

He Māhere Rautaki Whakakore Konihi

Predator Free 2050 5-year Action Plan

2020 – 2025



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Contents

- 1. Tā mātou whāinga tāhuhu / Our Vision.....5**
- 2. He Whakataki / Introduction.....7**
 - 2.1 Horopaki / Context.....8
 - 2.2 He aha ai / Why 5 years?8
 - 2.3 Ngā mahi matua / Priority actions8
 - 2.4 Ngā whainga mō te tau 2025 / Interim 2025 goals9
 - 2.5 Te huarahi whakaaweawe / A collective pathway for greater impact 10
 - 2.6 He roopu kāhui huihuinga / Proposed collaborative group initial memberships 12
 - 2.7 Ko te mea nui ka puta ko te rautaki tūmau / Prioritisation leading to an investment plan 14
- 3. Te huarahi ā mahi / Pathway action planning 17**
 - 3.1 Tikanga ā mahi / How to use this 5-year Action Plan: 17
 - Mā ngā whānau, mā ngā hapū, mā ngā iwi e whakatau tō rātou kaitiakitanga
Whānau, hapū and iwi expressing kaitiakitanga 18
 - Me whakaohooho, me whakamana ngā hapori kia mahi i te mahi
Communities taking action20
 - Te whakatinana i ngā ture me ngā momo kaupapa here e tika ana mō te kaupapa
Supporting the kaupapa through legislation and policy24
 - Te mātauranga, te mahi auaha, te whakapai
Advancing our knowledge, innovation and improvement26
 - He aronui, he aromataiwai, he aromātai i te rerekētanga
Measuring and assessing the difference we make30
 - Te nuku atu i te pupuru i te maha o te kaikonihī kia iti, ki te ara haepapa pūmau
Moving from sustained predator control to eradication33
- 4. Kuputaka / glossary.....37**
- 5. Appendix 1: Logic maps39**



1. Tā mātou whāinga tāhuhu / Our Vision

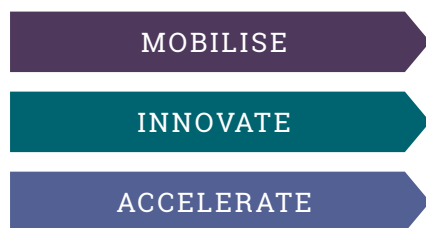
*Whakahokia mai ngā reo karanga o te pēpeke,
o te pekapeka, o te ngārara, o te manu ki ngā
ngahere, ki ngā whenua pāmu, ki ngā tāone iti,
ki ngā tāone nui me ngā takutai.*

*Return the voices of the insects, bats, reptiles and
birds back to the forests, farmland, towns, cities
and coasts.*



2. He Whakataki / Introduction

The strategy for delivering a predator free New Zealand by 2050 comprises three main actions – mobilise, innovate and accelerate – which will be shown graphically in this Action Plan as:



Mobilise: Taking the steps needed to build predator free communities and establish regional and national collaborations.

Innovate: Developing the new and transformational tools and techniques (and the public acceptance of them) that will be required to eradicate predators.

Accelerate: Applying Predator Free 2050 tools and techniques across the landscape as fast as possible, as they are developed.

To organise delivery of the Predator Free 2050 Strategy, six pathways have been identified. These pathways help rationalise and focus the work required to achieve Predator Free 2050 (PF2050):

- Mā ngā whānau, mā ngā hapū, mā ngā iwi e whakatau tō rātou kaitiakitanga
Whānau, hapū and iwi expressing kaitiakitanga
- Me whakaohoho, me whakamana ngā hapori kia mahi i te mahi
Communities taking action
- Te whakatinana i ngā ture me ngā momo kaupapa here e tika ana mō te kaupapa
Supporting the kaupapa through legislation and policy
- Te mātauranga, te mahi auaha, te whakapai
Advancing our knowledge, innovation and improvement
- He aronui, he aromataiwai, he aromātai i te rerekētanga
Measuring and assessing the difference we make
- Te nuku atu i te pupuru i te maha o te kaikonihī kia iti, ki te ara haepapa pūmau
Moving from sustained predator control to eradication.

The following action plan focuses on the work required over the next 5 years (2020–2025) and outlines key near-term outcomes within the six pathways, with a focus on how this work contributes to the overarching strategy of ‘mobilising, innovating and accelerating to deliver a predator free New Zealand by 2050’.

2.1 Horopaki / Context

Since New Zealand's ambition to become predator free by 2050 was announced, considerable work towards achieving this aim has taken place. Whānau, hapū and iwi, communities and landowners, alongside government agencies, businesses and other organisations, have all contributed efforts towards the PF2050 aim.

An action plan is required to provide a medium-term focus for this work. It aligns our efforts and ensures we focus on the priority actions identified for the next 5 years. This Predator Free 5-year Action Plan sets out a 5-year roadmap, alongside a longer-term vision, that will enable all New Zealanders to understand how they can contribute towards a predator free New Zealand.

Development of the Predator Free 2050 Strategy and this accompanying 5-year Action Plan has been a social exercise, built from engagement across the country between groups and individuals with diverse interests. As a result, collective terminology and language (specifically the terms 'we' and 'our') is used throughout the document. Where parties have a specific role to play, they are identified. A glossary has been added to provide clarity where needed.

2.2 He aha ai / Why 5 years?

The Strategy develops a programme to drive change. Everything we do adjusts the future, which, in turn, creates uncertainty. This is balanced by the Action Plan having a focus on a relatively short timeframe (the next 5 years), with more general longer-term outcomes signaling the desired direction of travel. The intention is to push the near-term planning ahead of us as we go, adjusting directions based on new knowledge as it becomes available.

2.3 Ngā mahi matua / Priority actions

The first years of the Strategy implementation focus on the steps needed to develop our systems. Many actions sit in the 'mobilise' component of the Strategy.

Key areas include:

- Actions to achieve the Strategy's goals for 2025.
- Establishing national and regional collaborations.
- Technical modelling.
- Establishing an investment plan.

2.4 Ngā whaingā mō te tau 2025 / Interim 2025 goals

New Zealand's goal to become predator free by 2050 was announced in 2016. Four interim (2025) goals were also established at that time to focus technical effort and demonstrate this progress towards the PF2050 goal. The Strategy identifies three more interim goals, recognising the significant contribution whānau/hapū/iwi, landowners and communities will make to the 2050 goal. The seven interim goals are:

- By 2025, we will increase by 1 million hectares (from 2016 figures) the area of New Zealand mainland where predators are suppressed, through Predator Free 2050 projects.
- By 2025, we will have demonstrated that predator eradication can be achieved in areas of mainland New Zealand of at least 20,000 hectares and that these areas can be defended from reinvasion without the use of fences.
- By 2025, we will have eradicated all mammalian predators from New Zealand's uninhabited offshore islands.
- By 2025, we will have developed a breakthrough science solution that would be capable of eradicating at least one small mammal predator from the New Zealand mainland.
- By 2025, whānau, hapū and iwi will have identified sites of importance for predator eradication and at least five eradication projects led by whānau, hapū and iwi will be underway across the country.
- By 2025 we will have eradicated possums or mustelids from at least one New Zealand city.
- By 2025, effective tools and knowledge will be available to achieve predator eradication on farmland.

Emphasis also needs to be placed on developing the underlying actions needed to build a platform for achieving a predator free New Zealand: understanding, capability and capacity, coordination and collaboration. This action plan sets out a number of outcomes and milestones that will contribute to building this platform.

2.5 Te huarahi whakaaweawe / A collective pathway for greater impact

Achieving a predator free New Zealand will be a world first, thus our thinking on how to make it happen also needs to be world-leading and innovative. Many minds and hands are already working on achieving this goal and working collectively will mean that our efforts can go further, faster. Predator Free 2050 will only be achieved if everyone takes responsibility for it, requiring collaborative effort across the country. Collaborative groups will therefore lead the direction of PF2050.

These collaborative groups will be set up at two levels – regionally and nationally (described in detail below). Organising efforts in this way ensures that decisions are made close to the action and at the most appropriate level, and by people who have the ability to influence resourcing and effort.

2.5.1 Mahi tahi a whānau / Regional collaborations

Local people having leadership and influence over what happens locally will be supported through regional collaborations. This will enable whānau, hapū and iwi, communities and landowners to make decisions about the land where they live, work and play. Regional collaborations, driven at the local level, will ensure that everyone works together to secure PF2050 outcomes for their places.

Whānau, hapū and iwi, community groups and non-governmental environmental organisations, local authorities, DOC and others will come together to stocktake work within each region and develop 5-year action plans to set out how each region will work towards PF2050. The collaborations will help clarify accountabilities, roles and responsibilities for this work.

2.5.2 Mahi tahi a motu / National collaborations

National collaborations will involve members of the PF2050 community whose work has a national impact, and where there is a need to align resourcing and effort. A nationally focused collaborative group will be formed for each strategic pathway using a Collective Impact model (a concerted effort across different parties to collectively achieve a common objective). These six groups will define roles and responsibilities and remove duplication by developing shared agendas for action. The collaborative groups will ‘own’ the strategic direction of each pathway, making changes to the 5-year direction based on shared knowledge. The first of these national-level groups is already being piloted (see Box 1 – Advancing our knowledge, innovation and improvement).

Proposed collaborative group membership (see Table 1) reflects the current situation and the need for alignment of resourcing and effort in these areas but is not necessarily indicative of future membership. Each national-level collaboration will nominate a lead, who will form part of the steering group. The balance of the steering group will be made up of representatives of any of the national organisations involved in PF2050 who were not represented by the collaborative group leads. This steering group will be tasked with working across the pathways to identify synergies, opportunities and relative priorities and to track and report on progress. This ensures that the PF2050 programme remains cohesive and operates as more than the sum of its parts.

The collaborations and steering groups are mechanisms for organising the national-level work and ensuring that the most effective actions are being undertaken. They are not programme governance – the organisations involved in each collaborative effort have their own independent governance with current programme governance provided by Cabinet. There have been calls to provide a different governance model that reflects the inclusive and collaborative intent of the strategy. This will be investigated in the near future.

This 5-year Action Plan has not defined actions specifically, but rather focused on outcomes and milestones. A key role for the collaborative groups will be to determine the actions required and roles and responsibilities to achieve the milestones defined in the plan. Development of shared agendas by the collaborative groups will ensure that the PF2050 programme is drawing on the best expertise and knowledge, while at the same time creating shared ownership of the mahi.

This approach will ensure that the PF2050 Strategy and the 5-year Action Plan remain ‘live’, current and responsive to new knowledge.

Box 1 – Advancing our knowledge, innovation and improvement

Te mātauranga, te mahi auaha, te whakapai

Key shifts the Predator Free 2050 Strategy proposes are national-level collective impact and local-level ownership of solutions. Collaboration is the obvious approach to problem solving and setting directions and strategic pathways enabling a system response to a complex issue like making New Zealand predator free.

In early 2019, a national-level collaborative group was piloted to progress work along the knowledge, innovation and improvement pathway. In an industry where a largely competitive research model has dictated predominately disconnected effort and investment, this approach has the opportunity to create a focused, effective and impactful work programme.

