Mahinerangi Wind Farm Stage 2 – Puke Kapo Hau

Mammalian Pest Control Plan

Prepared for Tararua Wind Power Limited

23 September 2025

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Approved for issue:

Stephen Fuller | Ecology | Senior Principal | 23 September 2025

Release and Reliance

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1.0 Introduction

Tararua Wind Power Limited ("TWP"), a fully owned subsidiary of Mercury NZ Limited, is progressing Stage 2 of the Mahinerangi Wind Farm which is to be known as "Puke Kapo Hau" ("the Project", "Puke Kapo Hau" or "MWF Stage 2"). The MWF is located on the eastern foothills of the Lammermoor Range, situated approximately 5 km north of Lake Mahinerangi and approximately 50 km west of Dunedin.

Stage 1 of the wind farm, consisting of 12 wind turbines, is located in the southern western corner of the wind farm site and was commissioned in 2011. The pest mammal control programme which is currently in place within the Stage 1 area will need to be extended to cover Stage 2. Figure 1 shows the full extent of the MWF, with the current control programme in Stage 1 highlighted.

Variation to Land Use Consent RM1409 contains several conditions relating to management of pests:

Condition 25D requires preparation of an Ecological Monitoring and Management Plan which specifies

> *ii) For Stage 2, the Consent Holder shall ensure that ecological monitoring and management of the Puke Kapo Hau - Mahinerangi Wind Farm Stage 2 is undertaken in accordance with the requirements of the following Management Plans:*
>
> *e) Mammalian Pest Control Plan.*

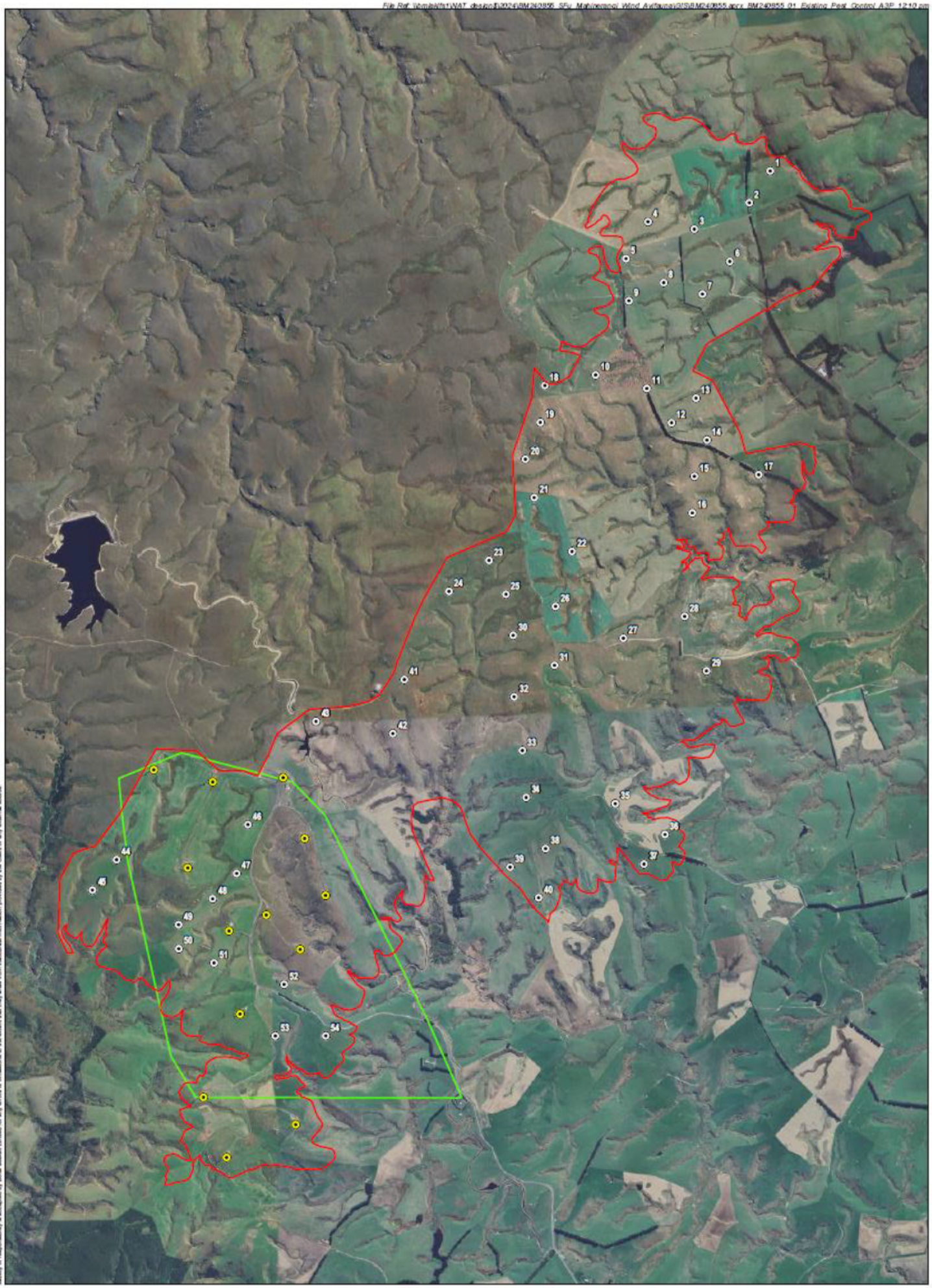
Condition 26 relates to Monitoring and Management of Avifauna and includes an Advice Note as follows:

