

Predator Free 2050

discussion guide



Department of
Conservation
Te Papa Atawhai

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Imagining a predator free New Zealand

When we asked people to envisage Aotearoa in the year 2050, they offered a vision of native biodiversity returning to its former abundance and richness. They talked about existing habitats healing from the ravages of browsing animals, about new ones created and connected by wildlife corridors across whole regions, about city gardens and parks chiming with native bird calls.

We heard about clean water and air, healthy soils, ecosystems restored to full health and functioning as they should – stronger and more resilient, better able to support both our biodiversity and our economy.

As our natural environment healed, people predicted that the well-being of New Zealanders would be enhanced too, out of a restored sense of connection with our wild places, and knowing they were in better health. They saw future generations inspired to take better care of our biodiversity.

Iwi and hapū would be the stronger for the opportunities offered by a predator free New Zealand to exercise kaitiakitanga – stewardship – through their leadership of conservation programmes. Taonga species could become so abundant that cultural harvest might resume.

People agreed that the nation would take enormous pride from the achievement, and the co-operation and imagination it required. Some saw a boost to New Zealand's international standing – perhaps as a centre of innovation excellence – and our tourism trade. Exports would gain a new standing in the international marketplace. New industries and markets would be created from the innovative technologies and demand generated by nationwide pest eradication programmes.



Going predator free: making a strategic plan

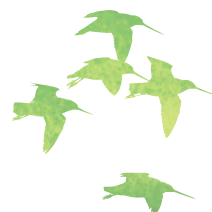
As the lead Government agency for Predator Free 2050 (PF2050), it's the Department of Conservation's (DOC's) job to prepare a strategic plan around how best to achieve it, and we'd like your help. There are a great many things to consider: how, for instance, do we get all of us – all New Zealanders – to engage with PF2050? How do we make sure it is adequately funded over its entire term? How do we encourage the technological innovation we're going to need?

We'd like to hear your thoughts on these and many more issues. To get things started, we gathered the views of scientists, technical experts, iwi, NGOs and others during a series of focus group workshops. This paper outlines their ideas and insights, and invites you to comment on them, or add more ideas of your own.

Because many things will change over the next 32 years, we can't prescribe every action in detail over the long term. The strategic plan will therefore set out quite general milestones towards 2050 but focus more tightly on the near term – the next 5 years.

Our intention is to push that near-term planning ahead of us as we go, much like a bow wave, adapting to new circumstances and incorporating lessons learned from the previous term into the next. The emphasis will be on clear accountability, with some long-term milestones established to help keep the programme on track.

At the end of each section of this discussion paper, you're invited to comment on the proposed 5-year goals. Longer-term milestones out to 2050 are provided in a separate section at the end of the paper, and you're invited to comment on those too, if you wish. You have until 30 January 2019 to offer your feedback, either online www.doc.govt.nz/discuss-pf2050, or by e-mail predatorfree2050@doc.govt.nz.



A framework for PF2050

PF2050 is a huge, bold ambition. It's a first in global conservation, which means there's no precedent, or no manual, to follow. Therefore, PF2050 will be an exercise in adaptive management; an iterative process of decision making in the face of uncertainty. By constantly testing the effectiveness of decisions and actions, and improving them as we go, we can reduce and manage that uncertainty.

PF2050 is a 'stretch goal' – a radical, raised expectation that, for now, lies beyond our current capabilities. Setting such an ambitious target has a galvanising effect, stimulating research, investment and effort to greater heights, effectively 'pulling' that collective effort along with the project as each expectation is met.

No single entity can do this alone. As the shared agenda of a nation, PF2050 will rely heavily on what's known as 'collective impact' – that a concerted team can achieve much more than organisations or individuals operating on their own. The first step in this process is for the various parties to collectively define the problem. Then they agree on a co-operative plan to solve it. By collaborating on the various PF2050 work strands, government agencies, councils, science providers, educators, innovators, businesses, NGOs, iwi, communities and individuals are better able to meet the goals before them. Collective impact is an inclusive approach that welcomes a diversity of views, values and talents, producing a collaboration working to an agenda shared by everyone.

