

# Kauri Protection

## Operational Plan

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Version 2.0

*Ko te kauri he whakaruruhau mō nga Iwi Katoa – The kauri is a shelter for all people*

*Kia toitū te whenua – So that the land endures*

*Kia toitū te kauri – So that the kauri endures*

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## Purpose

This operational plan is prepared by the Kauri Protection Team established within Biosecurity New Zealand. This plan is developed for the purpose of implementing the objectives and outcomes of the Kauri Dieback Disease Draft National Pest Management Plan (NPMP) from 1 July 2021

This plan is prepared ahead of the NPMP being created by Order in Council which will lead to the formal establishment of the Kauri Protection Agency (within Biosecurity New Zealand). The NPMP requires an annual operational plan. This plan will bring about co-ordinated effort, funding for national priorities, sharing of data and knowledge, economies of scale, equity in funding and consistent and strong involvement of Māori.

This plan will use the objectives and outcomes identified in the NPMP proposal as its base for activities and investment until the adoption of the finalised NPMP in 2022.

## Introduction

A national operational plan is a requirement of a NPMP. With an overall budget of \$32M over five years, it is not possible to deliver all response measures equitably across all kauri regions. This operational plan sets the work required to build a platform for a prioritisation system.

As the funding for kauri protection commences from 1 July 2021 the plan has been prepared to align the effort of agencies and Māori delivery teams from the start. This plan ensures operational alignment of management actions from a range of delivery providers. It sets out the need for evidence-based decision making and a science led approach. Finally, it signals a balancing of focus to managing the disease as much as the current focus on mitigating the movement of the pathogen.

The national operational plan along with the Kauri Protection Team brings together the efforts of all parties involved in kauri protection work. It ensures appropriate accountability, capacity and competence are brought to bear in delivering the NPMP. Agencies bring their own resources to the effort as well as the fund distributed by the Kauri Protection Team. The co Māori - Crown governance mechanism will provide oversight of all kauri protection work.

This first plan identifies the importance of mana whenua fulfilling their kaitiaki roles with support from the crown, along with the support and the continuation of existing mitigation work by agencies. Over the life of the NPMP there will be a transition to mana whenua leadership of kauri work, with support from the crown.

The NPMP is progressing through a formal process to be finalised. This is anticipated to be complete by April 2022.

The NPMP proposal was developed as a result of extensive consultation to:

- Establish clear national objectives, co-ordination, and consistency
- Allow the use of strong regulatory powers to require specific actions to protect kauri
- Make sure the national framework gives effect to the Treaty of Waitangi

Three rounds of public consultation were run from June 2018 to March 2019, including meetings and hui across kauri lands. This included 57 hui attended in person by a total of 1000 people with more joining by live-streaming. Biosecurity New Zealand received 227 formal submissions which were used to inform the NPMP proposal.

## Background

### Kauri in NZ

Kauri (*Agathis australis*) belongs to one of the oldest families of conifers and is one of the largest long-lived tree species in the world. The evolutionary whakapapa of kauri has been traced back over 100 million years. For thousands of years kauri grew throughout northern Aotearoa both within broadleaf forests and as thick groves. Significant logging and burning throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries resulted in less than 5% of the original kauri forest remaining. Forest throughout the north are regenerating and kauri grows naturally above a latitude of 38 degrees South.

Kauri are ecosystem engineers meaning they directly influence the environment in which they stand. Sixteen other forest species depend on kauri to survive. Kauri, while important to all New Zealanders, they have a special significance for Māori.

### What is Kauri Dieback Disease?

*Phytophthora agathidicida* (PA) is an organism that lives in the soil and infects kauri roots, damaging the tissues that carry nutrients and water within the tree, effectively starving it to death. There is currently no proven cure or long-lasting treatment and many infected kauri trees die.

PA is the pathogen that causes the disease known as kauri dieback. The symptoms of kauri dieback are bleeding lesions on the basal trunk, lesions on roots, the presence of canopy thinning, yellowing of the foliage, and tree death.

The term kauri dieback is no longer supported, as it creates a negative energy, whereas protection is seen as more active and positive.

### How did we get here?

Kauri Dieback Disease was first recorded in the early 1970's on Aotea (Great Barrier Island), initially mis-identified, it wasn't until after it was found in the Waitakere Ranges in 2006 that it was identified as *Phytophthora agathidicida* (PA). In 2008 PA was listed as an unwanted organism under the Biosecurity Act 1993.

PA is easily spread through soil movements including soil carried on dirty footwear, animals, equipment and vehicles. PA has been detected in tiny amounts of soil. The pathogen can also spread through natural ground water movements. It is estimated PA can spread up to 3m a year through natural water movement.

The latency period for kauri dieback can be quite long (months or years). Latency is the time between the pathogen infecting the host and disease becoming visible. Though a lot of infected kauri will show physical symptoms such as canopy thinning or bleeding lesions on the base of the trunk, a tree can be infected and not show any symptoms of the disease. PA is microscopic and infects the tree beneath the ground, meaning it is not visible to humans. Historically we have used symptomatic trees to help us detect areas where the pathogen may be present. These issues can cause kauri areas with no sign of disease to be classified as pathogen-free when in fact PA is present, hence kauri sites that have been tested are referred to as either 'PA confirmed sites' or 'PA undetected'. The presence of PA in the soil can only be confirmed with soil testing, though a not detected test is not considered negative

as the test may not be sensitive enough to detect PA as the sub-sample of soil from the sampling spots could be PA free, but PA may exist elsewhere in the soil around the tree.

PA is now found widely across kauri lands. Appendix B contains a map showing the distribution of kauri soils with PA detected.

### **Our Response to Kauri Dieback Disease**

In 2009 the Kauri Dieback Partnership Programme was launched to develop solutions to kauri dieback disease and support efforts by communities to help prevent the spread of PA. The partnership programme was a collective effort involving central government, local government, tāngata whenua and scientists.

There is no known cure for the disease and actions to date have been designed to reduce the movement of the pathogen (e.g. tracks improvements; animal control) and to invest in operational research. Going forward there is a need to switch away from solely mitigating movement to disease management and kauri protection. This means more surveillance and baseline monitoring is required to inform action.

In 2021 the programme will be closed and replaced with a Kauri Protection Team within Biosecurity New Zealand dedicated to kauri work. The Kauri Protection Team is working through establishing an agency, delivering the NPMP through its final steps, allocating funding via the operational plan, and co-ordinating kauri protection activities at a national level.

## Guiding Implementation

### Key Principles for Implementation

The following four principles will guide all parts of the implementation of the Operational Plan. These were developed in a wananga with all parties in April 2021.

1. Giving effect to Te Tiriti o Waitangi
2. Ngahere first
3. Mahi tahi (working together to protect kauri)
4. Dynamic and adaptive – our work is fit for purpose and evolves over time as thinking/science/knowledge and discovery lead us forward

### National Pest Management Plan Guidance

The approach to delivering the activities will be guided by the objective, outcomes, and measures from the NPMP proposal. A new strategy will be developed once the NPMP is activated and embedded.

#### Objective

To reduce, prevent and eliminate the harmful effects of *Phytophthora agathidicida* (PA) on economic wellbeing, the environment, human health, enjoyment of the natural environment, and the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga.