> *Advice Note: With respect to mitigation/predator control to support falcon and pied oystercatcher, the Mammalian Pest Control Plan identifies the areas/habitat to be targeted, target pest species, types of control tools and timings for control methods. Refer to conditions 28 and 28A.*

Condition 28 and 28A detail the requirements of Mammal Pest Control as follows:

> *28. The consent holder shall develop and implement a mammal pest control programme. The mitigation and monitoring programme shall include, but not necessarily be limited to, relevant matters identified in the Mammalian Pest Control Plan prepared by Boffa Miskell Limited that forms Part C of the Puke Kapo Hau - Mahinerangi Wind Farm Stage 2 – Fast-Track Approvals Act Application.*
>
> *28A The purpose of the programme will be to ensure that the densities of predators, such as feral cats, stoats, weasels, ferrets, hedgehogs and prey species such as rabbits and hares are at low densities in the area. To achieve this, the consent holder shall comply with the following:*
>
> *i) Undertake predator control measures to a level no greater than 10% residual trap interference.*
>
> *ii) Control measures may include, but will not be limited to, trapping and baiting.*
>
> *iii) The consent holder shall ensure that all predator carcasses are disposed off-site and at an appropriate facility.*

In preparing this MPCP the contractor that currently manages pest control in Stage 1 of the wind farm was contacted to discuss the site, and their approach to meeting the condition 28. This was done to ensure continuity as pest control is scaled up for Stage 2.



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Data Sources: Boffa Miskell Ltd, Mercury NZ Ltd.
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LEGEND

- Stage 1 - Built Turbines
- Stage 2 - WTG locations - RC 2025
- Site boundary
- Existing pest control outer boundary

MAHINERANGI PEST MANAGEMENT

Figure 1: Mahinerangi Wind Farm Site

Date: 23 September 2025 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] Drawn: LJa | Checked: HNa

2.0 Mammalian pest control objectives

2.1 Benefits of pest control

This MPCP has been designed for the protection of native fauna species, in particular:

- **New Zealand Falcon/kārearea** (falcon, *Falco novaeseelandiae*). The eastern variant of the falcon has a conservation status of Threatened: Nationally Vulnerable. Historically up to 6 pairs have occupied territories which overlap the Mahinerangi Wind Farm site (Boffa Miskell Ltd., 2025c); and,
- **South Island Pied Oystercatcher/tōrea** (pied oystercatcher, *Haematopus finschi*). The pied oystercatcher has a conservation status of At Risk: Declining. Small numbers of these birds breed within both the operational Stage 1 Mahinerangi windfarm, and within the Stage 2 Windfarm Development Area (Boffa Miskell Ltd., 2025c).

Introduced mammalian predators have a significant impact on breeding success of many native bird species throughout New Zealand. As species that often nest on the ground, falcon and pied oystercatchers are particularly vulnerable to predation.