The group comprises representatives of national agencies and organisations working in predator control science and allied research fields. The group committed themselves to develop and lead a national-level work programme to produce science outputs and outcomes for application by the wider PF2050 community.

This group has met twice since it was established and has agreed on three high priority themes for collective research to help expand our understanding on how to become predator free. These are:

- Social acceptability.
- Shifting from suppression to eradication.
- Defending against reinvasion.

Group members will scope agencies/organisations for input, existing work and future collaboration opportunities, leading to targeted and cost-effective research, innovation and improvement for PF2050 work.

2.6 He roopu kāhui huihuinga / Proposed collaborative group initial memberships

The proposed initial memberships of the national-level collaborative groups guiding the six PF2050 strategic pathways are provided in Table 1.

Criteria for membership of the collaborative groups reflect key responsibilities different organisations have and their being able to direct resourcing to deliver on pathway goals.

Table 1. Proposed memberships of the six Predator Free 2050 collaborative groups.

Collaborative group	Proposed organisation members
Mā ngā whānau, mā ngā hapū, mā ngā iwi e whakataū tō rātou kaitiakitanga – Whānau, hapū and iwi expressing kaitiakitanga	(Hapū/iwi leaders to be determined) Department of Conservation (DOC) Biological Heritage National Science Challenge (BHNSC) Ministry for Primary Industries (MPI) Te Puni Kōkiri (TPK) Manaaki Whenua-Landcare Research
Me whakaohoho, me whakamana ngā hāpori kia mahi i te mahi – Communities taking action	DOC Predator Free 2050 Ltd (see Box 2 for more information) Forest & Bird Predator Free New Zealand Trust Regional councils (via bio-managers group) MPI Federated Farmers (or similar body) City council representative
Te whakatinana i ngā ture me ngā momo kaupapa here e tika ana mō te kaupapa – Supporting the kaupapa through legislation and policy	DOC MPI Ministry for the Environment (MfE) Regional councils (via bio-managers group) Land Information New Zealand (LINZ) Environmental Protection Authority (EPA)
Te mātauranga, te mahi auaha, te whakapai – Advancing our knowledge, innovation and improvement	Predator Free 2050 Ltd Te Tira Whakamātaki Zero Invasive Predators (ZIP) Manaaki Whenua-Landcare Research BHNSC MPI DOC Science for Technical Innovation Challenge OSPRI Regional Council National Science Working Group

Collaborative group	Proposed organisation members
He aronui, he aromataiwai, he aromātai i te rerekētanga – Measuring and assessing the difference we make	DOC LINZ MfE PF2050 Ltd Regional councils (via bio-managers group) BHNSC Statistics NZ Department of Internal Affairs
Te nuku atu i te pupuru i te maha o te kaikonihī kia iti, ki te ara haepapa pūmau – Moving from sustained predator control to eradication	DOC OSPRI Regional councils (via bio-managers group) PF2050 Ltd Nga Whenua Rahui ZIP NEXT Foundation

Box 2 – Predator Free 2050 Limited

Predator Free 2050 Limited is a crown-owned charitable company established to direct some of the crown investment into the Predator Free 2050 (PF2050) programme. They have the role of leveraging the value of Crown-based funding into PF2050 projects through collaboration and philanthropic donations that will be invested in high-value, large-scale predator control initiatives and scientific research into predator eradication. As of 2019, Predator Free 2050 Ltd has invested over \$23.3 million in five large, landscape-scale ‘pathfinder’ or ‘learning by doing’ projects which aim to enable predator control to eradication. In addition to this, the company contributes \$1 million per annum towards breakthrough science, guided by their science research strategy.

A 2019 grant from the Provincial Growth Fund has enabled investment in three additional landscape-scale projects, and fast track development of new predator eradication tools for use over the next 3 years. Predator Free 2050 Ltd supports a shift from the competitive funding of small-scale, isolated projects to large, landscape-scale projects with much higher biodiversity outcomes. The five ‘pathfinder’ projects currently being funded through Predator Free 2050 Ltd have built community support across integrated landscape-scale projects. The projects are:

- Taranaki Taku Tūrangā – Towards a Predator Free Taranaki
- Predator Free Hawkes Bay
- Predator Free Wellington/Capital Kiwi
- Te Korowai o Waiheke – Towards a Predator Free Waiheke
- Predator Free Dunedin

Alongside the Predator Free 2050 Limited pathfinder projects, there are a number of other projects which are resulting in ‘learning by doing’, including NEXT-Foundation-funded Project Janszoon and Zero Invasive Predators’ Perth River Valley Predator Removal Operation.

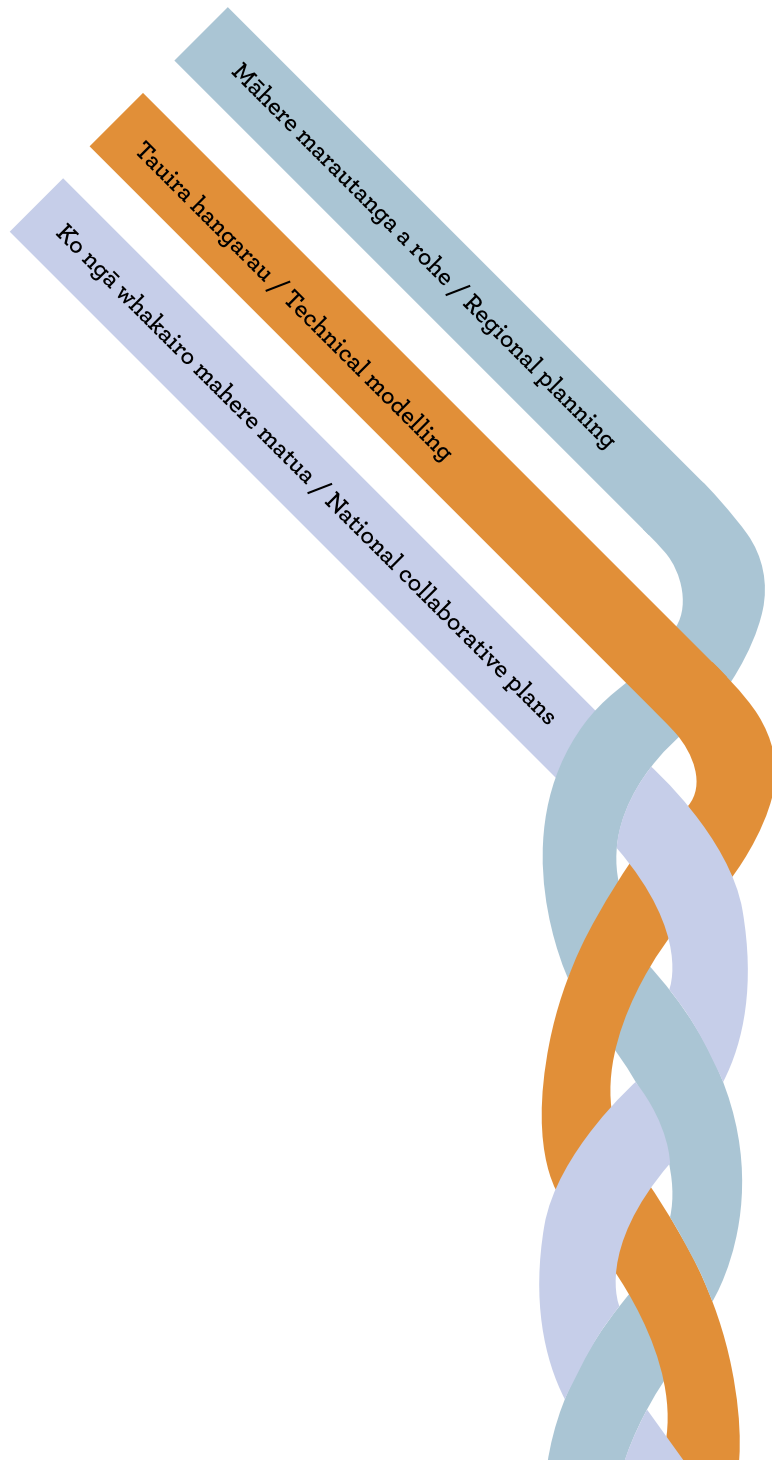
2.7 Ko te mea nui ka puta ko te rautaki tūmau / Prioritisation leading to an investment plan

Over time, New Zealand will be able to build a complete picture of regional readiness (social and technical) and national needs for predator eradication. This will allow a comprehensive investment plan to be developed for government and external investors. It provides oversight of future opportunities and guidance on where to direct resources to ensure they are allocated to the right places at the right times. This doesn't indicate that we should hold off investing now; rather, that a more complete national picture will emerge as we carry out the work.

We don't as yet have the technical and social knowledge needed to make informed investment decisions across New Zealand. Instead, the action plan establishes a path to get us there. The investment plan is a separate step informed by the Strategy. Three separate strands come together to build priorities (and, ultimately, determine the investment plan):

- Technical modelling / tauria hangarau – understanding of predator biology and effectiveness of eradication in different environments.
- National-level collaborative plans / ko ngā whakairo mahere matua – developed by the collaborative groups for each of the strategic pathways, identifying what actions and resources are required within each pathway.
- Regional-level collaborative plans / māhere marautanga a rohe – developed locally to determine social readiness of communities for predator control actions in their places. Implementation will be dictated by whānau, hapū and iwi and communities' readiness to support the predator eradication work required. Predator Free 2050 Limited has begun some of this work through the initiation of several regional projects.

These components are embedded in this first PF2050 5-year Action Plan.



Investment plan



3. Te huarahi ā mahi / Pathway action planning

3.1 Tikanga ā mahi / How to use this 5-year Action Plan:

This plan sets out the key steps along each of the six pathways that are needed to deliver intermediate outcomes for PF2050 over the next 5 years, with measurements of success identified as appropriate.

Logic mapping has been used to help guide and prioritise thinking within the six strategic pathways. The 'logic map' approach specifies the key steps (or intermediate outcomes) along the journey towards the desired long-term outcome for each pathway. The logic maps can be viewed in Appendix 1.

The 2025 goals can be identified within the following sections by **bolded** text.

The main actions of the Predator Free 2050 Strategy are mobilise, innovate and accelerate. We're depicting the three elements for each pathway as all are interlinked, but for each pathway, one will have more emphasis than the others. We've shown this visually at the head of the page.

Mā ngā whānau, mā ngā hapū, mā ngā iwi e whakatau tō rātou kaitiakitanga Whānau, hapū and iwi expressing kaitiakitanga

A collaborative interagency group will drive the kaitiakitanga pathway. This pathway is based on foundational concepts of mauri, local tikanga, wairua and tapu. In the near term, it seeks to support local leaders and individuals with mana (such as kaumātua) to revitalise the connection of whānau, hapū and iwi to te taiao (the natural world) and share this with each other. Ensuring local mātauranga is supported will help to inform both regional and national PF2050 projects.

Investment in education will ensure all generations have access to knowledge of what is happening to te taiao, and what can be done to help. Specifically, upskilling in pest management (field work, management, planning, technical innovation and data management) will allow whānau, hapū and iwi to be employed in PF2050 projects, supporting the local economy and sustaining ahi kā (connections to the land). Existing relationships and connections are critical to sharing learning – kaitiaki sharing their models of pest management and learning with other kaitiaki.

