planted ponds filter stormwater runoff, slow flows and help control flooding. These constructed environments provide home and shelter to wildlife, similar to a natural wetland. The wider area is renowned for its peat (due to being deep wetland regions before they were drained); enhanced peat formation in the constructed wetlands acts as a carbon sink.

The Kuku coastal land project aims to trial practical solutions to climate resilience, building upon a body of research about wetland ponding systems and their effectiveness.

Plantings of reeds, grasses and sedges will also support a habitat for whitebait spawning, with whitebait being restored to abundant levels again, reflecting its long-standing status as a taonga species and food source for mana whenua.

**Looking forward**

To restore the land to some of its former glory, whānau volunteers are also replanting many native species such as harakeke (flax) and manuka along the banks of the Ōhau River, leading to discussion about future use of the land. The board is exploring innovative land uses, such as flax production for fibre, with additional projects that aim to use natural dyes. Dairying will continue on the productive pastures.

**Sharing of knowledge**

An important aim of the constructed wetlands project is to build upon research knowledge about nature-based solutions to climate change. These solutions will support hapū agricultural landowners with low-lying coastal farms to transition to innovative land uses in the face of a changing climate. Results from the trial will be shared with other iwi and hapū, councils and interested stakeholders.





# COMMUNITY- LED COASTLINE PLANNING

Castlecliff – Whanganui District Council

18

## KEY CHALLENGES INCLUDE

Erosion

Significant natural  
sand movement

Ecological degradation  
of the beaches due  
to human land use

*A community led  
coastal action plan is  
making the coast from  
Castlecliff to Kai Iwi  
more resilient in the  
face of climate change.*

## 500+ PEOPLE

Recently responded to a Whanganui District Council survey about what they value about their coastline.

Responses came from

## EVERY SUBURB

in Whanganui and comments reflected how important the coast is for the health and wellbeing of the entire community.



*'Watching the sunsets,  
gathering resources such  
as driftwood and harakeke  
and shellfish, and building  
sandcastles.'*



*'The coast makes me feel  
renewed and alive.'*



*'For Māori, the connection  
to the elements is  
entrenched in whakapapa.'*



*Different parts of the coastline have very specific issues and will need their own management approaches.*

#### **Castlecliff**

Gradual build-up of windblown sand has created an extensive and unstable dune system. The community has also raised problems with rubbish, vehicles on the beach and dogs.

To develop a management plan, the Whanganui District Council is working alongside Te Mata Puau to make sure hapū are at the centre of all planning, through application of a framework, He Ara Tuku Rau, which ensures compliance with Te Awa Tupua. The plan will go beyond the protection of facilities and aim to improve social, cultural and environmental health.

#### **Kai Iwi**

Kai Iwi faces significant challenges from a rapidly retreating coastline and erosion, which is likely to accelerate with a changing climate. People responding to the survey also raised concerns about water quality in the stream. The council is working with the community, the Tamareheroto Hapū and specialists to consider proposals for Kai Iwi, using past reports and submissions by community members.

Proposals include managed advance (in the form of an offshore reef), managed retreat, installation of a breakwall, new and reinforced seawalls, or a combination of options. Survey responses highlight that the community wants an abundant coastline – healthy seafood, sustainable coastal management, healthy dune systems and coastal forest.

Next steps for the coastal plan include meetings between the council and key community groups, community-based resource mapping and engineering and ecological advice and costing for potential management options.

The plan will provide a pathway for the community to work together to increase the wellbeing and resilience of the people and environment 50 to 100 years into the future. It will be a ‘living document’, regularly reviewed and updated to reflect any changes in scientific data, community aspirations and access to funding. For example, South Beach is now being scoped for inclusion in the plan, following feedback from the community.



Tranzit Coachlines, Palmerston North

**20** *Transport is responsible for 20% of New Zealand's total greenhouse gas emissions – fossil fuels, such as petrol and diesel, produce harmful emissions that contribute to climate change.*

#### **Reducing car use**

To encourage people to get out of their cars, Horizons Regional Council and Massey University offer free bus trips for students and staff on all services in Palmerston North through an Unlimited Access Scheme (UAS). This is funded by Waka Kotahi, Massey University and Horizons.

At their peak, free UAS trips have exceeded 600,000 annually, making up nearly half of all bus trips in the region.

The UAS started as a small scheme with UCOL in 2004. It was expanded in 2005 to solve parking congestion at Massey University, and to ease peak traffic congestion in the city. Councils and Waka Kotahi also wanted to minimise expansion of roading infrastructure by shifting more people onto public transport.

Initially, the free bus service was funded by Massey University, which introduced car parking charges on its campus to cover costs. The trial was successful and expanded to connect to Massey University from the CBD and suburbs of Palmerston North.