#### Secondary Objectives

1. To reduce the spread of kauri dieback
2. Maintain kauri dieback–undetected areas
3. To reduce the impact of kauri dieback within infected sites
4. Locally eliminate kauri dieback within infected sites
5. To protect kauri trees and stands with special values from kauri dieback
6. To the extent that kauri forests are protected, facilitate controlled access by people to kauri forests where it does not compromise the future of and/or protection of kauri
7. To provide for Māori knowledge, values and approaches to manage kauri dieback disease and prevent its spread

## Measures

There are 11 principle measures that have been identified to implement the objective.

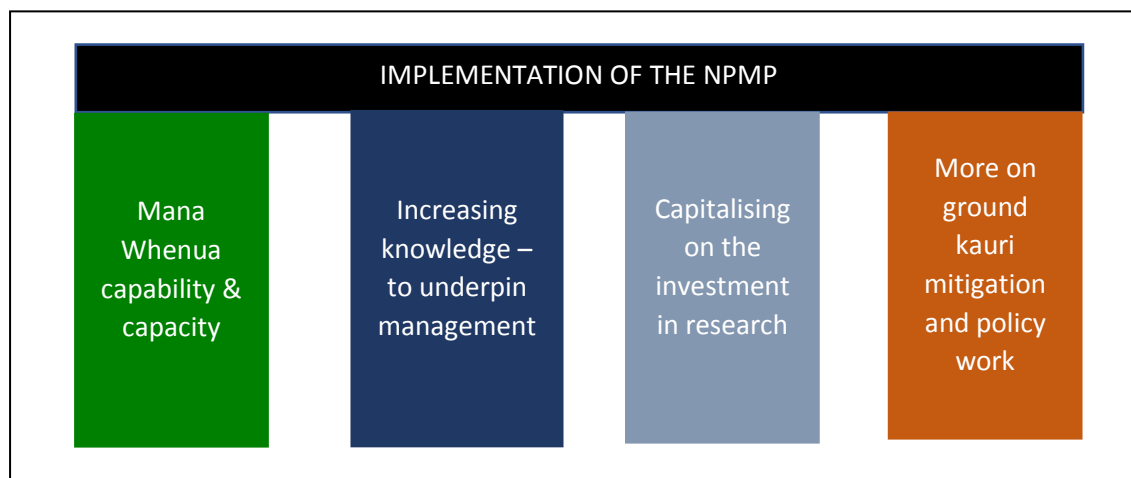
1. Determining and establishing protection areas
2. Growing awareness, partnerships, and hapu/iwi lead collaborations and engagement across the community
3. Applying Māturanga Māori and the results of science and research
4. Carrying out surveillance and monitoring to enable
  - I. mapping the distribution of kauri and kauri forests
  - II. mapping the presence or absence of PA
  - III. understanding the rate of spread of PA
  - IV. understanding the impacts of PA on kauri trees and kauri forests
  - V. understanding the application and effectiveness of PA control tools, Māturanga Māori and other management practices
  - VI. understanding the levels of compliance with the requirements of the plan
5. Implementing hygiene standards and programmes, and imposing movement controls, on risk goods that are, or may be, capable of contributing to the spread of PA
6. The exclusion of stock
7. Exclusion or control of animal vectors and supporting alternative hunting opportunities
8. Managing kauri forest access in collaboration and partnership with mana whenua, including forest closures and rāhui
9. Improving track user infrastructure, including track upgrades re-routing, closures and providing alternatives
10. Applying effective treatments to kauri trees
11. Protecting high value kauri germplasm and planting kauri trees, including trees with reduced susceptibility to PA



## Approach to Implementation

### The Four Pou

The implementation of the Operational Plan will be based on the four Pou.



1. Building capability and capacity of Mana Whenua – to lead kauri protection locally
2. Increasing knowledge to underpin management through enhancing surveillance and monitoring
3. Building rapport and leveraging research efforts – so that management decisions are well directed by science
4. On ground mitigation works and development of guides, policies and standards – to prevent movement of the pathogen and protect the trees and involvement of people

### Objective of the Pou

The objective of the Pou is to shape the investment in kauri protection through identifying and optimising collective performance to make the best use of resourcing to deliver the NPMP and strategy.

The Pou are portfolios that will be used to:

- Set investment levels
- Attract funding through joint funding or other sources
- Provide a template for recording work and progress during the year
- Give effect to measures in the NPMP
- Allow for annual reporting to demonstrate progress
- Demonstrate success and build a case for future funding

The Pous are dynamic, meaning, the weighting and emphasis on each will move up and down over the five years as work under the NPMP and annual Operational Plans progresses, and as Science and Research advance our understanding of both the pathogen (PA) and the disease. In the 20/21 year, there is a stronger weighting towards Pou 2 surveillance, monitoring and remote sensing and Pou 4 delivery of traditional mitigation work and standards etc, largely aimed at reducing movement of the pathogen. This is to increase the baseline knowledge to target strategic investment decisions to enhance protection. In addition, it will achieve a catch up on mitigation work which includes behaviour change and standardisation work and provide immediate on the ground results of the funding from government.

The Kauri Protection Governance Group will determine the level of investment in each Pou annually through the operational plans

### Roles in Implementation

Level	Structure	Who	Roles
Regional	Three or four regional Committees built collaboratively by Māori and Crown in 2021/22	Kauri land Māori, Local Community groups, Landowners with kauri, Regional and District Councils and DOC	Promoting protection of kauri and value of kauri Delivery of mitigation works i.e. pest control Input in the operational plan and identification of activities required to deliver the NPMP regional level Enforcement, education, and behaviour change within the national frameworks On ground networks
	Regional Councils & DOC		Deliver Regional Pest Management Plans and work from ratepayer funded activities, similarly with DOC funding. Over time ideally these will be synchronised through the governance group (a voluntary process) and the NPMP into the annual national operational plan and based within the investment Pou. Assist with kauri protection delivery of national operational plan.
National	[Interim] Operational Advisory Group	Management level of iwi /whanau/hapu, collabs or settled iwi, Regional Council and TLAs, DO, NZFOA, Researchers and Community representatives	A body representative of <i>whanui o te kauri</i> Provide advice to the Kauri Protection team (Agency) on national operational plans policy settings, enforcement, standards, policies and guidelines and to build collaborative effort and problem solve.
	Interim KPP Co-Governance Group	Co-Governance level with people with credibility, skills, knowledge and authority to make decisions on strategy	Lead the strategic direction of the NPMP, approve the National operational plan, report to Minister through biosecurity New Zealand. Overall oversight of all kauri protection.
		Knowledge Advisory Group, Science & Research Advisory Group, Operational Advisory Group	Provide expert advice for direction setting and implementation. Input into the supporting strategies including the Science Strategy. Hold the MBIE relationship for kauri research funding.
		Kauri Protection Team (later to be the Agency)	Lead the development of the NPMP and annual operational plans, lead the implementation of the operational plan.

			Co-ordination of national activities, funding and national direction of effort through the four investment Pou, Reporting, Build collaboration in <i>whanui o te kauri</i> Lead engagement and communication with public including behaviour change Lead science transfer to operational management Support governance group and other committees Report on all aspects of kauri protection
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Refer to Appendix E for role descriptions from the NPMP proposal. The role descriptions are to be consistent between the documents, with the Operational Plan providing an overview of the roles, and the more detailed descriptions to be found in the NPMP.

### Investment Plan

The government has provided \$32M over a 5-year period to deliver and implement a National Pest Management Plan to manage kauri dieback disease. The funding has been allocated over the 5-year period as follows

2021/2022	2022/2023	2023/2024	2024/2025	2025/2026*
\$8M	\$8M	\$8M	\$4M	\$4M*

\*Government budgets only confirm funding in 4-year periods, while there is a commitment to a total of \$32M over 5 years, the currently confirmed budget is \$28M over 4 years.