- **Tussock skink** (*Oligosoma chionochloescens*). The tussock skink has a conservation status of At Risk: Declining. These skinks are present in Stage 2 in areas of exotic grassland and crops (cultivated); sparse snow tussock grassland; dense snow tussock grassland; indigenous shrubland (degraded), wetlands, rock habitat over all habitats (Blueprint, 2025)[1].

Lizards and skinks are also vulnerable to predation due to their small size, limited defences, exposed basking behaviour, and the susceptibility of eggs, juveniles, and adults to introduced mammalian predators.

2.2 Target species suite

This MPCP identifies the target mammal species which have the greatest impact on native birds and lizards inhabiting the site. The target species fall into two categories, which are:

- **Predators**: including hedgehogs, mustelids (i.e. stoats, ferrets, weasels), and feral cats. Rats may also be caught in traps, but these are not subject to consent condition 28. Predator species impact native birds and lizards directly through predation of adults, chicks, and/or eggs.
- **Prey**: including rabbits and hares. If uncontrolled, high numbers of these prey species support higher population abundances of feral cats and mustelids, thereby indirectly increasing predation pressure on native birds and lizards.

[1] All native lizards are protected under the Wildlife Act 1953. The McCann's skink (*Oligosoma maccanni*) is also present within the wind farm and and will benefit from predator control.

3.0 Mammalian pest control protocols

3.1 Trapping protocols

3.1.1 Standard trapping network

As of July 2025, a network of pest mammal traps is currently operational within the Stage 1 area of MWF. Once Stage 2 of MWF is constructed the pest control network will expand to cover the Wind Farm Development Area. The expanded trap network design will follow the same principles of the existing network, namely:

- Traplines to follow wind turbine access routes through the wind farm.
- DOC-series traps set out at approximately 200 m spacing along traplines. The majority of these will be double-set DOC150 or DOC200 traps, but at every third trap station along the line a single-set DOC250 trap will be used instead (i.e. 600 m spacing of DOC250 traps). This will ensure that ferrets are effectively targeted alongside the smaller mustelids and hedgehogs.
- Timm's traps (baited for feral cats) at approximately 600 m spacing along traplines.
- Trapping network to be divided (for analytical purposes) into three trapping blocks: A, B, and C. This is so that trap-catch data can show any variation in predator abundance across MWF more clearly.

Figure 2 shows the proposed expanded trapping network for MWF, including actual locations of traps in the existing Stage 1 area, and indicative trap locations for the Stage 2 area. Note that final deployed trap locations for Stage 2 are yet to be ground-truthed and may vary slightly from the indicative locations due to practical constraints.

Servicing frequency for the standard trapping network (to clear animal carcasses, refresh baits and reset traps) will be once per month between March and August (inclusive). Between September and February (inclusive), when New Zealand falcon and pied oystercatcher are breeding, servicing frequency will be increased to once per fortnight. See Table 1 (Section 5) for a summary of trapping and reporting protocols.

3.1.2 Lizard release site

In addition to the standard trapping network, a more intensive trapping grid will be installed in a 4 ha lizard release site located in high-quality snow tussock grassland habitat within a QEII Open Space Covenant area, as per the Lizard Management Plan (Blueprint, 2025). This area will function as a release site for any native lizards salvaged during construction of Stage 2 of MWF.

A 25 × 25 m grid of DOC200 traps will be installed throughout the lizard release site to target key predators of native terrestrial lizards such as rodents, mustelids, and hedgehogs.

Predator control will be undertaken for two months prior to lizards being released, and for three years after the final year of lizards being released.

Traps within the lizard release site will be checked and reset once per fortnight, year round. See Table 1 (Section 5) for a summary of trapping and reporting protocols.

3.2 Shooting protocols

Night shooting of rabbits and hares will take place six times per year (approximately every second month) on fine nights. Shooting routes will be dispersed across the entire MWF Stage 1 and 2 areas. The primary purpose of night-shooting is to reduce the density of rabbits and hares, however possums and feral cats may also be shot opportunistically. Night-shooting must only be carried out by trained personnel with current firearms licences, and relevant permissions from land occupiers and Police. See Table 1 (Section 5) for a summary of shooting and reporting protocols.