Barriers to expression of kaitiakitanga (such as lack of resources, capability and access to public lands to practice kaitiakitanga) need to be understood and addressed. The priorities of whānau, hapū and iwi for their rohe need to be understood by agencies and accounted for in planning.

This pathway recognises the need for self-determination – whānau, hapū and iwi creating, designing and delivering pest management programmes, and also the need for whānau, hapū and iwi to have a voice at the table in larger regional initiatives – many of which they may lead. Locally driven mātauranga māori underlies all this work, informing research and regional planning.

Ultimately, this mahi will be future-focused, helping return the ngahere (forest) to health and abundance and enabling cultural practices such as mahinga kai (food gathering) and rongoā (medicine), increasing mana. In the short term, a number of milestones and measures of success for tracking progress towards the PF 2050 intermediate outcomes have been identified.

Ngā whaingā ako / Intermediate outcomes:

1

Whānau, hapū and iwi are at the core of PF2050 decision making.

2

Predator Free 2050 activities are contributing to local economies, providing employment of whānau, hapū and iwi and sustaining ahi kā.

3

Whānau, hapū and iwi have a strengthened sense of connection with place and community.

4

The ngahere returns to health and abundance, enabling cultural practices such as mahinga kai and rongoā, enhancing mana and wellbeing.

5

The Treaty partnership is honoured.



**Whānau, hapū and iwi
express kaitiakitanga**

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates a kaitiakitanga shared agenda.</p>	<p>By 2020, a national-level collaborative group is formed and developing a shared agenda for kaitiakitanga in PF2050 activities.</p>
<p>2. Community influencers act as catalysts to connect and mobilise their communities to make a difference for te taiao.</p>	<p>Opportunities are provided for Māori communities to share learning of what was and what is now (including whakapapa, mauri, local tikanga, wairua and tapu) from kaumatua, wānanga, stories and hikoi back to places.</p> <p>Whānau, hapū and iwi and Māori land owners use connections and relationships to share information and approaches to pest management.</p>
<p>3. Agencies/organisations work with whānau, hapū and iwi to understand what is needed, and how to support this.</p>	<p>Discussions between whanau, hapū and iwi and agencies/organisations identify predator control opportunities within rohe, and how best to support them.</p> <p>By 2021, a toolbox of information to assist whānau, hapū and iwi with decision making, planning and delivery of predator control is readily available.</p> <p>Agencies/organisations allow for other demands on whānau, hapū and iwi time (e.g. Treaty settlements) and plan accordingly.</p> <p>Ongoing, other barriers to kaitiakitanga are identified and addressed, e.g. access to Public Conservation Land, resourcing.</p>
<p>4. Tamariki learn about their relationship to te taiao and understand their role in looking after it into the future.</p>	<p>By 2025, kura, kohanga and other education providers are using tailored PF2050 resources to educate and encourage tamariki and rangatahi to act.</p>
<p>5. Rangatahi and others will have opportunities to upskill in pest management locally (e.g. ecology, trapping, project management, customary management) delivered by skilled whānau, tertiary institutes and local wānanga.</p>	<p>By 2020, initial training needs are identified and a stocktake of existing information has been carried out.</p> <p>By 2025, rangatahi and others are being upskilled in predator management and project management via tertiary education, wānanga and skilled whanau.</p> <p>By 2025, PF2050 opportunities are providing employment and other economic opportunities for rangatahi and others.</p>
<p>6. Whānau, hapū and iwi design, decide on and deliver new pest management programmes.</p>	<p>By 2025:</p> <ul style="list-style-type: none"> • Involvement and expertise of whānau, hapū and iwi in pest management has increased. • Whānau and hapū are actively restoring a significant number of sites. • PF2050-related work is providing employment and economic opportunities for whānau and rangatahi in their local areas.
<p>7. Existing projects initiated by whānau, hapū and iwi are succeeding, encouraging more sizeable whānau, hapū and iwi-led projects and contributions to larger regional initiatives.</p>	<p>By 2025, the majority of marae are actively involved in predator control in their rohe.</p> <p>By 2025, whānau, hapū and iwi identify sites of importance for predator eradication and at least five eradication projects led by whānau, hapū and iwi are underway across the country.</p> <p>Whānau, hapū and iwi will have a voice at the table in larger regional initiatives – many of which they may lead.</p>
<p>8. Whānau, hapū and iwi voices and stories in conservation are shared and celebrated.</p>	<p>By 2025, an increasing number of Māori voices and stories in conservation are being heard and shared.</p>

Me whakaohooho, me whakamana ngā hapori kia mahi i te mahi Communities taking action

More and more New Zealanders are participating in predator control and eradication programmes in the places where they live, work and play. The 'communities taking action' pathway seeks to maintain and grow this momentum into the long term. At the national level a communications and engagement group will develop a shared agenda to deliver this pathway. First steps involve growing understanding, particularly amongst young people (about what predators are doing to our environment and how they can help), and agencies and organisations (about people's values and perspectives, what motivates them to contribute, in various ways, and how best to involve and support community groups).

In the past, much of our pest eradication has occurred on offshore islands or in uninhabited 'mainland islands'. As our ambition has grown for predator eradication to encompass all of New Zealand, so too has the need for people to become involved in protecting the native taonga of the places they care about. Individuals, hapū, families, communities, landowners and business are critical to the success of PF2050 in farmland, towns and cities. Sharing of local stories will generate a sense of shared experience and momentum within and across communities.

The organisations with key roles in achieving PF2050 will need to consider how best to enable individuals and community groups to be most effective, and how to support them. Education is critical. Focusing on our young people helps sustain the momentum into the future, with schoolchildren becoming the leaders of tomorrow.

As more and more areas are cleared of predators, and biodiversity begins to recover, more New Zealanders will be able to experience what healthy forests and other ecosystems look and sound like. Research shows the resilience and wellbeing of both nature and people are interconnected, and that contact with nature is essential for improving emotional, physical and spiritual health and wellbeing. For Māori, the relationship with Te Taiao, our environment, is personal and long standing. Community wellbeing depends on healthy ecosystems, and healthy ecosystems are reliant on communities. Biodiversity that is recovering will foster wellbeing and must be used to inspire people to connect with nature. That, in turn, may foster wellbeing and inspire more people to get behind further projects.

Innovative tools and techniques are required in order to reach PF2050. Science communications will help keep the public informed and ensure transparency in this work, while access, training and support for communities who will be the end users of these tools will ensure they can be utilised effectively.

In the short term, there will be a focus on supporting existing community effort and stimulating more engagement and effort towards PF2050. By contributing to and supporting efforts towards a predator free New Zealand, New Zealanders will be investing in a future where our native wildlife thrives.

Ngā whainga ako / Intermediate outcomes:

- 1**
Predator Free 2050 is collectively owned and supported.
- 2**
People’s wellbeing is enhanced from engaging and participating in making New Zealand predator free.
- 3**
People are reconnecting with te taiao.
- 4**
Communities and agencies/organisations celebrate their contribution to New Zealand’s success as a global leader in controlling invasive predators and other pests.
- 5**
Younger generations are picking up the mantle.

Collective ownership and participation

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates shared communities agenda.</p>	<p>By 2020, a national-level collaborative group is formed and developing a shared communities agenda to support PF2050.</p> <p>By 2020, all parties have clarity on each other's roles and responsibilities, recognising respective strengths.</p>
<p>2. The range of values, attitudes and beliefs held by New Zealanders and how these might influence attitudes to predator control is underpinning messaging by agencies/ organisations.</p>	<p>By 2022, an approach for segmented (targeted) messaging based on values is being used to foster public acceptance of PF2050.</p>
<p>3. Communities are empowered to take action to deliver PF2050 projects.</p>	<p>By 2022, agencies/organisations understand community needs and how they can help support community groups to take action.</p> <p>By 2022, agencies/organisations support community projects, in the ways preferred by those communities. These may include:</p> <ul style="list-style-type: none"> • Providing strategic advice and practical support. • Creating community hubs where this approach is useful. • Minimising administrative pressure. <p>By 2025, harder-to-reach communities (e.g. those in circumstances that make them less able to contribute) are proactively engaged by agencies/organisations that enable them to participate in ways that suit them.</p> <p>By 2025, every town and city has community-based PF2050 initiatives underway, involving a wide range of people and strengthening communities.</p>
<p>4. Young people learn about their relationship to te taiao and understand their role in looking after it.</p>	<p>By 2025, schools, kura, kōhanga and other education providers are using PF2050 resourcing to educate and encourage young people to act.</p>
<p>5. PF2050 stories are shared nationally and locally, amplifying and generating a sense of shared experience and momentum within and across communities.</p>	<p>By 2020, the national PF2050 kaupapa is widely understood.</p> <p>Local stories are generated and widely shared within and across communities, helping to inspire others.</p> <p>People are being encouraged and influenced by peers and stakeholders (including landowners/land managers) leading by example.</p> <p>Successes are shared and celebrated on local, national and global platforms.</p>

Milestones	5-year measures of success
<p>6. Training, information, tools and support that enable individuals to act are available and being utilised.</p>	<p>By 2020, initial training needs are identified and a stocktake of existing information is undertaken.</p> <p>By 2021, sustainability of supply for PF2050 tools (e.g. traps) is secured.</p> <p>By 2022, a toolbox of information to assist with decision making, planning and delivery of pest control is readily available.</p> <p>By 2025, people are being upskilled in pest management and project management through tertiary education, workshops and on-the-job training.</p> <p>By 2025, PF2050 operations are providing employment and economic opportunities for New Zealanders.</p>
<p>7. Whānau, hapū and iwi, urban and rural communities, land managers, businesses and councils are actively contributing to PF2050 projects.</p>	<p>By 2025, participation in PF2050 projects by rural and urban communities across New Zealand has increased, strengthening people's relationship with the environment.</p> <p>By 2025, diverse communities and individuals are engaged and contributing in different ways (e.g. citizen science, donating, trapping, building traps, planting).</p>
<p>8. Existing rural and urban community projects are succeeding, encouraging more local collaboration and ambitious PF2050 projects.</p>	<p>People are excited by what others are doing towards PF2050 and actively seek out ways to contribute for wider collective benefit.</p> <p>As predator eradication projects succeed, and skills and confidence grow, communities and individuals undertake biosecurity and broader conservation management action to secure and enhance gains.</p>
<p>9. Coordination between iwi, councils, community groups and others enables shared regional plans to be developed.</p>	<p>By 2025, regional plans are in place for 75% of the country and are being shared and communicated with the public.</p>

Te whakatinana i ngā ture me ngā momo kaupapa here e tika ana mō te kaupapa Supporting the kaupapa through legislation and policy

This pathway considers whether that New Zealand has the appropriate legislative framework and policy tools to support Predator Free 2050 and that they are being used effectively. A tight national-level collaborative multi-party group will maintain a PF2050-focused overview of legislation and policy effectiveness. Understanding the current legislative and policy environment is critical here. Much of the key legislation which may assist in driving New Zealand towards being predator free by 2050 already exists, including:

- Biosecurity Act 1993
- Hazardous Substances and New Organisms (HSNO) Act 1996
- Resource Management Act 1991 (RMA)
- Local Government Act 2002
- Animal Welfare Act 1991
- Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997
- Conservation Legislation (i.e. Conservation Act 1987, Wild Animal Control Act 1977)

Opportunities to influence the institutional framework (such as the development of the next New Zealand Biodiversity Strategy and the upcoming reviews of the Resource Management Act 1991 and the Biosecurity Act 1993) will be considered in light of how they may assist New Zealand in its aim to become predator free. Legislative tools will be utilised where they are effective, and processes will be evaluated for efficiency gains.