The investment in kauri protection will be based on the 4 Pou. The level of funding will be determined by the governance group. It is anticipated that the funding in each Pou will change over time. For example, as surveillance and monitoring activity is normalised the resourcing will drop, and the funding will shift to mitigation and mana whenua capability to deliver kauri protection work. Similarly, as mana whenua capacity increase so will the funding increase as work shifts from other providers to those best placed to deliver. The research Pou is not seen as a major funding item – it is designed to leverage existing research activity to realise operational benefits, it covers vital future focussed work and investment may shift to this Pou as knowledge increases through completed research. An example could be the refocus of research to operational science in breeding for resistance (this requires work with Māori on the objectives)

## Indicative investment 2021/2022

This table shows funds in three states; Ready to be approved in principle, indicative or requested. The work on allocation is ongoing, however the underlying premise is to allocate funds as quickly as possible.

Investment Pou	Ready to go (first tranche)	Indicative Second tranche	Request but not agreed
# 1 \$1.8M	<p>Iwi Colab Kauri Ora Project Manager <b>\$110K</b> to support operations across the four iwi</p> <p>Te Kawerau a Maki project manager/planner <b>\$100k</b></p> <p>DOC to co-developed with hapū /iwi kauri forest plan in 20/21 to guide mana whenua and crown on future work <b>\$150k</b></p>	<p>Kauri team to develop a contestable process framework for funding mana whenua to deliver kauri ora – to allocate funding of <b>\$1.1M</b></p>	<p>Te Roroa Whakapikitia – learning centre to share knowledge with other mana whenua alongside other investors</p> <p>Te Kawerau a maki and Auckland council kaimahi team set up</p> <p><b>circa \$340K</b></p>
# 2 \$2.5M	<p>Remeasure of Forest vegetation plots and other data collection (matauranga) at existing and/or new sites in kauri forests 3-year programme) using mana whenua, MWLCR and DOC <b>\$800k</b> in first year</p> <p>Iwi Colab Kauri Ora diagnostics budget 21/22 <b>\$150k</b> [\$35k per iwi plus consumables of \$10k]</p>	<p>Host population detection (using remote sensing) and baseline monitoring in kauri forests. Priority sites and specific monitoring objectives to be determined with mana whenua and science criteria <b>\$1.55M</b></p> <p>NB based on a series of science hui, September hui with mana whenua delayed due to Covid – rescheduled for Late October/Nov</p>	
# 3 \$0.7M	<p>Support ongoing tree population for future science management understanding of <b>resistance breeding</b> (based at Scion) <b>\$150k</b></p>	<p>Other minor research projects(not yet identified) to be operationalised to support resistance (e.g. companion planting, breeding resistance, management tools) <b>\$550k</b></p>	
# 4 \$3M	<p>Waikato and Northland Regional Councils have developed shared work programmes at <b>\$2M</b> (\$1M each) for traditional mitigation <i>*this funding needs to be released quickly and projects need to be approved by KP manager</i></p>	<p>Potential community grants scheme for kauri</p> <p>Commercial forestry guidelines joint venture with FOA and TUR <b>\$50K</b></p> <p>Auckland Council joint ventures with national benefit <b>\$400K</b> not specified yet</p>	<p>Unallocated plus a contract LINZ data management \$250K</p>

	<p><i>There may be more work that can be funded. However, getting funding to these councils so they can start is the first step.</i></p> <p>DOC has agreed to co fund and manage a Pig/Large animal control plan for all kauri forests <b>\$200k</b></p>	<p>BOPRC to develop a community-based programme to support the kauri protection work <b>\$100k</b></p>	
	<b>\$3,66M</b>	<b>\$3.75M</b>	<b>\$0.59M</b>

Refer to Appendix D for further details of spending.

### Other Kauri funding for the 2021/22 year

Each of agencies have funding already earmarked for kauri protection work. These funds, at this point remain outside of the operational plan.

For those agencies with significant funding the NPMP funding is likely to be used to achieve additionality – i.e. more work than the agency can achieve alone (e.g. greater areas of pig control) or extra work to achieve a common goal (e.g. pig control strategy for kauri lands). In future operational plans it is hoped that all funding will be shaped within the four investment Pou and in line with the NPMP.

Funding Agency	Funding For	Funding Value
Ministry for Primary Industry	Team operation including overheads, salaries, and admin costs, NPMP process and policy, ongoing science and operational contracts, brand refresh, behaviour change, grants and standards and policies, seminal annual meetings and kauri wide collaboration.	\$ 1,800,000*
Northland Regional Council	Regional kauri operational works	\$ 70,000
Waikato Regional Council	Regional kauri works	\$ 224,000
Bay of Plenty Regional Council	Regional kauri works	\$ 10,000
Auckland Council	Regional kauri works	\$ 3,800,000
Department of Conservation	Baseline funding	\$ 5,400,000
<b>Total</b>		<b>\$ 12,504,000</b>

\*Actual funding \$3M, \$1.2M redirected.

### Funding rationale

For this year, with \$8M to be distributed, and to enable progress, the work to be delivered is recommended using a simplified national approach to be agreed by governance.

In future years a more regional/rohe approach will be used to build the operational plan, involving iwi/hapū /whānau and others in the development of work plans and projects. This will serve a dual purpose of ensuring work is identified and resourced at the ground level and that capability for mana whenua is enhanced to underpin the leadership transition.

By this time the Kauri Protection Agency will be established, fully staffed with systems and process in place to ensure transparency, equity and a science led approach. The design of processes will be through co-design with Māori and Crown with an obvious need to comply with government business rules and policies.

In this first year, given the challenges inherent in delivering on ground actions within a one-year timeframe this plan provides Northland and Waikato Regional Councils a preliminary allocation of \$1M each to be approved quickly by the DDG Biosecurity after discussion with the Minister. This should occur before September to enable those two councils to gear up and employ the resources required in a timely way, thus ensuring kauri protection work is delivered. Individual projects will be subject to agreement with the Manager Kauri Protection and will support co-leadership with Maori.

Funding for Auckland and Bay of Plenty councils and DOC is intended to be through leveraging joint ventures to capitalise on existing programmes and maximise results that have national applicability. This still needs to be discussed with Auckland Council, DOC have agreed to this approach. For example,

the plan includes for funding of \$200k be provided to DOC to underpin their existing work on a strategic plan for pig control and other large animals in kauri forests. This work is required to enable management decisions to be made on future expenditure on pest vectors and has a kauri lands focus as well as a conservation focus.

The iwi collab in Northland is working through a plan to upscale their kauri protection work. This year the iwi Collab has indicated funding of \$110K will enable continued gearing up of their workforce and subsequent ability to deliver greater levels of kauri protection work.

## The process

### Investment in Pou 1

#### Pou 1: Building capability and capacity of Mana Whenua

Over the course of 2021/22 the Kauri Protection Team will commence building relationships with mana whenua across all of kauri Lands. The jobs for nature funded iwi collab in Te Tai Tokerau is a model that may work in other places. The work over the year ahead will be to build more collaborations and to work on a co-design with Māori of a process to distribute funding to support capability and capacity to deliver kauri ora and kauri protection work.

The Kauri Protection Team has recruited new people, including an Operations Manager and a Relationship Advisor to enable this work to commence.

