FSC® FOREST MANAGEMENT PLAN

Mangapakeha Forest
ROBMIJON Holdings Limited
May 2025 – April 2030

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1. What is this Plan?

1.1 About this Plan

This **specific** forest management plan provides details about Mangapakeha Forest.

It is to be used in conjunction with the **standard** forest management plan[1], which outlines the typical management applied to the Forest Stewardship Council (FSC®) Group Scheme estate forests.

Where Mangapakeha Forest is managed in a different way than described in the standard forest management plan, this is detailed within this plan, which takes precedence.

1.2 Foundation Principle

As a policy the:

- ROBMIJON Holdings Ltd has a long-term commitment to the FSC Principles and Criteria in the management unit, and to related FSC Policies and Standards, and
- ROBMIJON Holdings Ltd is committed to the PF Olsen FSC Group Scheme **SCS-FM/COC-400064** processes and associated documents.

ROBMIJON Holdings Ltd has sought FSC certification, to ensure that their forests are managed in an environmentally appropriate, socially beneficial and economically viable manner and to obtain the best access opportunities to the local processing market which is seeking to source FSC certified logs.

[1] https://nz.pfolsen.com/site/pfolsen/ForestManagemenPlan%20-%20Standard.pdf

2. The Forest Land

2.1 Forest area

Mangapakeha Forest consists of two forest blocks (Main and Reserve) within the Wairarapa as shown in Appendix 1. The net stocked areas have been measured from mapping produced by PF Olsen.

These areas are subject to change due to farmland retirement and afforestation and are correct as of 15 April 2025.

Mangapakeha Forest	Area (ha)
Productive - Current	162.1
Productive - Planned afforestation	-
Productive Total	**162.1**
Reserve – Indigenous Natural	60.9
Reserve - Indigenous Planted	-
Reserve – Indigenous Total	**60.9**
Reserve - Exotic	
Farmland / Other	14.1
Total Legal Area (ha)	**237.1**

2.2 Location and access

Forest	Location
Mangapakeha – Main block	Accessed from the Masterton-Castlepoint Road, approximately 40 km form Masterton.
Mangapakeha – Reserve block	Accessed from Moeraki Road, approximately 28 kilometres from Martinborough.

2.3 Legal ownership

The forest is freehold. The legal description for each forest is shown in the table below.

Forest	Certificate of Title	Legal Description	Gross Title Area
Mangapakeha – Main block	WN20C/248	Part Section 4, Block XV, Mangapakeha Survey District	182.71 ha

Mangapakeha – Reserve block	WN48B/754 WN391/14	Pahaoa 1C Block, Pahaoa 2C Block Lot 2 Deposited Plan 2950	231.52 ha 46.36 ha

The following documents and agreements have been checked to ensure the legality of the forest:

- Certificate of title
- Title plans and maps

The following agreements are in place between the forest owner and PF Olsen:

- Forest management agreement
- FSC client member agreement

PF Olsen is legally registered company, filing annual returns, and is audited annually by an independent financial auditor.

2.4 Markets

The location of Mangapakeha Forest (Main block) in relation to potential markets is listed in the table below.

Distances from forest to log markets

Potential Market or Export Port	Distance from Forest (km)	Log market type
Wellington	142	Export
Masterton	45	Domestic
Featherston	80	Domestic
Dannevirke	154	Domestic

2.5 Topography

The topography of the Main block consists of rolling to steep hill country of a generally northerly aspect. Altitude of the forested area ranges from 40 m to 205 m above sea level.

A combination of ground based and cable hauler log extraction methods will be utilised at harvesting.

The reserve block has moderately steep to steep fertile mudstone and siltstone hillslopes below 1000 m above sea level.

2.6 Soil

The Main block soils are predominantly Liliburn, recent Skeletal, Oronoko and Gladstone brown soils, loams over rock. The soils range from very shallow to deep and are well drained. They are of medium to low fertility and subject to periods of soil moisture deficiency.

At the northern and southern parts of the block the Land Use Capability (LUC) is 7e6, with the potential for very severe to extreme deep earthflow and moderate to severe gully erosion. The LUC in the middle of the block is 6e13, with the potential for moderate sheet, soil slip and gully erosion, and slight wind erosion.

The Reserve Block soils are predominantly Moka, Waitataura and Heretaunga brown soils, loams over clay and rock. The soils are moderately deep to deep and moderately well drained. The LUC is 6e7 with a potential for moderate soil slip and shallow earthflow, and slight sheet and gully erosion.

