5–10 Year Strategy



THE NEW ZEALAND
POPLAR & WILLOW RESEARCH TRUST

May. 2026

This strategy provides a clear direction for the Trust over the next 5-10 years. It outlines how we will build greater awareness, confidence and adoption of poplar and willow as practical and valuable tools within New Zealand's landscapes and communities.

Collaboration, partnership, and sustainable investment will be critical to achieving our vision. Through shared commitment and long-term support, the Trust can continue to lead, innovate, and deliver lasting benefits for New Zealand's landscapes and communities.

We will set ambitious goals and focus on the areas where we can achieve the greatest impact in ensuring poplar and willow to play an essential role in resilient landscapes across Aotearoa New Zealand.

We will work alongside landowners, farmers, catchment groups, researchers, regional councils, advisors and industry partners to strengthen understanding of the role poplar and willow play in soil conservation, land resilience, biodiversity, sustainable farming systems and protecting communities.

Our Vision

"To ensure NZ landscapes and communities are protected, enhanced and resilient to the threats of climate change, and pest and disease incursions"

To achieve this vision:

We prioritise, we partner, we adapt

We have 4 main pillars:

Breeding

Germplasm

Research

Extension

Our Focus

Prioritise and focus our work
on areas that will deliver the greatest long-term value and contribute most strongly to achieving our vision.

Demonstrate real-world outcomes
support practical, evidence-based initiatives that demonstrate measurable environmental, economic, and community benefits.

Strengthen partnerships and influence
build strong relationships and collaborative programmes that extend the reach and impact of the Trust throughout New Zealand

Support innovation and knowledge
encourage research, innovation and knowledge sharing to ensure poplar and willow continue to evolve as relevant and effective tools for future landscapes.

Build understanding and confidence
improve awareness and understanding of strengths, benefits and opportunities associated with poplar and willow among landowners, practitioners, decision-makers and the wider community.



Some of our opportunities

- Strong partnerships with Councils
- Leveraging of funding and investment
- Collaborate where possible
- Enable our passionate partners to share their story
- Share stories that inspire others to action
- Catchment scale bioengineering
- Poplars and willows positioned as cost effective, scalable mitigation tools within new regional plans (policy level)
- Mitigation packages for fast track erosion planting plans
- Position breeding programme outputs as supporting infrastructure resilience
- Poplars and willows remain cost effective mitigation tools (end user)
- Focus on infrastructure protection, asset resilience, flood mitigation and cost avoidance
- To be recognised as a national provider of cost effective, climate resilient land and river infrastructure solutions.
- Make information more accessible and engaging so is used more.
- Opportunities around wider communications and promotion, that are not currently covered.
- Positively influence decision makers the role of poplar and willow in the landscape.
- Best practice planting guides to promote effectiveness of poplar and willow.
- Give people the tools to manage poplar and willow themselves
- Support end of life opportunities for well managed stands

Some of our challenges

- Securing ongoing sustainable funding to allow the Trust to perform successfully
- Changing environment and landscape, often impacted by climate change
- Success stories are under utilised
- Monitoring data within Councils is fragmented
- Adoption of cultivars is not always successful.
- Environmental protections could weaken or become more discretionary
- Changes in local government and managing linkages and funding
- Councils may deprioritise soil conservation
- Aligning website and communication with new planning regulation.
- The time between breeding requirements and evaluation programme and release times.
- Balancing requirements between those wanting to maintain pasture and those focusing on ecological restoration or biodiversity.
- Poplar and willow being misunderstood.
- Willow and poplars weedy due to spreading especially in retired areas or waterways.
- Reducing popularity of poplar and willow due to the lack of legacy management strategy.

Breeding Pillar

Goal

NZPWRT's breeding programme will be explicitly aligned with identified land-use, climate, and biosecurity priorities. Clear choices will be made around trait prioritisation, recognising trade-offs and resource constraints. Breeding will be positioned as a core risk-management tool for pest, disease, and climate pressures, with outputs supported by field validation and transparent performance reporting.

Overview

There is a long history of poplar and willow breeding from its initiation in the 1950s. Past disease and pest incursions that have limited the use of past cultivars have highlighted the need for an ongoing breeding programme. Many of the cultivars that have been either imported or bred, are still in use, but others have been superseded.

Current State

Breeding is a core strength of the Trust, but there is a need for greater clarity around programme purpose, trait prioritisation, and delivery pathways. Breeding needs to be demand-led, risk management investment, closely aligned with research, extension, and adoption.