Key to success will be a process that is fair and equitable to all mana whenua; science and matauranga based and recognising that a blend of the right people and the right place will be essential to ensure success. The limits of funding will mean not all mana whenua can receive support, especially in the first year, however the underlying reasons for the distribution will be clear and broadly accepted. The set-up of collaborative efforts will help to achieve a more equitable spread of resources.

Additionally, those iwi/hapū /whanau already well placed will provide support to other mana whenua e.g. Te Roroa's Whakapikitia initiative. The Kauri Protection Team recognises that support is already being provided, by Te Roroa to nearby iwi and we anticipate the co design component of this plan will support more of this initiative by them and by others across all of kauri lands.

### Investment Pou 2

#### Pou 2: Surveillance and remote sensing

For 2021/2 a significant amount of resources \$1M-\$3M may be allocated to increased monitoring and surveillance. A workshop held with leading scientists on 8 July 2021 has established the overall objective and identified next steps.

The results of this workshop will guide investment in Pou 2 and are set out here:

**Objective:** To inform adaptive kauri dieback management strategies using data gathered from a modular, flexible and consistent surveillance and monitoring framework.

## Goals:

1. Define the baseline host population spatially
2. Determine the baseline pathogen distribution
3. Establish baseline prevalence of kauri dieback and kauri forest health
4. Determine drivers of kauri dieback and of kauri forest decline

## Key steps:

1. Use existing pathogen and kauri dieback knowledge to inform priority areas for baseline monitoring and which goals (1-4) are required to inform management.
2. Build a modular monitoring framework, using existing methods at the plot, forest, region and national scale to meet each of the four goals.
3. Use all existing data sources to identify the host population at risk, set management units and set the sample frame for monitoring.
4. Finalise case definition, refine and set consistent measurements of risk factors, pathogen testing, disease and impact variables for ground and aerial survey.
5. Collect baseline data using existing trained kaimahi and develop capability and capacity to extend kaimahi lead surveillance across kauri lands.

## Key Principles:

1. Use complimentary technologies (i.e., validate remote sensing data with field observations and diagnostics) and approaches across a range of scales (individual tree, local site, landscape)
2. Ensure an effective interface and application of research to operations
3. Use a centralised data platform that recognises data sovereignty and ensures mana whenua access.
4. Drivers other than the pathogen (i.e., climate change, weather, physical disturbance, natural turn-over, external agents) are considered.

## Funding-ready activities:

1. Remeasure plots established in the 2000s
2. Survey sites ready for repatriation with higher resistance kauri
3. Remeasure Te Roroa site
4. Complete surveillance design, specifications and models based on existing data
5. Compilation of existing data. Note: Much of the existing data is based on risk-based delimiting the pathogen and therefore there is no 'non-case' comparison group for disease drivers or for understanding baseline disease distribution or prevalence. It is a useful historical record however and should be included. All data that is included should contain the metadata of the date and survey method of collection.

## Rationale

We have tactics to reduce pathogen spread (footwear cleaning stations, fencing, pig control, track upgrade or closure). Kauri dieback may be controlled by applying phosphite or using traditional rongoa. Currently, it is difficult to take a strategic approach to pathogen and dieback management because we don't know with certainty where the pathogen is present or absent, what the prevalence of disease is, and which locations may have a high disease risk. Collection of robust monitoring data will avoid resources being inappropriately applied – i.e., closing tracks or fencing to exclude the pathogen when the pathogen is already present, or applying disease control treatments to trees growing in areas where kauri dieback is unlikely to become serious. The data will reveal the role of drivers such as disturbance and changing weather patterns on kauri dieback development thus



assisting kaitiaki and land managers to make informed decisions on which management approaches to apply.

### **Explanatory Comments**

This work is vital to underpin future management decisions and to achieve the NPMP objectives and the objectives of the 2019 science plan. To illustrate this, without knowledge of, for example, where to treat trees; whether trees are dying where there are tracks (open or closed); or if areas are exposed to the pathogen, we are working in the dark. Kauri are at risk through the lack of information on the disease.

The lack of understanding of disease prevalence hampers long term management, in particular (the trees live a very long time) – how do land managers prioritise areas for treatment, for fencing and other levels of protection? How do we convince communities and forest users to respect forest closure without information to empower them to agree with the decisions?

As resources are limited, a baseline is critical so that we can plan which forest areas are likely to need treatment and assess the efficacy of management options. Then measurement over long periods can inform from observations on what has changed and the speed of change. New strategies can be deployed as they become available based on evidence of where they are best deployed.

In each year remeasuring of forest vegetation plots will occur as an opportunity for mana whenua to lead a collaboration with Maanaki Whenua, DOC and Council and potentially others. This is a simple, effective, informative and vital component of baseline monitoring work. It will provide insight into the health of kauri and kauri forests. It will provide an opportunity to measure elements significant to mana whenua (identified in local co-design) and potentially to identify carbon sequestration (as an add on funded by others) The final cost, which will be scalable over years/summers is not yet fully known but could be \$500k per annum for two or three years or 4800k this year reducing next year.

This work provides an excellent opportunity to include mana whenua in design and execution as well as place them in the leadership position.

### **Investment Pou 3**

#### Pou 3: Building rapport and leveraging research efforts

To recap this investment Pou is about bridging the gap between science(research) and Operational management and mana whenua. There are still gaps that need to be addressed as soon as practicable in order to guide allocation of resource in future years.

The scanning done in advance of this plan recognises there are fundamental needs for the benefit of kauri that require both ends of the spectrum to work together better. For example, reliable, inexpensive and quick detection methods, greater understanding of the interact between host, pathogen and the forest, identification of resistance/resilience and additional protection measures, treatment of ill trees, sanctuaries

The form of this Pou is not totally clear yet as it requires work with science and mana whenua and management agencies. It is not about funding research, this is covered by MBIE, however it may include top up funding to ensure a result is available to operationalise or further trials.

There is a pressing need for an annual meeting of science and operational management and an event of this nature will be organised for September. This will underpin the work in Pou 2 as well as all Pou.

An example is the healthy trees programme which is touching on genetic solutions. Funding is required to maintain stock and to reset this programme to extract operational management benefits. This requires significant work on tikanga and working with mana whenua before pressing forward. An estimated investment of up to \$400,000 could be required. A number of scientist believe breeding resistance is the best strategy for future survival. It needs direction and funding if that is the case.

#### Investment Pou 4

### Pou 4: On ground mitigation works

As already covered in this plan a pragmatic approach to this investment Pou is recommended. Regional Councils and DOC are already set up to deliver on ground mitigation work and are either already working with iwi/hapū /whanau and communities or will be. This work is largely based around pathogen movement, behaviour change, awareness, and enforcement. This reflects the need for greater science leadership of operations. To reduce pressure of setting up projects and time constraints caused by summer weather and end of financial years, fleet funding of two regional councils has been recommended, while the other options for funding is worked through with other councils, DOC and other providers.

This POU includes work on outstanding policy needs, around matters such as earth movement, silviculture, and district plans. It includes engagement with territorial local authorities to familiarise them with the NPMP and to encourage alignment of their kauri work to the national operational plan.

Overtime it is anticipated funding in this investment Pou will be distributed on the basis of both mitigating pathogen movement (e.g. hygiene stations, track hardening, pest control) and disease management.

So far \$2M has been identified for NRC and WRC with more negotiation required to understand investment with other councils. It is anticipated no more than \$3M will be allocated to councils in the 21/22 year.