3.3 Responsive toxin use

In the case where the trap-catch index (see Section 4.1) exceeds the targeted level of pest abundance for two consecutive service-periods, toxic control will be initiated to reduce predator abundance. There is currently no bait station network in place at MWF, so if responsive toxin is required bait stations will be installed along the traplines within the trapping block(s) to be treated. For feral cats and stoats, chimney bait stations at 500 m spacings, and for hedgehogs Philproof mini bait stations at 100 m spacings will be used.

All toxin use must be undertaken by a suitably qualified and experienced contractor who must hold relevant VTA handling certifications/licences, follow all regulatory requirements (including warning signage at all known points of entry to the project site), and follow the product label for each toxin type. The pest management contractor must attain any permissions required from landowners, iwi or hapū, authorities and/or agencies prior to any toxin use.

Toxins that may be suitable for use at MWF are:

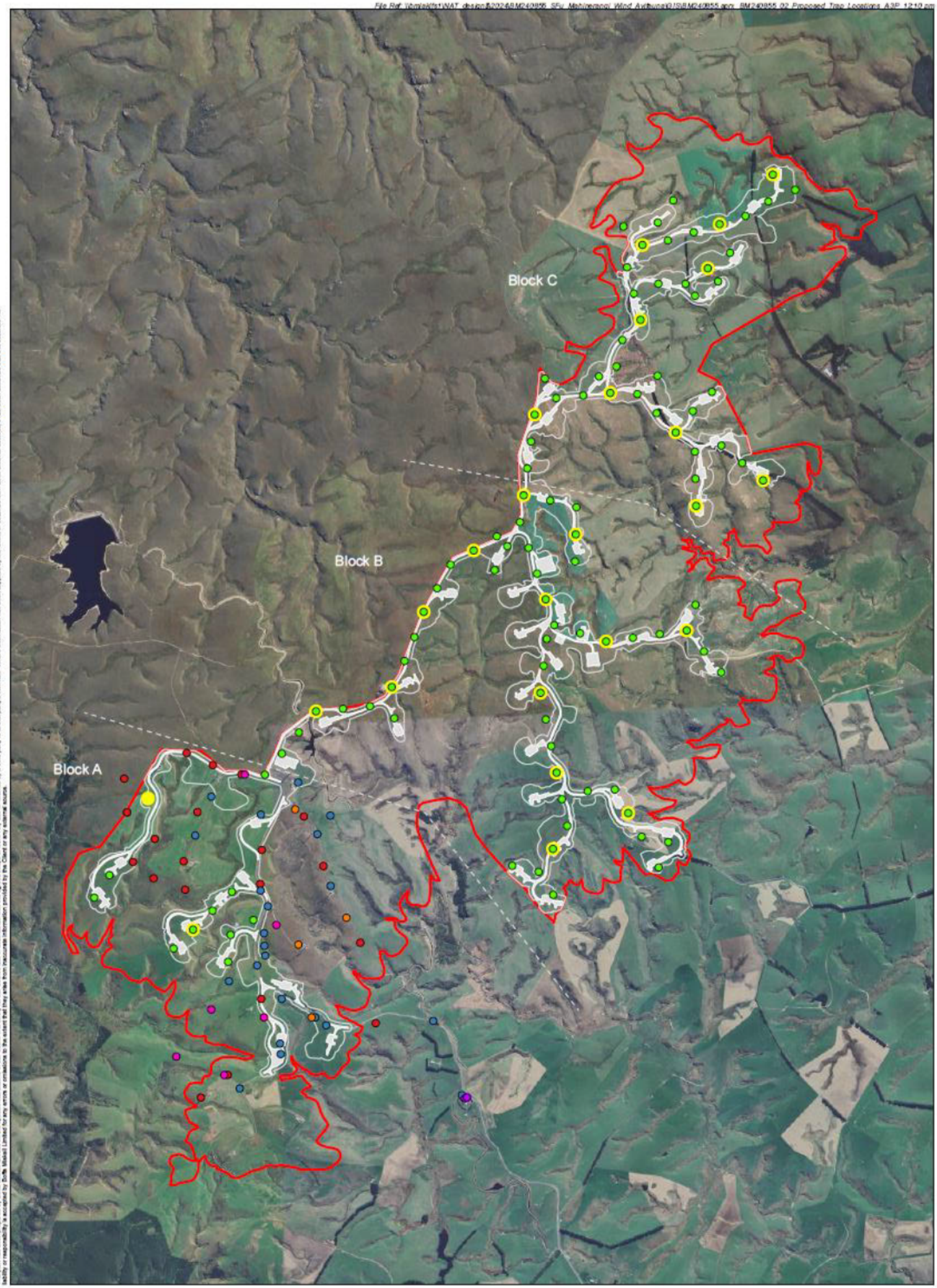
- **PAPP (Para-aminopropiophenone**) (brand name PredaSTOP)