2.7 Climate

- The Wairarapa region experiences a temperate climate.
- The forest areas experience hot summers and cold winters.
- The annual rainfall rarely exceeds 1200 mm in the Main block, but ranges from 1200 – 2000 mm in the Reserve block.
- Daytime temperatures range from -5 to 33+ degrees Celsius.
- The mean annual temperature is around 13.1 degrees Celsius
- The Wairarapa rarely experiences heavy rainfall, however, high rainfall can occur when a moist south or southeastern airflows occur associated with a depression situated over or just to the east of the region.
- Droughts are not uncommon in the Wairarapa, and these are expected to become more severe and frequent with climate change.

3. Ecological Information

3.1 Ecological District

The Mangapakeha Forest blocks are located within the Eastern Wairarapa Ecological District (ED), in the Wairarapa Plains Ecological Region. Refer to the following information about the Eastern Wairarapa ED (35.01).

https://www.doc.govt.nz/documents/science-and-technical/ecoregions3.pdf

3.2 FSC requirement: Ecological District

See the Standard FMP for further detail about the requirements of 6.5.6 and 6.5.8 in the NZ FSC Standard.

The forests meet the FSC requirement of having at least 10% of their total forest area as indigenous reserves. There is no reserve shortfall.

Reserve areas in Mangapakeha Forest by Ecological District

Ecological District	Total Forest Area (ha)	Reserve Area (ha)	Reserve %	Meets FSC?	Reserve Shortfall (ha)
Eastern Wairarapa	237.1	60.9	25.7%	YES	N/A

3.3 Threatened Environments Classification

The reserve areas in Mangapakeha Forest are within the following NZ Threatened Environments Classifications.

All of the Reserve block is within the TEC 1 category of < 10% indigenous cover left.

Less than 10% of the natural indigenous vegetation reserves fall in the >30% remaining & <10% protected category. This category has a reasonable proportion of its original (pre-human) extent remaining today. However, of this area, little remains under the protection of public conservation land. Most of it lies on private land.

Threatened Environments Classification / Forest	< 10% remaining	10 – 20 % remaining	20 – 30 % remaining	> 30 % remaining & < 10 % protected	> 30 % remaining & 10 – 20 % protected	> 30 % remaining & > 20 % protected	Total Area* (ha)
Mangapakeha- Main block				5.3			5.3
Mangapakeha- Reserve block	55.6						55.6
Total area* (ha)	**55.6** 91.3%			**5.3** 8.7%			60.9

4. Cultural and Social Aspects

4.1 Forest history

The Main block of Mangapakeha Forest is a second rotation plantation forest having been previously harvested over the period 2003 to 2009. The forest was established by a previous owner primarily for investment purposes. When previously farmed, the land was predisposed to slope instability with potential for slips and erosion.

The Reserve block consists of regenerating indigenous vegetation that was set aside when surrounding areas were afforested.

4.2 Current social profile

The predominant land uses surrounding the forests are pastoral farms and plantation forest, with small rural towns servicing the predominantly rural communities. The forests contribute to the social profile of the area. They are privately owned.

There is a contribution to the local economy by way of added incremental employment from the forests throughout the forest rotation, including:

- Tree nurseries
- Planting and silviculture contractors
- Pest control operators
- Forest managers
- Quality control providers
- Forest inventory contractors
- Water quality monitoring service providers
- Roading contractors
- Harvesting and cartage contractors

4.3 Historic and archaeological sites

The 'Archsite' web resource does not record any known historic sites in the Mangapakeha Forest blocks, nor within 1km of the forest boundary.

Accidental discovery protocols will apply should any physical evidence be discovered during operations.

4.4 Tangata Whenua

Ngāti Kahungunu ki Wairarapa Tāmaki nui-a-Rua have statutory acknowledgements across the Wairarapa. The Crown and Rangitāne o Wairarapa-Tāmaki Nui ā Rua signed a Deed of Settlement on 22 March 2018. The iwi has developed strategic documents - Kahungunu ki Uta, Kahungunu ki Tai, Marine and Freshwater Fisheries Strategic Plan.

Rangitāne o Wairarapa-Tāmaki Nui ā Rua have statutory acknowledgements and deeds of recognition across the Wairarapa:

> Statutory Areas: Akitio River, Coastal Marine Area, Manawatū River and its tributaries within the area of interest, Wainui River and its tributaries.
>
> Deed of Recognition areas: Lowes Bush Scenic Reserve, Oumakura Scenic Reserve, Pukeahurangi/Jumbo, Pukeamoamo/Mitre, Rewa Bush Conservation Area.