Ngā whaingā ako / Intermediate outcomes:

1

New Zealand's regulatory environment supports PF2050 work and is agile and future facing, enabling effective assessment of, and decisions on, novel technologies and methods.

2

Compliance and enforcement support PF2050.

3

Target organisms are considered for inclusion within the HSNO act framework.



New Zealand's regulatory
framework supports the
Predator Free 2050 vision

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates shared legislation and policy agenda.</p>	<p>By 2020, a national-level collaborative group is formed and developing a shared legislation and policy agenda to support PF2050.</p> <p>By 2020, all parties have clarity on each other's roles and responsibilities, recognising respective strengths.</p>
<p>2. Agencies/organisations understand the current legislative and policy environment and look for opportunities to improve their effectiveness for PF2050.</p>	<p>By 2021, agencies/organisations perform an analysis of effectiveness of current legislative and policy landscape.</p> <p>By 2022, changes to the Biosecurity Act and Resource Management system deliver improved outcomes for PF2050.</p> <p>Regular environmental scanning of the legislative and policy landscape is undertaken.</p>
<p>3. The role of PF2050 in achieving wider biodiversity outcomes is recognised and provided for in national and regional biodiversity strategies.</p>	<p>By 2020, an updated New Zealand Biodiversity Strategy supports delivery of PF2050.</p> <p>As regional biodiversity strategies are developed and updated, they explicitly provide for delivery of PF2050 outcomes.</p>
<p>4. The specific regulatory needs of individual projects and PF2050 regional plans are identified and implemented.</p>	<p>Supporting regulatory tools are considered alongside PF2050 regional plans (e.g. regional pest management plans).</p> <p>By 2020, codes of practice are developed and in place, encouraging best practice use of tools and methods in PF2050 activities.</p> <p>By 2025, border biosecurity systems for key offshore sites are established.</p> <p>Regional pest management plans are linked up to coordinate management of predators across regional boundaries, where appropriate.</p> <p>As Conservation Management Strategies are renewed, they are aligned with PF2050 outcomes.</p>
<p>5. National policy instruments that assist the work of PF2050 are identified and utilised (e.g. national pest management plans and unwanted organism classifications).</p>	<p>By 2021, a new National Policy Statement on Indigenous Biodiversity which supports PF2050 outcomes is in place.</p> <p>By 2021, national policy instruments that could support delivery of a predator free New Zealand are investigated and implemented, where useful.</p>
<p>6. PF2050 is building the support of decision makers.</p>	<p>In 2021, Predator Free 2050 is prioritised within council long-term plans (LTPs).</p>
<p>7. HSNO and ACVM requirements support decisions on novel predator control technologies and methods.</p>	<p>By 2020, agencies and organisations seek improvements to provide an effective and improved risk assessment and decision making process for novel technologies under HSNO, NAWAC and ACVM processes.</p>

Te mātauranga, te mahi auaha, te whakapai Advancing our knowledge, innovation and improvement

A collaborative national-level interagency group will be formed to develop and drive a shared research agenda to deliver the knowledge, innovation and improvement pathway. Initially, three key research themes will be focused on. These are: social acceptability, shifting from suppression to eradication, and defending against reinvasion. Mātauranga Maori, which conveys centuries of knowledge and history gained by whānau, hapū and iwi in their rohe, will underpin work on these themes.

An early step for agencies/organisations involved in supporting communities to make PF2050 a reality is to undertake social science research to develop an understanding of people's values and perspectives on predator control. There is not, as yet, enough understanding of these values and perspectives to enable PF2050 practitioners to skilfully support active engagement in PF2050 activities across different communities, although we do know that 85% of New Zealanders agree that investment in pest control is beneficial for future generations¹. We need to understand the full range of reasons why people engage in this work, as well as the many differences in attitudes that will exist between different segments of the population (e.g. between urban and rural populations).

Predator Free 2050 builds on decades of success in eradicating predators from New Zealand islands. We now need to build on that knowledge and learn how to apply and modify our approaches for the mainland. Existing tools and technologies are insufficient to reach the PF2050 goal. As such, we need to actively invest in more effective use of existing tools alongside development of new tools and technologies. To ensure we are investing in the right tools, we need focused research to identify knowledge gaps, and how these should be filled. For example, predator ecology and predators' interactions with native animals are likely to differ between natural, rural and urban environments and these differences will be critical to understanding how to remove them. Funding or incentives will increase research capacity and capability and drive technological innovation and improvement for the full range of land tenures (natural, rural and urban environments). Work to develop these new tools and technologies will be done in an open and transparent way. Technical scenario modelling involving understanding of predator biology and effectiveness of control in different environments will be used to inform research and work prioritisation. Continued development of predator control tools and technologies will drive improvements in the humaneness and effectiveness of the methods used. As New Zealand gets closer to a PF2050 reality, barriers (or other ways of defending sites) will need to be in place and operational to ensure eradication gains are not compromised by reinvasion. Work to develop barriers to prevent predator reinvasion across the full range of environments in New Zealand is a priority.

¹ New Zealand's Biological Heritage National Science Challenge, (2018), Public perceptions of the use of novel pest control methods, Retrieved from <https://bioheritage.nz/research/public-perceptions/>

The drive towards attaining PF2050 does not occur in isolation from other ecological and social issues. The issues associated with removing predators and the social context are complex, with possible unintended consequences (both positive and negative). The impacts of climate change on predator behaviours are just one example of the knowledge gaps that will need to be considered. Ensuring unintended (or unanticipated) responses are considered as part of research programmes will allow management to adapt, based on what we learn.

Ngā whaingā ako / Intermediate outcomes:

- 1 Applied research, tool and technology development and adaptive management give native species the chance to thrive.
- 2 Continuous improvement of tools and technologies ensure improvements in their humaneness and effectiveness.
- 3 Mātauranga and community-based science enhance relationships between people and the natural environment.
- 4 Applied social science continues to inform constructive national conversation about our biological heritage, and New Zealanders are having open discussions on new technologies and methods.
- 5 NZ's PF2050 science and innovation has a broad national and international profile.

Learning and expanding our toolbox

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates shared knowledge, innovation and improvement agenda.</p>	<p>By 2020, a national-level, collaborative group is formed and developing a shared knowledge, innovation and improvement agenda to support PF2050.</p> <p>By 2020, all parties clearly understand each other's roles, responsibilities and respective strengths.</p>
<p>2. How current knowledge contributes to PF2050 is clearly understood and gaps in knowledge (at both national and local levels) are identified and addressed.</p>	<p>By 2020, a stocktake of current predator control research is complete and knowledge gaps are identified.</p> <p>By 2020, research to address key knowledge gaps to overcome current challenges to PF2050 is underway.</p>
<p>3. Funding and incentives are directed towards the right research to advance our knowledge and develop tools.</p>	<p>By 2025, systems are in place to ensure New Zealand is benefiting from increased predator control capability and capacity.</p>
<p>4. Social science research is improving understanding of the diversity of beliefs and values in rural and urban societies associated with predator control and methods used.</p>	<p>By 2022, social science research has helped agencies/ organisations understand what motivates people through:</p> <ol style="list-style-type: none"> 1. Investigating the links between people's predator control attitudes, motivations and participation. 2. A fundamental, baseline picture of public understanding, interpretation and support of PF2050, including: <ul style="list-style-type: none"> • How this associates with diverse world views. • How this associates with conservation behaviours. 3. Understanding co-benefits – whether conscious support of PF2050 is needed for the right behaviours. 4. Investigating what public concerns for the future look like.
<p>5. New humane approaches and technologies broaden the suite of predator management tools available.</p>	<p>By 2020, research which helps increase understanding of values and beliefs underlying attitudes relating to humanely killing target species is underway.</p> <p>Engagement with whānau, hapū and iwi, and the public on new approaches and technologies starts early and is conducted in an open and transparent way.</p> <p>New tools and techniques are developed drawing on innovation and expertise from a wide variety of sources including scientists, engineers and others.</p> <p>By 2025, we will have developed a breakthrough science solution that would be capable of eradicating at least one small mammal predator from the New Zealand mainland.</p>
<p>6. Predator ecology and interaction in natural, rural and urban environments is better understood.</p>	<p>In 2022, a scenario modelling tool will be informing prioritisation of predator control approaches for different environments.</p>

Milestones	5-year measures of success
<p>7. New technologies and tools to enable and secure eradication gains are developed for use on a range of land tenures.</p>	<p>From 2020, investment is occurring in technologies and tools for eradication of predators and security against their reinvasion across a range of land tenures.</p> <p>By 2025, effective tools and knowledge will be available to achieve predator eradication on farmland.</p>
<p>8. Potential unanticipated outcomes are proactively identified, and solutions developed.</p>	<p>By 2025, the implications of climate change on predator behavior are better understood.</p> <p>By 2025, the likely effects of eradicating stoats, rats and possums on remaining pests are better understood.</p>
<p>9. Approaches needed to ensure widespread acceptance of large-scale predator control and eradication are developed.</p>	<p>By 2022, an approach for segmented (targeted) messaging based on values is being developed to foster public acceptance of PF2050.</p>
<p>10. Mātauranga Māori, ecological, citizen and social science research underpin PF2050 work.</p>	<p>In 2020, pilots of mātauranga-centred research to inform regional planning commence.</p> <p>By 2022, mātauranga needs are an essential component of all PF2050 funding applications.</p> <p>By 2025, locally driven and owned mātauranga and research has informed development of regional PF2050 plans.</p> <p>Citizen science is informing understanding and development of new tools and technologies.</p> <p>By 2020, social science is helping agencies/organisations to understand motivations around PF2050.</p>
<p>11. New Zealand’s PF2050 science is gaining a national and international profile.</p>	<p>Our science and technological successes are celebrated and shared.</p> <p>Scientists and new graduates are attracted into pest management and social and biological sciences.</p>

He aronui, he aromataiwai, he aromātai i te rerekētanga Measuring and assessing the difference we make

For this pathway, a national-level collaborative interagency group will drive the assessment and implementation of data, monitoring and evaluation needs for PF2050. New Zealanders need to have a clear understanding of what data need to be collected and why, to ensure our data collection focuses on the right things. Agencies/ organisations need an understanding of the range of data collection methods people use, and the barriers to sharing data.

Monitoring is needed to detect whether predators are present and to understand the difference PF2050 actions make. Innovative and effective monitoring tools are being developed, and continually improving technologies for data collection (such as remote sensing technologies) will help with this work. As part of this kaupapa, there will be opportunities for local mātauranga-centred monitoring.