For the strategic plan, it is proposed that the work be sorted into five broad work streams:

1. Mātauranga Māori
2. Science, innovation and improvement
3. Communications and engagement
4. Landscape-scale predator suppression and eradication
5. Data management, monitoring and reporting

These work streams will complement existing initiatives, such as biodiversity and pest plans, National Policy Statements and environmental standards. A shared 5-year work plan, facilitated by DOC, will enable collaboration across the five work streams to meet the overall goals set by the strategic plan. Meanwhile, team leaders will guide co-operation within their respective work streams.

The success of PF2050 will come from local effort – each of us working in our patch towards a national objective. A key approach for PF2050 will be to build up a national picture of how on-the-ground action will be implemented from local input. After the strategic plan is complete, each region will undertake a planning session to allow iwi, community, council and DOC to describe what is required at their place to support PF2050. It is important that local people get a say on what is going to happen at their place.

We asked our focus groups for their views on the establishment of the framework for PF2050. They wanted to see the following goals achieved in the next 5 years:

1. An adaptive management process is in place to evaluate progress and continuously create improvement.
2. A national programme of Predator Free hui have been held to listen, learn and build support.
3. A collective impact approach is fostering collaboration among PF2050 partners.
4. Regional-scale predator eradication plans are in place, reflecting input from local iwi, community, councils and DOC.

Q: *Do you think the focus groups identified the right goals? If not, how would you alter the four goals listed?*



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Why go Predator Free?

New Zealand was one of the first landmasses to split from the ancient supercontinent of Gondwana, 85 million years ago – so long ago that mammals hadn't yet reached it until bats flew there many millions of years later. That's why our only native mammals are those that could either fly here (bats) or swim here (seals).

That long isolation means much of our biodiversity is found nowhere else on Earth, but it also explains why our birds, reptiles, bats and insects never learned how to defend themselves from the sharp-nosed, fleet-footed mammalian predators that later came with Māori and European settlers.

In the last few centuries, those predators – stoats, rats, possums, weasels, ferrets, cats, hedgehogs and others – have decimated our fauna. New Zealand has one of the worst extinction records of any nation and, today, some 4000 native species are considered to be at some kind of risk. Around a quarter of those are in real danger of extinction.

In New Zealand, we've been trying to control pests for decades using traps, bait stations and aerial poisoning, but this has only ever been about temporary control over limited areas – a way of buying our native species breathing space. It has simply held the line – just – against the predators.

PF2050 means to push that line all the way back, to free our wildlife from the plague of stoats, rats, and possums once and for all. As such, it's a step change from piecemeal control to co-ordinated, progressive nationwide eradication.

PF2050 builds on the knowledge gained from decades of successful island pest eradications in New Zealand, and on the momentum of the hundreds of community conservation projects already springing up around the country. It fits with existing conservation strategies, and offers central and local government, iwi, science and environmental agencies, NGOs, communities and individuals the unifying vision of permanent eradication, and an action plan to achieve it.

Aotearoa's biodiversity is a taonga, the heritage of all New Zealanders – including those yet to be born. That means we all have a stake in seeing it thrive again. Anyone, everyone, can be a part of PF2050.

Predator Free 2050: a potted history

That we are now considering a predator free mainland is thanks to nearly six decades of dedicated research effort and sheer hard slog ridding our offshore islands of mammalian predators. This innovative work has driven an exponential leap in the potential – and success – of island pest eradications, from the very first rat operation by a boatload of volunteers on tiny, two-hectare Ruapuke islet in the Hauraki Gulf in 1960, to another world first in 2001 – removing rats from 11,300 hectare subantarctic Campbell Island in a single operation.

New Zealand has now freed more than 110 of its islands from pests, and lessons learned on the islands have since been applied to the mainland, through wildlife sanctuaries – both fenced, (like Wellington's Zealandia) and unfenced (like Te Urewera 'mainland island'). Pest control techniques have been constantly refined and become much more effective. Possums, for example, can now be so well controlled that New Zealand farmers are very close to being free from the bane of Bovine Tb.