The Crown and Rangitāne o Wairarapa-Tāmaki Nui ā Rua signed a Deed of Settlement on 10 August 2017. The iwi has developed a Cultural and Environmental Management Plan (EMP) titled "Te Tapere Nui-o-Whātonga" with Horizons Regional Council. This plan provides a framework for restoring the mauri (life force) of the Rangitāne takiwā (territory) in Tamaki nui-ā-Rua.

The strategy informs decisions made under the One Plan (Horizons' Regional Plan), which is enforceable under the Resource Management Act (RMA).

Forestry activities requiring resource consent are expected to demonstrate alignment with the strategy's values, particularly in relation to water quality, indigenous biodiversity, and cultural heritage sites.

4.5 Tenure & resource rights

There are no known Iwi interests in Mangapakeha Forest.

4.6 Neighbours

Appendix 3 lists the forest neighbours. Some of these parties should be consulted when operations are proposed in forest areas adjacent to their boundaries.

5. Regulations

5.1 National Environmental Standards for Commercial Forestry (NES-CF) Erosion Susceptibility Classification

The NES-CF regulations are generally based on the Erosion Susceptibility Classification (ESC) of the underlying land.

The Mangapakeha Forest Main block is located across a range of erosion risk land. The majority of the forest activities will be permitted subject to meeting the NES-CF regulations. However, activities in orange and red ESC zones will normally require resource consent (e.g. earthworks, harvesting and replanting).

The table below shows the productive plantation area of the Mangapakeha Main block by the respective NES-CF ESC.

Productive plantation area (ha) within each ESC Class

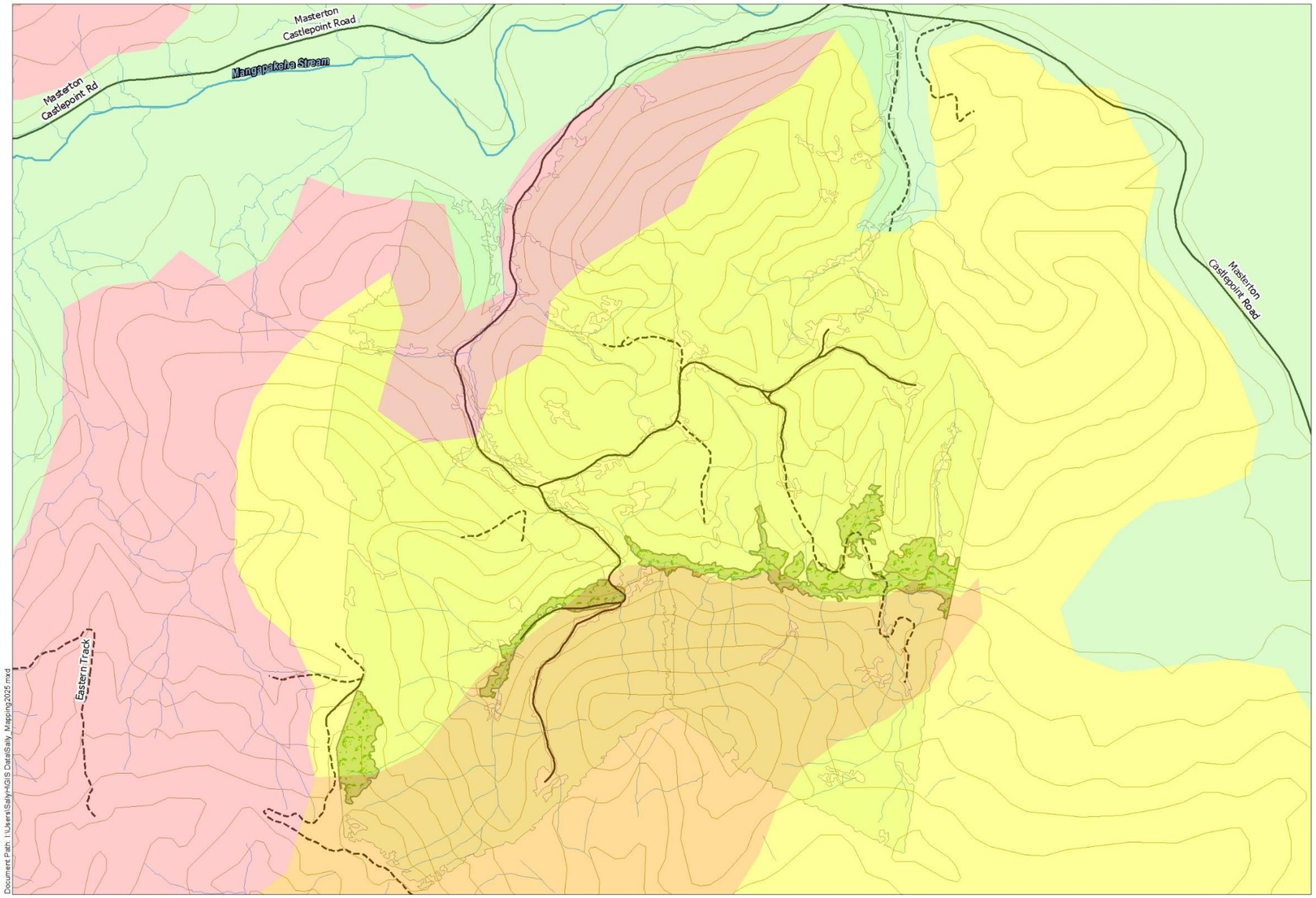
Forest	Low	Moderate	High	Very High	Very High (8e)	Total
Mangapakeha	5.3	96.2	37.3	23.3	0	162.1