As mentioned, the funding to NRC and WRC in 2021/22 should be made quickly to avoid missing the summer and creating a year end spending issue. Individual projects are subject to agreement with the Kauri Protection Manager to avoid duplication of effort or deviation from the parameters of the national kauri protection effort

## Key Work Areas

Over the next 12 months, the Kauri Protection Team will be focused on:

- Funding of pre NPMP work through the investment Pou
- Data Management & Sharing of intellectual property
- Guidelines, Standards and Compliance
- Rules
- Communications and Engagement/Brand refresh
- Science and Research to underpin the next kauri strategy

### Data Management & Sharing

The success of kauri protection activities and understanding both PA and the disease are tied to data sharing between all the parties working in the kauri space.

Currently there are many different groups holding various data in different systems, with poor overall national co-ordination. Over the next 12 months the Kauri Protection Team will work with these groups to identify the best way to store and share data. A successful model is in place for wilding conifers, that may be emulated.

Wherever possible a series of cultural authorities, based on tools already in use for research, will be established, which will enable information and knowledge to be shared for the benefit of the kauri.

The objective here is ensure the maximum amount of information sharing between all parties and to unlock any barriers to achieve a complete information set.

### Guidelines, Standards & Compliance

Until the NPMP is in place with specific rules, there are a number of best practice guideline documents that exist for kauri forest/area users. These documents are designed to inform users how to protect kauri health and are currently available to the public via the kauri protection website and can be found here <https://www.kauriprotection.co.nz/how-to-guides/>. Overtime these will be updated to match the NPMP and to fill any identified gaps.

### Rules

The NPMP will establish a set of rules designed to protect kauri. These rules will carry infringement offences. These rules were established through wide consultation with support of all parties. As the NPMP moves toward completion the rules will be shaped to ensure they work well in the regulatory environment.

The rules will not come into effect until the adoption of the NPMP (anticipated April 2022). After the NPMP is adopted and the rules are in place, the operational plans will reflect them, and the work required to enforce them.

This includes developing the definitions and rationale for the enforcement of rules as well as work to identify the relative prioritisation of management actions. Through the period of this plan this work will be ongoing, with the intent being that when the order in council is signed all parties will be clear on the rules and the obligations required and an approach to application of the rules can be applied consistently across kauri lands.

The interim Operational Advisory Group will inform this work during the term of this plan.

### Communications and Engagement

The Communications and Engagement programme will provide a Te Ao Māori. national strategy to support the strategic objectives to prevent the spread of kauri dieback disease and protect kauri for future generations.

Social science, public awareness campaigns and education programmes will be tools used to guide and drive key messaging to raise awareness and drive protection of kauri with audiences. Refer to Appendix C for further detail.

### Science and Research

The kauri protection overall programme is supported by the Science plan of 2019 ( [Kauri dieback science plan \(kauriprotection.co.nz\)](https://www.kauriprotection.co.nz) ). This plan will be updated in time with leadership from the Knowledge Advisory Group and the Biological Heritage Challenge and with consideration of the work by Ngā Rākau Taketake. A hui of Operational managers and Science Leaders will be set for November 2021, to bring both parties together (possibly for the first time?) and to help the KAG identify the priorities for science in kauri protection. These can then be brought to the Kauri Protection Governance Group.

### Monitoring and Measuring achievement against outcomes

All activities funded from the \$8M will be matched to the measures set out above. Each agency/group that receives funding will be required to submit 6-monthly reports to the Kauri Protection Team, setting out how the funds have been used and what has been achieved.

These reports will feed into the annual report the Kauri Protection Team is required to provide to the Minister on the implementation of the operational plan.

### Review and Reporting

A National Operational Plan is a requirement of a National Pest Management Plan under section 100B of the Biosecurity Act.

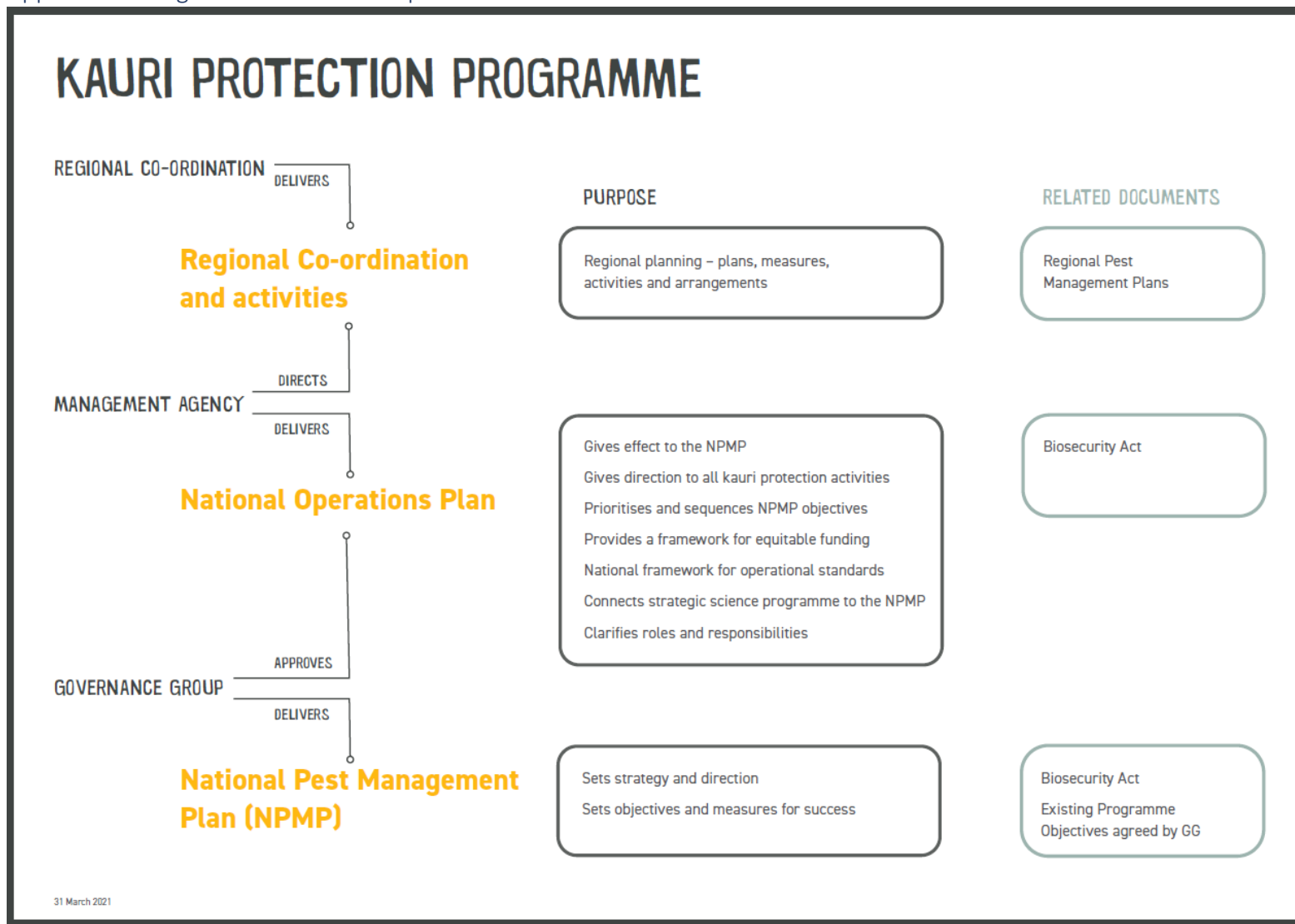
Under this section there are certain requirements the Kauri Protection Agency (within Biosecurity New Zealand) must meet, including:

