

Manaaki Whenua
Landcare Research

STATEMENT OF CORPORATE INTENT

2023–2028



He Kupu Whakamihi

Ki o tātou tini mate kua wheturangitia ki te pō, moe mai rā i te okiokinga roa. Ki a tātou e mahue mai nei ki te ao tūroa hei manaaki tonu, hei tiaki tonu i te whenua me ngā momo koiora kanorau katoa o runga, tēnā tātou katoa. Anei e whai ake nei te Tauākī Whakamaunga Atu a Manaaki Whenua mo ngā tau e haere ake nei (2023–2028).

To those who have gone before us and who now adorn the night sky as stars, we acknowledge you and trust you rest easily in the long sleep. To those of us who still reside here in the world of the living and who continue to nurture and care for the land and the many and varied life forms upon it, we acknowledge and greet you also. We present here the Statement of Corporate Intent for Manaaki Whenua for the years 2023–2028.

Cover: *Left* – Manaaki Whenua presentation at the STEMfest Rarotonga event, hosted by the Climate Change Cook Islands division. We engaged with over 1,700 students during the 3 days. *Centre* – researchers John Hunt and Phil Novis about to apply prepared treatments of snow algae to white snow in Canyon Creek, Southern Alps, to test their effects on albedo (reflectance) relative to the effect of bushfire dust from Australia. *Right* – researcher James McCarthy begins a disease assessment for *Austropuccinia psidii*, the fungus that causes myrtle rust, in a forest block in Egmont National Park.

Contents

Chair and CEO overview.....	1
Our national role.....	3
Our ambition and purpose.....	3
Te Āpōpōtanga (the future).....	3
Shareholding Ministers' priorities	6
Te Tiriti.....	7
Building capability for Māori researchers.....	7
Māori partnership	7
Impact.....	8
Supporting impact.....	8
Partnering for impact	9
Our focus on Aotearoa New Zealand's priorities	9
What we will deliver	10
Research for public good	14
Manaaki Whenua's public good research	14
Public good research infrastructure	15
Capability for the future.....	19
Building system agility	19
Valuing our people.....	19
Equity, diversity, and inclusion.....	20
New Zealand's Biological Heritage – NSC.....	21
Toitū Envirocare	22
Performance	24
External review and input	24
Corporate sustainability	24
Performance monitoring and reporting	25
Financial reporting	26
Group financial performance and position.....	26
Appendix 1: Additional financial indicators.....	28
Appendix 2: Business policies	29
Appendix 3: Other matters required by the Crown Research Institutes Act 1992.....	30
Glossary.....	31
Directory	32

Chair and CEO overview

This Statement of Corporate Intent (SCI) describes Manaaki Whenua's approach to creating value for Aotearoa New Zealand through its research, people, and partnerships. It describes how we align our intended research outcomes and organisational strategy with government strategies, in particular *Te Ara Paerangi – Future Pathways*, so we are well placed to align with future strategic shifts in Aotearoa New Zealand's research and innovation system. This SCI also indicates our financial position and expected performance over the period.

Te Ara Paerangi – Future Pathways

Manaaki Whenua's strategic direction and outlook align closely with all four of the main objectives of *Te Ara Paerangi – Future Pathways*.

Creating new futures: We develop research and impact pathways so that together with our partners we can deliver on four areas of science impact for Aotearoa New Zealand: restoring biodiversity and beating invasive species; enhancing land, water, and soils; acting against climate change; and achieving a positive relationship between people and their environment. Our understanding of these integrated, interconnected areas of impact is central to the mitigation of current and emerging environmental problems and will contribute significantly to new national research priorities.

Valuing our people: We aim to attract, develop, and retain exceptional talent, and, in particular, to nurture the next generation of scientists and early career researchers, including Māori and Pasifika scientists. We aim to provide for health, safety, and well-being, and for an equitable, diverse, and inclusive culture.

Building system agility: We are focused on developing an organisation that is agile, and whose people, processes, and systems are resilient and able to adapt to disruptive technological, social, and market innovations and change. We are developing a culture that supports our people through disruptive change, including digital disruption, to harness the power of these innovations. We are investing in the research competencies needed to support and navigate society through the same processes of change, and we continue to seek partnership with others, combining talents to deliver benefit to Aotearoa New Zealand.

Embedding the Treaty of Waitangi – Te Tiriti: Further extending our formal organisational commitment to Te Tiriti, made in 2021, we are: building our internal capability for Māori researchers, developing a strategic plan to connect hapū and iwi to the taonga we hold on their behalf in our collections and databases, actively investigating issues of data governance, and raising cultural competency across Manaaki Whenua's science and support staff.

Research for public good

Around 75% of our research activities can be defined as 'public good' research. We also curate, maintain, and develop nationally significant public good research infrastructure, including our databases and collections. Our long-term aspirations for these databases and collections are interwoven with our commitment to Te Tiriti. To achieve positive impact from our work, we work alongside Māori iwi as the Treaty partner, and with central and local government, business and industries, community groups, and the global research sector.

Toitū Envirocare

To address issues of increasing market demand and the urgent global need for a zero-carbon future, significant investment is being made in Toitū Envirocare's systems and processes, encompassing system simplification and automation, and extending Toitū Envirocare's reach through partner networks and digitisation.

National Science Challenges

Since 2014 Manaaki Whenua has been proud to host the New Zealand's Biological Heritage National Science Challenge (Bioheritage NSC), one of Aotearoa New Zealand's 11 National Science Challenges. We share

common goals with the Bioheritage NSC and seek to maximise the impact of our research through alignment with the Challenge and its extensive network of collaborating parties and Māori stakeholders.

We also contribute to five more National Science Challenges:

- Our Land and Water – Toitū te Whenua, Toiora te Wai
- Deep South Challenge – Te Kōmata o Te Tonga
- Resilience to Nature’s Challenges – Kia Manawaroa – Ngā Ākina o te Ao Tūroa
- Building Better Homes, Towns and Cities – Ko ngā wā Kāinga hei Whakamāhorahora
- Sustainable Seas – Ko ngā Moana Whakauka.

The National Science Challenges have been an important pathway for Manaaki Whenua to achieve our ambitions. The Challenges’ lifespan comes to an end in 2024, so we are now supporting them to embed tools, partnerships, and practices developed over the past decade to ensure the generation and maintenance of maximum impact from their work.

Financial outlook

Manaaki Whenua has a strong revenue pipeline, but in recent years Covid has affected our ability to recognise this revenue by causing delays in recruitment and fieldwork or travel. During the 2023/24 financial year, to manage this challenge and recognise more revenue while ensuring a sustainable margin, senior management will take the following actions:

- increase research FTEs
- reduce external costs (by maximising Manaaki Whenua staff time on projects)
- examine research delivery processes in detail, with a view to optimising them so that research staff can focus on research activity
- work with stakeholders to scope and price research contracts to ensure sustainable margins on delivered research.

Despite the strength of our revenue pipeline, our financial outlook is challenging for the foreseeable future. Issues include the ending of several large MBIE Endeavour research contracts, remuneration expectations across the public sector given restraints and inflation, SSIF contracts not being adjusted for inflation, and the ending of the National Science Challenge contracts in 2024.

To fill these potential gaps, senior management is exploring new opportunities. We are pursuing relationships and partnerships where our products are more solutions-focused in order to open up potential additional revenue streams, both with non-traditional (private sector) partners and in a more subscription-based model. This has worked well with the partnerships built around our S-map tool.

Working closely with MBIE officials, we will review the scope of work to be delivered within our three Strategic Science Investment Fund (SSIF) platforms, and ensure this research meets Aotearoa New Zealand priorities and is sustainable given the limited funding available in each SSIF platform.



Colin Dawson
Chair



James Stevenson-Wallace
Chief Executive

Our national role

Our ambition and purpose

Our ambition

Kia mauriora te whenua me tōna taiao (make the life-force and vitality of the land strong). This requires a positive, reciprocal relationship between people and their natural environment – between iwi Māori and their ancestral lands.

Our purpose

Agreed in 2010, our Statement of Core Purpose (SCP) is 'to drive innovation in New Zealand's management of terrestrial biodiversity and land resources to protect and enhance the terrestrial environment and grow New Zealand's prosperity'. Under the Crown's SCP for Manaaki Whenua, we are mandated to be the lead Crown Research Institute provider for:

- improving the measurement, management, and protection of Aotearoa New Zealand's terrestrial ecosystems and biodiversity, including those in the conservation estate
- achieving the sustainable use of land resources and their ecosystem services across catchments and sectors
- improving the measurement and mitigation of greenhouse gases in the terrestrial biosphere
- increasing the ability of Aotearoa New Zealand industries and organisations to develop within environmental limits and meet market and community requirements.

Te Āpōpōtanga (the future)

Te Āpōpōtanga outlines Manaaki Whenua's strategic priorities for the 5 years from 2022. It describes our approach to creating value and impact for Aotearoa New Zealand through our research, people, and partnerships.

Figure 1 illustrates our strategic research priorities, which are summarised in four research impact areas. Our impact areas are underpinned by 12 research outcomes that our research projects and programmes are working towards. Later in this document we share a summary of our research portfolio objectives, which are designed to contribute to these impacts and outcomes.

Te Āpōpōtanga also identifies three strategic pillars and associated initiatives that underpin our ability to deliver on our research priorities over the next 2-3 years. These include: 1) Weaving the principles of Te Tiriti into our fabric, 2) Driving research impact with our partners, and 3) Creating a sustainable environment for our people and our research to thrive. Figure 2 illustrates these pillars and our priority initiatives within each pillar for the next financial year.



OUR RESEARCH

Our ambition

KIA MAURIORA TE WHENUA ME TŌNA TAIAO

The life-force and vitality of the land are strong

Our four research impacts



People and environment



Restoring biodiversity, beating invasive species



Action on climate change



Enhancing our soils, water, and land

Our 12 research outcomes

Our research work is focused where these research impacts overlap.



1. Critical knowledge of the wealth, state, and trends in our biodiversity, soils, and lands informs natural resources decision-making



2. Hapū and iwi act confidently as kaitiaki of their whenua using science and mātauranga Māori



3. Māori land trusts and incorporations achieve their aspirations for their land



4. Ecological restoration is guided by knowledge of past and present ecosystems



5. Land use, soils, and erosion are managed to improve freshwater quality



6. Productive lands are regenerative at the landscape scale



7. Risk and harm from invasive organisms are mitigated



8. Biosecurity tools are available with social licence



9. Communities and regulators have adaptation pathways for climate change



10. Greenhouse gas emissions and removals are managed to mitigate climate change



11. Environmental decisions are underpinned by advanced geospatial information



12. National environmental outcomes are improved by integrating social practice theory, policy tools, and economics

Figure 1. *Te Āpōpōtanga*: Manaaki Whenua research impact areas and research outcomes.