The Main block of Mangapakeha Forest is shown on the following ESC map. Note the Reserve block of Mangapakeha is not shown as it does not contain any productive area.

National Environmental Standards for Commercial Forestry Erosion Susceptibility Classification

Main block, Mangapakeha Forest

ROBMIJON Holdings Ltd



LEGEND

Patches

PatchClass, PatchType

- Planted - Commercial
- Protected EcoSystem

Transport

Type

- Road
- Track
- Stream
- Unclassified

Erosion Susceptibil... Classificati...

ESCvalue

- Low
- Moderate
- High
- Very High
- contour

Print Date: 11/04/2025

Coordinate System: NZGD 2000 New Zealand Transverse Mercator
Projection: Transverse Mercator
Datum: NZGD 2000

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0 75 150 300 450 600 750 Meters

Map Disclaimer This map is distributed as-is without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use. This map is intended for use only at the published scale. The data used was believed to be correct, however, a degree of error is inherent in all maps This map may contain information from LINZ or NZ Archaeological Association Site Recording Scheme.

5.2 Council Resource Management Plans

The Main block of Mangapakeha Forest is within the Masterton District while the Reserve block is within the Southern Wairarapa District. Both are in the Greater Wellington Region.

The Masterton and Southern Wairarapa District Councils and the Greater Wellington Regional Council have their own planning documents and associated rules, developed through public process.

- There are no rules of relevance in the combined Masterton, Carterton and Southern Wairarapa District Plan 2023
- Under the Greater Wellington Regional Plan, there are permitted activity rules for the discharge of agrichemicals (rules 37 and 38 – All zones) and for the use of beds of rivers (rule 5.4.4(n)).

If resource consents are required for operations, consideration should be given to the Rangitāne o Wairarapa-Tāmaki Nui ā Rua Cultural and Environmental Management Plan (EMP) entitled "Te Tapere Nui-o-Whātonga".

5.3 Consents & authorities held

There are currently no resource consents or Archaeological Authorities relevant to Mangapakeha Forest.

5.4 Emissions Trading Scheme

Mangapakeha Forest qualifies as pre-1990 forest land. The previous owner had established the forest before 31 December 1989. The forest has been harvested and subsequently replanted. A deforestation liability would only be incurred if there was a change from forestry to a non-forest land use.

6. Managing environmental risk

6.1 Assessment of environmental effects

Refer to the Standard FSC Forest Management Plan for the full assessment of environmental effects.

6.2 Natural hazards

Natural hazards are disturbances that can be a risk to social and environmental values, and important ecosystem functions. The following natural hazards have been identified in Mangapakeha forest:

- Drought - as identified under 'climate' in section 2, the Main block of the forest is susceptible to drought. For subsequent rotations, the species planted may need to change to adapt to increased likelihood of drought.
- Flooding/heavy rainfall events - as identified under 'climate' in section 2, the forest isn't susceptible to flooding given the hilly nature of the forest blocks. Heavy and prolonged rainfall could result in landslides, soil slip, especially during the window of vulnerability. However, the impacts of these natural events can be minimised by replanting, careful slash management on the NES-CF orange ESC zone cutover and care when harvesting around riparian areas to minimise the opportunity for slash to be mobilised.
- Earthquakes – Aotearoa New Zealand is susceptible to earthquakes. Should an earthquake of sufficient magnitude impact the forest blocks, this would be in conjunction with widespread devastation of the region.
- Mass soil erosion/landslides (see above and the following section on erosion susceptibility).
- Fire (see following section on fire).