Just the same, Les Kelly knew it wasn't enough. Dismayed by the collapse in bird numbers since his childhood, he began to realise that their rescue would come not from perpetual control, but total eradication across the entire country – from a 'predator free New Zealand'. This idea captured the imagination of the late Sir Paul Callaghan, who raised it in the public and political consciousness as 'New Zealand's moonshot'.

Forest & Bird got behind him, leading a round of workshops that asked experts the first, crucial question: would such a thing be possible? From their answer came the Predator Free NZ Trust, an embodiment of Les's vision to champion and promote his huge idea. People began to speculate about Stewart Island/Rakiura, Taranaki and Hawkes Bay becoming predator free.

Business and philanthropic trusts have lent their weight to this collective effort. Project Janszoon, for example, is a public/private initiative, supported by the NEXT Foundation, that has dramatically stepped up pest and weed control in Abel Tasman National Park, and supported the return of threatened species long since lost from the area, such as pāteke (brown teal), whio (blue duck) and the parrots kākā and kākāriki.

In 2015, the Government recognised this growing momentum, and public appetite, for more action to protect native biodiversity. That July, then-Prime Minister John Key announced the creation of Predator Free 2050 Ltd, a charity to direct Crown investment into an overarching goal – forests rid of the devastating impacts of stoats, rats and possums by 2050.

Choosing our guiding principles

Our first step is to agree on the values and principles most important to us. These will, in turn, define how we will approach PF2050. Our focus groups suggested the following six values and principles:

1. Local action, led by communities.
2. A resolute focus on achieving a thriving indigenous natural environment.
3. Ownership by all, including future generations.
4. Kaitiakitanga: recognising the relationship between our environment, our culture and our wellbeing.
5. Manākitanga: inclusiveness that welcomes all contributions.
6. The courage to persevere in the absence of certainty.

Q: *Are there any values and principles you feel we missed, or got wrong? What others would you like to see in here?*



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Which pests are we targeting?

PF2050 aims to eradicate stoats, rats and possums from the whole of New Zealand by 2050. These species were chosen because, collectively, they inflict the worst damage of all the introduced pests on New Zealand's plants and wildlife. Furthermore, we know more about their biology and control than any other pests.

'Stoats' may be interpreted as all three of the mustelid species in New Zealand. Similarly, the term 'rats' encompasses all three rat species in New Zealand: ship rats, Norway rats and kiore (Pacific rat). Therefore, ferrets and weasels are included:

Stoat	<i>Mustela erminea</i>
Ferret	<i>Mustela putorius furo</i>
Weasel	<i>Mustela nivalis</i>
Ship rat	<i>Rattus rattus</i>
Norway rat	<i>Rattus norvegicus</i>
Pacific rat/kiore	<i>Rattus exulans</i>
Possum	<i>Trichosurus vulpecula</i>

Mātauranga Māori

The Treaty of Waitangi defines and guides our relationship with iwi and hapū in a spirit of partnership. When we asked iwi in our workshops for their views on PF2050, they emphasised the vital importance of the inextricable links between culture, environment and people. Much of Māori culture is defined by the environment, so that the health of one affects the health of the other. Kaitiakitanga was described as the ethos that maintains that mutual welfare. Thus, iwi representatives supported the removal of introduced predators as a way of returning both environment and culture to good health, so long as iwi and hapū were a true and equal partner in this work.

Predator Free 2050 offers an opportunity to build a next-level partnership – a new way for iwi, hapū and the Crown to work together in a way that enshrines the values of rangatiratanga (autonomy and sovereignty), wairuatanga (spirituality) and kaitiakitanga. In particular, it could rekindle kaitiakitanga values in rangatahi (young people) through education, and offer pathways to work and fulfilment.