OUR STRATEGY

Our ambition

KIA MAURIORA TE WHENUA ME TŌNA TAIAO

The life-force and vitality of the land are strong

Strategy 1.

Weave the principles of Te Tiriti into our fabric

The Treaty principles will guide Manaaki Whenua to a balanced state of partnership: in finding inspiration and value while engaging science and mātauranga; in influencing our strategic leadership towards equitable outcomes; and in growing both the number of Māori in the organisation and our networks among iwi and hapū.

Kia Māia

Developing our bi-cultural competencies to help honour our Te Tiriti commitment.

Te Tiriti Partnership

Working with Te Tiriti Partnership Group to define the future strategy for our biological collections & databases.

Strategy 2.

Drive research impact with our partners

Together with our partners we will prioritise Aotearoa New Zealand's needs from research [now and in the future] and develop strategic investment pathways. Research impact will be accelerated through user-centred developments. We will leverage data and digital technologies where they add value.

Research Outcomes

Ensuring that our 12 Research Outcomes have plans in place with aligned research and partnerships to deliver for Aotearoa New Zealand.

Mt Albert

Building a centre for biological security in partnership with Plant & Food Research.

Data & Digital Strategy

Leveraging data science & digital technology to increase research impact.

Strategy 3.

Create a sustainable environment for our research and people to thrive

We will ensure our people have the right environment and personal development in which to work to their greatest potential, so that Manaaki Whenua fulfils its national role and sustains and grows its national and global impact.

Mahi Tahī

Ensuring our people have the processes and systems they need to deliver high-impact research.

Future of Work

Helping our people to find the combination of environment, tools, and approaches to best achieve their daily goals.

Figure 2. Te Āpōpōtanga: Strategy pillars and initiatives.

Shareholding Ministers' priorities

Below are the priorities for Manaaki Whenua as expressed in the 2023 Letter of Expectations. This Statement of Corporate Intent shows how we intend to contribute to and address each of these expectations.

Te Ara Paerangi – Future Pathways

To ensure Manaaki Whenua is well placed to align with future strategic shifts in Aotearoa New Zealand's research and innovation system, we will contribute to each of the four main objectives of *Te Ara Paerangi – Future Pathways*:

- **creating new futures:** delivering science with impact for Aotearoa New Zealand and contributing significant expertise to new national research priorities
- **valuing our people:** to attract, develop and retain exceptional talent, in particular to nurture the next generation of scientists
- **building system agility:** through collective, system-wide approaches to planning and resource sharing
- **embedding Te Tiriti:** further building on our formal organisational commitment to Te Tiriti.

Te Tiriti

- Manaaki Whenua has made an important commitment to the principles of Te Tiriti and our plan of action to deliver on that commitment is now well underway.
- We are working to give effect to Te Tiriti O Waitangi obligations and expectations, and will contribute to the Tiriti Statement for the research, science, and innovation system.

Research, Science, and Innovation property portfolio

- Our contribution to research system performance improvements includes our involvement in the Mt Albert co-development project.

Financial resilience and sustainability

- We will work with MBIE to deliver a 10-year capital intentions and funding plan, and will work to refine and meet key performance objectives.

Environmental data

- Investment in digital transformation is key to the effective delivery of Tiriti obligations concerning our collections and databases. We also intend to invest to digitise Toitū Envirocare's activities.

We will continue to contribute to relevant government strategies and priorities; for example, through the underpinning contribution of robust data and expertise to national environmental policy formulation. We will deliver agile, timely, and collective responses to environmental issues that require multi-agency collaboration, as we did recently in response to the damage caused by Cyclone Gabrielle.

To be effective and ensure our science has wide-ranging impacts for Aotearoa New Zealand, it is crucial that we continue to strengthen our relationships with our Tiriti partners, with national and local government, with the primary sector, and with the general public, and collaborate with other national and international science organisations.

In the following sections we outline the actions we have planned to meet these expectations.

Te Tiriti

Building capability for Māori researchers

Kaihautū, kaitūhonohono, and Kia Māia

The kaihautū will continue to work with our research portfolio leaders to co-develop the 3-year Portfolio Strategies, Annual Portfolio Plans, and overall Strategic Science Investment Fund (SSIF) allocations. Portfolio leaders are required to work with kaihautū in keeping with the principle of increased Māori co-design and co-leadership of our research agenda, signalled in the Statement of Commitment to the Principles of Te Tiriti o Waitangi, signed by the Manaaki Whenua Board in June 2021.

Our newly appointed kaitūhonohono (connector) role will focus on reconnecting hapū and iwi to the physical collections and databases held by Manaaki Whenua that were collected or sampled from their rohe (traditional tribal territories). This appointment was in response to a specific recommendation of the Te Tiriti Partnership Group – Te Rōpū Rangapūtanga Tiriti, for Manaaki Whenua’s collections and databases. A key priority for the role will be to develop a hapū and iwi engagement plan to address the need for consistent protocols for how Manaaki Whenua engages with kaitiaki *before* going out and collecting, sampling or measuring.

Kia Māia is our bicultural competency learning and development platform, which offers a comprehensive range of modular learning opportunities to all staff, and includes basic introductory te reo Māori; a customised pepeha format for staff to introduce themselves in Māori; workshops on understanding Te Tiriti o Waitangi (provided by an external tangata Tiriti trainer); and ‘Being Manuhiri’ training, developed by our tangata Tiriti social researchers and designed specifically to assist Manaaki Whenua scientists to engage respectfully with our tangata whenua partners.

Māori partnership

Te Rōpū Rangapūtanga Tiriti mō ngā Kohinga, Raraunga hoki a Manaaki Whenua

Manaaki Whenua’s collections and databases Te Tiriti partnership group, Te Rōpū Rangapūtanga Tiriti, was established to oversee the implementation of a comprehensive strategic plan for our collections and databases, and to advise us on how best to connect hapū and iwi to the taonga we hold on their behalf as their Te Tiriti partner. A key message from the group is that, given our focus on the land environment (and the centrality of land to Māori culture and identity), Manaaki Whenua should seek informed consent from hapū and iwi for our research programmes prior to and during the early development phase. Work is now underway to develop protocols to achieve this.

Crown Research Institute standard policy on indigenous data governance

Manaaki Whenua is an active leader in a cross-CRI initiative seeking to establish standards for indigenous data governance, particularly in relation to the physical collections and place-based data that CRIs hold, and how we add to, access, and re-use those collections and data. We have also initiated a pilot in this area by adding ‘biocultural notices’ to the metadata for all our physical specimens. These notices alert the research community that there are indigenous rights and interests associated with the data, and that further discussion with relevant hapū and iwi interests may be necessary. A number of iwi have joined the initiative and attached non-exclusive, iwi-specific interest labels to the metadata for the specimens collected from their respective iwi rohe. We will continue to explore how to give indigenous communities greater control over indigenous data.

An important principle in the field of indigenous data governance is that of returning control over the collection, access, use and re-use of indigenous data back into the hands of indigenous communities for indigenous benefit. This is in keeping with the CARE philosophy promoted by the Global Indigenous Data Alliance, and is summarised in the principles of collective benefit, authority to control, responsibility, and ethical use of data. We will actively explore what this means for Manaaki Whenua as we seek to share control and decision-making responsibility over indigenous data with our Te Tiriti partners.

Impact

How we create impact

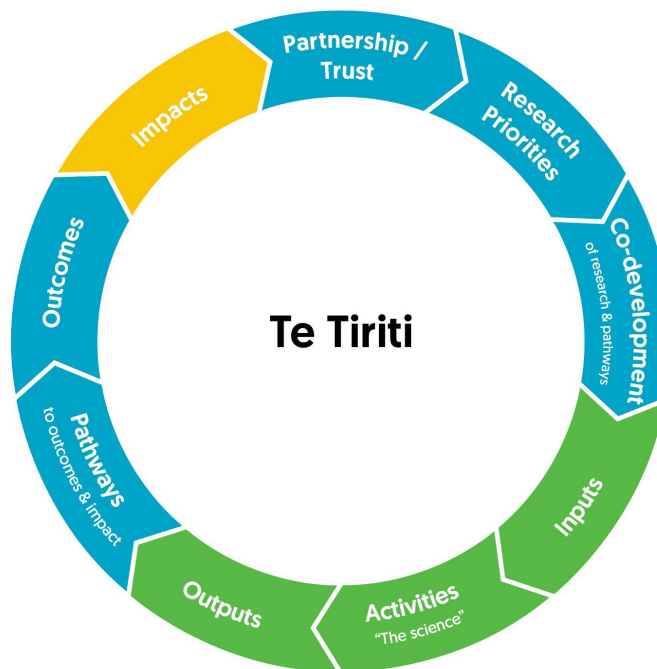


Figure 3. An overview of the impact creation cycle underpinning Manaaki Whenua's approach to supporting and increasing impact from the work we do. This figure outlines the activities and steps required if science and research are to have impact, and has been derived from research by the CRI collaborative group iPEN ([iPEN - Home](#)).

Supporting impact

At Manaaki Whenua we believe that a key part of successfully creating impact and benefit for Aotearoa New Zealand is strong relationships and trust. Through long-term relationships with key partners in the private and public sectors (e.g. hapū and iwi as our Te Tiriti partners, government, universities and other research providers, and industry), Manaaki Whenua has built an understanding of the real-world issues our partners face and how our research, services, and capability can help.

While science can have a reputation for focusing on inputs, activities, and outputs, Manaaki Whenua has a long history of doing more, driven by the passion our people have to make real-world change. We recognise our need to continue to strengthen our capability in all the activities outlined in Figure 1 and will continue to increase our efforts around co-development and delivery of research with our partners, ensuring the best pathways for implementing change are planned at the beginning. In 2023/24 we will accelerate this work and link it to the initiatives of *Te Ara Paerangi – Future Pathways* through:

- implementing our strategy, *Te Āpōpōtanga*, including weaving the principles of Te Tiriti into our fabric to better deliver impact with and for Māori
- leveraging our iPEN collaboration to enhance the capability of our people
- trialling new ways to invest in and support implementation pathways
- refreshing our engagement strategy
- strengthening our systems and processes to better support impact.