- Prepare an operational plan within 3 months after the commencement date of the NPMP
- Review the operational plan annually, and decide on appropriate amendments, if necessary
- Prepare a report on the operational plan and its implementation not later than 5 months after the end of each financial year

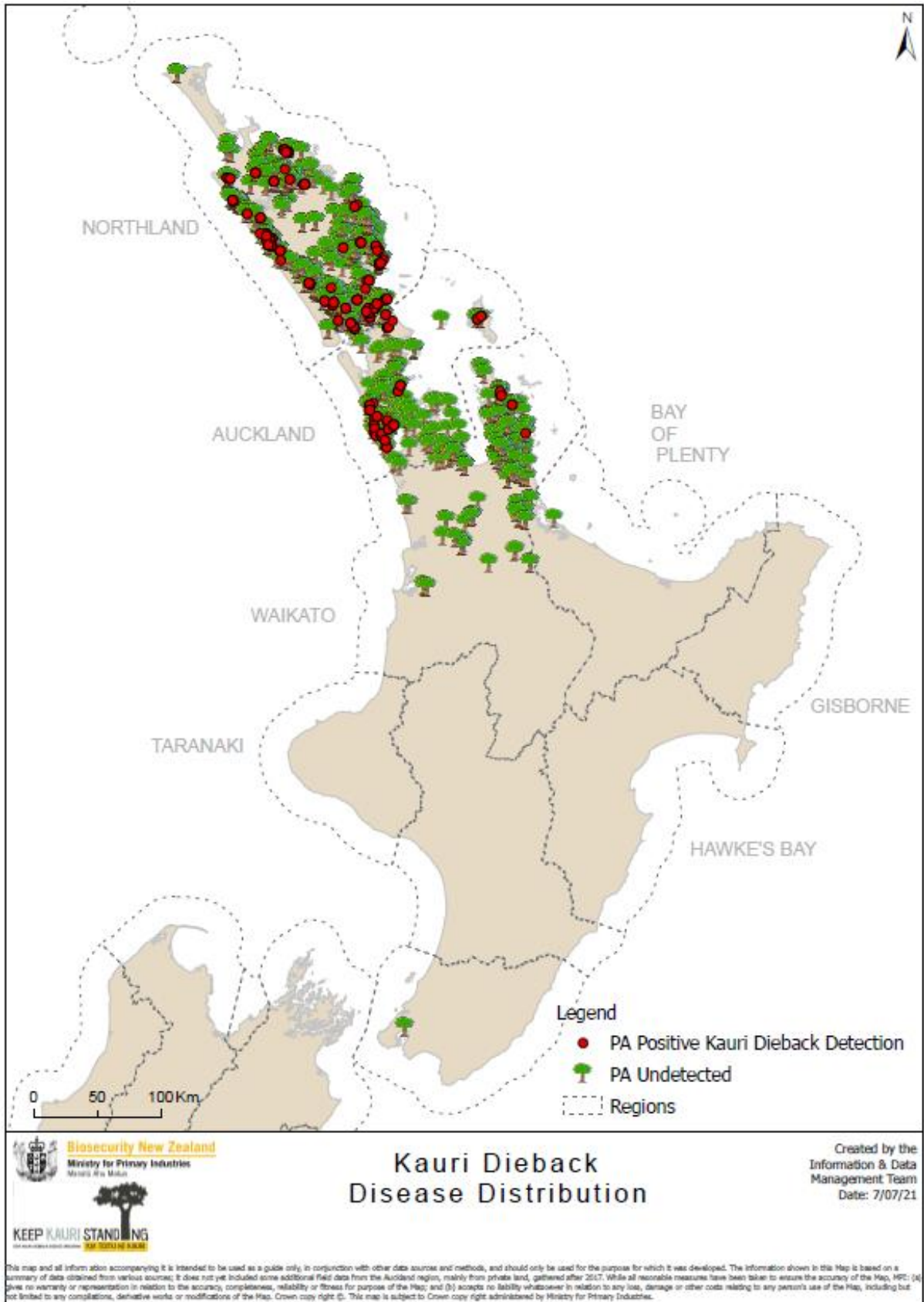
Review and reporting on the operational plan will be in line with these requirements.

Appendices

Appendix A: Diagram of kauri related plans



Appendix B: Map of Kauri Dieback Disease Distribution



## Appendix C: Communications and Engagement Strategy

Year	Consult	Engage	Inform
<b>2021/22</b> <b>YEAR 1</b>	<p><b>OBJECTIVE: ENGAGE &amp; CONSULT</b></p> <ul style="list-style-type: none"> <li>▪ Refresh brand – rollout and launch Kauri Protection brand, website, publications and campaigns</li> <li>▪ Develop Communications Strategy with partners</li> <li>▪ Update and incorporate Te Ao Māori. messaging throughout all our brand and marketing communications</li> <li>▪ Develop Kauri Protection brand story</li> <li>▪ Update kauri programme Key Messaging</li> <li>▪ Develop National Pest Management Plan communications strategy and rollout timeline</li> <li>▪ Develop public awareness campaigns</li> <li>▪ Develop channels for audience personas</li> <li>▪ Develop external partnership and media opportunities identifying proactive opportunities.</li> <li>▪ Update collateral and publications, best practice guidelines</li> <li>▪ Kauri Kaitiaki Programme</li> <li>▪ Kauri NPMP Symposium</li> <li>▪ Social Research to determine</li> <li>▪ Identify NPMP collateral and key messaging for NPMP</li> <li>▪ Develop nationwide campaign for NPMP roadshow across regions</li> <li>▪ Annual Report</li> <li>▪ Develop content for publications and channels</li> <li>▪ Develop social research strategy</li> <li>▪ Calendar of events and stakeholder engagement</li> <li>▪ <b>2121</b> – hundred-year commitment, for the next thousand years <b>3121</b></li> </ul> <p><b>OUTCOME: STRENGTHEN RELATIONSHIPS AND CONFIDENCE IN THE PROGRAMME</b></p>		
<b>2022/23</b> <b>YEAR 2</b>	<p><b>OBJECTIVE: EMPOWER MĀORI. CAPABILITY &amp; CAPACITY, EDUCATE AND IMPLEMENT NATIONAL PEST MANAGEMENT PLAN</b></p> <ul style="list-style-type: none"> <li>▪ Strengthen the Kauri brand across channels and with external partnership opportunities</li> <li>▪ Tourist campaign – Kauri Tikanga</li> <li>▪ National Pest Management Budget underway first year funding</li> <li>▪ Rolling out the National Pest Management Plan nationwide</li> <li>▪ Annual Kauri Symposium</li> <li>▪ Update communications strategy</li> <li>▪ Annual Report</li> </ul>		

	<ul style="list-style-type: none"> <li>▪ Live updates across Kauri lands</li> <li>▪ Nationwide campaign to raise awareness</li> <li>▪ Signage strategy across Kauri lands</li> <li>▪ Launch NPMP with Ministers</li> </ul> <p><b>OUTCOME: ENFORCE STRONGER PROTECTION</b></p>
<p><b>2023/24 YEAR 3</b></p>	<p><b>OBJECTIVE: INFORM &amp; INSPIRE - CLEAN DREAM -KAURI KAITIAKI</b></p> <ul style="list-style-type: none"> <li>▪ Nationwide campaign to inspire behaviour change to teach people the values of forest health and the role they play with clean shoes before you leave home.</li> </ul> <p><b>OUTCOME: INCREASE AWARENESS REDUCE SPREAD</b></p>
<p><b>2024/25 YEAR 4</b></p>	<p><b>OBJECTIVE: KAURI COLLECTIVE - ACHIVEMENTS</b></p> <ul style="list-style-type: none"> <li>▪ What have we achieved? The ladder of success what this looks like</li> </ul> <p><b>OUTCOME: BUILD CONFIDENCE WITH STAKEHOLDERS AND PUBLIC</b></p>
<p><b>2025/26 YEAR 5</b></p>	<p><b>OBJECTIVE: THE FUTURE</b></p> <p><b>OUTCOME:</b></p>