Tools for collecting data will be widely shared, enabling local monitoring of projects by whānau, hapū and iwi, communities and landowners as well as by larger delivery agencies. This will require technical support from agencies/ organisations. Individuals and groups may also be interested in understanding how their work contributes to the local, regional or national picture. Box 3 describes two of the tools currently in development.

Monitoring is another area where collaboration is crucial. An open data portal will provide the ability for people to connect with, analyse and display data sets, supporting PF2050 decision making and enabling reporting, so that we can see how well we are doing. Processes will be continually reviewed and adapted as necessary when new tools become available.

Ngā whaingā ako / Intermediate outcomes:

1

Innovative ways of visualising and reporting on progress towards PF2050 are keeping people inspired and engaged.

2

Capturing learning through monitoring and evaluating outcomes as we trial technology, tools and methods enables adaptive learning.

3

The difference PF2050 action is making to our environment, culture and wellbeing is being demonstrated.

4

Sharing information and information management tools is leading to better decision making, analysis and understanding.



**We understand the difference
we are making**

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates shared monitoring and reporting agenda.</p>	<p>By 2020, a national-level collaborative group is formed and is developing a data, monitoring and evaluation shared agenda to support PF2050.</p> <p>By 2020, all parties clearly understand each other's roles, responsibilities and respective strengths.</p>
<p>2. Understanding what monitoring and evaluation data we need to collect and why, through mātauranga and other site-based research.</p>	<p>By 2020, public surveys enable understanding and insight into the range of data collection methods used by the public.</p> <p>By 2020, key monitoring specialists and representatives of stakeholder groups have determined what data need to be collected and have developed conceptual models and sampling frames based on this assessment.</p> <p>By 2022, initial barriers to data sharing have been addressed.</p>
<p>3. Aligned set of biological, social and cultural indicators are developed and disseminated.</p>	<p>By 2022 the collaborative group will have determined an indicator framework and key set of indicators and these are disseminated widely.</p>
<p>4. Agencies/organisations explore opportunities for innovative monitoring, evaluation, reporting and communication approaches.</p>	<p>Monitoring, evaluation, reporting and communication needs are discussed with key tech leaders as opportunities present.</p> <p>By 2025, new technology to capture data and view real time has been developed.</p> <p>By 2025, prototype communication approaches developed and tested.</p>
<p>5. People are collecting standardised data and understand why this is important.</p>	<p>By 2022, PF2050 monitoring and data management training needs have been identified and are being addressed.</p> <p>By 2025, people have the tools and access to expertise they need to collect and record PF2050 data (e.g. online courses, a toolbox of monitoring methods).</p> <p>By 2025, people contributing to Predator Free 2050 are consistently monitoring their work and sharing the data.</p> <p>Ongoing technical support is available to assist people in gathering standardised data and understanding why this is necessary.</p>
<p>6. Monitoring is underway on an appropriately widespread scale (geographically and organisationally).</p>	<p>By 2022, baseline data to inform scenario modelling have been collected.</p> <p>From 2022, mātauranga-centred monitoring of places is supporting regional PF2050 planning.</p> <p>By 2023, data collection is being carried out in a coordinated manner across key agencies/organisations through access to common/shared planning tools.</p> <p>By 2025, there is coordinated and complementary data collection amongst agencies/organisations and community groups, which enables data aggregation and shared learning across and between regions.</p>
<p>7. National data collection and sharing (interchange) standards for PF2050 are developed, disseminated and used by key agencies/organisations involved in data collection.</p>	<p>By 2021, data collection and quality assurance standards for PF2050 work are developed/confirmed and implemented by key agencies/organisations.</p> <p>By 2022, PF2050 data infrastructure has been developed and is available for use by key agencies/organisations.</p>

Milestones	5-year measures of success
8. Using new technology and highly sensitive, accurate and reliable remotely operated, automatic predator presence/surveillance methods.	<p>By 2025, highly sensitive, reliable, quick and accurate devices and methods are being used across New Zealand to alert land managers when breaches occur into areas where predators have been eradicated.</p> <p>Developers and users seek ongoing improvement in surveillance and/or detection of pests (e.g. by thermal imaging, camera traps, acoustic recorders).</p>
9. Predator Free 2050 interventions and outcomes are being monitored.	<p>By 2025, algorithms have been developed and are being used routinely by key agencies/organisations and communities to inform progress against the PF2050 Strategy.</p>
10. Open access to PF2050 data and findings enables actions and programmes to be managed adaptively, and real time progress to be seen.	<p>By 2020, a set of assurances, principles and standards regarding intellectual property rights (data sovereignty) and data security will have been developed for PF2050 activities.</p> <p>By 2020, collaborative partners agree to share data so that data are available for all to use.</p> <p>By 2020, an open data portal is connecting, analysing and displaying data sets and supporting PF2050 decision making.</p> <p>By 2025, people are consistently monitoring and sharing PF2050 data.</p> <p>By 2025, sophisticated data analysis and interpretation (e.g. to prove causality) is available and we can tell the story of the difference PF2050 actions are making.</p>

Box 3 – Ngā māhere rauemi / Mapping tools

New Zealanders need access to information to show where current activity is occurring, enabling people to see where they can contribute for wider collective impact. Mapping applications allow this to happen.

The Predator Free New Zealand Trust is mapping effort of community projects throughout the country (at both regional and national scales) and provides contact details for the organisations leading these projects. The map is accessible at <https://predatorfreenz.org/map/>.

More recently, a publicly accessible mapping application has been developed by DOC which maps current national activity and investment alongside geographic/landcover and vegetation masting forecast data (which can enable forward planning for predator population increases). This mapping tool is designed to help facilitate strategic regional- and national-level decision making. It enables identification of areas (such as large, defensible sites on mainland New Zealand). The map is accessible at <http://deptconservation.maps.arcgis.com>.

Whilst neither tool provides complete or comprehensive coverage of New Zealand, it is easy to see the benefit of a collaborative/amalgamated mapping tool, and the importance of transparent, open source information to help with predator control decision making. As New Zealand gets closer to becoming predator free, these tools will allow progress to be mapped, ensuring motivation and effort is maintained.

Te nuku atu i te pupuru i te maha o te kaikonihī kia iti, ki te ara haepapa pūmau Moving from sustained predator control to eradication

A national-level collaborative group will be set up to deliver a shared agenda to drive the work needed to enable PF2050 to move from sustained predator control to predator eradication. Regional collaborations between hapū, iwi, councils, DOC, community groups and private landowners/farmers will drive progress through developing shared local approaches to predator control, informed by technical modelling, local knowledge and social readiness.

Sustained predator control is needed to maintain low predator numbers while the technologies to shift from control to eradication are developed, and as such remains a critical part of the PF2050 strategy. Barrier systems to prevent reinvasions will need to be implemented as New Zealand begins to clear areas of the target pests.

A focused island eradication programme would ensure there is a focus on New Zealand's offshore islands that are yet to be declared predator free.

Alongside this, enhancing and increasing habitat will be needed to ensure there is sufficient habitat for native species to expand into as their numbers increase – this will require linkages with wider biodiversity restoration programmes.

Ultimately, this work is the end game for the PF2050 programme – restoring te taiao to health.

Underlying the work for this pathway is the need for feedback which informs integrated pest management. Adjustment of direction will occur as new knowledge and technologies become available.

Ngā whaingā ako / Intermediate outcomes:

1

Native species are less threatened and becoming more abundant.

2

Ecosystems are recovering and te taiao is returning to health.

3

Native species that are sensitive to predation are thriving across New Zealand.

4

Predator Free 2050 is enhancing our culture, economy and wellbeing.



Te taiao returning to health

Milestones	5-year measures of success
<p>1. National-level collaborative group facilitates shared predator control to eradication agenda.</p>	<p>By 2020, a national-level collaborative group is formed and developing a shared agenda to support Predator Free 2050.</p> <p>By 2020, all parties have clarity on each other's roles and responsibilities, recognising their respective strengths.</p>
<p>2. Coordination between hapū, iwi, councils, DOC and community groups to enable development of shared regional action plans.</p>	<p>By 2020, regional collaborative groups have formed in identified pilot regions and are developing a shared action plan.</p> <p>By 2022, regional collaborative groups have formed across the country and planning for regional predator control is underway, informed by local knowledge, technical modelling and social readiness.</p> <p>By 2025, PF2050 regional plans are in place.</p>
<p>3. A focused island predator eradication programme is established.</p>	<p>By 2020, an island eradication programme is underway.</p> <p>By 2025, we will have eradicated all mammalian predators from New Zealand's uninhabited offshore islands.</p>
<p>4. Capability and capacity needs required to scale up and deliver on shared agendas are addressed.</p>	<p>By 2022, capacity and capability requirements to scale up predator control and delivery of shared agendas have been identified and addressed.</p> <p>By 2022, industries involved in predator control have the incentives, certainty and confidence to scale up their activities.</p> <p>Ongoing, safe and effective use of predator control tools and methods by all helps maintain social acceptance of their use.</p>
<p>5. Sustained predator control buys native species time while eradication technologies are developed.</p>	<p>By 2025, we will increase by 1 million hectares (from 2016 figures) the area of New Zealand mainland where predators are suppressed, through PF2050 projects.</p>
<p>6. Delivery of predator control is prioritised and aligned across agencies/organisations.</p>	<p>By 2020, priority sites where there are, or will be, long-term commitments to predator eradication have been identified.</p> <p>By 2022, work programmes are aligned and are being operationalised (i.e. priorities for action, sites for trials, targets).</p> <p>Predator control and knowledge transfer are being coordinated between regions.</p>
<p>7. Scenario modelling, regional plans and national collaborative shared agendas are integrated to produce a national investment plan that drives prioritisation of PF2050 work.</p>	<p>By 2022, a national PF2050 investment plan is developed.</p>

Milestones	5-year measures of success
Shift from predator control to predator eradication	
<p>8. Sustained predator control is moving to eradication across all land tenures.</p>	<p>By 2025, technology, tools and methods to enable and then secure eradication gains are being trialed across all land tenures</p> <p>By 2025, we will have demonstrated that predator eradication can be achieved in areas of mainland New Zealand of at least 20,000 hectares and that these areas can be defended from reinvasion without the use of fences.</p>
<p>9. Priority mainland sites are predator free (and used as examples).</p>	<p>By 2025, New Zealand has piloted a predator control to eradication programme on at least once large mainland site.</p> <p>By 2025 we will have eradicated possums or mustelids from at least one New Zealand city.</p>
<p>10. Broader conservation management and biosecurity measures create safe habitat for native species to populate after predator eradication.</p>	<p>As sites become predator free, New Zealanders take complementary measures to restore and enhance habitat.</p> <p>By 2025, reintroduction of appropriate species previously lost due to predation is occurring in suitable predator-free mainland sites.</p>