Partnering for impact

Both *Te Āpōpōtanga* and *Te Ara Paerangi – Future Pathways* emphasise the critical role of partnerships in creating impact. Partnerships with research users are important for Manaaki Whenua to be able to accurately define the need or problem that requires a solution. Our partners are increasingly becoming involved in the research process and play a key part in disseminating and ensuring the adoption of our research outputs. Ultimately, it is our partners – sometimes with help from Manaaki Whenua – who generate environmental, economic, cultural, and social impact. Other important partnerships are with:

- other Aotearoa New Zealand and international research providers, so we can access the right people and resources to deliver impact, which increasingly enables a system-wide perspective on collective engagement and strategic planning, and the sharing of assets and capability
- those focused on public good, in particular our partnerships with local government and central government. Manaaki Whenua puts significant effort into these enduring and long-term partnerships so we can best contribute to government strategies and priorities
- MBIE, so we can achieve the best outcomes from Aotearoa New Zealand’s R&D investment
- a range of private sector partners, including multi-agency primary sector initiatives such as He Waka E Noa and the NZ Agricultural Greenhouse Gas Research Centre.

Woven through all these relationships is our partnership with Māori, ensuring we incorporate the principles of Te Tiriti.

Having such a strong focus on public good means we look closely at what Manaaki Whenua needs to bring to a partnership, such as resourcing opportunities for our partners to engage in codesigning research where funding is not otherwise available for them to be involved. Where needed, we also provide additional services to support implementation pathways, such as maintaining a public website or helping with outcome adoption activities to ensure impact can be achieved.

In 2023/24 Manaaki Whenua will:

- strengthen our engagement strategy and planning to ensure we have the capacity and capability to develop and continue rich productive partnerships and provide value to Aotearoa New Zealand
- advance the cross-CRI regional sector alliance to provide greater impact through shared research programmes
- strengthen our relationships with the Department of Conservation, the Ministry for Primary Industries, and the Ministry for the Environment through specific project deliverables with MOUs
- advance specific MOU-based partnerships with the regional sector – Waikato, Taranaki, Southland, and Greater Wellington Regional Councils – to provide research that has impact and end-user uptake
- develop closer links with the primary sector and primary sector-focused CRIs to enable integrated solutions for the farming sector, such as provisioning for climate-smart landscapes
- review and renew Pacific Island Country partnerships, including those with regional agencies SPREPP, SPC, and SROS.

Our focus on Aotearoa New Zealand’s priorities

Aotearoa New Zealand and the wider world face a barrage of wicked environmental problems, as *Te Ara Paerangi – Future Pathways* makes clear. Manaaki Whenua’s wide-ranging and complementary research capabilities make us uniquely positioned to address and help to mitigate these matters of national priority. We respond to the environmental challenges of climate change and environmental degradation (including soil erosion and biodiversity loss), the effects of invasive species on Aotearoa New Zealand’s taonga species, and the complex social, cultural, and economic effects of all of these. Our science is summarised below.

Enhancing soils, water, and land

Soil health is central to our society’s well-being, and soils are being lost by erosion from productive lands at unsustainable rates. Soils hold more water than our rivers, lakes, and aquifers, and are the pathway for pollutants and sediments entering waterways. One of the greatest challenges facing regional and national

agencies, and the food and fibre sector, is managing land and water use to provide sustainable production while protecting downstream ecosystems and supporting diverse community and iwi values. Our work helps to understand soils, improve capability to manage the land-use effects, and build confidence to deploy mitigation approaches.

Restoring biodiversity, beating invasive species

Having evolved in isolation, much of Aotearoa New Zealand’s indigenous biodiversity is unique. Manaaki Whenua curates national and Pacific land biodiversity collections that include plants, invertebrates, fungi, and microorganisms. Our research helps improve understanding of the richness of Aotearoa New Zealand’s biodiversity and the risks to it from exotic species through clarifying how ecosystems function, the threats they face, and how they can be restored.

Action on climate change

Climate change is the major challenge of our generation and is of specific concern to Pacific Island nations. Over two decades we have redirected our research to focus on understanding Aotearoa New Zealand’s emissions balance, supporting mitigation, and enabling adaptation and resilience to climate change. Our research has supported Aotearoa New Zealand’s international emissions reporting, and has provided an understanding of carbon stocks in our indigenous forests and in the soil. We have designed and supported pathways for carbon sequestration and for businesses and communities to take meaningful climate action.

People and environment

Our social, cultural, and economic research capability builds understanding of people’s decision-making in matters related to the natural environment. The audience for results from this research is diverse – including central and local government, Māori organisations, primary industry, businesses, NGOs, and communities – because all parts of society affect natural resource management. Our research spans rural, conservation, and urban landscapes, and the full range of ecosystem services viewed from both Western science and indigenous knowledge systems. It supports improved natural resource decision-making in Aotearoa New Zealand and in the Pacific. This work is integrated with our work in all impact areas where people need improved tools for decision-making, policy, governance, regulation, planning, and strategy development.

What we will deliver

Here we outline how our research portfolios will deliver benefit to Aotearoa New Zealand over the next 5 years.

Biota

Our collections and databases, managed in line with the principles of Te Tiriti o Waitangi and indigenous data governance, are a national treasure underpinning research to understand and protect our unique biodiversity and biosecurity.

Critical issues

- The collections are not fully inventoried, which limits the value they can provide as part of protecting Aotearoa New Zealand’s biodiversity and the well-being of the land.
- Not all end-users can access the collections and databases, or easily use the information.

What we will deliver, 2024–2029	Benefits
<p>A waharoa (gateway) to the databases:</p> <ul style="list-style-type: none"> • information and data to Māori • collection and paper-based information digitised for easier access. <p>Improved care and curation of the collections and databases through comprehensive policy and procedure manuals.</p> <p>Increased documentation of, and information on, the biodiversity of Aotearoa New Zealand.</p>	<p>Partners, end-users, and kaitiaki are more aware of the information contained in the collections and databases. There is an increase in hāpu and iwi use through the waharoa.</p> <p>Regional and central government use critical knowledge of the wealth, state, and trends in our biodiversity to inform natural resource decision-making.</p>

Characterising Land Resources

To provide characterisation and modelling of Aotearoa New Zealand’s soil, land cover, land use, and terrain including state, trends, risks, and opportunities.

Critical issues

Our understanding of Aotearoa New Zealand’s soil, land cover, land use and terrain – its current state, trends, risks, and opportunities - is inadequate, leading to poor land-use decisions.

- Land environmental data inequalities hold back Māori community aspirations and affect the mauri of the whenua, and data are often at a scale that is difficult for all landowners to use.
- There is reduced effectiveness of policy implementation and monitoring for climate change adaptation, greenhouse gas accounting, freshwater quality, soil and food security, and land-use suitability.

What we will deliver, 2024–2029	Benefits
<p>Expanded and improved, fit-for-purpose, national geospatial data sets, for example:</p> <ul style="list-style-type: none"> • S-map and National Soil Data Repository • Highly Productive land, Land Use Capability, Land Fragmentation, Land Cover Database • historical wetland extent. <p>The data sets need to be:</p> <ul style="list-style-type: none"> • meaningfully framed for Māori and other key user groups • supported by experts and readily accessible via data and information delivery services • seamlessly integrated into tools, decision-making, and monitoring frameworks. 	<p>Māori have meaningful and readily available information and use it to make decisions that align with their aspirations.</p> <p>Regional and central government climate change, freshwater, land, and water policies are better formulated, monitored, and improved.</p> <p>Farmers and other land managers make land-use decisions and investments based on stronger evidence.</p> <p>Researchers can do research more efficiently and effectively, and can easily access associated specialist support.</p>

Climate Change Adaptation and Mitigation

To enable the creation of multifunctional landscapes in Aotearoa New Zealand and support synergistic climate change mitigation and adaptation that delivers a range of ecosystem services.

Critical issues

- Greenhouse gas (GHG) emissions are increasing and our climate is changing, affecting our ecosystems, infrastructure, communities, and economy, but New Zealanders lack an understanding of the cumulative effects of a changing climate.
- To adapt and respond to climate change we need practical, cost-effective solutions to help land stewards, ensure low-emission land use/products, decision-making that includes ecosystem and social/economic implications, and access for Māori to science that supports their aspirations to care for their environment.

What we will deliver, 2024–2029	Benefits
<p>Improved tools and knowledge, informed by mātauranga Māori, for developing policies, making decisions, and taking action to adapt to or mitigate the effects of climate change.</p> <p>Tools for our stakeholders and partners will include:</p> <ul style="list-style-type: none"> • maps and models of carbon storage in soils and vegetation • validated approaches for mitigating GHGs, nutrient loss, and building resilience to climate change, and web-based tools to explore climate change scenarios • climate-smart landscape templates to support multiple ecosystem services and adaptation to climate change. <p>Targeted work on peatlands for an updated GHG inventory, ways to reduce GHG emissions and subsidence from productive use, and restoration techniques for drained peatlands.</p>	<p>Regional and central government use our information and advice for national policy development, planning, and reporting processes.</p> <p>Primary producers have trusted information and clear options when deciding on how to engage with carbon markets or regulations.</p> <p>Māori landowners and other land stewards use our adaptation, mitigation, and transition tools and technologies.</p> <p>Kaitiaki use our modelling to understand tohu (environmental indicators) within a changing climate.</p>

Managing Land and Water

To enable kaitiaki and other stewards to better manage land natural capital and its impact on water.

Critical issues

- Landscapes are managed piecemeal without considering their interactions and complexities. This results in not knowing the contaminants present and their impacts, insufficient landscape resilience to a warming climate, and accelerated erosion, causing degraded freshwater quality.
- Highly productive land is taken for granted and not protected for the ecosystem services it provides.
- Aotearoa New Zealand's science and innovation are led by global perspectives that do not involve indigenous knowledge systems.

What we will deliver, 2024–2029	Benefits
<p>Issues framed in a way that supports mātauranga Māori.</p> <p>New geospatial data sets and model outputs to better inform land and water management at national, regional, and farm scales.</p> <p>Guidance to encourage effective decisions on managing soil security, erosion, rehabilitation, and contaminants.</p> <p>Better targeting of mitigation measures that increase land and water resilience to climate change.</p> <p>Identification of catchment source areas and the impacts of sediment, nutrients, and bacteria.</p>	<p>Te ao Māori and mātauranga inform soil, land use, and water management, which enables kaitiakitanga, improving human and environmental well-being.</p> <p>Regional and central government set policies and targeting strategies that better mitigate erosion, sediment, and contaminants, and address climate change adaptation.</p> <p>Consultants and farm managers use digital data to improve fertiliser and water-use efficiency.</p>

Plant Biodiversity and Biosecurity

To be the lead science provider to enable the restoration of Aotearoa New Zealand's plant-based ecosystems.