5 Year Actions

- Clearly articulate breeding objectives linked to priority use-cases (erosion control, river management, climate resilience, fodder, emerging uses)
- Make explicit choices around trait prioritisation, recognising trade-offs and resource constraints
- Strengthen the strategic role of willows, particularly for river and riparian systems
- Position breeding as a proactive response to pest, disease, and climate risk
- Improve field validation and performance data for existing cultivars
- Identify and agree to a staged breeding programme for both poplar and willows
- Each selection phase to have a clear pathway for selection, including trials
- Each selection has a clear pathway to release and post release support materials etc. (see extension)
- Landscape review to clearly understand successes and failures in uptake and why - extension, at both field or nursery level
- Data stewardship and management is robust and transparent.

2036 Outcomes

- A resilient, well-characterised suite of cultivars that meet future land use needs and different environmental conditions
- Cultivars are released with solid framework around them
- Positive uptake of new cultivars with beneficial traits by nurseries and landowners.
- Clear and visible pathway from breeding programme to cultivar use
- Ability to use genetic markers to accelerate breeding programme
- Data stewardship

Germplasm Pillar

Goal

To ensure that a broad range of species and cultivars of poplars and willows are preserved for future breeding and reference

Overview

The national germplasm collection now comprises of:

- 15 species
- 39 hybrids of poplar
- 10 species of tree willow
- 12 hybrids of willow
- 29 species of shrub willow
- 20 hybrids of shrub willow

These are maintained in two germplasm collections in the Manawatu and one in central Otago. In addition there are resource stands of poplar clones on farm. These were planted in 1980s.

Current state

BSI report on Poplar and Willow Breeding outlines in more detail the germplasm plantings (March, 2026).

5 Year Actions

Maintain, and expand where strategic, our germplasm collection:

- There are at least 2 planted sites of all parent and hybrid material for both poplar and willow.
- Clear germplasm and data stewardship processes in place
- Manage the relocation of BSI's poplar germplasm to alternative site within the orchard.

2036 Outcomes

- A diversified, well maintained genetic bank
- Preservation of superior poplar/willow varieties with sought after traits
- Accessible
- Provide good reference



Research Pillar

Goal

Maintain a credible, future-focused evidence base that supports the use of poplars and willows for land, river and climate resilience outcomes.

Overview

Much of the work undertaken is focused on soil conservation, but we need to consider what the future might look like and what risks may exist for the Trust. Ensuring that the justification for planting exists but adding some quantified, evidence-based data around reducing risk and providing protection and the associated cost:benefit.

Current state

There is strong evidence for erosion control, root structure and soil stabilisation. There is moderate knowledge around climate impacts, fodder use, pest and disease but limited published research around bioremediation and bioenergy, river bioengineering, biodiversity and ecosystem services along with farmer attitudes and adoption drivers. There should be a move from ecological benefit to more risk management and infrastructure resilience.

5 Year Actions

- Focus on research that addresses priority knowledge gaps with high impact.
- Research is timely, practical, applied and end-user driven.
- Supports policy and funding frameworks (partnership/ collaboration)
- There are a number of broad themes to focus on, with a key theme to quantify ecosystem of plantings, both now and in light of climate change, including the following:
    - Impact of poplar and willow space planting in whole farm systems and catchment scale.
    - Farmer attitudes and adoption
    - Impact of soil loss both on-farm and to communities at a wider scale.
    - Impact of river management in protecting urban communities.
    - Biodiversity and ecosystem services – investigate poplar and willows social license and benefits to the environment..
    - With new hybrid cultivars, what are their fodder value and other factors not tested.
    - Strengthen links between research outputs and breeding priorities
    - With Climate Change, identify what pest and/ or disease may invade NZ and be proactive in solution focus. This could involve breeding.

2036 Outcomes

- Research has supported evidence-based decision making by the end-user and nurseryman by ensuring they understand the site survival, propagation and management needs that impact on tree growth and vigour.
- That there has been no disease or pest invasion that has decimated either poplar or willow
- Research provided incorporates the role of poplar and willow in a climate changing environment.
- Evidence-based decision making.

Extension Pillar

Goal

Translate research and information into clear, practical guidance that drives adoption of the best fit-for-purpose cultivars, imbeds best practice and articulates the value of NZPWRT.

Overview

There is a large amount of work that has been undertaken on poplar and willows, along with some great extension videos. The website has been used as a depository and as a result succinct information is not always easily searchable or obtainable. NZPWRT needs to ensure that it remains relevant in changing political and climate environments.

Current state

As environmental reform and local government realignment occurs, there is a greater need to incorporate new language, information that is easy to find and understand.