6.3 Erosion susceptibility: NES-CF ESC red zone

There are 23.3 ha of productive NES-CF ESC red zone forest land within the Main block of the forest – refer to the map in section 5.1. This land has been evaluated as per the protocols in the Standard FSC Forest Management Plan.

As it is planned for these areas are to be clear-felled, the NES-CF ESC red zone productive area monitoring program has been implemented (refer to the Standard FSC Forest Management Plan) and is recorded in appendix 7.

6.4 Infrastructure damage or service disruption

The following infrastructure is adjacent to the forest. It is recognised that forestry operations may have an impact on the infrastructure. Any potential adverse effects are managed through operational plans.

Forest	Infrastructure/Services
Mangapakeha – Main block	The north-easter corner of the forest is adjacent to the Masterton Castlepoint Road but is buffered by amenity trees. Operations in the forest are unlikely to impact the road.

6.5 Pests and diseases

The main pest threats are feral deer, possums and wilding pines. Feral deer and possums are identified in the Greater Wellington Regional Pest Management Plan as pests that require site led control. It is the landowner's duty to create management plan to control the pests. Please refer to Appendix 5 for the ecological work plan.

For further information please refer to: https://www.gw.govt.nz/your-region/plans-policies-and-bylaws/plans-and-reports/environmental-plans/regional-pest-management-plan/

Animal pests in Mangapakeha Forest will be controlled using ground control methods as required, which prevent impacts on non-target species. Potassium cyanide in bait stations has been occasionally used for the control of possums on the boundaries of the property. This pest control was initiated by the Greater Wellington Regional Council.

6.6 Fire

Mangapakeha forest is within the Fire and Emergency NZ (FENZ) Hutt-Wairarapa Zone[2]. The plan references the thresholds for fire restriction levels and the coordination of forestry risk management responses between forest owners/managers and FENZ.

[2] https://www.fireandemergency.nz/assets/Documents/fire-plan/2024-Fire-Plans/2024-final/Wellington-District-Fire-Plan-2024-2027-2024-07-22-v4.0.pdf

7. Commercial Plantation Estate

7.1 Current crop

The Main block of Mangapakeha Forest is a radiata pine forest, replanted in 2003 and in 2009. Approximately 40 hectares was established from regeneration and is now being managed as plantation. Information on the current crop is contained in the following table:

Productive area by species

Compartment	Area (ha)	Species
1/6	28.3	*Pinus radiata*
1/7	38.8	*Pinus radiata*
1/8	95.0	*Pinus radiata*
Total area (ha)	162.1	

Pinus radiata has excellent growth and structural quality in the region, has a proven record (including in relation to disease risk), has large local domestic processing demand, and also has proximity to an export port.

The forest is likely to be re-established with *P. radiata* post-harvest.

7.2 Tending

The tending in Mangapakeha Forest has been to develop a mixed clearwood and framing regime, dependant on the stand characteristics. Pruning and waste thinning operations have been undertaken.

7.3 Tree nutrition

The soils are generally not deficient in nutrients for healthy tree growth.

8. Harvesting Strategy

8.1 Harvesting strategy

The potential range of harvest age is 25 to 32 years, depending on growth rates, likely markets and contractor availability.

In the next 5 years, some harvesting may be likely in Mangapakeha Forest. This could commence in 2030 when the stands are age 27.

The projected harvest for radiata beyond the end of 2029 is listed below:

Annual harvest (ha)	Year				
	2030	2031	2032	2033	2034
Cpt 1/6	28.3				
Cpt 1/7		38.8			
Cpt 1/8	-	-	-	-	-

8.2 Infrastructure

As a second rotation forest, infrastructure is largely in place. Prior to harvesting, infrastructure maintenance and minor upgrades may be required.

9. Indigenous Biodiversity

9.1 Natural indigenous vegetation reserves

Natural indigenous vegetation reserves are the areas of naturally occurring indigenous vegetation within each forest that have been identified as part of the ecological survey. These areas are not all legally protected but are managed to meet the FSC Principles and Criteria.

Appendix 5 shows the ecological workplan for Mangapakeha Forest.