Critical issues

- Invasive weeds affect all ecosystems in Aotearoa New Zealand and are close to outnumbering the native flora.
- Māori need easier access to knowledge that will support their aspirations for their lands, as kaitiaki and for delivering cultural, environmental, and commercial outcomes for whānau and hapū.
- Reconstructing resilient ecosystems requires deep understanding of the mātauranga and science to achieve the best outcomes for managing rare and common taxa, and for understanding past assemblages and specialised/significant environments such as wetlands.

What we will deliver, 2024–2029	Benefits
<p>Tools and knowledge to help develop policies, make decisions, and take action to protect and restore Aotearoa New Zealand's plant-based ecosystems.</p> <p>Partner with hapū and iwi to:</p> <ul style="list-style-type: none"> • co-design restoration plans and explore ways native biota can help meet cultural and economic aspirations for their land • develop a framework from a kaupapa Māori perspective for weed biocontrol assessment projects. <p>Tools for our stakeholders and partners:</p> <ul style="list-style-type: none"> • a unified scheme for wetland extent and condition for councils to meet their commitments for the National Policy Statement for Freshwater Management • improved models using remote-sensed imagery for biodiversity monitoring of canopy species • an update of the Quaternary Vegetation of New Zealand, to provide national-scale layers of past vegetation communities at different historical time points • guidelines to better inform translocation/planting sources and provide resilience to climate change. 	<p>Ecosystem and species restoration is informed by the past, cutting-edge genomic information, and modelling of future states to produce resilient natural systems.</p> <p>Conservation action outcomes are understood, along with how they alter the state and trends of biodiversity at local and national scales.</p> <p>The effects of invasive plants can be mitigated, and we understand how to tip ecosystems from domination by weed species to native species.</p> <p>Kaitiaki are empowered to realise their aspirations and priorities for their taonga, including restoring cultural practice and providing economic opportunities.</p>

Society, Culture, and Policy

To improve natural resource and environmental decision-making in Aotearoa New Zealand, with Māori as Treaty partners in our science and implementation.

Critical issues

- Environmental condition is decreasing, indigenous biodiversity is declining (particularly in lowlands and agricultural land), and land managers face multiple environmental issues. Food security concerns and environmental and natural hazards are increasing.
- Policy development is challenging for most New Zealanders. The number of reforms can be overwhelming, policy responses are siloed, there are inconsistencies between different policies for resource management, and policy implementation is slow across all environmental domains.

What we will deliver, 2024–2029	Benefits
<p>Improved information on:</p> <ul style="list-style-type: none"> • attitudes, perceptions and behaviour toward the environment, disruptions, and responses over time • types and extent of vulnerabilities to disasters and natural hazards • effective governance/co-governance models and how to enable them. <p>Collaboration frameworks, engagement processes and tools to:</p> <ul style="list-style-type: none"> • bring together Māori and non-Māori world views, and assess the effectiveness of decisions based on multiple world views • better connect New Zealanders to the environment and connect environmental outcomes to well-being • guide implementation and assess policy and management decision impacts across multiple environmental issues • design policy instruments. 	<p>Industry and regional and central government use strategies and management that accounts for and addresses multiple environmental pressures and incorporates mātauranga Māori.</p> <p>Kaitiaki, hapū and iwi are empowered and co-governing their whenua.</p> <p>Education initiatives, natural resource agencies, and the primary sector empower New Zealanders to restore and protect the environment.</p> <p>Aotearoa New Zealand is prepared for change. Regional councils have plans to reduce exposure to environmental disruptions, and industry and iwi are able to implement resilience measures.</p> <p>The Asia-Pacific nations we work with have the tools and knowledge to manage their natural resources and improve climate change resilience.</p>

Wildlife Management and Conservation Ecology

To be the leading provider of research, tools, and technologies for controlling invasive predators and herbivores to support the regeneration of biological diversity and function, and cultural heritage.

Critical issues

- Māori values and perspectives are increasingly represented in policy, but knowledge and practices are often poorly implemented in management.
- Understanding all the factors affecting species recovery (e.g. mammalian predators, vegetation, pests, diseases, and how these interact with management) is essential to sustaining native species.

What we will deliver, 2024–2029	Benefits
<p>Understanding of bicultural approaches and customary practices, identifying Māori values and aspirations for ecosystem restoration, and creating a whata kōrero framework (Kaupapa Māori learning and knowledge transmission platform) to reconnect tangata whenua to place.</p> <p>Inform landscape-scale biodiversity management through forecasting introduced predator population dynamics in Aotearoa New Zealand forests, determining how pests use complex landscapes for improved eradication device deployment, and defining the role intermediate hosts play in transmitting toxoplasmosis and links to infections in livestock and native wildlife.</p> <p>We will:</p> <ul style="list-style-type: none"> • provide online tools to support cost-effective decisions in managing and eradicating invasive animal pests • develop new/improved toxins targeting stoats and rodents. 	<p>Māori are supported to express kaitiakitanga.</p> <p>Community groups have access to wildlife management best practice.</p> <p>Regional and central government strategies and policies are more effective in managing animal pests and supporting native biodiversity.</p> <p>Land-based industries are better able to predict and manage the impacts of animal pests and diseases.</p>

Research for public good

About 75% of all Manaaki Whenua research is what we would define as ‘public good’ research. This research compensates for market failures, whereby no part of the market is willing or able to fund a specific research need. Such public good research is required if Aotearoa New Zealand is to achieve its national research priorities across all three research horizons ([MBIE RSI Strategy – draft for consultation](#)).

In addition, all research in Aotearoa New Zealand relies on critical public good research infrastructure, including the scientific collections and databases that hold foundational data leveraged by a wide range of research questions. Other critical infrastructure is shared across the system, such as the National eScience Infrastructure (NeSI). Manaaki Whenua contributes to public good research infrastructure in several ways.

Manaaki Whenua’s public good research

Horizon 3: generating new ideas

Horizon 3, as defined in MBIE’s Research, Science, and Innovation (RSI) Strategy, identifies research that contributes to generating new ideas. Often referred to as foundational research, it is a critical part of ensuring that the Aotearoa New Zealand RSI system is ‘match-fit’ and ready to respond to and deliver on national research priorities. Such research is often investigator led.

At Manaaki Whenua, Horizon 3 research takes many forms and is funded through our three SSIF platforms and contestable funds such as MBIE Endeavour. Examples of foundational research include:

- research to develop and refine new scientific techniques that might be applied to a range of questions important to Aotearoa New Zealand (e.g. research on artificial intelligence, machine learning and deep learning that have a range of potential applications to research)
- exploratory research and analysis that help generate new ideas or avenues for investigation – such research is often a precursor to new research domains or larger research programmes
- research that identifies and characterises our environment, such as systematics or taxonomic research and soil characterisation – this research rarely has a direct application to a national science priority, but the identification and characterisation of our environment underpins all other environmental research, and such research regularly contributes to national collections and databases (discussed below).

Horizon 2: developing emerging ideas

Horizon 2 builds on the foundational research in Horizon 3. While some of the research done in this space can leverage commercial and contestable funding pathways, in our experience public good funding is often still needed for the pre-development of such projects and programmes. Funders are rarely prepared to support this pre-development activity.

Manaaki Whenua uses SSIF funding to support this research, and often succeeds in using it to develop projects that later become successful in winning contestable funding, such as the MBIE Endeavour programme, or funding from other Aotearoa New Zealand sources such as government departments and industry organisations. Following are some examples of the work we pursue in this space.

- *Developing new research programmes or projects:* in the coming year, we will support several emerging research ideas with SSIF, to develop to a stage where we can pursue other funding. Examples include developing novel paleoecology approaches (using ‘ancient’ DNA) to enable ecosystem conservation, and using DNA from faecal pellets to estimate deer (and other ungulate) populations and movements as a new tool for the Department of Conservation.
- *Delivering research critical to Aotearoa New Zealand that lacks sufficient market funding:* for example, our partnership with Predator Free Rakiura. Manaaki Whenua will match funding from Predator Free Rakiura with a contribution from SSIF to support the world’s largest island pest eradication programme.

Horizon 1: leveraging proven research ideas

MBIE defines Horizon 1 as the use of knowledge in public service delivery. At this applied end of research there is an expectation of more commercial interest in and support for research. While this can be the case, Manaaki Whenua still supports significant public good research within this horizon, using our SSIF funding to support knowledge application in several areas, including:

- environmental monitoring and state of environment reporting
- research contributing to policy development across government
- early-stage development of tools for industry and government (pre-commercialisation).

Public good research infrastructure

Collections and databases

Manaaki Whenua creates, maintains, curates, and builds on several important scientific collections and databases. The specimens and data held in these resources underpin land environment, biodiversity, biosecurity, and climate research at Manaaki Whenua and in other research institutes in Aotearoa New Zealand and internationally. They hold taonga and associated data important to Māori. They also directly support industry and government with decision-making. This includes supporting the Ministry for Primary Industries with its biosecurity response, and supporting regional councils and industry with land-use decision-making. These resources represent critical public good research infrastructure that needs to be maintained for the good of all New Zealanders.

Several of the collections and databases we curate were identified in 1992 as nationally significant. Manaaki Whenua is responsible for maintaining nearly one-third of Aotearoa New Zealand's Nationally Significant Collections and Databases (NSCDs). Figure 4 identifies the nine NSCDs managed by Manaaki Whenua, which are supported by a SSIF funding platform.

In addition, Manaaki Whenua has continued to develop important public good databases, which we support through contestable and commercial funding pathways for Aotearoa New Zealand. S-map – a national system that provides comprehensive, quantitative, national soil information to support sustainable development and scientific modelling – is one such example. S-map also feeds into other important tools, such as Overseer.

The NSCDs provide fundamental information about our environment, are a critical part of Aotearoa New Zealand's research infrastructure, and are central to protecting Aotearoa New Zealand's natural resources by:

- underpinning our biosecurity system, protecting valuable primary industry, tourism, and recreation sectors, and conservation efforts, by providing authoritative identification of new plants, insects, fungi or bacteria that may threaten the economy or the environment
- supporting Māori aspirations, contributing knowledge of taonga, and supporting kaitiakitanga in a rapidly changing world
- providing information that helps central and local government create evidence-based conservation, and land and water policy, and enabling climate change, freshwater, land, and other policies to be monitored, evaluated, and improved
- providing evidence for farmers and other land managers to make land-use decisions and investments
- enabling researchers to do better research, more efficiently, with access to specialist support
- supporting Aotearoa New Zealand's international citizenship, agreements, and obligations (e.g. environmental reporting).