Iwi participants offered their knowledge (mātauranga Māori) and their long experience (whakapapa) of the land. Intergenerational thinking – ever mindful of the consequences of present actions for those who come along after – is a particular strength of Māori endeavour, and complements the multi-generational ambition that is PF2050. The Māori participants in our workshops offered the energy and commitment of their young people, and a backdrop of myths and stories about our wild places.

Wide Māori participation is critical to the success of PF2050, and can be secured, representatives told us, by understanding and upholding the special nature of the Māori relationship with land, and the importance of restoring wairua (life force) to natural systems. There will need to be an appreciation of the fact that, for many Māori families, some introduced species now represent an important source of food, and that complex issues take time for iwi and hapū to thoroughly consider.

The prospect of PF2050 training and job programmes will be welcomed by communities struggling with unemployment.

Our workshop participants suggested the following outcomes for the next 5 years:

1. Iwi are genuine partners in PF2050, involved in decision making, scoping and planning.
2. Mātauranga values are an integral part of the PF2050 strategic plan.
3. Consultation is done at local, hapū level.
4. More sizeable, iwi-led eradication projects have begun.
5. Examples of best practice in iwi leadership and stewardship are being showcased.
6. The majority of marae have established trap networks.
7. Rangatahi are an integral part of PF2050 work, and gaining the qualifications required to move through to leadership roles.

Q: Does this list represent all the 5-year outcomes you would wish to see for iwi involvement? If not, what would you add?



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Science, innovation and improvement

New Zealand's biodiversity continues to decline, indicating that 'business-as-usual' in respect to pest control is not sufficient – we need to do things differently, more intensively, across a much broader front, if the decline is to halt.

Because we don't yet have all the approaches needed to halt biodiversity decline, this part of the PF2050 strategic plan is about developing the tools and methodologies needed to get us there. Clearly, adequate investment is critically important. A science strategy already guides such investment, and DOC administers a fund to develop new tools and techniques. Many research programmes are already up and running, and technological capability is increasing all the time. In some cases, we're already close to success – for instance, the necessary means to eradicate possums are on the near horizon.

Although existing pest control methodology will be scaled up under PF2050, it will be artificial intelligence, remote monitoring and data collection tools, unmanned aerial vehicles (UAVs or drones) and other smart devices that will deliver the needed breakthroughs in landscape-scale pest eradication. However, our focus groups thought there were still a number of gaps. In particular, that we need more emphasis on 'applied' science – research into the practical use of new technologies. That research, they said, needed to be carefully prioritised to get the best possible results from the funding available.

Some aspects of 'pure' science need more work, too. We need to better understand, for instance, what might happen once all rats, stoats and possums are eradicated. Wild ecosystems can be complex and unpredictable things: might we see a jump in mouse numbers, for example? We should do all we can to understand any risks and trade-offs of eradication.

Our focus groups pointed out, too, that biodiversity needs more than just freedom from pests – there must be ample food and plenty of quality habitat to accommodate the increase in population numbers.

The focus groups suggested the following 5-year goals as priorities:

1. A science and technical advisory group will be established as part of PF2050 national governance and co-ordination.
2. A science 'gap' analysis is undertaken and strategy developed to address those gaps in knowledge.
3. Focus is put on predator management in urban and farming landscapes and developing 'barriers to movement' to enable predator free areas to be defended.
3. A conservation business accelerator is established, and incentives are encouraging more innovative solutions toward achieving PF2050.
4. Mātauranga Māori is integrated into all work.

Q: *Do these 5-year objectives for science, innovation and improvement in PF2050 fit with your own? If not, what would you change?*



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Communication and engagement

One task of PF2050 is to inspire the national passion it will take to achieve it. Generally, New Zealanders agree with the need to become predator free, but some question how it should be done, or whether it can be done at all.

More and more New Zealanders are participating in pest control. Because our society is changing – for example, we’re aging, becoming more urbanised, and more ethnically diverse – PF2050 will need to be socially flexible enough to accommodate those trends.

We need to increase participation across all New Zealand cultures, by learning how to address the different perspectives and values that New Zealanders have. With more resources, social science can help us in understanding public perceptions and blind spots around pest control.