Natural indigenous vegetation reserve areas by protection category

	Special	Important	Limited	Total area (ha)
Mangapakeha – Main block		6.6		6.6
Mangapakeha – Reserve block	54.3			
Total area (ha)	54.3	6.7		60.9

The Important indigenous vegetation consists of a 1.9 ha wetland ecosystem and 1.3 and 2.4 ha areas of manuka/kanuka/broadleaved hardwoods.

Protection granted to the natural indigenous vegetation reserves

	SNA[3]	QEII Covenant	NZ Forest Accord	Management plan	Total area (ha)
Mangapakeha – Main block	-	-	3.6	3.0	6.6
Mangapakeha – Reserve block	-	-	54.3		54.3
Total area (ha)	0	0	57.9	3.0	60.9

9.2 High Conservation Value (HCV) Forests

Natural areas within Mangapakeha Forest were assessed against the HCV criteria. The Reserve block met the HCV criteria (2025 Forbes Ecology report). LEPT-01 is a 54.3 hectare seral kanuka stand on TEC 1 category land (less than 10% of the original vegetation remaining).

The HCV management plan is in appendix 5.

9.3 Biodiversity values by forest

Forest	Flora	Fauna present or highly likely
Mangapakeha – Main block	**Overview** The forest is dominated by plantation forest areas, with only very small areas of indigenous vegetation present in the gully floor. **Threatened flora** None noted. **Ecological values** 1.9 ha wetland ecosystem 1.3 and 2.4 ha areas of manuka/ kanuka/ broadleaved hardwoods	None noted.
Mangapakeha – Reserve block	**Overview** The area would originally have been tawa-rimu forest. Following past clearance of the original forest, the composition today is kanuka with a minor broadleaved component. **Threatened flora** None noted. **Ecological values** The forest occurs in land environments which at a national scale contain <10% or 10-20% native vegetation (Acutely and Chronically threatened). This threatened status triggers National Priority 1.	None noted.

9.4 Rare and threatened species management

The general management of these species is shown below. Specific ecological management activities are outlined in the Ecological Workplan (appendix 5). iNaturalist[3]

[3] https://www.inaturalist.org/projects/biodiversity-in-plantations

(Biodiversity in Plantations) is used to record sightings of important indigenous fauna or flora discovered in the forest.

Biodiversity group	Management response
Flora	The rare flora species are in the *Myrtaceae* family. The Myrtle family are at risk of myrtle rust; hence their threat class has been elevated. Indigenous vegetation will benefit from the exclusion of possums and feral deer control, and careful harvesting along the boundary of indigenous vegetation. Wilding pine control will benefit indigenous vegetation.
Birds	Birds that may be present within the forest will benefit from reserve/riparian protection and wider pest control implemented across the forests.
Bats	Long-tailed bats are not known to be present. Any bat populations will benefit from wider pest control implemented across the forests. Populations will benefit from wider pest control, and riparian and reserve protections implemented across the forests.
Lizards & frogs	Herpetofauna if present will benefit from wider pest control, and riparian and reserve protections implemented across the forests.
Fish	Any fish species will be afforded protection from riparian and reserve protections implemented across the forests.
Invertebrates	Invertebrates within the forest will benefit from wider pest control implemented across the forests. These species will be afforded protection from riparian and reserve protections implemented across the forests.

10. Other Special Values: Everything but the timber

10.1 Public access

Please refer to the Standard FMP for public access categories and descriptions. There are no public access provisions in Mangapakeha Forest.

10.2 Recreational access by permit

Please refer to the Standard FMP for more information on landowner managed public access.

Mangapakeha Forest is usually open for recreation. Access to the privately owned forest areas is managed through the PF Olsen forest access permit system. For information on how to apply for a permit, please phone the PF Olsen Masterton Office phone number (06 377 3531).

Anyone who accesses the forest is expected to abide by the intent of the Outdoor Access Code and signage or barriers at access points and within the forest.

Closures will apply during times of high fire risk, any *force majeure* state and during forestry operations over private forestry land.

10.3 Other special values

There are no other special values e.g. use of the forest for apiary sites.

10.4 Non-Timber Forest Products

There are no FSC certified non-timber forest products [4] from Mangapakeha Forest.

[4] In FSC standards, the reference to non-timber forest products is a reference to such products that are able to carry the FSC label. It is not a reference to the presence or absence of other co-products from the forest areas that do not seek to carry the FSC label.