To maximise benefit to Aotearoa New Zealand and ensure NSCDs' responsiveness to national priorities and needs, Manaaki Whenua regularly engages with stakeholders (e.g. through specialised internal and external advisory and steering groups).

NATIONALLY SIGNIFICANT DATABASES



National Soils Data Repository (NSDR)

5,900+ New Zealand soil profile descriptions, plus analytical data on their chemical, physical, and mineralogical characteristics. Includes the National Soils Archive, a reference collection of soil samples for the NSDR.

<https://viewer-nsdr.landcareresearch.co.nz/>

Land Resource Information Systems (LRIS)

Includes the New Zealand Land Resource Inventory (NZLRI), Land Use Capability (LUC), fundamental Soils Layer (FSL), and related datasets and materials. Presents general land characteristics and land evaluation information, plus a range of environmental, climatic, management and production attributes.

<http://Iris.scinfo.org.nz>

<https://ourenvironment.scinfo.org.nz/>

Ngā Rauropi Whakaoranga

2,400+ records on Māori names and cultural uses of New Zealand native plants, fungi, and algae.

<https://rauropiwhakaoranga.landcareresearch.co.nz>

National Vegetation Survey (NVS) Databank

A national repository of plot-based vegetation survey data from 121,000+ survey plots going back over 70 years. Covers Northland to Stewart Island, the Kermadec and Chatham Islands, and from coastal to forests to high alpine.

<http://nvs.landcareresearch.co.nz>

NATIONALLY SIGNIFICANT COLLECTIONS



Allan Herbarium (CHR)

New Zealand's national herbarium with 700,000+ specimens of New Zealand and South Pacific algae, lichens, liverworts, mosses, ferns, and seed plants.

www.landcareresearch.co.nz/allanherbarium

New Zealand Arthropod Collection (NZAC)

Largest collection of New Zealand insects and related arthropods with 7 million+ specimens. Includes the National Nematode Collection of New Zealand (NNCNZ).

www.landcareresearch.co.nz/nzac

New Zealand Fungarium (PDD)

Primary information source on New Zealand and Pacific fungi with 105,000+ dried fungal specimens, and voucher specimens documenting most plant diseases recorded in New Zealand.

www.landcareresearch.co.nz/pdd

International Collection of Microorganisms from Plants (ICMP)

One of three major international collections for plant and soil bacteria, with living cultures of 22,500+ strains of bacteria and fungi from plants and soil.

www.landcareresearch.co.nz/icmp

Te Kohinga Harakeke o Aotearoa (National New Zealand Flax Collection)

Living collection of *Phormium* species of cultural, economic, and historical interest.

www.landcareresearch.co.nz/harakeke

SIGNIFICANT DATABASES



S-map

A national system that provides comprehensive, quantitative soil information to support sustainable development and scientific modelling.

<https://smap.landcareresearch.co.nz>

<http://Iris.scinfo.org.nz>

Land Cover Database (LCDB)

A classification of land-cover change across New Zealand in a series of 5 snapshots dating back to 1996. Contains 33 mainland classes [35 including the Chatham Islands].

<http://Iris.scinfo.org.nz>

<https://Iris.scinfo.org.nz/layer/104400-lcdb-v50-land-cover-database-version-50-mainland-new-zealand/>

<https://vizbe.landcareresearch.co.nz/>

Figure 4. The Nationally Significant Collections and Databases (NSCDs) and significant databases curated by Manaaki Whenua. These hold important scientific and cultural information about the plants, invertebrates, fungi, bacteria, and soil and land resources in Aotearoa New Zealand.

The NSCDs have special significance for Māori, who have whanaunga (kinship) with the material in the collections. They are taonga (treasures) to Māori because they contain thousands of specimens of indigenous species, plus thousands of soil samples and associated data, and they are the physical aspect of whenua (land) in all its forms. They hold ancestral connections and are the root of tūrangawaewae (the place where one has the right to stand, place of belonging) and whakapapa (genealogy). To fulfil our commitment to the principles of Te Tiriti, we have formed Te Tiriti Partnership Group – Te Rōpū Rangapūtanga Tiriti, to help us establish a strategic work plan for the collections and databases and to identify priority actions.

The NSCDs are also internationally significant as a repository for specimens and voucher material of plants, fungi, bacteria, plant diseases, and terrestrial invertebrates for Pacific Island nations. As part of the international collections and databases network, Manaaki Whenua often loans objects internationally and supports overseas research of benefit to Aotearoa New Zealand and the world.

New approach to NSCD management

To provide a framework for Manaaki Whenua's SSIF Infrastructure Platform investment, we have recently agreed with MBIE on a set of principles that will be used to manage NSCDs in our care. The below principles represent long-term aspirations for the collections and databases, aiming to safeguard the core functions of NSCDs and enhance them to deliver greater value to Aotearoa New Zealand.

NSCDs will:

- uphold Te Tiriti
- deliver benefits to Aotearoa New Zealand
- provide for long-term strategic priorities while being responsive to more immediate needs.

NSCDs are:

- well curated, reliable sources of information that are secure from risks
- accessible and usable
- nationally and internationally collaborative and connected
- underpinned by the critical capability to deliver on these principles.

Achieving these principles is a journey for Manaaki Whenua, with many questions and issues yet to be addressed, such as those associated with indigenous data governance. Our ability to deliver on these principles will take more funding than is currently available, but we will make every effort to deliver on their intent.

Guided by the Te Tiriti Partnership Group – Te Rōpū Rangapūtanga Tiriti, our strategy to deliver on the above principles during 2023/24 includes:

- supporting our Treaty commitment, engaging with kaitiaki, and providing resources to help with knowledge transfer from Manaaki Whenua to hapū and iwi
- developing a compelling story for the collections and databases
- implementing more integrated management practices for all the collections and databases, including reviewing and unifying collections policies and risk management
- accelerating digitisation.

National research infrastructure

Research infrastructure includes a wide array of equipment and property, ranging from the relatively small to significant national investments. Manaaki Whenua does, and will continue to, invest in critical equipment to enable leading land environment and biodiversity research. Critical investments for the coming year include:

- an expansion of our Invertebrate Containment Facility, which supports critical public good research on weed biocontrol agents, among other research priorities
- purchasing additional Isilon storage capacity for complex data that need to be accessed regularly

- the addition of an evaporative light-scattering detector to our high-performance liquid chromatography machine to enable the analysis of sugars in nectar
- radio telemetry loggers to track bird movements in urban environments.

Manaaki Whenua supports aligning investment on larger infrastructure across institutes within the RSI system.

In the coming year we will contribute to the next capital investment round for the National eScience Infrastructure (NeSI) facilities. NeSI supplies high-performance computing (supercomputer) and data storage facilities to research projects and institutes across Aotearoa New Zealand. This next round of investment will help pave the way for the development of a Data and Digital Research Institute for New Zealand, as recommended in MBIE's eScience Infrastructure Review report.

We will also partner with Plant & Food Research, ESR, and the Ministry for Primary Industries on a new research building on Plant & Food Research's Mt Albert science campus. This facility will support researchers from Plant & Food Research and Manaaki Whenua who work on biosecurity and biodiversity issues, and will host several nationally significant collections: the New Zealand Fungarium, the New Zealand Arthropod Collection, and the International Collection of Microorganisms from Plants.

Capability for the future

Building system agility

Research, science, and innovation property portfolio

Consistent with building long-term financial resilience and sustainability, Manaaki Whenua will continue to invest in our infrastructure, where appropriate, while constantly challenging itself on co-location opportunities. Two tangible examples of this strategy crystallising are the planned extension of the Insect Quarantine Facility at our Lincoln site and the proposed co-location of a new research hub with Plant & Food Research at Mt Albert (see below).

Manaaki Whenua is committed to ensuring our property portfolio is fit-for-purpose, right-sized, safe, and an engaging place to work. We continue to support MBIE in creating an all-of-CRI 10-year capital intentions and funding plan.

Mt Albert

We are in the early planning stages of pooling resources and research capabilities with Plant & Food Research at the Mt Albert site, where we intend to build a new research hub to address increasingly complex biological security threats, in support of all Aotearoa New Zealand, including mana whenua and the Pacific region. This hub will match research readiness preparation (for incursions and biodiversity protection) with the response regulatory function of the Ministry for Primary Industries. Biological collections and research on organisms will be combined with expertise in novel foods to accelerate innovation in novel products from Aotearoa New Zealand's biota.

All of this will be achieved in partnership with mana whenua to ensure indigenous data governance and novel revenue sources for the indigenous owners. The combination of skills from both research organisations will remove the artificial barrier between managed and natural landscapes.

Valuing our people

Workforce and the future of work

Manaaki Whenua's People and Culture Strategy has an aspiration to attract and retain exceptional talent. As of 31 December 2022 Manaaki Whenua employed 418 staff, and Toitū Envirocare 83. Over the past 12 months we have recruited an additional 85 employees at Manaaki Whenua, including new staff in roles historically hard to fill, such as economists, data scientists, and kairangahau Māori. Fifty-two new employees were employed by Toitū Envirocare.

Covid has rapidly reshaped expectations and accelerated practices relating to work. Having embraced these drivers and the changing needs of our people, adapting to global trends in relation to how work is undertaken at Manaaki Whenua is a priority under the third pillar in our strategy *Te Āpōpōtanga* – creating a sustainable environment for our research and people to thrive. We expect the following to be enduring changes:

- a flexible approach to remote ways of working, which involves continuing to reduce our travel carbon footprint, and efficient use of our physical assets
- an increased use of virtual communication to add value for our partners, including convening stakeholder groups.

Attract, develop, and retain talented people

Manaaki Whenua is committed to supporting early career researchers through line management by a capability leader (rather than just project leaders) and support to attend conferences and other professional development. We have appointed co-leads for our Early Career Group, which includes non-researchers, who

are affiliated with the CRI Early Career network. Many of our early career researchers now align with this group. We are developing mentoring connections between early career researchers and principal researchers, to share knowledge and experience in aspects of research including ideas pitching and bid development.

Building capability within Manaaki Whenua

Manaaki Whenua is committed to developing the capability of our people. Every staff member has access to at least 3 days a year of professional development. Continuing from last year, our focus for 2023 will be on leadership development. We have partnered with the New Zealand Institute of Management and Leadership and have nine staff members attending their Emerging Leaders Programme in 2023. We are running this programme in-house and have extended the invitation to identified emerging leaders at other CRIs. Two programmes specifically designed for Manaaki Whenua, which were piloted in 2022, will be run twice during 2023 to ensure all our people leaders attend.