Investment and funding could be stimulated by constantly demonstrating the economic value of PF2050 to sectors such as tourism and primary production. The stories we tell, and who tells them, will be important.

As more and more sites are cleared of pests, and biodiversity begins to recover, it will allow more New Zealanders to experience what healthy forests and other ecosystems look and sound like. That, in turn, might inspire more people to get behind further projects, especially if we remember to celebrate our successes.

Our focus groups suggested the following 5-year goals

relating to getting people involved in PF2050:

1. PF2050 embraces a diversity of values and approaches.
2. Projects are driven locally and regionally, from the bottom up, and supported by government and other leaders.
3. PF2050 has a broad social licence – the vision is well understood and has wide community support.
4. A communications strategy and annual communication plan connect and support communities.
5. Influential landowners and land managers are leading by example.
7. Regional operational plans guide and enable PF2050 activities at a local level.
8. Communities and schools are being well supported for PF2050 activities with adequate funding and expertise.
9. The tertiary education sector is engaged with, and supporting, PF2050.

Q: *Have we covered the most important objectives for getting people involved in PF2050 here? Can you suggest any more?*



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Landscape-scale suppression and eradication of predators

This work strand is the sharp end of PF2050 – addressing the actions required to progressively eradicate stoats, rats and possums from landscape-scale sites, preventing their re-invasion and replacing them with thriving populations of native wildlife. The focus groups believed that regional councils had a vital role to play in landscape management, with the work needing to be supported by their long term plans and pest management plans.

PF2050 will come together much like a jigsaw: many thousands of people will be responsible for a piece each, and the picture will emerge as their widespread efforts are co-ordinated and connected. That's what we want the strategic plan to enable.

Our focus groups set the following 5-year goals for predator eradication and suppression:

1. Objectives for biodiversity are set for all PF2050 initiatives.
2. Predator eradication programmes are established and co-ordinated between regions to achieve agreed 5-year targets.
3. At least 10 large sites are cleared of predators, and celebrated as exemplars.
4. At least 10,000 hectares of rural production land are cleared of stoats, rats and possums and protected from reinvasion.
5. Priority biodiversity 'hotspots' to be identified and inform predator eradication targets set for mainland sites.
6. Remaining islands are being cleared of predators.
7. National Policy Statement on Biodiversity is developed and gives guidance to councils to incorporate appropriate PF2050 measures in their plans.

Q: *Have we covered the most important objectives for getting people involved in PF2050 here? Can you suggest any more?*



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Data management, monitoring and reporting

There's a saying in business: 'You can't manage what you can't measure' which might equally have been written for pest eradication. New technology allows us to think well beyond the historical limits to predator control, but how can we be sure it's working?

First, we need a good handle on predator numbers before we start, which requires pre-operation monitoring, and many of the tools to do that (such as tracking tunnels and remote trail cameras) already exist. A clearly established baseline gives us something to check progress against as we go and can tell us when we need to do something more, something differently, when the job is done or, perhaps, has failed.

Clearly, monitoring is crucial if we are using predator barriers to prevent re-invasions following eradication. We need highly sensitive devices to quickly and accurately detect any incursions, and reliably alert managers to the exact nature of the breach.

Data are valuable: apart from telling us how we're doing, data offer those running programmes in other regions helpful background information too. But everyone has to be working to the same benchlines, monitoring the same things in the same way.

PF2050 will put heavy demands on information systems. Once information is gathered, we'll need a secure system in which to store it, make sense of it and make it easily available to everyone else.

Our focus groups told us that there are still some knowledge gaps around monitoring baselines and assessing the effectiveness of different eradication and re-invasion barrier methods.

These were their priority goals for the next 5 years:

1. We understand what we have to measure and why, and co-ordinated monitoring to establish baselines has begun.
2. Technical support to help community groups to gather needed data in a consistent manner is in place.
3. A suite of reporting standards and key indicators is helping everyone track progress toward PF2050.
4. Data are being accurately gathered and held in a single open and shared database.
5. State-of-the-art remote sensing and reporting of predator numbers is being trialled.