11. Future Planning

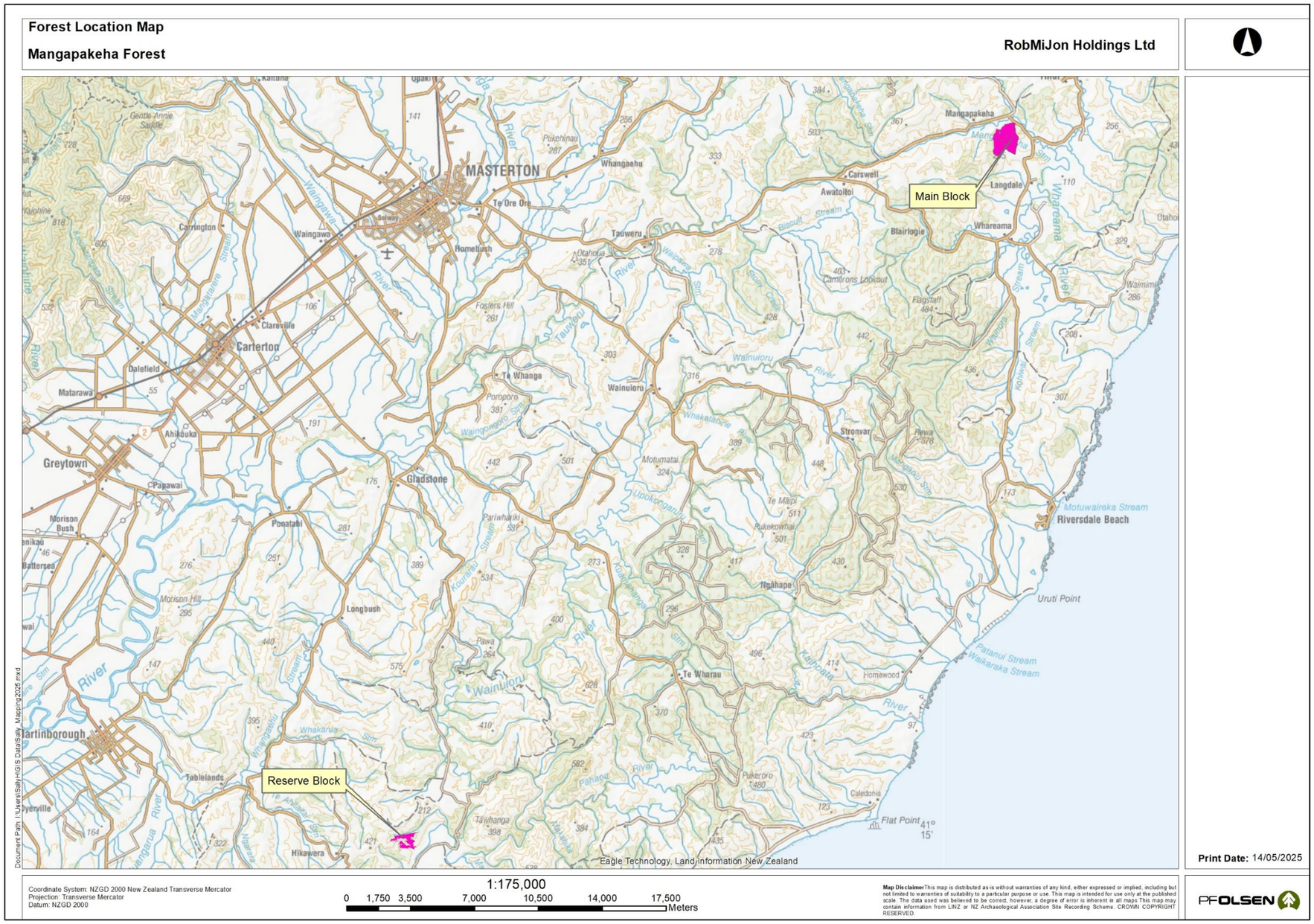
11.1 Plan changes & reviews

The next major review date for this plan is April 2030 (5 years).