Manaaki Whenua runs an annual talent and succession process for all our staff, which includes a capability review for our science staff. The outputs of these processes inform focus areas for career development.

Equity, diversity, and inclusion

Building a diverse and inclusive work culture

A key facet of our culture is embracing diversity. This recognises that complex (or wicked) problems, such as climate change, will only be solved if we can bring together a diversity of thought, experience, values, perspectives, and skills. To help us navigate this journey we utilise the knowledge and experience within our internal Diversity and Inclusion working group. The group annually reviews its priorities and focuses on a wide range of diversity issues, including building bicultural capability among staff through Māori-language training, recognising and celebrating neurodiversity, and introducing staff training on unconscious bias.

Our challenge has been to lift the proportion of Māori and Pasifika staff to better represent national demographics. At the end of 2021 we supported a new approach to our intern programme, with four Māori and two Pasifika interns. This has helped to build future pathways into the organisation, with two of these Māori interns now employees at Manaaki Whenua. Last year we grew the intern programme, Poipoiā Kia Rere, with nine Māori interns working with us over the summer period. We will continue to grow our intern programme, with a focus on our under-represented demographic groups.

Manaaki Whenua produces an annual Gender and Ethnic Pay Gap report, which includes an action plan to support a reduction in the pay gap. This analysis shows that our concern is not pay equity (horizontal pay gaps for a similar role) but continues to highlight the lack of women in senior positions at Manaaki Whenua as the main driver of our vertical pay gap. Our focus will be on ensuring the activity in our action plan is achieved and that we follow the recommendations and best practice outlined in *Kia Toipoto*, the Public Service Pay Gaps Action Plan 2021–24.

New Zealand's Biological Heritage – NSC

The mission of the New Zealand's Biological Heritage National Science Challenge, Ngā Koiora Tuku Iho (BioHeritage NSC), is to reverse the decline of our biological heritage by protecting and managing biodiversity, improving biosecurity, and enhancing resilience to harmful organisms.

The BioHeritage NSC works collectively across the science system to stimulate and accelerate progress towards achieving this mission, creating impact in three interlinked areas:

1. **whakamana/empower:** New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it
2. **tiaki/protect:** Aotearoa New Zealand's biosecurity system is world class, securing biological heritage in the face of current and future biotic threats
3. **whakahou/restore:** Aotearoa New Zealand's natural and production systems are resilient and thriving.

The BioHeritage NSC, hosted by Manaaki Whenua, comprises 18 formal collaborating Challenge Parties, along with a network of communities and partners spanning the research and innovation sector, communities, non-government organisations, business, industry, and the public.

With \$37.8 million in National Science Challenge funding and an additional \$33.4 million for kauri dieback and myrtle rust research through the MBIE-funded programme Ngā Rākau Taketake, the BioHeritage NSC is creating enduring impact and benefits by:

- working to **eliminate legacy threats** (wasps, kauri dieback, mammal predators)
- **better predicting and managing emerging threats** (e.g. myrtle rust, brown marmorated stink bug)
- increasing ecosystem resilience **to global environmental changes**
- building capability and capacity to make **strategic, long-term, impact-oriented progress** in biodiversity and biosecurity
- **giving effect to Te Tiriti o Waitangi** through partnerships, equal decision-making in investments, and fostering a culture that recognises and values mātauranga Māori
- **creating and deploying novel tools, technologies, and strategies** for the control and eradication of biotic threats
- **developing new models of Tiriti-based governance** across Aotearoa New Zealand to support conservation transformation.

Manaaki Whenua supports and works closely with the BioHeritage NSC to deliver its research strategy and mission through key roles on the leadership team, general management, and administration, along with researchers and strategic alignment of our SSIF and other investments. We share the BioHeritage commitment to new ways of doing and approaching science, generating new knowledge and tools, and operating within a Te Tiriti o Waitangi-led model. This is critical to building impact and, ultimately, to reversing the decline of our biological heritage. Manaaki Whenua has embraced many of the Tiriti-led practices of the Challenge, such as co-development of research with senior internal researchers (kaihautū) and co-leadership of research programmes with mana whenua based in the relevant rohe.

National Science Challenge funding ends on 30 June 2024. By then we will have empowered communities to take action; created new knowledge and innovations to inform strategies and responses to protect our taonga; and developed the enduring partnerships and practice needed to restore our environments for future generations. Manaaki Whenua is supporting the Challenge to find the best places for permanent hosting of Challenge tools, partnerships, and practices to ensure maximum impact.

This will ensure Aotearoa New Zealand has new knowledge, tools, and expertise to transform the way we safeguard our primary production-based economy, our native flora and fauna, and our unique environments into the future (<https://bioheritage.nz/>).

Toitū Envirocare

Context

Toitū Envirocare's rapid growth reflects the sustained focus on climate action and disclosure globally. Recent climate-related events here have further strengthened the call for urgent action on carbon reduction in Aotearoa New Zealand.

While our programmes are implemented globally, our focus is Aotearoa New Zealand businesses, and our collective action seeks to protect the ecological and economic future of our country by helping organisations reduce their environmental impact.

Recent attendance at COP 27 confirmed that Toitū Envirocare's programmes align with current global best practice, and we continue to collaborate with leading global organisations to ensure we maintain our science and standards-based approach to reducing climate impact.

As at March 2023 Toitū Envirocare has a total global customer base of over 850 business enterprises (which includes 574 in our carbon programmes and 250 to whom we provide advisory, training, and education services). Toitū Envirocare's primary focus is emission reductions, with over 8.4 million tonnes of carbon emissions reduced since 2001 and over 265 million tonnes of CO₂ measured over the same time frame. Organisations who have been Toitū Envirocare members for at least 5 years have reduced their CO₂ emissions by 38%, on average, since joining our programmes.

We are closely monitoring and participating in the development of requirements for mandatory climate-related disclosures for large publicly listed Aotearoa New Zealand companies. This is to ensure the requirements align with relevant international standards, and assurance is not limited to financial accounting firms, while still giving due consideration of the required skill set to give assurance over these disclosures. Toitū Envirocare's internationally recognised accreditation status and expertise have made us a key participant in this process, and our expertise has been recognised by key bodies, including the External Reporting Board (XRB). Our programmes are being reviewed to align with reporting requirements for mandatory climate-related disclosures.

Significantly reducing emissions will take time. To support a rapid and just transition to net carbon zero, organisations can offset any remaining or unavoidable emissions through verified carbon credits. Toitū Envirocare provides a range of carbon credits that meet very strict assessment criteria developed to incorporate a range of international regulations, recognised standards, and the best practice principles of the [International Carbon Reduction and Offset Alliance \(ICROA\)](#), of which Toitū Envirocare is a member. In the most recent measurement year, 466.5 thousand tonnes of CO₂ were offset, with Aotearoa New Zealand-sourced credits accounting for 8% of these credits and 92% sourced from offshore.

In the current financial year Toitū Envirocare expects revenue to grow 40% (\$4.9 million). The outlook for growth across the next 5 years looks strong, with the 2023/24 financial year growth expected to be around 25%, or \$4.1 million. We are forecasting an average growth of 25% across the next 5 years. To support this growth and allow our products to have greater accessibility across the small to medium business market, Toitū Envirocare is investing in partnership arrangements and a suite of digital products (see below under 'Intent' for more detail). The company is investing its profits and cash flow into funding these investments.

Intent

Toitū Envirocare's purpose and intent is to catalyse action for a zero-carbon future and enable Aotearoa New Zealand to achieve net zero by 2050, at the latest. Our vision to achieve this is for every organisation in Aotearoa New Zealand, public and private, to know their carbon emissions, have an ambitious plan to reduce them, and be aggressively executing that plan. Toitū Envirocare's vision and goals fully support and align with the Climate Change Response Act 2002, a framework to enable Aotearoa New Zealand's obligations under the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement. Toitū Envirocare contributes action to the Climate Change Response (Zero Carbon) Amendment Act 2019, which

states Aotearoa New Zealand's intention to be carbon neutral by 2050. We assist organisations to prepare for the Emissions Reduction Plan and the upcoming emissions budgets, which establish the plans for Aotearoa New Zealand to reach its 2030 and 2050 emissions reduction targets.

A recent strategic review of the business concluded that the market requires Toitū Envirocare to evolve its business model and associated capabilities and resources to enable us to more effectively interact with, and service, the needs of the market and clients to achieve our purpose of a net-zero carbon future. There is urgency in our work: the IPCC report issued in August 2021 was described by the UN as a 'code red for humanity', and subsequent reports in 2022 and 2023 underscore the urgency of taking more ambitious action. The Government has committed to 2050 targets in line with the Paris Agreement, creating an opportunity to leverage Toitū Envirocare's assets and capability built up over 20-plus years under Manaaki Whenua's custodianship, and make a real impact in reducing carbon emissions for Aotearoa New Zealand.

While exceptionally well placed, Toitū Envirocare faces challenges in fulfilling its role. The following strategic issues have affected our ability to contribute in the fullest manner.

- The climate action ecosystem lacks sufficient stewardship of climate action to address the need for urgency, consistency, and accessibility.
- Market demand is leading to a proliferation of solutions that deliver inconsistent outcomes and inertia in the climate action ecosystem.
- The existing Toitū Envirocare platform (systems and processes) lacks critical features to support the strategic objectives, scale, access, and use by organisations beyond Toitū Envirocare.
- Demand on Toitū Envirocare is increasingly leading to internal inefficiencies that will result in an inability to deliver the outcomes Aotearoa New Zealand requires.

To address these problems, Toitū Envirocare is investing up to \$18.5 million over the next 3 years on three key workstreams:

1. **simplify and automate** – to ensure our systems, processes and core business functions are more efficient, and ultimately improve our customers' experience
2. **extend reach through partner networks** – working with others in the sustainability sector to share data, train and accredit their people, and work collaboratively to drive momentum and manage quality
3. **digitise the business** – to enable us to provide sustainability services and solutions, more effectively, more efficiently, and at greater scale to all Aotearoa New Zealand businesses.