  This toxin effectively targets stoats and feral cats. PAPP should be used inside bait stations and use of this toxin requires a Controlled Substances License (CSL) and landowners within 3 km must be notified for feral cat control using this toxin.

- **Brodifacoum** (brand names Pestoff, Talon)

  An effective knockdown tool for hedgehogs and rats, must be used inside bait stations. Secondary poisoning of mustelids and feral cats may also be achieved. No CSL is required to purchase or use brodifacoum, however it is a persistent toxin which builds up in the environment. Frequent use of this toxin should therefore be avoided.

Toxins must be deployed following the instructions on the product label.



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LEGEND

Existing trap by type
- DOC150
- DOC200
- DOC250
- Timms – Possum
- Timms – Cat

- Proposed DOC trap location
- Proposed cat trap location
- Wind Farm Development Area
- Stage 2 Earthworks Boundary - RC 2025
- Site Boundary

MAHINERANGI PEST MANAGEMENT

Figure 2: Current and proposed trap locations

Date: 23 September 2025 | Revision: 0

Plan prepared by Boffa Miskell Limited

Project Manager: [redacted] Drawn: LJa | Checked: HNa

4.0 Monitoring protocols

4.1 Monitoring protocol

As per consenting condition 28, the objective of pest mammal control at MWF is to ensure that target pest species are suppressed to low densities within the site. The consent condition specifies 'residual trap interference' as the measure of success, as per this quoted excerpt from condition 28 (emphasis added):

> *"....The purpose of the programme will be to ensure that the densities of predators, such as feral cats, stoats, weasels, ferrets, hedgehogs and prey species such as rabbits and hares are at low densities in the area. To achieve this, the consent holder shall comply with the following:*
>
> *i)* ***Undertake predator control measures to a level no greater than 10% residual trap interference****".*

Historical trapping records from pest control contractors previously working on the site show that trap capture records for all target species had been pooled and divided by the corrected trap nights[2] to produce a measure of traps that have caught any animal per trap night, expressed as a percentage.

Catch per 100 trap-nights (C100TN) is a suitable metric for tracking trends in trap catch over time because it normalises for trapping effort, allowing for variation in the duration between consecutive trap services. To assess compliance with condition 28(i), the C100TN method will be used.

To calculate C100TN for <u>each species individually</u> (method adapted from Gillies (2013)):

- Calculate the total number of trap-nights = the number of species-capable* traps in the trapping block × the number of nights since the trap was last serviced

  * The number of traps in this calculation should only include traps that are intended for the species in question. For example, DOC-series traps for mustelids and hedgehogs, and cat-baited Timms traps for feral cats.
- Calculate the number of trap-nights lost = 0.5 × (number of captures + number of sprung traps). The number of captures in this calculation includes all species, not just the species for which the index is being calculated
- Calculate the corrected number of trap-nights = total trap-nights – trap-nights lost
- Calculate C100TN = (number of captures × 100) ÷ corrected trap nights. The number of captures in this calculation includes only the species for which the index is being calculated.

If C100TN exceeds 10 captures per 100 trap nights for two consecutive service-periods, toxic control will be initiated to reduce predator abundance (Section 3.3).

5.0 Summary of protocols

Table 1 summarises the mammalian pest control and monitoring protocols described in Sections 3 and 4.

[2] Corrected trap nights = the total number of traps × number of nights in operation minus the number of trap nights lost due to trap occupancy or traps sprung empty.

Table 1: Summary of mammalian pest control protocols for Mahinerangi Wind Farm.

