# Measuring and assessing the difference we are making

## Collective Action Plan
## 2020–2025

(2024 revision)

He aronui, he aromataiwai, he aromātai i te rerekētanga

PREDATOR FREE 2050
TUIA TE TAIAO

Te Kāwanatanga
o Aotearoa
New Zealand Government

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# Section 1: Overview

The Predator Free 2050 (PF2050) vision is ambitious and won't be easy to achieve. Sir Paul Callaghan described it as 'New Zealand's Apollo project' for a reason.

The PF2050 strategy aims to completely remove seven predators: rats (Norway, ship and kiore), mustelids (stoats, ferrets and weasels) and possums. To be successful in gaining support, we will need to demonstrate the benefits of achieving PF2050 for Aotearoa New Zealand (ecological, cultural, social and economic) and have evidence to justify it.

Sufficient investment in outcome monitoring is required to assess the effectiveness of PF2050 interventions. We need to know if interventions are having the desired impact, what any unintended consequences might be, and quantify, based on data, the level of investment needed to achieve the goal.

# Section 2: Milestones

This action plan outlines the main milestones and actions needed to allow collective national information sharing and enable and inform good decision-making to show the difference PF2050 is making.

## Milestone flow

Figure 1 shows the measurement and assessment process for this plan.



Flock of kea, Upper Perth Valley. *Photo: Carey Lintott*

**Milestone 1**

We understand what needs to be measured and why.

Biological, social and cultural indicators encompass the wider needs and aspirations of the PF2050 community, ensuring Māori aspirations are captured, with pathways provided for embedding mātauranga Māori.

**Milestone 1a**

Develop and disseminate a set of biological indicators for the PF2050 interim goals.

**Milestone 2**

Data standards (biodiversity, pest control and monitoring, social and cultural) are disseminated, accessible and used.

**Milestone 3**

People are collecting standardised data and understand why this is important.

**Milestone 4**

Scaling up: data are being shared and collated into an aggregated dataset for analysis at regional and national scale. Stocktake and gap analysis.

**Milestone 5**

Analysis is undertaken of aggregated data to quantify the effect of PF2050 interventions. Model validation and refinement. Interpret, learn, report.

**Milestone 6**

Create an open-access PF2050 data portal to track progress in real time, and use patterns in the data to inform planning of future activities (adaptive management). Mechanism for impact.

**Milestone 7**

Advocate for innovations in PF2050 data collection (new tools), processing and analysis (artificial intelligence), with the intention of improved efficiency and understanding of impacts of PF2050 interventions.

**Actions**

Actions describe the critical work and processes required to achieve measured outcomes. Some actions are discrete, one-off pieces of work that set the foundation for how data infrastructure and outcome monitoring support are designed and delivered. Other actions have a more ongoing focus, with regular evaluation to ensure the support is fit for purpose.

**Measures**

Measures are set for the actions within each theme and to assess outcome success.

**Requirements**

Some of the milestones and measures have indications of the precursor foundational data needed to undertake the actions.

Figure 1. Process for measuring and assessing the Predator Free 2050
*Measuring and assessing the difference we are making: Collective Action Plan.*

# Section 3: Action plan

The action plan is presented in a series of themed tables.

## Milestone 1

We understand what needs to be measured and why.

Biological, social and cultural indicators encompass the wider needs and aspirations of the PF2050 community, ensuring Māori aspirations are captured, with pathways provided for embedding mātauranga Māori.

| National actions | |
|---|---|
| 1.1 | Engage with national-level specialists and stakeholders to:<br>– adopt existing metrics or frameworks<br>– commission research where existing approaches are inadequate. |
| 1.1a | Connect with those working on Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy and other applicable data management work to ensure communication and alignment of programmes. |
| 1.2 | Develop a data management framework to reflect mātauranga Māori monitoring approaches. |
| 1.2a | As part of action 1.1, engage with mātauranga Māori experts to identify metrics that help measure progress toward ecological goals. |
| 1.3 | Recommend indicators based on action 1.1 and action 1.2 and begin research to fill the gaps that recommendations have noted. |
| 1.4 | Undertake a scanning exercise for models of large-scale data management at a national scale. |

| Local actions | |
|---|---|
| 1.5 | Develop channels for engagement and knowledge exchange for data managers at national and local levels. |

**Measures**

- Key monitoring specialists and representatives of stakeholder groups have determined what data needs to be collected and have developed conceptual models and sampling frames based on assessment.