Q: *Do you agree with these monitoring and data management goals? Are there any you would add, change or delete?*



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Long-term milestones

2023 – 2030	Mātauranga Māori	Science, innovation and improvement	Communications and engagement	Landscape-scale predator suppression and eradication	Data management, reporting and monitoring
	<ul style="list-style-type: none"> • Iwi and hapū are actively restoring a significant number of sites • Māori involvement and expertise is increasing 	<ul style="list-style-type: none"> • Proven technology exists to eradicate at least one target species • Effective barriers are blocking predator movement • Novel technologies are widely understood, both by scientists and the public 	<ul style="list-style-type: none"> • Biodiversity is promoted on TV and social media • All schools are nurturing future conservationists • Harder-to-reach communities have joined in • All large landscape-scale eradication efforts are actively supported by their local communities • Technical support is consistently meeting the needs of community and landowner groups • Groups are consistently monitoring and sharing data 	<ul style="list-style-type: none"> • New Zealand has its first rat-free city • Contiguous predator-free corridors are linking all areas that have been cleared of predators • All nature reserve islands are predator free • One significant inhabited island (e.g. main Chatham, Waiheke, Aotea (Great Barrier) or Stewart Island/Rakiura) is predator free • One million hectares are under sustained pest control, with eradication the ultimate aim • Barrier systems are working to keep predators from re-invading cleared areas • The knock-on effects of eradicating stoats, rats and possums on remaining pests (e.g. mice) are better understood 	<ul style="list-style-type: none"> • A data commons for all is up and running • State-of-the-art remote sensing and reporting is widely established

2030 – 2040	<ul style="list-style-type: none"> • Iwi leadership and effort will have been integral to securing a number of pest-free sites • The achievements and efforts of individuals will have lifted mana throughout iwi • Restored ngahere (forest) will be able to provide food and medicines in some areas 	<ul style="list-style-type: none"> • The technology needed to find and eradicate the last 1% of predators in targeted populations exists 	<ul style="list-style-type: none"> • 85% of New Zealanders are supporting PF2050 in some way • People are still offering new ideas • Societal well-being associated with PF2050 achievements will be evaluated nationally 	<ul style="list-style-type: none"> • Possums have been eradicated in New Zealand • A succession of 20,000-hectare-plus parcels of mainland landscape are being cleared and defended • All flagship mainland sites are predator free • Any remaining gaps in landscape-scale predator management on public conservation lands have been plugged • Predator free sites are beginning to join up 	<ul style="list-style-type: none"> • Predator densities are remotely monitored across the whole of New Zealand
2040 – 2050	<ul style="list-style-type: none"> • Customary management will be empowered in law • Some species may be granted legal personhood 	<ul style="list-style-type: none"> • The boundaries of predator free areas are secure 	<ul style="list-style-type: none"> • Children who learned about PF2050 at school in 2019 were now setting and leading the agenda 	<ul style="list-style-type: none"> • Border Biosecurity systems are in place and functional • New Zealand is functionally free of mustelids, rats and possums • There are substantially fewer native species threatened with extinction • Vulnerable species are being translocated to suitable predator free sites • Remote automatic monitoring is cheap, available and implemented • Our grandchildren are enjoying at least the same biodiversity abundance that our grandparents did 	

Q: Do you think this list of desired long-term milestones is complete? If not, what more would you add?

Q: Do you agree with the timeline? Should some milestones be brought forward, or pushed back, in your view?



What happens next?

You have until 30 January 2019 to offer your comments on this paper, either online, or by e-mail [predatorfree2050@doc.govt.nz].

After that, the PF2050 Strategic Plan will be prepared, informed by all of the comments we have received. This plan will be published online.

The Strategic Plan will be reviewed regularly, to take account of changing circumstances, advances in technology, and lessons learned. Each review will set a detailed plan for the following 5 years.