Kiwi being released. Photo: Omataroa Kiwi Project



4. Kuputaka / glossary

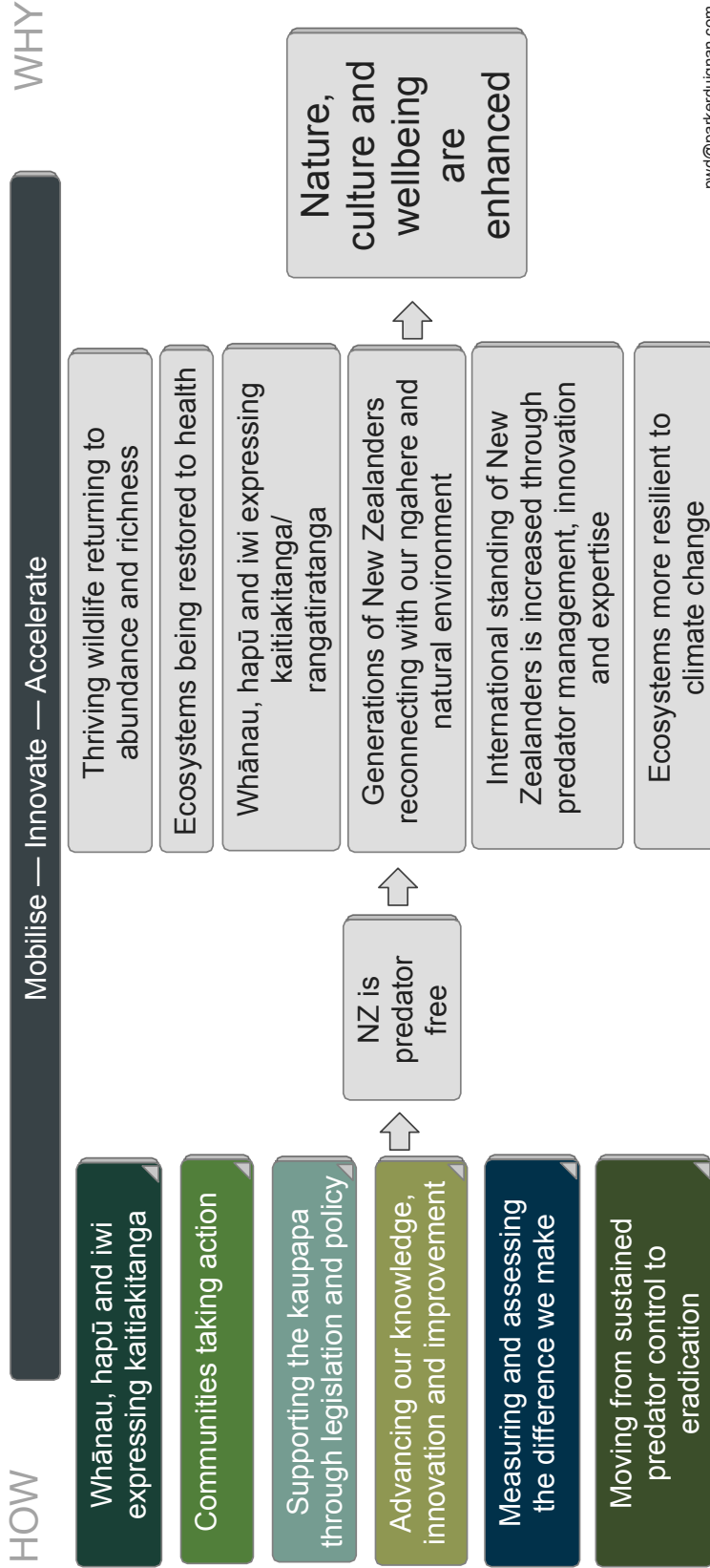
agency	Government department or ministry with the mandate to work on a specific issue.
ahi kā	Continuous occupation by whānau, hapū and iwi who keep their home fires burning.
community group	A group operating to provide a specific service in a community, for the public benefit of the members of the community.
eradication	Complete removal of predators.
hapū	Hapū are an extension of the wider whānau, and are mandated by the whānau to provide political and cultural expression within rohe.
hui	Gathering or meeting.
iwi	Iwi are an extension of whānau and hapū. They are also mandated to engage politically on all issues.
kaitiaki(tanga)	The exercise of guardianship by the tangata whenua of an area in accordance with tikanga Māori in relation to natural and physical resources; and includes the ethic of stewardship.
kaupapa	Policy, purpose, scheme, proposal, programme, issue, initiative.
mātauranga	Knowledge.
ngahere	Bush, forest.
organisation	An entity or group of people working together towards a specific purpose.
rohe	Territory, area, place.
stakeholder	A person, group or organisation with interest or concern in a topic.
taiao	Earth, world, environment.
taonga	Valued resources or prized possessions.
tikanga Māori	To act in accordance with tikanga is to behave in a way that is culturally proper and appropriate.
whakapapa	Genealogy, lineage.
whānau	Family.
whenua	Land.



5. Appendix 1: Logic maps

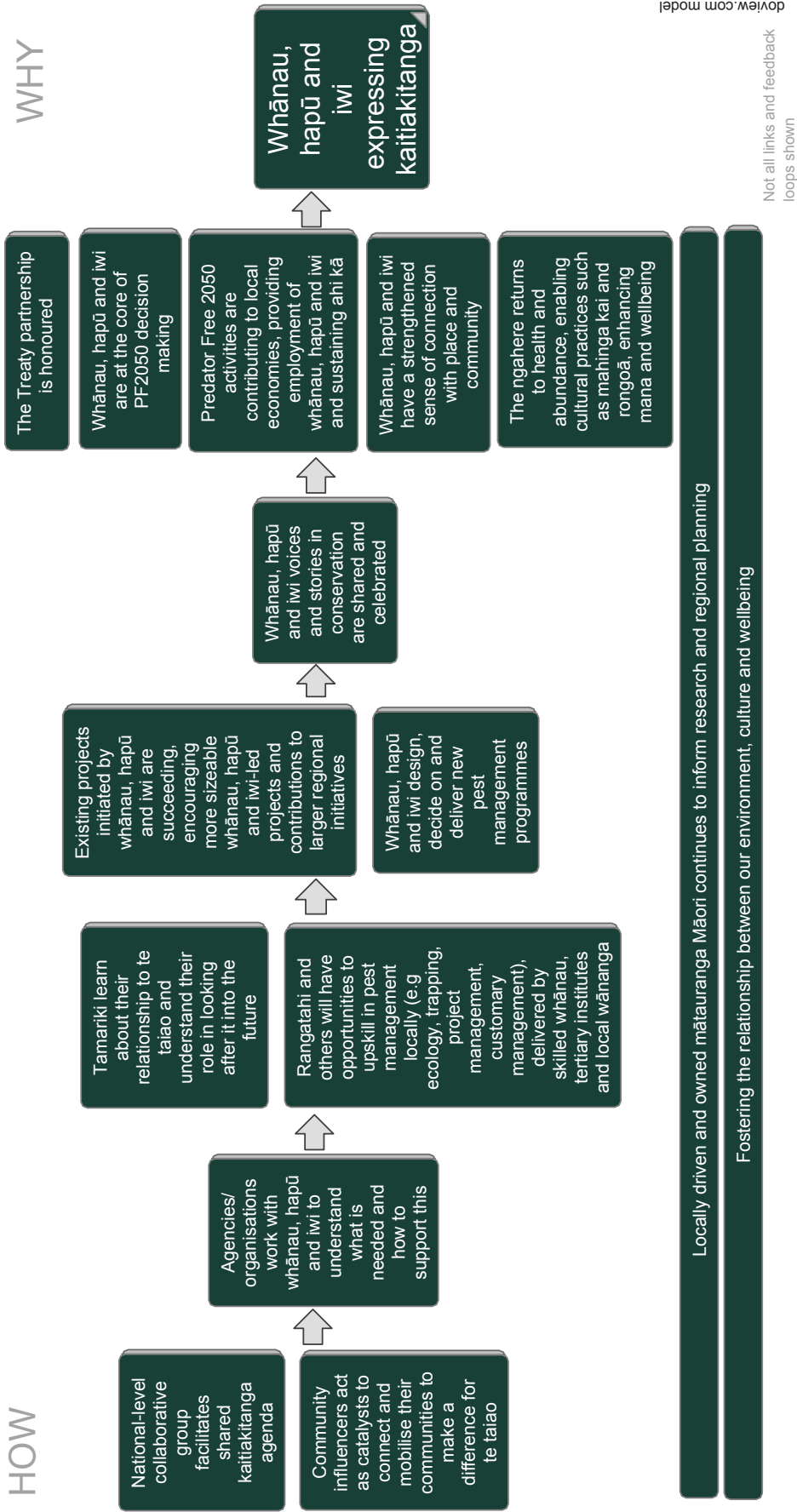
Predator Free New Zealand 2050 Intervention Logic