## Appendix D: Regional Council kauri activity budget (for Government funding)

## Northland Regional Council

Item	NPMP Principle Measure	Brief Description	Amount
Soil Sampling	1.Determining and establishing protectable areas.  4.Establishing a base line and carrying out monitoring	Analyses of soil samples taken strategically across positive site in order to understand better the extend of the presence in the landscape and build a solid base line.  Analyses of soil samples taken strategically across undetected sites in order to determine either (i) presence previously missed or (ii) build a picture of absence which would lead into identifying protectable areas, from a disease perspective.	\$200,000
Fencing	1.Determining and establishing protectable areas. 2.Hapū/Iwi lead collaborations 6 and 7. The exclusion of stock and the control of animal vectors	Staff have had discussions with multiple landowners in Northland who require fencing to protect kauri in forest blocks. Some are substantial in size and require 100% funding. Sites include large forest areas adjacent to PCL.	\$200,000
Wild Animal Control	7.The control of animal vectors. 2.Hapū/Iwi lead collaboration.	NRD Kauri Protection Team will work directly with Te Roroa to implement the pig control plan which initially was prepared and implemented in Waipoua Forest, which with this funding will extend to private land surrounding Waipoua.	\$50,000
Track Upgrade	9.Improving track infrastructure to protect kauri.	NRC have 2 separate sections of track in the Kaipara District that require track upgrade and have been costed. One of these tracks is the Paparoa Bush Walk and the other is the Kaiwaka Domain.	\$250,000
Capacity Building	1.Determining and establishing protectable areas. 2.Hapū/Iwi lead collaboration. 4.Establishing a base line and carrying out monitoring.	Employment of 2 additional staff for 12 months to assist with soil sampling, assessments, liaising with landowners for fencing provisions. This will include training local kaitiaki in the sampling process.	\$200,000
Improving TA Trail capacity in Northland	9.Improving track infrastructure to protect kauri.	The Te Araroa Trail desperately needs to capacity build in order for trail issues relating to kauri protection in Northland to be dealt with and relationships built for a sustainable long-term future of the TA Trail.	\$100,000
<b>Total</b>			<b>\$1,000,000</b>

## Waikato Regional Council

Item	NPMP Principle Measure	Brief Description	Amount
Fencing and landowner kauri protection agreements	2. growing awareness, partnerships, collaboration, and engagement activities across the community.  5. Implementing hygiene standards and programmes, and imposing movement controls on risk goods that are, or may be, capable of contributing to the spread of PA  7. exclusion or control of animal vectors 8. managing kauri forest access	This work area is focused on working with rural landowners to support the management of people, stock, and feral animal vectors.  To provide funding support for fencing activities around ecologically significant kauri in the Waikato.	\$350,000
Wild animal control	7. exclusion or control of animal vectors	Support the delivery of feral animal control in priority areas. Namely wild cattle, deer, and goat control in priority areas (proximity to PA positive sites and ecologically significant kauri areas).	\$250,000
Community liaison	2. growing awareness, partnerships, collaboration, and engagement across the community. 8. managing kauri forest access.	Expanding upon WRC's community group support programme to deliver kauri protection plans with community groups undertaking bait-line operations off-track – there are over 90 community groups on the Coromandel WRC looking to work with.	\$180,000
Industry liaison	2. growing awareness, partnerships, collaboration, and engagement across the community 8. managing kauri forest access	Raising awareness and building engagement across industry such as roading, quarry, powerline company, earthworks, and forestry.	\$140,000
Marketing support	2. growing awareness, partnership, collaboration, and engagement across the community.	This role will support local marketing initiatives to support community engagement and a school's programme. The role will aim to build normative behaviours and share stories from others to encourage 'social influencing'. To support celebrating success and telling good stories to further enhance buy-in and build engagement.	\$80,000
<b>Total</b>			<b>\$1,000,000</b>

### Auckland Council

Auckland Council has \$3.8M ratepayers funding for kauri protection. It is important to note AC has land management responsibilities akin to DOC with a high level of population pressure.

Funding from Kauri Protection funds will be to leverage AC investment where there is national benefit including and beyond AC managed lands or where there is additive benefits that would not otherwise be achieved (without supplementary funding).

The Kauri protection team is awaiting a copy of the AC kauri workplan to continue discussions on funding opportunities.

Item	NPMP Measure	Brief Description	Amount

### Bay Plenty Regional Council

Item	NPMP Measure	Brief Description	Amount

## Department of Conservation

DOC has funding of \$3.5M to allocate towards Kauri Protection.

Funding from the kauri protection operational plan is considered where there are national benefits beyond public conservation lands or joint funding to achieve NPMP objectives.

For FY 2021/22 the following is being proposed.

Item	NPMP Measure	Brief Description	Amount
Pig Control Strategic Direction	7.Exclusion or control of animal vectors	Funding for DOC to undertake pig control; planning to improve methods, identify priority work and develop a plan across kauri forests	\$200,000
Forest plan joint funding	8. Managing kauri forest access in collaboration and partnership with mana whenua	50% funding for DOC to develop in partnership with mana whenua a forest plan which protects kauri with iwi/hapū which will be replicated across private landowners	\$150,000
TOTAL			\$350,000

## Iwi CoLab Proposal : Kauri Ora Project Manager Role



Opportunity Statement – It has been highlighted there is a crucial need to reinstate the role of a Kauri Ora Project Manager that will support operations and project delivery and create capacity for the Programme Manager

Kauri Ora which is funded through the Jobs for Nature initiative is now into its 2nd quarter of operations and is meeting targets and outcomes towards creating a minimum of 30 FTE positions over the course of the investment period. The Iwi Collaboration: Kauri Action intends to extend beyond the initial investment and job numbers and needs to create the capacity to do this.



## Current State




- The initial Kauri Ora J4N proposal was scoped to include the roles of Investment Manager and Project Manager. However, due to funding restraints these roles were not progressed.
- The activities of these two roles have been subsequently absorbed by the Programme Manager. The Project Management tasks have taken up most resource requiring full focus and priority for the operation and success of the project.
- Currently, the Programme Manager is not able to focus fully on 1. strategically growing the Iwi Colab value proposition through nurturing and developing relationships with key strategic partners and stakeholders; and 2. leveraging Government investment while developing longer term sustainability through developing relationships and investment ready projects with national and international philanthropic and NGO funding opportunities.