---

**THE UAS HAS, IN EFFECT, TAKEN 173 CARS OFF THE ROAD AND, DESPITE A FALL IN BUS USE DURING THE COVID PANDEMIC, SAVED AN AVERAGE OF NEARLY 70 TONNES OF CARBON EMISSIONS A YEAR.**

#### **Scheme expansion plans**

More recently, the scheme has further expanded to include two other tertiary education providers: English Teaching College and IPU New Zealand.

Horizons Regional Council is encouraging other organisations to offer free travel on council services. Horizons' Regional Public Transport Plan (2022-2032) promotes free transport schemes to support organisations working to encourage the use of more sustainable transport modes.

Horizons' plans target a 30% reduction in regional carbon emissions from land transport by 2030, including a lower-emissions public transport fleet.

Council policies support the Government's Emissions Reduction Plan which highlights the importance of reducing emissions from transport through better public transport, walking and cycling. As well as reducing emissions, 'mode shift' will support access to affordable housing and improve the liveability of our urban centres.

#### **Find out more**

[Horizons Regional Public Transport Plan Information on mode shift](#)

# FARMING INNOVATION - STEWART DAIRYLANDS



Riparian planting – Stewart Dairylands

*'People come and go,  
but the land remains  
forever. We don't own  
it, we just pay for the  
privilege to look after  
it. It is now our turn.'*

David A Stewart.

21

## **Going beyond compliance**

The Stewart family has farmed for over 120 years in the Manawatū. Their mission is to produce high-quality dairy products from healthy, well-bred animals, by caring for their animals and the environment.

For the Stewart Dairylands team, it's about going beyond compliance and becoming a carbon neutral business. An environmental plan covers the entire farm, there are regular open days, and relationships with both environmental and iwi groups.

## **Reducing carbon emissions**

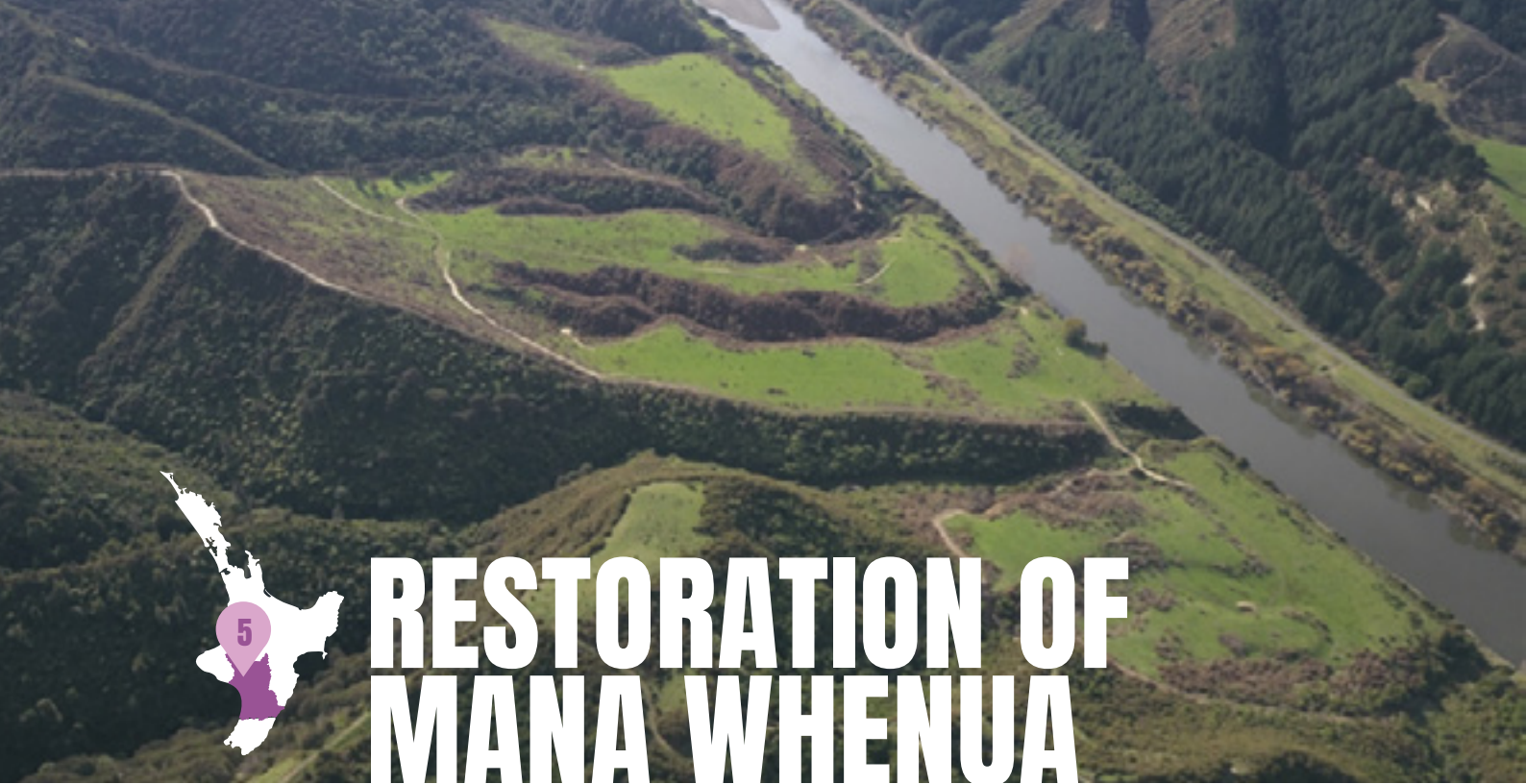
Stewart Dairylands has installed solar panels on the dairy shed roof to replace a gas-fired system that heated hot water in the dairy shed. Installing solar panels has reduced total energy use by 30%. Stewart Dairylands is close to the Bunnythorpe sub-station and there is potential for the property to become a solar farm and run sheep around the solar installations.