A 'DoView' Strategy Diagram built by Dr Paul Duignan



doview.com model

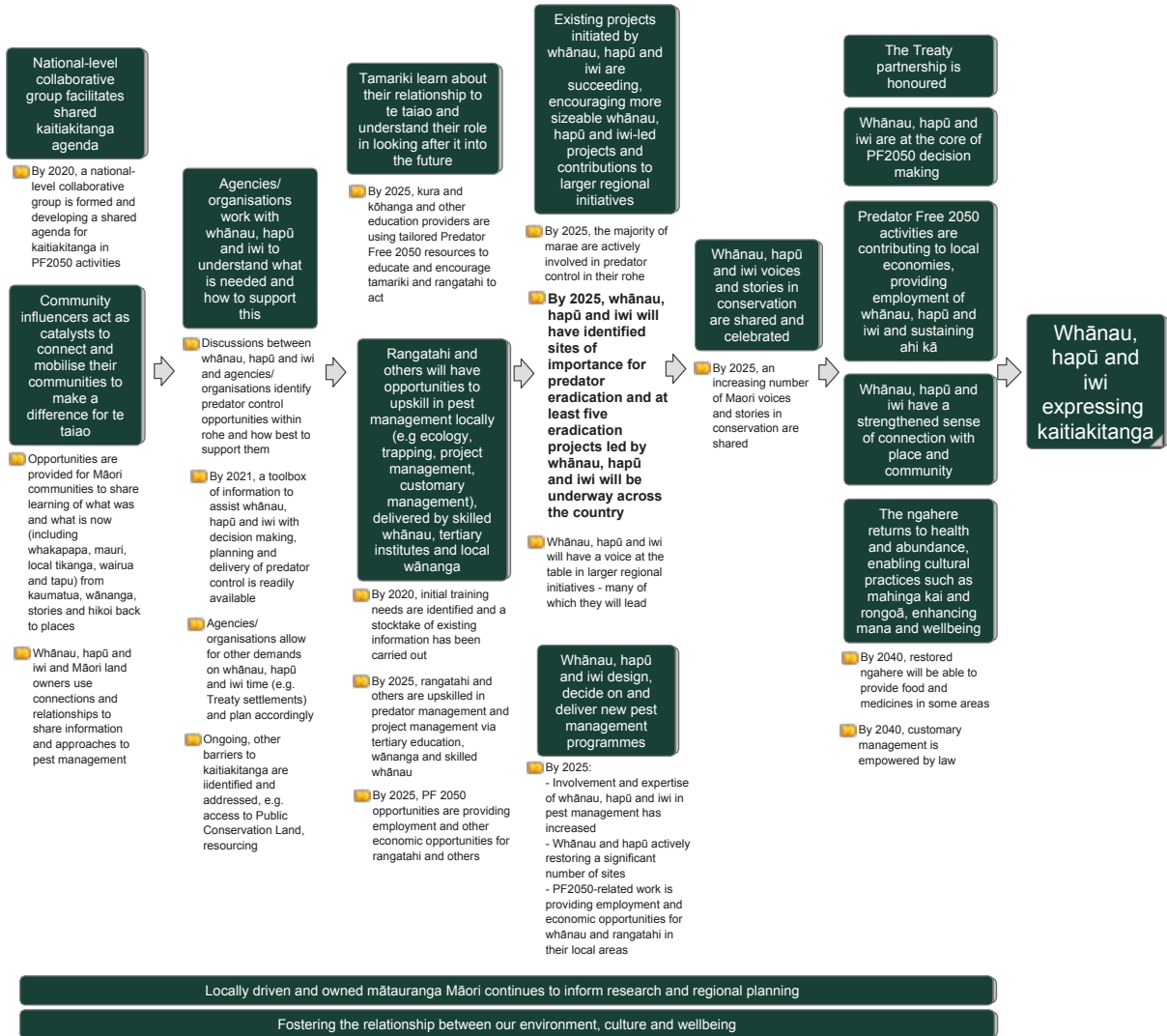
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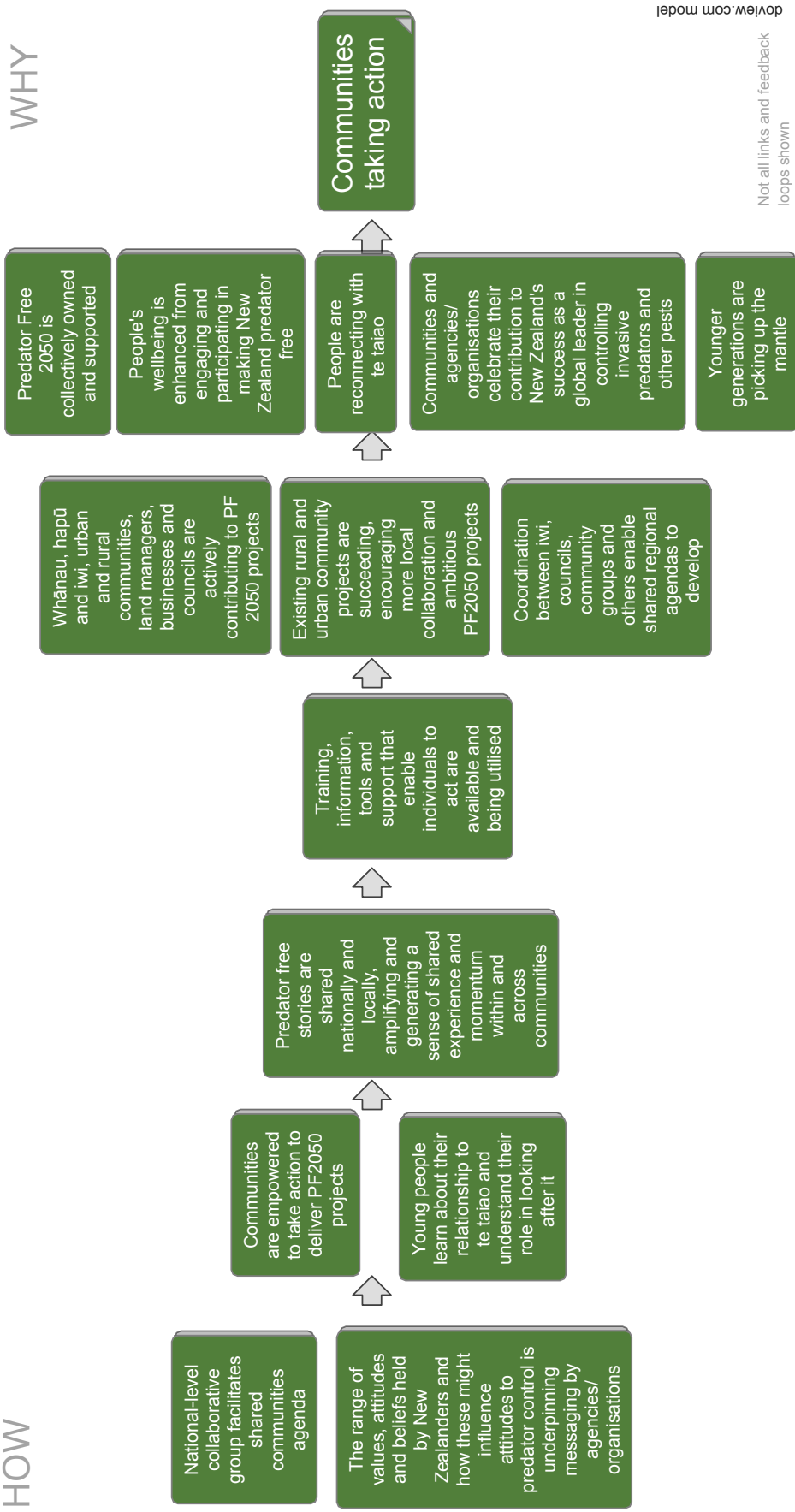
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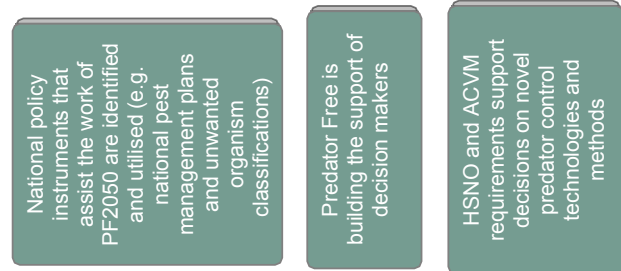
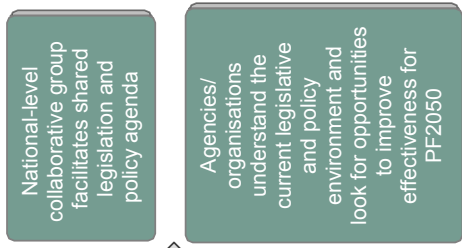
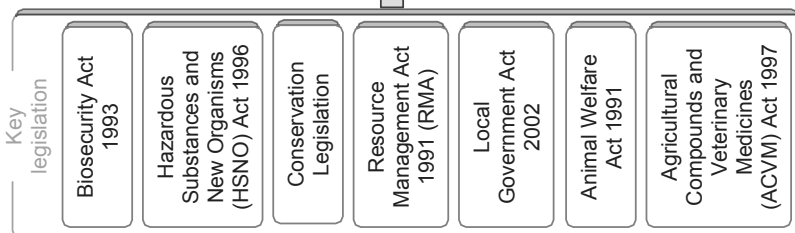
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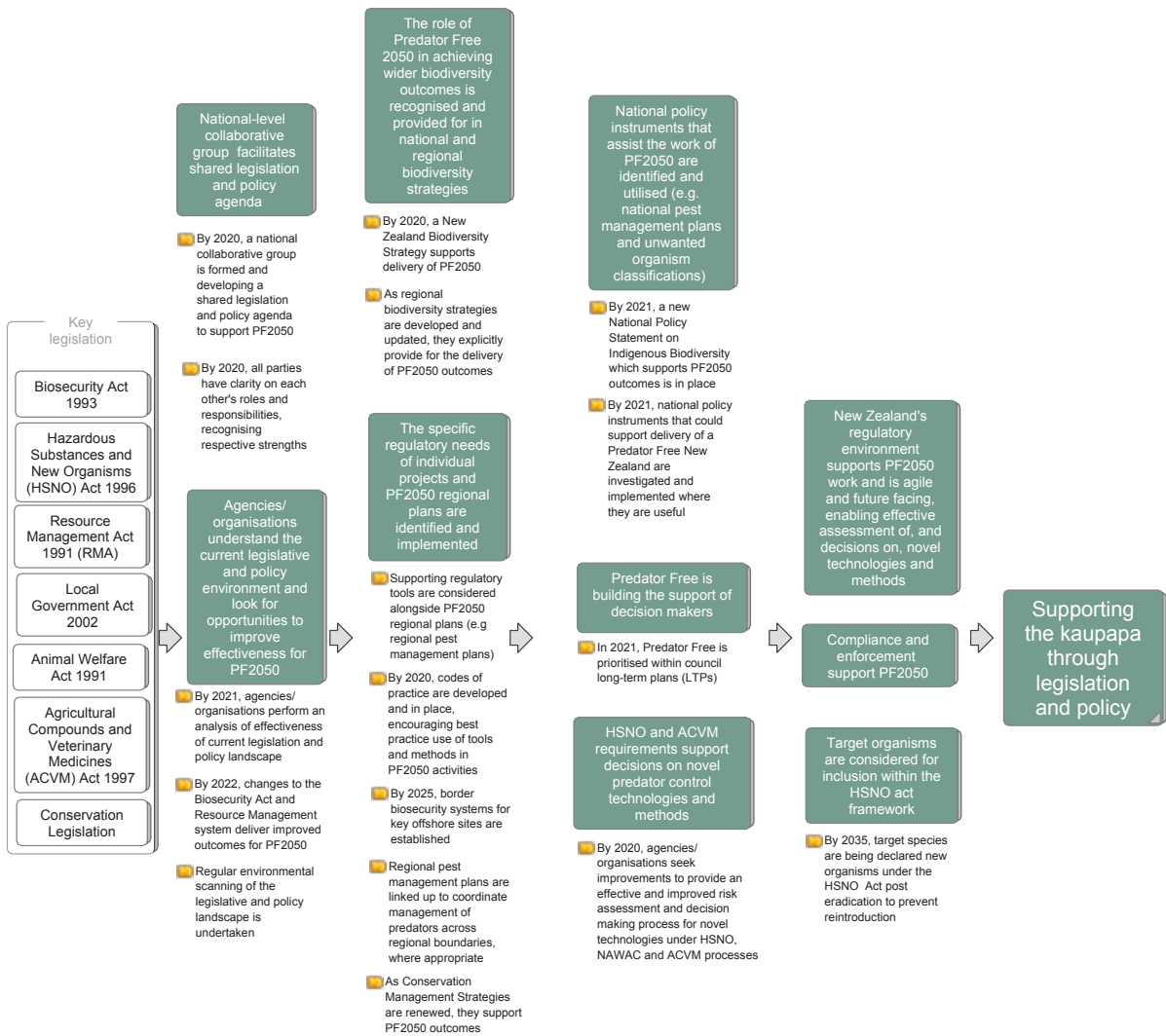
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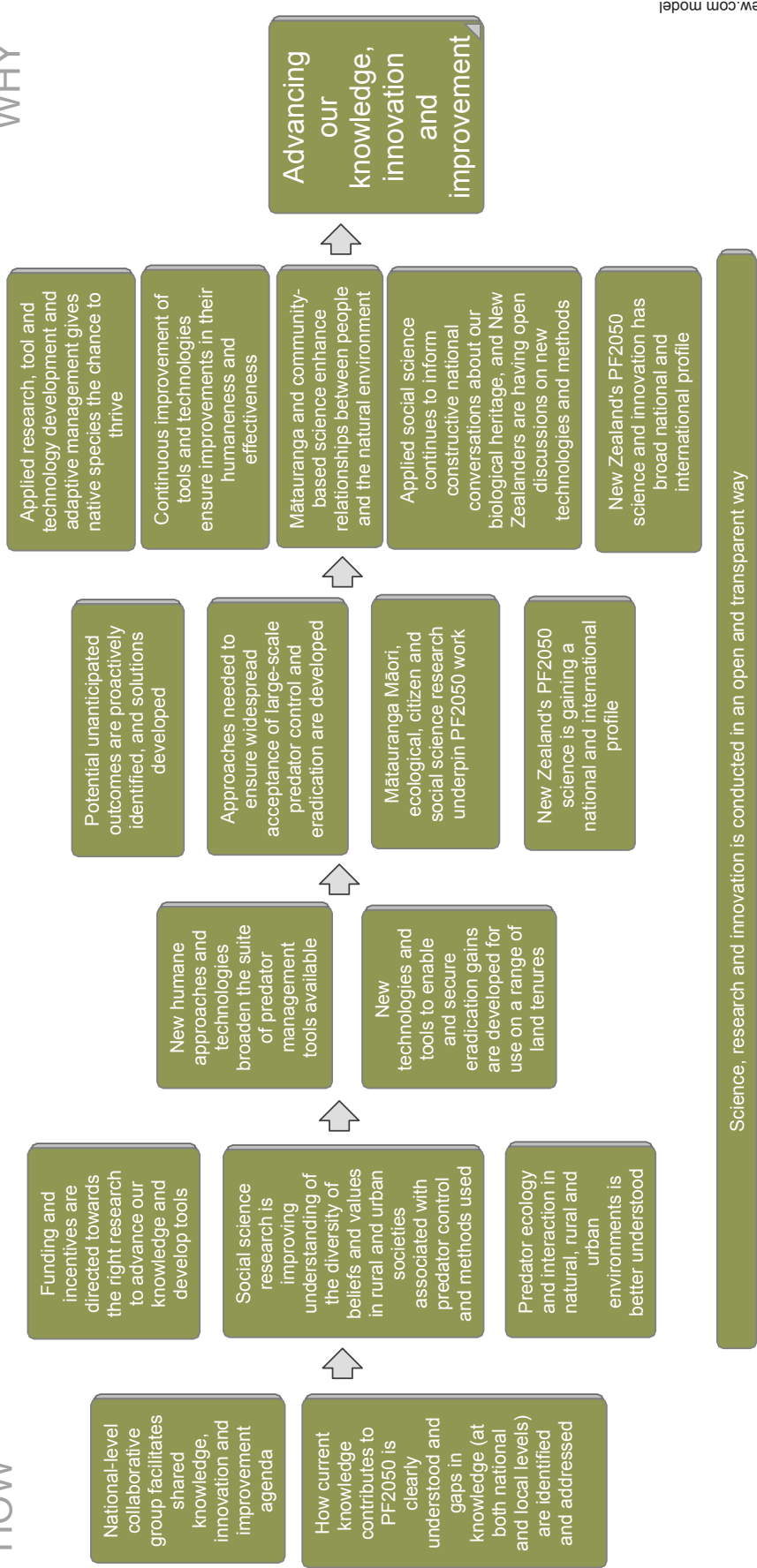