This investment will:

- enable a climate action ecosystem across Aotearoa New Zealand that will solidify and accelerate the achievement of carbon zero targets by providing enabling platforms, coordination of activity, and integration of information for benchmarking and measuring outcomes
- ensure that organisations and individuals can readily and easily access a functional, compliant, easy-to-use, and accurate system for measuring carbon emissions
- enable consistent analysis and decision-making within the business community through better information, consistent processes and systems, and activity coordination
- ensure internal efficiencies across processes and systems so that Toitū Envirocare can deliver high-quality programmes and advice to clients
- ensure seamless integration with other systems, internal and external, with the flexibility to evolve with the ecosystem's needs, for participants to improve and continually meet ongoing climate objectives
- enable continued recognition of Toitū Envirocare as the gold standard provider of sustainability services and solutions, so we can anticipate and meet market and customer needs with credibility and impact.

Performance

External review and input

Science and Outcome Advisory Panels

In 2022/23 we started implementing the recommendations from our review of how we can deliver greater value from our Nationally Significant Collections and Databases. We established the Te Tiriti Partnership Group – Te Rōpū Rangapūtanga Tiriti, comprising key Māori representatives and representatives from the Ministry for Primary Industries, the Department of Conservation, and the Museum of New Zealand Te Papa Tongarewa to determine how to implement the recommendations from the review and prioritise the key actions.

In 2023/24 we will review the excellence of our research over the past 4 years relating to biodiversity and biosecurity. This will involve constituting a new **Science Advisory Panel (SAP)** to ensure we have the correct breadth and depth of expertise needed. The SAP will be co-chaired and will include members from overseas. We aim to have the review completed by early December 2023, when the SAP report and recommendations will be presented to the Manaaki Whenua Board. In 2024/25 we anticipate undertaking a similar review of science excellence for our soils, land use, and climate change research.

We continue to draw on the **Outcome Advisory Panel (OAP)** to understand current and future stakeholder needs, how we are delivering on information required, and, importantly, what organisational challenges are being faced that may have an impact on the delivery of information. The OAP make-up reflects current drivers and the direction of *Te Āpōpōtanga*, with representation from central and local government, industry, and Māori agribusiness.

The OAP continues to provide valuable feedback on a twice-yearly basis for formal workshops, enabling our Board to hear feedback from the sectors represented by the OAP members. For next year the focus will continue to be engaging the OAP on Manaaki Whenua's strategic direction and how we are creating impact. This process for the coming year will be shaped in the April 2023 meeting, where discussions on strategic impact goals and focus will be explored.

Corporate sustainability

Our contribution to Aotearoa New Zealand's future is underpinned by a sustainable business model that balances social, economic, and environmental impacts. As a Crown Research Institute, we are expected to be self-sufficient and financially sustainable, and with the permission of our shareholding Ministers, our surplus is reinvested in our science and infrastructure.

Sustainable procurement

As a Crown Research Institute, we access several All of Government (AoG) and syndicated contracts. Several of these have sustainable procurement practices built in, as required by the Government's broad outcomes. Our own Procurement Policy notes we 'Require sustainably produced goods and services wherever possible having regard to economic, environmental and social impacts over their life cycle'. We work to ISO 20400 standards for sustainable procurement.

Taking action to combat climate change

Given our focus on the sustainable use of natural resources, it is especially important that we manage our operational activities to minimise any adverse impacts on the environment and our communities. The scope of these activities includes moving our car fleet to electric vehicles, sustainable travel procurement and making progress towards sustainable energy use in our buildings. We have been certified to the ISO 14001 standard since 1998, maintaining systems to document and manage our environmental impacts. We have been certified carbon-neutral since 2011, measuring and managing our greenhouse gas emissions and paying to offset those emissions we cannot eliminate. We will continue to maintain carbonzero certification through our subsidiary, Toitū Envirocare, which purchases certified carbon credits on our behalf.

Performance monitoring and reporting

Non-financial performance indicators

Indicator	Measure	2021/22 actual	2022/23 forecast	2023/24 target
End-user collaboration	Revenue per FTE from commercial sources (\$000s) ^{a, b, c}	\$68.9	\$75	>\$70
Research collaboration ^{a, b}	Percentage of papers co-authored (total) ^c	90%	92%	85–90%
	Co-authored with other Aotearoa New Zealand organisations ^d	33%	32%	25–30%
	Overseas co-authors ^d	37%	41%	30–35%
	Both Aotearoa New Zealand and overseas co-authors	20%	19%	20–25%
Technology and knowledge exchange	Commercial reports per scientist FTE ^a	0.68	0.71	0.75–0.85
	Availability of data from our SSIF-funded databases, collections, and information systems (assessed by a variety of metrics appropriate to each; metrics online)	Increasing trends Refer to annual reports for detail		
	Response rate for requests to our SSIF-funded biological collections and associated infrastructure (specimen transactions, identifications, visits)	95%	95%	>95%
	New and improved products, processes, and services ^d	42	45	>35
	Presentations to stakeholders and community groups ^c	147	125	120
Science quality	Impact of scientific publications (mean journal citation score) ^{a, b, d}	5.2	5.0	3.5–4.5
Financial indicator	Revenue per FTE (\$000s) ^a	225.4	240	\$240
Stakeholder engagement and feedback	Percentage of relevant end-users who have adopted knowledge and/or technology from Manaaki Whenua ^{e, f, g}	64%	65%	>65%
	Percentage of relevant funding partners and other end-users that have a high level of satisfaction in our ability to set research priorities ^{e, f, g}	48%	60%	>60%
	Percentage of stakeholders involved in a specific research team/partnership that have a high level of confidence in our ability to form the best team for the collaboration we are involved in ^{e, f, g}	58%	65%	>65%
	Staff invited to participate in stakeholder meetings or workshops ^c	112	128	130
Vision Mātauranga	Number of positive strategic partnerships with iwi and Māori organisations in which we link science and mātauranga, and address Māori goals and aspirations ^{b, d}	169	142	>100
Commercialisation	Number of new and existing licensing deals involving Manaaki Whenua-derived IP (including technologies, products, and services)	25	30	20–25
High-performance culture	Staff engagement in survey evaluations	76%	80	>80%
	Staff retention rate	90%	90	>90%

^a Generic indicators required by MBIE across all CRIs are at the Manaaki Whenua Group level; the rest are at Parent level.

^b Common with or related to SSIF Programmes Investment Contract key performance indicator(s).

^c Target increased from previous year.

^d Considered for increased target, but not supported by long-term trend analysis.

^e Based on an internally run stakeholder survey administered biennially.

^f Does not include survey respondents who were unsure.

^g Those who scored 8, 9, or 10 on a 0–10 scale.

Financial reporting

Group financial performance and position

For the financial year ending 30 June	2022/23		2023/24	2024/25	2025/26	2026/27	2027/28
	Target	Forecast	Target	Target	Target	Target	Target
Revenue	\$115,624	\$116,205	\$127,585	\$121,704	\$135,003	\$141,241	\$146,423
EBIT ¹	\$(799)	\$(1,091)	\$(2,735)	\$(1,575)	\$4,693	\$8,878	\$13,000
NPAT ²	\$(199)	\$91	\$(88)	\$652	\$5,133	\$8,140	\$11,056
Total assets	\$110,669	\$118,660	\$110,397	\$114,566	\$117,954	\$121,820	\$125,819
Capital expenditure	\$7,041	\$4,407	\$5,904	\$9,006	\$6,520	\$5,457	\$5,621
Dividend	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil
Equity ratio ³	45.8%	47.0%	46.8%	45.6%	47.6%	50.5%	53.9%
Gearing ⁴	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil

Explanatory notes to table:

All dollars in 000s

¹ EBIT: earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure.

² NPAT: net profit after tax.

³ Equity ratio: average shareholders' funds ÷ average total assets.

⁴ Gearing: interest-bearing debt ÷ interest-bearing debt + shareholders' funds, expressed as a percentage.

In 2023/24 Manaaki Whenua's revenue is budgeted at \$127.6 million, up by \$11.4 million compared with the 2022/23 forecast. This reflects the following:

- Increased revenue is due to research programmes gaining momentum following Covid delays that impacted prior years. Momentum was possible due to significant easing of capacity issues through recruitment, and contracted activities such as field work and travel taking place. Toitū Envirocare activity is estimated to increase, reflecting market conditions.
- SSIF funding remains constant and is not adjusted for inflation. To ensure this funding is sustainable, Manaaki Whenua will work with MBIE to ensure the scope of research to be delivered is aligned to Aotearoa New Zealand priorities.
- Research contracts are fully costed and competitively priced to ensure sustainable margins.
- As several MBIE Endeavour research investments come to an end, Manaaki Whenua is focusing on securing commercial partnerships with local government and the private sector, and exploring new industries where we can make an impact.
- The Manaaki Whenua Board is presently considering strategic investment in Toitū Envirocare to realise its full potential to help Aotearoa New Zealand meet its zero carbon goals.

Return on equity (Appendix 1)

Manaaki Whenua must continue to be flexible in responding to changes in the external environment and pursuing strategic opportunities. In determining a rate of return to shareholders, we use the following principles.

- The rate of return on equity (RoE) needs to ensure the financial sustainability of the organisation.

- The Board may propose a lower RoE to support the databases and collections and strategic investments that will enhance science, provide benefit to Aotearoa New Zealand, and underpin future value, including from Toitū Envirocare.
- The targeted RoE will be reviewed by the Board over the planning period as other strategic investment opportunities with long-term benefits are presented.

Balance sheet

Manaaki Whenua’s science requires an ongoing investment in scientific equipment if we are to deliver science, secure revenue and be financially sustainable. Beyond this underlying capital spending requirement, the priority for 2023/24 is to continue planning the co-location with Plant & Food Research, at Mt Albert to provide a new world-class research hub to address increasingly complex biological security threats.

Cash balances are used for day-to-day operations or represent funding received in relation to contracted work that is yet to be earned.

Cash flow and dividend

Manaaki Whenua expects to continue to deliver positive operating cash flows, with earnings before income tax, depreciation, amortisation, and fair value adjustments (EBITDAF) of \$2.7 million in 2023/24. Capital expenditure in 2023/24 is expected to be \$5.9 million.

Based on the strategic capital investment needs identified above, no dividend is planned during the period of this SCI. However, the Manaaki Whenua Board will review this annually.

Risks

There is forecasting uncertainty associated with Manaaki Whenua’s revenue budgets. There are risks and opportunities from political uncertainty, competition, research funding constraints, and disruptive technologies with the potential to affect capability and future business sustainability.

Revenue risk is high in 2023/24 because SSIF funding continues to not be inflation adjusted and several MBIE Endeavour research investments come to an end. The recent focus of Endeavour investment on ‘frontier innovation’ is not fully aligned with the CRIs’ focus on strategic research, which spans the frontier-to-applied spectrum, with a strong focus on impact for the benefit of Aotearoa New Zealand. Therefore, we have moderated our expectations of continuing the recent level of investment.