**Requirements**

- We need to use what we have now (data collection) while we build more and develop.

## Milestone 1A

Develop and disseminate a set of biological indicators for the PF2050 interim goals.

| Actions | |
|---|---|
| 1.1a | Develop an agreed set of definitions. |
| 1.2a | Disseminate definitions across all collaborative workstreams involved in PF2050 activities. |
| 1.3a | Identify the data sources for interim goals. |
| 1.4a | Gather and assemble data (quality and accessibility dependent). |

1.5a    Share data that support interim goal achievement through an open-access portal and make these publicly available.

Note:    Different data requirements will exist for other streams, but for the interim goals, high-level information is required that does not need to include a lot of data.

**Measures**

- We have an agreed glossary of definitions for use by all parties involved in PF2050 activities.

- We have determined an indicator framework and a set of indicators, including social and cultural, and these have been disseminated widely.

## Milestone 2

Data standards (biodiversity, pest control and monitoring, social and cultural) are disseminated, accessible and used.

**Actions**

2.1    Develop, test and ratify the key data standards for:

- predator control

- predator monitoring.

2.2    Develop 'terms of use' for sharing of data.

2.3    Make data standards accessible and in a usable format.

2.3a   Develop a communications plan to roll out across relevant parties.

2.4    Evaluate the data standards, their impact, uptake and ongoing maintenance.

2.5    Identify other standards that are needed, for example biodiversity monitoring, community effort and social outcomes.

2.6    Advocate for standardised data monitoring and sharing.

**Measures**

- Data collection and quality assurance standards for PF2050 work are developed, confirmed and implemented by significant agencies and organisations.

- PF2050 data infrastructure has been developed and is available for use by significant agencies and organisations.

**Requirements**

- Defined data standards need to be produced and ratified by the responsible agencies.

- Auditing capacity is needed to evaluate how reliably agencies are using the new standard, along with a metric to measure change over time. An acceptable rate of uptake per year needs to be established.

- The current tools being used to collect, store and analyse predator data need to have adopted the data standard.

## Milestone 3

People are collecting standardised data and understand why this is important.

**Actions**

| | |
|---|---|
| 3.1 | Develop or identify best practice tools and materials for predator control data collection, for example trapping, baiting and predator monitoring (camera traps, tunnels, chew cards, and so on). |
| 3.2 | Identify support models for ensuring standardised data collection systems are in place and platforms are being used effectively, for example an e-learning platform or nationwide training course. |
| 3.3 | Implement the support models determined in 3.2. |
| 3.4 | Annually review the systems in place, and update e-learning tools and training programmes. |

**Measures**

- PF2050 monitoring and data management training needs have been identified and are being addressed.
- People have the tools and access to the expertise they need to collect and record PF2050 data (for example online courses, a toolbox of monitoring methods).
- Ongoing technical support is available to help people gather standardised data and understand why this is necessary.
- Baseline data to inform scenario modelling have been collected.

## Milestone 4

Scaling up: data are being shared and collated into an aggregated dataset for analysis at regional and national scale. Stocktake and gap analysis.

**Actions**

| | |
|---|---|
| 4.1 | Carry out a stocktake for data, meeting public data needs. |
| 4.2 | Use the stocktake to provide gap analysis. |
| 4.3 | Assess data aspects of current contracts through Projects to Products and Tools to Market. |

**Measures**

- Data sharing among collaborative workstreams and the PF2050 community enables us to scale up our monitoring.
- Data collection is being carried out in a coordinated and complementary manner across significant agencies, organisations and community groups, through access to common and shared tools.
- Pathways are in place for embedding monitoring centred on mātauranga Māori to support regional PF2050 planning.
- Data are being collated and aggregated to regional and national scales, enabling shared learning across and between regions.