## Desired State

To employ a Project Manager for Kauri Ora which will achieve the following

- Increase Programme Manager capacity to allow increased focus on strategic relationships and growing investment opportunities.
- Reallocation of activities to the Project Manager such as liaising directly with Iwi to ensure all financial and reporting requirements are being planned and completed on time and ensuring that the project is meeting milestone reporting tasks and on time
- Ensure that project scope and objectives are further developed and tracked to ensure on time delivery, that resource availability, allocation and tracking is in line with project financials and budget
- Ownership of risk reporting and ensure that all risks and dependencies are identified, mapped, owned and mitigated

	<ul style="list-style-type: none"> <li>The need to engage with and resource Kauri Protection Agency and Governance opportunities will increase, and a risk is this opportunity for the CoLab may not always be fully realised with current staffing restraints.</li> </ul>		
	<b>Reporting Line</b> Programme Manager		<b>Contract</b> 1 x FTE; 35 hours per week
	Investment: \$110 K pa over a two year period		
	<b>Summary</b> The need for a Full Time Project Manager is essential for the ongoing success of Kauri Ora now the project is into an operational phase. This person will be able to assist with quarterly planning and form a conduit between the Project team, Team leaders and the Programme Manager They will also be able to own the Risk register and ensure that all operational & project risks are identified and mitigated, ensure scope of the project is maintained and the project financials are in order. This will release capacity for the Programme Manger to focus on strategic relationships and growing investment opportunities alongside other identified responsibilities.		

## Iwi CoLab Proposal: Request for Funding Kauri Ora Diagnostics: 2021-23

### *Purpose*

The Iwi CoLab: Kauri Ora seek funding from the Ministry of Primary Industries for the purpose of providing an operation diagnostics budget to support the investigation of the distribution of *Phytophthora agathidicida* (PA) in our kauri forests of Te Taitokerau.

### *Background*

The Kauri Ora project is an iwi collaboration between four iwi of te Taitokerau to enhance the capacity and capability of mana whenua leading investigations of forest health within their own iwi rohe. This project directly aligns to the first of four pou signalled within the draft National Operations Plan for Kauri Protection 2021 and is also operationally aligning to the surveillance methodology conducted recently within Te Waonui o Tiriwa, the Waitakere Ranges. Our iwi Kauri Ora ranger teams will undertake soil sampling and tree health assessments across landscape representative scales to report on the health of kauri forests within and across these landscapes.

### *Diagnostics budget*

The diagnostics budget is a critical component to the Kauri Ora mahi as it determines positively identified kauri infected with PA within forest management units. Confirmation of phytophthora infection is a critical step to informing a treatment plan across appropriate scales within specific kauri management units and combined with the observed symptomology of individual trees will determine whether individual kauri are suitable for Phosphite or rongoa treatment.

This informed approach aligns with the methodology conducted within the Waitakere Ranges by Auckland Council and will allow for ongoing site monitoring and more detailed investigation of PA infestation within appropriately scaled kauri management units of forests. This provides an evidence based approach to show efficacy of treatments by establishing a clear critical pathway from symptom, diagnostics, treatment and monitoring to determine the overall efficacy of this management intervention approach.

The diagnostics budget was originally omitted from the *Iwi Colab - Kauri Ora* Jobs for Nature application as the focus was to build capability and capacity within the collaborative iwi partner organisations and to ensure positions were well resourced. Additionally, previous soil sampling campaigns in Waipoua and Trounsan Park were covered by budget from the Kauri Coast DoC office kauri dieback operations budget and the expectation was that this local operational level funding stream would continue to be available from DoC. With the Kauri Protection Programme National Operations Plan being activated it is appropriate for Kauri Ora to request operational funds to support our objectives and those of the National Pest Management Plan.

#### *Kauri Ora Diagnostics Budget*

The diagnostics budget will be used to support minor material resourcing as well as the processing of soil sample material collected by the Kauri Ora ranger teams of the four Iwi Colab partners. We will utilise the approved method for confirming the presence of PA in soil. Soil testing can be undertaken from two approved service providers within Aotearoa New Zealand - Scion based in Rotorua and Plant and Food Research based in the Hawke's Bay.

#### **Iwi CoLab: Kauri Ora is seeking:**

<b>Funding required for</b>	<b>Soil samples required</b>	<b>Tree Assessments</b>	<b>Costings</b>
<b>2021-22: Iwi</b>			
Te Roroa	200 @\$175 per sample	1000 @\$0	\$35,000.00
Te Rarawa	200	800	\$35,000.00
Ngatiwai	200	500	\$35,000.00
Ngati Kuri	200	500	\$35,000.00
Consumables and Delivery		\$10,000.00	
<b>TOTAL</b>		<b>\$150,000.00</b>	

## Appendix E – Role descriptions from the NPMP Proposal

## Local Authorities

**25. The actions that it is proposed local authorities, local authorities of a specified class or description, or specified local authorities may take to implement the plan, including contributing towards the costs of implementation [s.61(2)(1)]**

The actions that it is proposed regional councils may take to implement the plan, including contributing towards the costs of implementing the plan are:

- Involvement in regional coordination, regional compliance and regional implementation.
- Ensuring that all regional council staff and contractors implement effective kauri dieback hygiene protocols and comply with requirements of the NPMP – this activity is to be funded by the regional council.
- Actively managing kauri dieback on publicly-owned lands in accordance with the NPMP, where the regional council is the statutory land manager – this activity is to be funded by the regional council, but with ability to apply to the management agency to contribute funding under exceptional circumstances.
- Including appropriate rules and other requirements in regulatory plans administered by council and implementing these, including ensuring consent conditions provide for the effective protection of kauri from PA and associated compliance monitoring and reporting.

The actions that it is proposed territorial local authorities may take to implement the Plan, including contributing towards the costs of implementing the plan are:

- Ensuring that all local authority staff and contractors implement effective kauri dieback hygiene protocols and comply with requirements of the NPMP – this activity is to be funded by the local authority.
- Actively managing kauri dieback on publicly-owned lands in accordance with the NPMP, where the local authority is the statutory land manager – this activity is to be funded by the local authority, but with ability to apply to the management agency to contribute funding under exceptional circumstances.
- Minimising the risk of kauri dieback spread by regulating earthworks under the Resource Management Act 1991 - this activity is to be funded by the local authority.



## Department of Conservation

**26. The action that it is proposed the Department of Conservation may take to implement the plan**

The actions that it is proposed the Department of Conservation (DOC) may take to implement the plan:

- Involvement in regional coordination, regional compliance and regional implementation
- Ensuring that all DOC staff and contractors implement effective kauri dieback hygiene protocols and comply with requirements of the NPMP
- Actively managing kauri dieback on public conservation lands in accordance with the NPMP, where DOC is the statutory land
- Actively using regulatory tools under Conservation legislation to effectively manage the risk of kauri dieback on public conservation lands, including forest and track closures
- Advocating, promoting and educating in relation to kauri dieback consistent with DOC's functions under section 6 of the Conservation Act 1977.

Funding of the above activities are yet to be determined.

## Māori

**1. The actions that it is proposed hāpu/iwi may take to implement the plan**

The actions that it is proposed hāpu/iwi may take to implement the plan are:

- Involvement in regional coordination, regional compliance and regional implementation
- Preparing a funding plan for activities identified in the regional implementation plans, including capacity and capability building
- Ensuring that all staff and contractors of hāpu/iwi implement effective kauri dieback hygiene protocols and comply with requirements of the NPMP – this activity is to be funded by the management agency;
- Actively managing kauri dieback on publicly-owned lands in accordance with the NPMP, where co-governance/co-management agreements exist with the statutory land manager
- Actively managing kauri dieback on Māori land in accordance with the NPMP, in a way consistent with the aspirations of mana whenua
- Actively managing kauri dieback on general land in accordance with the NPMP, by agreement
- Use and apply solutions sourced from Mātauranga Māori for the protection of kauri from PA
- Carrying out compliance monitoring and reporting appropriated to the effective protection of kauri from PA – this activity is to be funded by the management agency.
- Self-nominating any other action appropriate to the effective protection of kauri from PA as and when they feel ready.