## **Building ecosystems**

The team actively looks for opportunities for the least productive land, such as gullies. Over the past decade, 10,000 trees have been planted on the less viable parts of the property. The team is focusing on how to plant trees to reduce the farm's carbon footprint – rather than planting solely for water quality and shelter.

The goal is also to build and protect ecosystems – by planting contoured native woodlots, creating manmade wetlands, sediment traps, nutrient interceptor beds and innovative ecological engineering for water flow harvesting.

Field days are used to show these innovative approaches to neighbours and other farmers, who have now formed the Stoney Creek Catchment Collective, covering 2400 hectares. This dedicated catchment group works proactively on their land to help improve and further enhance the water quality of the Stoney Creek catchment.



# RESTORATION OF MANA WHENUA

Paetawa Station

22

---

**THE GOAL IS TO RESTORE  
THE LAND TO ESTABLISH  
A THRIVING MĀORI  
AGRIBUSINESS WITH A NET  
ZERO CARBON FOOTPRINT.**

**Te Urumingi Whanau Trust**  
Descendants of Te Ratana Te  
Urumingi and Heeni Piiato have  
big aspirations for their land.

Their 1214-hectare Paetawa  
Station is located in rugged  
Whanganui River hill country,  
with only about 80 hectares  
suitable for traditional farming.  
Te Urumingi Whanau Trust  
runs the station through  
its subsidiary company  
Heeni Investment.

*Heeni Investment faced  
challenges, including  
previous over-spraying,  
limited grazing, weeds  
and poor pasture.*

---

**USING EXPERT ADVICE,  
HEENI INVESTMENT NOW  
HAS AN INTEGRATED FARM  
PLAN, BASED ON A MĀORI  
TAIAO PERSPECTIVE OF  
THE ENVIRONMENT.**

**Actions taken**

The station team has designed a  
cost-effective biological approach  
to the remediation of the soil – by  
building up its microbial health  
and feeding the microbes with a  
mixture of seaweed and fish-based  
products.

This has led to increased  
production, and controlled weeds,  
without using synthetic fertiliser.  
Stock is in better condition,  
healthier and getting better prices  
– and there is less use of drenches.

# THE BUSINESS IS RUN ON FOUR PRINCIPLES:

## Taiao (Environment)

Improve our natural asset base (soil and water quality; erosion-prone land; waterway margins; biodiversity).

## Mātauranga (Education)

Cultural: enhance our mahinga kai; kaitiakitanga, whakairo, maanakitanga, whakawhanaungatanga.

Create an opportunity through a kaupapa Māori nursery for our people to return to the Whanganui River to learn and to work.

## Ōhanga (Economics)

Create diverse sustainable economic opportunities through the expansion, permanence, and diversification of forest on our whenua.

## Kīnakitanga (Enhancement)

Leadership: establish a thriving Māori agribusiness with a net zero carbon footprint that demonstrates minimal reliance on synthetic fertilisers to reduce on-farm biological emissions and nutrient run-off into waterways.

So far, Heeni Investment has

## PLANTED 400 HECTARES IN NATIVES & MANUKA

River flats on the station are now ready to be fenced and planted.

## AN ADDITIONAL 420 HECTARES OF NATIVES

such as manuka, karamu, tī kōuka and tōtara are being or are planned to be planted.

## INSTALLING SEDIMENT TRAPS

To capture runoff and protect waterways.

## TO HELP REDUCE CARBON EMISSIONS

Heeni Investment is shifting from breeding cows to dry stock and is exploring carbon farming, potato milk and alternative proteins.

*'We know what the land looked like 40 years ago and we want to bring it back to its full glory. We still have Kaumatua who know this stuff. We have got to set in place something for future generations and we are now on that journey.'*

*Ben Potaka, Heeni Investment Co Ltd.*

23



*Kahikatea swamps are favoured habitat for native fish, including tuna (elvers) and provide the paru (mud) used to dye harakeke for pūipui, kete and whariki.*