5 Year Actions

- NZPWRT needs to remain relevant in an ever changing environment
- Re-position the website as national gateway for poplar and willow knowledge, focusing on 'use-cases' rather than documents.
- Fill core knowledge gaps on the website such as:
  - Bioremediation and bioenergy
  - River bioengineering
  - Biodiversity and ecosystem services
  - Climate adaption and risk
  - Risk of willows being marginalised
- Convert research findings into:
  - Factsheets
  - Case studies
  - Practical guidelines
- Fully integrate:
  - Cultivar factsheets
  - Decision support tools
  - Identification key
- Have clear measurable outcomes such as hectares planted, sediment avoided, asset protection benefits.
- National nursery standard adopted
- Develop exemplar case studies and promotional role of Ambassadors to enable peer-to-peer storytelling
- Support end-users with decision support applications that enable better monitoring and understanding of use.
- Continue the delivery of training to end-users.

2036 Outcomes

- Strong integration with policy and funding tools
- Lead innovation in climate resilient bioengineering systems.
- NZPWRT is an authoritative national source of information
- Improved adoption and confidence

Delivery Framework: From Evidence to Impact

To ensure focus and deliverability, NZPWRT will

- Use the gap matrix to select a limited number of high priority actions for each 3-year work programme
- Review and update priorities at the end of each block
- Align research, breeding, extension and website development within each block.

By explicitly linking research evidence, identified gaps and delivery pathways, this Strategy provides a clear, staged plan for how NZPWRT will protect institutional knowledge, guide investment, and increase adoption over the next decade.

NZPWRT Knowledge and Delivery Gap Matrix

Extension and Research priorities	Need more info?	Info need compiling?	Level of importance	Score	Comment
Biodiversity and ecosystem services	3	5	3	11	Quantified benefits, integration
Farmer attitudes and adoption	3	5	3	11	Synthesis of barriers, drivers, or behaviour insights
Timber, wood products and end of life	3	3	3	9	Farm system integration and end of life
Climate Change and resilience	1	4	3	8	Practical guidance on drought establishment, survival and risk
River bioengineering	1	4	3	8	Good practice guide, natives, positioning
Poplar and willow breeding - purpose and trade offs	1	5	2	8	Prioritisation of traits, expectations
Bioremediation and bioenergy	1	5	2	8	Link to future land-use or bioeconomy
Monitoring, auditing and impact data	1	5	2	8	National narrative around effectiveness, survival and uptake
Fodder, animal welfare and pasture	2	3	2	7	Cultivar comparison, benefits in farm system
Poplars, Willows and Natives	2	3	2	7	Mixed system guidance, nurse-crops and co-benefits
Erosion Control - Hill Country	1	3	2	6	Single authorative guide, build ETS profile, improve visuals
Root structure and function	1	3	2	6	Build translation from science to practitioner
Willows - strategic role	1	4	1	6	Under-represented - investment and purpose
Nursery management and pole production	1	2	2	5	Build knowledge
Disease and pests	1	2	1	4	Forward focus

NOTE: 5=high and 1=low

KPI and Reporting Framework

Pillar	Key Performance Indicators (KPIs)	Reporting Line	Reporting Frequency
Research & Evidence	• Priority research gaps addressed (per Gap Matrix) • Research outputs delivered on time and scope • Research informing breeding or extension decisions	Technical Advisory Group → Board	Bi-Annual
Breeding & Genetics	• Breeding priorities aligned to Strategy • Number of cultivars with updated performance data • Pest/disease and climate traits assessed	Breeding Programme Lead → TAG → Board	Bi-Annual
Knowledge Transfer	• Priority factsheets/guides updated or created • Website content aligned to use-cases • Uptake of decision-support tools	General Manager → Board	3-monthly
Adoption & Impact	• Case studies developed • Survival and performance data collated • Evidence of adoption by Councils/farmers	General Manager → Board	3-monthly
Overall Strategy Delivery	• 3-year work programme delivered • Priorities reviewed and reset • Alignment across research, breeding and extension	Chair / Board	Annually

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Our Supporters

Northland Regional Council – Te Kaunihera ā rohe o Te Taitokerau
Auckland Council – Te Kaunihera o Tāmaki Makaurau
Greater Wellington – Te Pane Matua Taiao
Bay of Plenty Regional Council Toi Moana
Te Kaunihera o Te Tairāwhiti Gisborne District Council
Waikato Regional Council – Te Kaunihera ā Rohe o Waikato
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Environment Canterbury Regional Council – Kaunihera Taiao ki Waitaha
tasman district council – Te Kaunihera o te tai o Aorere
Taranaki Regional Council
environment Southland – Te Taiao Tonga

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