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MILESTONES

WHY

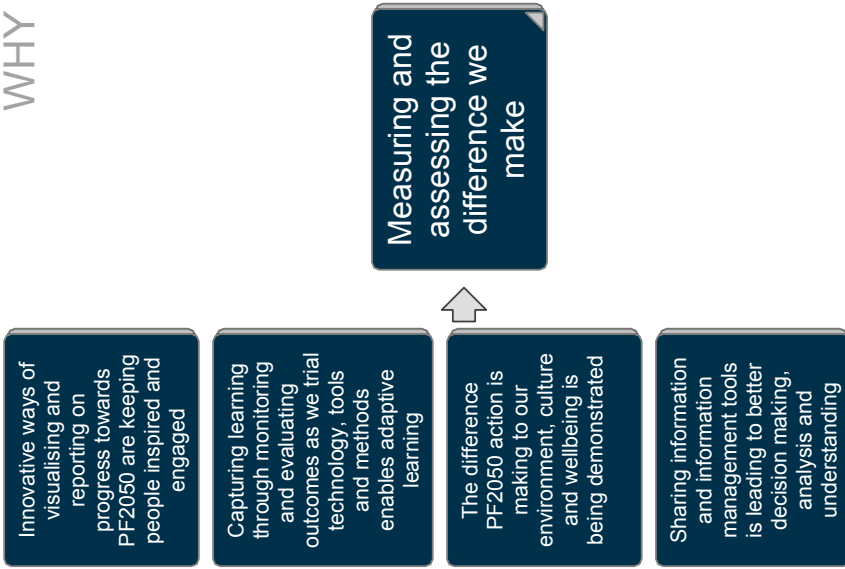


doi.org/10.1002/pe.1000

HOW



WHY



Processes are continually reviewed and adapted as necessary where new tools come along

HOW

MILESTONES

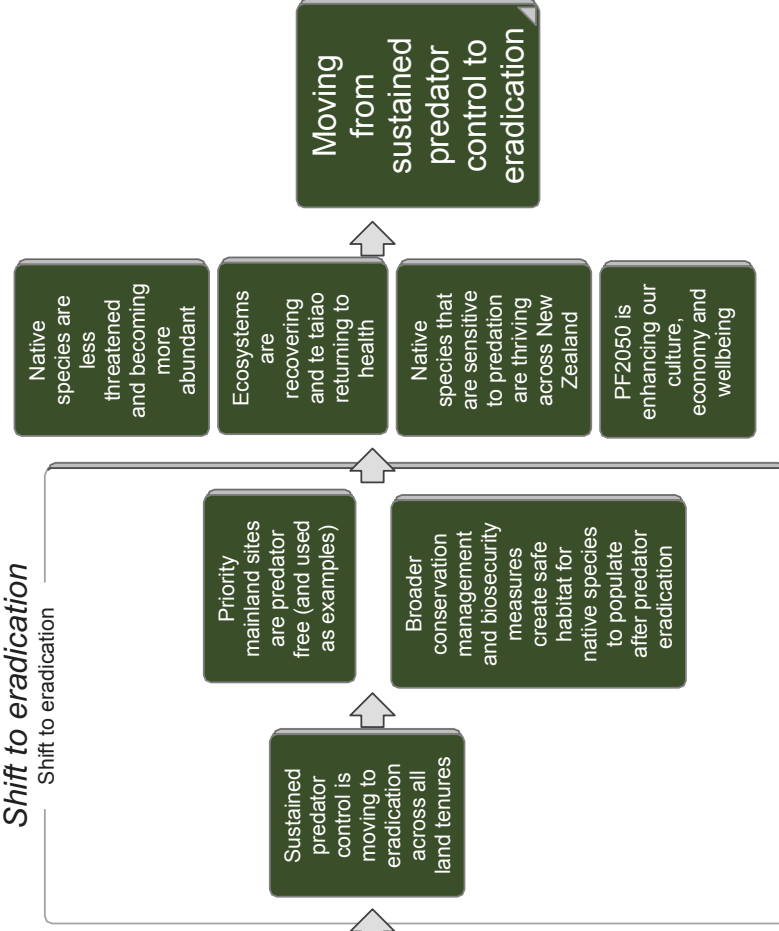
WHY



HOW



WHY



Feedback informs integrated predator management

Not all links and feedback loops shown

HOW

National-level collaborative group facilitates shared predator control to eradication agenda

- By 2020, national collaborative group is formed and developing a shared agenda to support PF2050
- By 2020, all parties have clarity on each other's roles and responsibilities, recognising respective strengths

Coordination between hapū, iwi, councils, DOC and community groups enable development of shared regional action plans

- By 2020, regional collaborative groups have formed in identified pilot regions and are developing a shared action plan
- By 2022, regional collaborative groups have formed across the country and planning for regional predator control is underway, informed by local knowledge, technical modelling and social readiness.
- By 2025, PF2050 regional plans are in place

A focused island predator eradication programme is established

- By 2020, an island eradication programme is underway
- By 2025, we will have eradicated all mammalian predators from New Zealand's uninhabited offshore islands**
- By 2030, one significant inhabited island (e.g. main Chatham, Waiheke, Aotea (Great Barrier) or Rakiura/Stewart Island) is predator free
- By 2045, all islands are predator free

Capability and capacity to scale up and deliver on shared agendas are addressed

- By 2022, capacity and capability requirements to scale up predator control and delivery of shared agendas have been identified and addressed.
- By 2022, industries involved in predator control have the incentives, certainty and confidence to scale up activities
- Ongoing, safe and effective use of predator control tools and methods by all helps maintain social acceptance of use

Sustained predator control buys native species time while technologies are developed

- By 2025, we will increase by 1 million hectares (from 2016 figures) the area of New Zealand mainland where predators are suppressed, through PF2050 projects.**

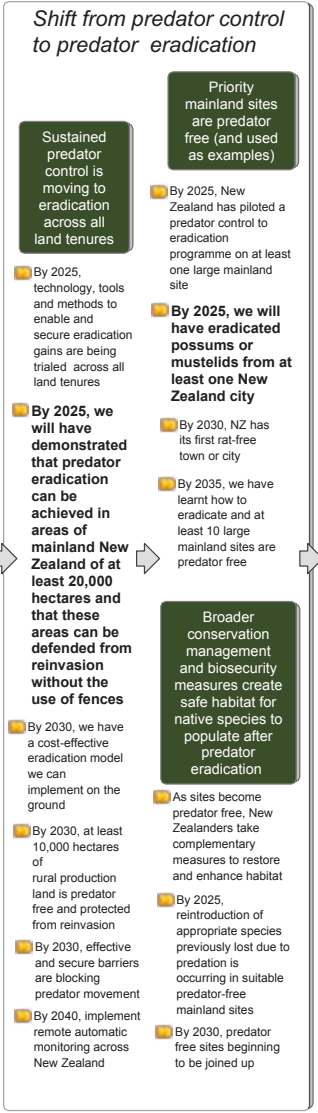
Delivery of predator control is prioritised and aligned across agencies/organisations

- By 2020, priority sites where there is, or will be, long-term commitments to predator eradication have been identified
- By 2022, work programmes are aligned and are being operationalised (i.e. priorities for action, sites for trials, targets).
- Predator control and knowledge transfer are being coordinated between regions

Scenario modelling, regional plans and national collaborative shared agendas are integrated to produce an investment plan that drives prioritisation of PF2050 work

- By 2022, a national PF2050 investment plan is developed

MILESTONES



WHY

Native species are less threatened and becoming more abundant

Ecosystems are recovering and te taiao returning to health

Native species that are sensitive to predation are thriving across New Zealand

PF2050 is enhancing our culture, economy and wellbeing

Moving from sustained predator control to eradication

Feedback informs integrated predator management

Not all links and feedback loops shown

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