Tupou Zone Reforestation and Biodiversity Management Plan

Version 2025

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1. INTRODUCTION

The Tupou Zone Reforestation and Biodiversity Management Plan (RBMP) outlines the strategic approach to restoring and enhancing the native ecosystems on the landholdings. This former sheep and beef farm had marginal profitability and degraded ecological health, and this plan aims to restore it.

This is a living document, guided by the principles of adaptive management and responsiveness to ecological outcomes. The overarching goal is to maximise native biodiversity and long-term carbon storage.

2. OBJECTIVES, METHODS, TIMING, MEASURES AND RESPONSIBILITIES

The core objectives of the RBMP are:

- Reforestation: Convert unproductive pastureland to native forest, focusing on steep, low-quality soils.
- Biodiversity Enhancement: Increase and sustain native biodiversity, including threatened species, through habitat creation, habitat improvement, and intensive pest control.
- Long-term Sustainability: Establish a self-sustaining ecosystem that can be monitored and adapted over time.
- Landscape Connectivity: Create and maintain ecological corridors within the property.

Reforestation Programme (2023-2029)

- Objective: Re-afforest a total of 404.1 hectares in the Tupou Zone.
- Methods:
    - Area Selection: Remove livestock from the least productive paddocks, initially focusing on a large area of 620ha to the south of the main internal access road. A further 135ha will be destocked and planted from 2026.
    - Planting: Plant a mix of canopy trees and shrubs, prioritising locally sourced indigenous species to ensure genetic integrity and high survival rates.
- Timing & Measures:

Year	Area (ha)	Number of plants
1	85.8	36,225
2	63.3	68,966
3-5	174.2	111,839 (plus 324,000 from 2026 onwards)
5-7	91.5	146,368
Total	**404.1**	**687,398**

- Responsibilities: Tupou Zone landowners through its appointed pest control coordinator, revegetation coordinator and farm staff, will be responsible for the implementation and management of the programme. They will be assisted by Tahi Advisers (Drs John Craig, Anne Stewart & Neil Mitchell).

Ecological Restoration and Biodiversity Enhancement

Objective 1: Enhance and sustain native fauna populations and improve overall ecosystem health.

Objective 2: Design a property that Illustrats the potential of blended farming systems, reforesting marginal or less-productive land with native species, while keeping the best farmland in a more traditional use. The approach is designed to optimise both ecological and economic outcomes, delivering biodiversity gains, carbon, agricultural productivity, rural economic resilience.

- Methods:
    - Intensive Pest Control: Implement and sustain a comprehensive pest management plan across the entire property [Refer to the Pest Management Plan].
    - Habitat Creation/Improvement: Create additional wetlands and ponds to slow water and provide new habitats. Fencing wetlands within farmed areas will improve water quality and sustain bird and fish life.
    - Fauna Re-introductions: Consider the re-introduction of native fauna where appropriate, once pest numbers are sustainably low and habitats are established.
- Timing & Measures:
    - Pest Control: Ongoing, with a dedicated coordinator and farm staff. Traps, bait stations and night shooting are currently employed across the property.
    - Habitat Work: Planned for the future as part of the overall strategy.
    - Fauna Re-introduction: To be considered in the future, based on monitoring results and the success of pest control and habitat restoration.

3. SPECIES SELECTION, PLANTING, AND MAINTENANCE

Species selection: Species are selected based on their known presence or historical likelihood on the property. A full list of species is appended to this plan.

Planting Density and Methodology: The planting programme aims for an average density of around 1,700 plants per hectare, which will vary based on the specific ecological needs of each area.

Weed and Pest Control:

- Weed Control: The property has a low weed burden, with the exception of pampas. Control methods will focus on managing pampas and other invasive species as they appear, particularly around new plantings. Mulching and other weed suppression methods will be used to improve seedling survival rates.
- Pest Control: Intensive pest control is a foundational element of this plan. Target Species: Pigs, possums, rats, cats, hedgehogs, rabbits, hares and mustelids.

Long-term Maintenance and Protection

- Provisions: Ongoing pest and weed control is the most critical long-term maintenance action. Additional planting will be undertaken where necessary – especially on steep low quality soils.
- Funding: The programme is funded by the owners of the Tupou Zone.

4. MONITORING AND REPORTING

Biodiversity Value Index (BVI): The BVI will be a key performance indicator to monitor the success of the plan. It will be calculated based on a combination of factors, including plant species diversity and density, fauna counts, pest animal density, and forest health indicators. The BVI will be reported annually.

Monitoring Protocols:

- Overall Surveys: Full ecological surveys are planned at least every five years.
- Birds and Lizards: Bird and lizard counts will be conducted on defined seasonal basis (e.g. quarterly) to track population changes more accurately. Monitoring with trail cameras will continue for species like kiwi.
- Water Quality: Monthly monitoring of one stream by the NRC will continue, with full measures for all six streams to be repeated periodically.
- Additional monitoring will be undertaken as at the other Tahi property using LiDAR, tree coring, satellite imagery, and on-the-ground biodiversity surveys, so others can replicate without the same trial-and-error
- Vegetation clearance plan for the establishment of buildings, roads and tracks in relation to eco-tourism and eco-education facilities.