## Milestone 5

Analysis is undertaken of aggregated data to quantify the effect of PF2050 interventions. Model validation and refinement. Interpret, learn, report.

### Actions

5.1  Model the effects of PF2050 interventions on predator populations, including changes in residual predator abundance (effect size, timeframes and lags, from intervention to outcome). Relate these to biodiversity outcomes and/or metrics from other actions in this plan. Models are validated and refined as new data become available.

5.2  Interventions are assessed including:

- efficiency
- effectiveness
- barriers
- protocol
- implementation.

5.3  Surveillance data from sites targeted for eradication are collected and assessed to be able to declare eradication when criteria are satisfied. Decision-support tools may help this process (for example proof-of-absence models).

5.4  Data reporting is undertaken at a national scale on outcomes and progress towards success.

### Measures

- Models of pest and biodiversity outcomes from PF2050 interventions have been developed, fitted to data, validated and refined as new data become available.
- Effectiveness of interventions and relationships between residual pest abundance and biodiversity outcomes are being quantified and reported.
- Models and new knowledge are being used routinely by significant agencies, organisations and communities to track progress against the PF2050 strategy and to inform planning of future PF2050 interventions.

### Requirements

- Definitions of predator suppression, elimination and eradication need to have been agreed upon. Criteria need to have been set for declaring eradication in a predator-managed area.

## Milestone 6

Create an open-access PF2050 data portal to track progress in real time and use patterns in the data to inform planning of future activities (adaptive management). Mechanism for impact.

### Actions

6.1     Identify barriers to data sharing and create a report to share understanding of:

- what the barriers are
- why they exist
- how to break them down.

6.2     Scope and establish the budget needed for commissioning the building of an open-access data portal solution(s) and maintaining it.

6.3     Determine governance, data-sharing agreements and data custodian roles.

6.4     Define an interchange standard.

6.5     Undertake a training needs analysis to identify who needs to use the tool and what training is required.

6.6     Use the training needs analysis to define a support model.

6.7     Access and collate data from significant agencies, organisations and community groups to a regional and national scale.

6.8     Share the aggregated dataset for analysis and reporting under Milestone 7.

### Measures

- A set of assurances, principles and standards regarding intellectual property rights (data sovereignty) and data security has been developed for PF2050 activities.
- Collaborative partners agree to share data so data are available for all to use.
- An open-access data portal is connecting, analysing and displaying datasets and supporting PF2050 decision-making.
- People are consistently monitoring and sharing PF2050 data.
- Sophisticated data analysis and interpretation is being undertaken, for example to prove causality.

### Requirements

- The means for ensuring data sovereignty and data custodianship need to be developed.

# Milestone 7

Advocate for innovations in PF2050 data collection (new tools), processing and analysis (artificial intelligence), with the intention of improved efficiency and understanding of impacts of PF2050 interventions.

## Actions

7.1    Establish a shared repository of Proof of Concept and pilot tools with the PF2050 Knowledge, Innovation and Improvement collaborative group so data outputs can be assessed and agreed.

7.2    Horizon scanning, actively research what new tools are being developed (for example genetic tools) and establish indicative data requirements for these future tools.

## Measures

- By 2025, a data aggregation and processing infrastructure is in place that allows devices and methods to be used across Aotearoa New Zealand to alert land managers when breaches occur in areas where predators have been eradicated.

- Assessment is undertaken of the data capabilities of new technologies to support PF2050 indicators and measures.

- Prototype reporting products have been developed and tested.

## Requirements

- Excellent and active ongoing information sharing needs to occur between and among agencies and entities through the collaborative group.

- An understanding is needed of other collaborative groups through approaching collaborative workstreams to understand their data needs for reporting, including requirements, that is, frequency, level of detail and level of accuracy.

- Clarity is needed on the roles of the collaborative groups, in particular, which group(s) develops the monitoring methods and technologies needed to support PF2050 indicators and measures.

- Process(es) need to be developed to access data, compile and collate.

- A channel needs to be developed for internal reporting (could be digital, dashboard or low-tech) and responsibility assigned for its continued updating.