Pest	Frequency	Data Collected	Data Reported
Mustelids	**Trap service:** Monthly between March and August (inclusive). Fortnightly between September and February (inclusive). **Toxin:** Only as required in response to exceedance of monitoring thresholds.	GPS points of all trap locations Species and locations of animals recovered from traps.	Map of trap lines Dates of trap visits and servicing required. Trap kill results by species, trap number, trap line and standardised by number of trap nights (C100TN). Analysis of catch rates of target pests.
Hedgehogs	**Trap service:** Monthly between March and August (inclusive). Fortnightly between September and February (inclusive). **Toxin:** Only as required in response to exceedance of monitoring thresholds.	GPS points of all trap locations Species and locations of animals recovered from traps.	Map of trap lines Dates of trap visits and servicing required. Trap kill results by species, trap number, trap line and standardised by number of trap nights (C100TN). Analysis of catch rate of target pests.
Feral cats	**Trap service:** Monthly between March and August (inclusive). Fortnightly between September and February (inclusive). **Toxin:** Only as required in response to exceedance of monitoring thresholds.	GPS points of all trap locations Species and locations of animals recovered from traps.	Map of trap lines Dates of trap visits and servicing required. Trap kill results by species, trap number, trap line and standardised by number of trap nights (C100TN). Analysis of catch rate of target pests.
Rats	**Trap service (lizard release site only)** Fortnightly, year round.	GPS points of all trap locations Species and locations of animals recovered from traps.	Map of trap lines Dates of trap visits and servicing required. Analysis of catch rate of target pests.
Hares and Rabbits	**Night-shooting:** Six times per year on fine nights	GPS or other tracking of shooting routes Species of animals recovered while shooting. Location of all animals shot.	Map of areas where shooting occurred Shooting results by species, and area. Analysis of number of target pests observed.

6.0 Data management and annual reporting

All pest control data will be entered into a data management system as soon after field work as possible. Trap.NZ is recommended as a single cohesive data management platform as it is widely used across New Zealand, user friendly, and can record spatial distribution of devices and pest animal catches or detections. Maintaining accurate records is crucial to assessing the success of pest management activities. Spatial and temporal trends in pest populations and catch rates can be identified in the analysis of this data, which help to inform future pest management decisions.

A report on pest management outcomes should be produced every year in April or May. The report should provide a summary of pest management activities for the year and include all data listed in the 'data reported' column of Table 1.

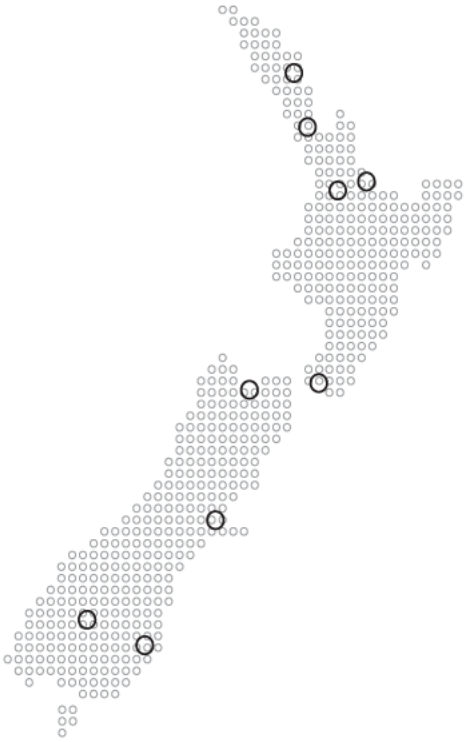
7.0 References

Boffa Miskell Ltd. 2025c. Proposed Mahinerangi Wind Farm Avifauna Management Plan. Report prepared by Boffa Miskell Limited for Chancery Green.

Blueprint Ecology 2025. Draft Lizard Management Plan Mahinerangi Wind Farm Stage 2. Report prepared by Blueprint Ecology Limited for SLR Consulting New Zealand Limited.

Gillies, C.A. 2013. DOC snap trap guide v1.3: Using snap traps to index rodent abundance. Department of Conservation, Science & Capability Group, Hamilton, New Zealand. www.doc.govt.nz

Gillies, C.A.; Williams, D. 2013. DOC tracking tunnel guide v2.5.2: Using tracking tunnels to monitor rodents and mustelids. Department of Conservation, Science & Capability Group, Hamilton, New Zealand. www.doc.govt.nz



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