Research: Research is encouraged, with an invertebrate study by Auckland University already underway.

5. REVIEW AND ADAPTIVE MANAGEMENT

This RBMP is based on the principle of adaptive management. The plan will be formally reviewed at least every five years to reflect new ecological outcomes and research findings. Minor updates may be made more frequently based on

monitoring data and the BVI reports. This ensures the RBMP remains responsive to the needs of the ecosystem and the goals of the Tupou Zone and considers any buildings, roads or tracks in relation to the overall BVI in the zone.

Appendix 1: Species list

Trees	
Cabbage tree	*Cordyline australis*
Coastal maire	*Nestegis apelata*
Kahikatea	*Dacrycarpus dacrydioides*
Kaikōmako	*Pennantia corymbosa*
Karaka	*Corynocarpus laevigatus*
Karo	*Pittosporum crassifolium*
Kauri	*Agathis australis*
Kawaka	*Libocedrus plumosa*
Kohekohe	Dysoxylum spectabile
Kowhai	*Sophora chathamica*
Large-leaved milk tree, Turepo	*Streblus banksii*
Matai	*Prumnopitys taxifolia*
Miro	*Prumnopitys ferruginea*
Ngaio	*Myoporum laetum*
Northern rata	*Metrosideros robusta*
Pigeon wood	*Hedycarya arborea*
Pohutukawa	*Metrosideros excelsa*
Pukatea	*Laurelia novae-zelandiae*
Puriri	*Vitex lucens*
Rewarewa	*Knightia excelsa*
Ribbonwood	*Plagianthus regius*
Rimu	*Dacrydium cupressinum*
Swamp maire	*Syzygium maire*
Tanekaha	*Phyllocladus trichomanoides*
Taraire	*Beilschmiedia tarairi*
Tawapou	*Pouteria costata*
Titoki	*Alectryon excelsa*
Totara	*Podocarpus totara*
Towai	*Weinmannia silvicola*
Shrubs	
Akapuka	*Griselinia lucida*
Akeake	*Dodonaea viscosa*
Akepiro	*Olearia furfuracea*
Coastal mahoe	*Melicytus novae-zealandiae*
Five finger	*Pseudopanax arboreus*
Flax	*Phormium tenax*
Haekaro	*Pittosporum umbellatum*
Hangehange	*Geniostoma rupestre*
Heketara	*Olearia rani*
Hikuruana	*Coprosma spathulata*
Houpara	*Pseudopanax lessonii*
Kakabeak	*Clianthus maximus*
Karamu	*Coprosma robusta*

Karamu	*Coprosma lucida*
Karapapa	*Alseuosmia macrophylla*
Kawakawa	*Macropiper excelsor*
Kirk's Daisy	*Brachyglottis kirkii var. kirkii*
Kohuhu	*Pittosporum tenuifolium*
Korokio	*Corokia buddleioides*
Koromiko	*Hebe ligustrifloia*
Koromiko	*Hebe macrocarpa*
Koromiko	*Hebe parviflora*
Koromiko	*Hebe stricta*
Kumarahou	*Pomaderris kumeraho*
Lacebark	*Hoheria populnea*
Lancewood	*Pseudopanax crassifolius*
Large seeded coprosma	*Coprosma macrocarpa*
Large-leaved mahoe	*Melicytus macrophyllus*
Mahoe	*Melicytus ramiflorus*
Makamaka	*Ackama rosaefolia*
Mamangi	*Coprosma arborea*
Mapou	*Myrsine australis*
Mingimingi	*Leptecophylla juniperina*
Mingimingi	*Leucopogon fasciculatus*
Mingimingi	*Coprosma propinqua*
Neinei	*Dracophyllum latifolium*
Pate	*Schefflera digitata*
Puka	*Meryta sinclairii*
Putaputaweta	*Carpodetus serratus*
Ramarama	*Lophomyrtus bullata*
Rangiora	*Brachyglottis repanda*
Shining Karamu	*Coprosma repens*
Small-leaved milk tree, Turepo	*Streblus heterophyllus*
Tataka	*Melicope simplex*
Taurepo	*Rhabdothamnus solandri*
Thin-leaved Coprosma	*Coprosma aereolata*
Toetoe	*Cortaderia fulvida*
Toro	*Myrsine salicina*
Toru	*Toronia toru*
Tree fuchsia, Kotukutuku	*Fuchsia excorticata*
Twiggy Coprosma	*Coprosma rhamnoides*
Wharangi	*Melicope ternata*
Whau	*Entelia arborescens*
Wineberry, makomako	*Aristotelia serrata*
	Pittosporum ellipticum
	Pittosporum virgatum