Manaaki Whenua will actively monitor and respond to any emerging financial risks.



Colin Dawson
Chair



Dr Paul Reynolds
Deputy Chair

30 June 2023

Appendix 1: Additional financial indicators

For the financial year ending 30 June	2022/23		2023/24	2024/25	2025/26	2026/27	2027/28
	Target	Forecast	Target	Target	Target	Target	Target
Operating margin ¹	4.6%	3.6%	2.1%	3.2%	7.6%	10.2%	12.7%
Profit/FTE	\$11,063	\$8,915	\$5,134	\$7,248	\$18,935	\$25,726	\$32,143
Quick ratio ²	3.22	3.26	3.23	2.91	3.57	3.61	3.87
Interest coverage ³	21.4	18.4	11.8	15.5	40.9	63.4	81.8
Profit volatility ⁴	5.9%	4.1%	2.9%	2.6%	5.4%	8.9%	11.5%
Forecasting risk ⁵	1.8%	3.5%	0.4%	1.3%	10.0%	14.4%	17.1%
RoE ⁶ (after investment)	(0.4%)	0.2%	(0.2%)	1.3%	9.1%	12.6%	14.6%
Revenue growth	13.3%	0.5%	9.8%	(4.6%)	10.9%	4.6%	3.7%
Capital renewal ⁷	1.15	1.21	1.09	1.65	1.18	0.98	1.00

Explanatory notes to table:

All dollars in 000s

¹ Operating margin: EBITDAF ÷ revenue, expressed as a percentage and per FTE (EBITDAF is earnings before interest, income tax, depreciation, amortisation, and fair value adjustments).

² Quick ratio: (current assets – inventory – prepayments) ÷ (current liabilities – revenue in advance).

³ Interest cover: EBITDAF ÷ interest paid.

⁴ Profit volatility: the standard deviation of the past 5 years' profit, scaled by average profit.

⁵ Forecasting risk: 5-year average of return on equity, less forecast return on equity.

⁶ Return on equity: NPAT ÷ average shareholders' funds, expressed as a percentage (NPAT is net profit after tax). Shareholders' funds include share capital and retained earnings.

⁷ Capital renewal: capital expenditure ÷ depreciation expense + amortisation expense.

Appendix 2: Business policies

We operate in accordance with the purpose and principles stated in the Crown Research Institutes Act 1992 and have statutory obligations under other acts, including the Companies Act 1993 and Crown Entities Act 2004. Our business policies include the following.

Dividend policy

The Board will notify the shareholding Ministers within 3 months of the end of each financial year of:

- the amount of dividend (if any) recommended to be distributed to the shareholders
- the percentage of tax-paid profits the dividend represents
- the rationale and analysis used to determine the amount of dividend.

In determining the amount of surplus funds, consideration will be given to:

- shareholder policies on dividends and capital structure
- providing for strategic and capital investment requirements (including equity investments) without recourse to the Crown for equity injections to the company
- working capital requirements (including subsidiaries/businesses in which equity is held)
- the ongoing financial viability of the company, including its ability to repay debt
- the extent of debt financing in relation to the prudent borrowing capacity of the company
- obligations of the Directors under the Companies Act 1993 and other statutory requirements.

With the projected profitability and capital requirements of the organisation in the course of this planning period, we are not projecting to pay dividends to the shareholder.

Risk policy

Manaaki Whenua has risk management and compliance processes in place and operating effectively across the agency. The risk management framework identifies, classifies, reports on and mitigates business risk. Risk reporting to the Audit and Risk Committee and the Board is done every 6 months, or as a risk arises.

Accounting policies

A summary of our accounting policies is included in our Annual Report. The current Annual Report can be found on our website: <http://www.landcareresearch.co.nz/about/sustainability/annual-reports/>.

Shareholder consent for significant transactions

The Board will obtain prior written consent from the shareholding Ministers for any transaction or series of transactions involving full or partial acquisition, disposal or modification of property (buildings, land and capital equipment), and other assets with a value equivalent to or greater than \$10 million or 20% of the company's total assets (before the transaction), whichever is the lesser.

The Board will obtain the prior written consent of shareholding Ministers for any transaction or series of transactions with a value equivalent to or greater than \$5 million or 30% of the company's total assets (before the transaction) involving:

- acquisition, disposal or modification of an interest in a joint venture, partnership or similar association
- acquisition or disposal, in full or in part, of shares or interests in a subsidiary, external company or business unit
- transactions that affect the company's ownership of a subsidiary or a subsidiary's ownership of another entity
- other transactions that fall outside the scope of the definition of the company's core business or that may have a material effect on the company's science capabilities
- intellectual property transactions, which, wherever possible in advance, will be notified in the quarterly reports to shareholding Ministers.

Appendix 3: Other matters required by the Crown Research Institutes Act 1992

Activities where shareholder compensation is required

Where the Government wishes Manaaki Whenua to undertake activities or assume obligations that will result in a reduction of the organisation's profit, or net worth in terms of investment in research, the Board will seek compensation sufficient to allow the organisation's position to be restored.

No requests for compensation are currently under consideration.

Other matters specifically requested by the shareholder

Section 16(3) of the Act requires Manaaki Whenua to furnish an estimate of the current commercial value of the Crown's investment.

The Board is satisfied that the net asset position (or total equity) is a reasonable proxy for the commercial value of the Group. The net asset position, as shown in accordance with the company's accounting policies for 30 June 2021, was \$52.7 million.

Glossary

CCC	Climate Change Commission	
COP	Conference of the parties (United Nations)	
CRI	Crown Research Institute	
DOC	Department of Conservation	www.doc.govt.nz
EBIT	Earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure	
EBITDAF	Earnings before income tax before depreciation, amortisation, and fair value adjustments	
FTE	Full-time equivalent	
GHG	greenhouse gas	
IPCC	Intergovernmental panel on climate change	
ISO	International organisation for standardization	
MBIE	Ministry of Business, Innovation and Employment	www.mbie.govt.nz
MPI	Ministry for Primary Industries	www.mpi.govt.nz
MOU	Memorandum of understanding	
NGO	Non-governmental organisation	
NSC	National Science Challenge	
NSCD	Nationally Significant Collections and Databases	
NPAT	Net profit after tax	
RSI	Research, science and innovation	
SCI	Statement of Corporate Intent	
SCP	Statement of Core Purpose	
S-map	A national system that provides comprehensive, quantitative soil information to support sustainable development and scientific modelling	www.smap.landcareresearch.co.nz
SPREPP	Secretariat of the Pacific Regional Environment Programme	
SPC	The Pacific Community	
SROS	Scientific Research Organisation of Samoa	
SSIF	Strategic Science Investment Fund (MBIE)	www.mbie.govt.nz
Te Āpōpōtanga	Our updated strategy for the period 2022–24	
Te Ara Paerangi – Future Pathways	A multi-year programme run by MBIE, focused on the future of New Zealand’s research, science, and innovation system	Te Ara Paerangi - Future Pathways Ministry of Business, Innovation & Employment (mbie.govt.nz)
Te Tiriti, Te Tiriti o Waitangi	The Treaty of Waitangi	
UN	United Nations	

Directory

DIRECTORS

Colin Dawson (Chair)
Dr Paul Reynolds (Deputy Chair)
John Rodwell
Prof. Caroline Saunders
Justine Gilliland
Marje Russ
Dr Warren Williams
Dr Andrea Byrom

REGISTERED OFFICE

Canterbury Agriculture & Science Centre
54 Gerald Street
PO Box 69040
Lincoln 7640
New Zealand

Phone: +64 3 321 9999
Fax: +64 3 321 9998

Website: www.landcareresearch.co.nz
NZBN Number: 9429038990496

SENIOR LEADERS

James Stevenson-Wallace	Chief Executive
Dr Fiona Carswell	Chief Scientist
Kylie Hansen	General Manager, People & Culture
Dr Nancy Garrity	General Manager, Māori Development
Holden Hohaia	General Manager, Te Tiriti Strategy
Chris McDermott	Chief Information Officer
Dr Peter Millard	General Manager, Science
Graham Sevicke-Jones	General Manager, Science and Knowledge Translation
Richard Eglinton	General Manager, Corporate Services

BANKERS:	ANZ Bank New Zealand Limited
AUDITORS:	Audit New Zealand on behalf of the Auditor-General
SOLICITORS:	Buddle Findlay

AUCKLAND | TĀMAKI MAKĀURAU

231 Morrin Rd, St Johns
Auckland 1072
Private Bag 92170, Auckland Mail Centre, Auckland 1142
Ph: +64 9 574 4100

DUNEDIN | ŌTEPOTI

764 Cumberland Street
Dunedin 9016
Private Bag 1930, Dunedin 9054
Ph: +64 3 470 7203

HAMILTON | KIRIKIROA

Gate 10, Silverdale Road, University of Waikato
Hamilton 3216
Private Bag 3127, Hamilton 3240
Ph: +64 7 859 3700

LINCOLN (Head Office) | MANGŌNUI

54 Gerald Street
Lincoln 7608
PO Box 69040, Lincoln 7640
Ph: +64 3 321 9999

PALMERSTON NORTH | TE PĀPĀIOEA

Riddet Road, Massey University,
Palmerston North 4472
Private Bag 11052, Palmerston North 4442
Ph: +64 6 353 4800

WELLINGTON | TE WHANGANUI A TARA

17 Whitmore Street
Wellington 6011
PO Box 10345, The Terrace, Wellington 6143
Ph: +64 4 382 6649

Toitū Envirocare

Teresa Betty
(Chief Executive)

info@toitu.co.nz
0800 366 275

AUCKLAND | TĀMAKI MAKĀURAU

Level 11, 11 Britomart Place
Auckland 1010
PO Box 137182, Parnell 1151, Auckland

CHRISTCHURCH | ŌTAUTAHI

Level 2, 14 Wise Street,
Addington
Christchurch 8024

WELLINGTON | TE WHANGANUI A TARA

Level 6, 17 Whitmore Street
Wellington 6143

Science working for New Zealand

The Crown Research Institutes (CRIs) proudly work, individually and collectively, to create a more prosperous, sustainable and innovative New Zealand



www.sciencenewzealand.org

4,400

SMART AND
PASSIONATE PEOPLE

54

SITES ACROSS
NEW ZEALAND

6,000

SCIENCE PROJECTS
EACH YEAR

40

NATIONALLY SIGNIFICANT
DATABASES & COLLECTIONS