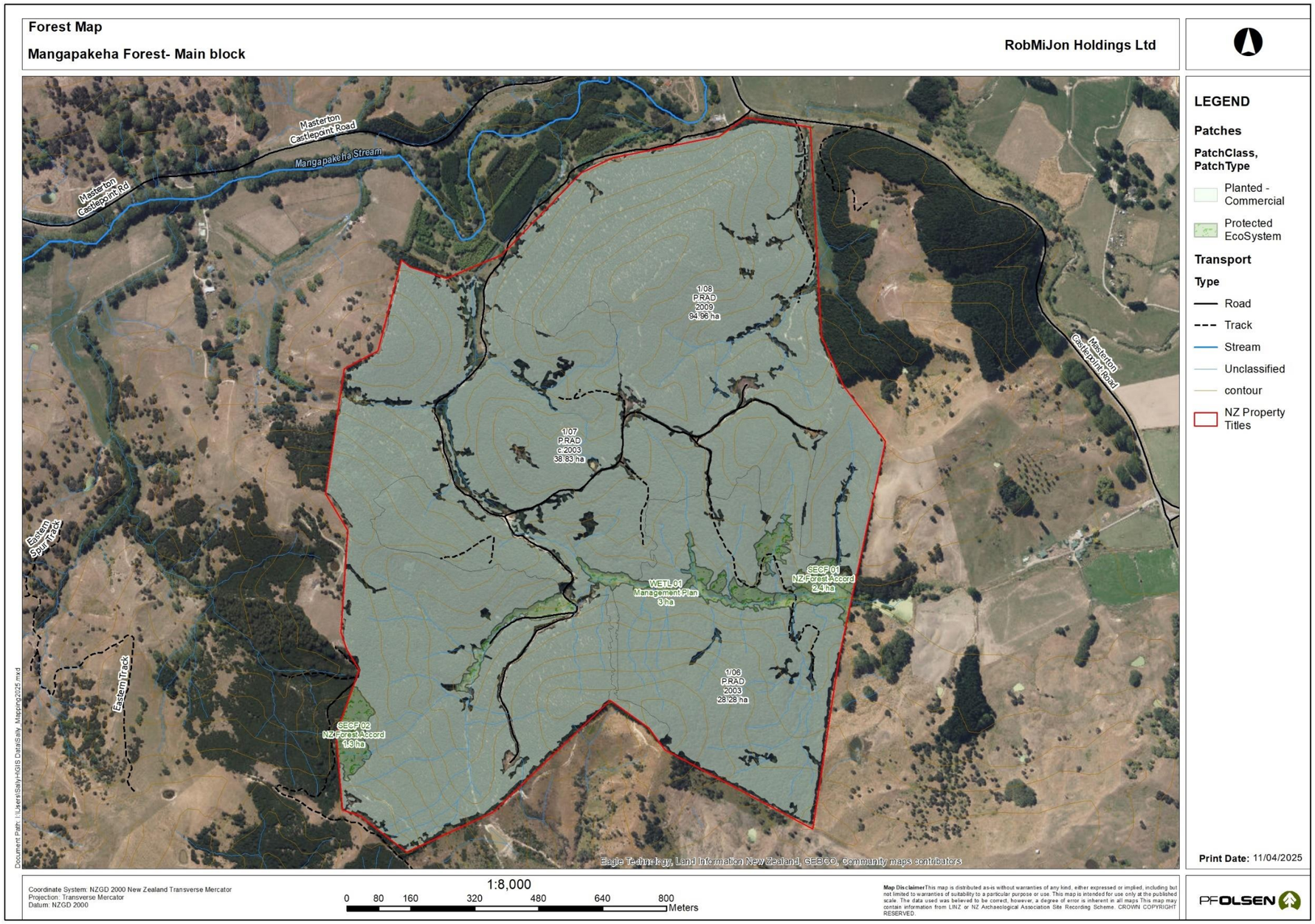
Minor revisions may be made at any time. Any material changes made will be documented below.

Change	Date	Section/Page
FMP moved to the new template and information updated	April 2025	All

Appendix 1: Forest Location Map



Appendix 2: Forest Maps



Forest Map

Mangapakeha Forest- Reserve block

RobMiJon Holdings Ltd

LEGEND

Patches

PatchClass, PatchType

Reserve

Transport

Type

Road

Track

Unclassified

contour

NZ Property Titles

Print Date: 11/04/2025

Document Path: I:\Users\SallyH\GIS Data\Sally_Mapping2025.mxd

Coordinate System: NZGD 2000 New Zealand Transverse Mercator
Projection: Transverse Mercator
Datum: NZGD 2000

1:5,000

0 50 100 200 300 400 500 Meters

Appendix 3: Forest Neighbours

Appendix 4: HCV Management Plan

Forest	Mangapakeha – Reserve block		
Stand	LEPT-01	Area (ha)	54.3
		Location	NZTM E 1822674 NZTM N 5428536
Species composition	Seral kanuka forest The forest canopy is predominantly even aged kanuka. Kanuka co-occurs with several broadleaved species including: • Mahoe (*Melicytus ramiflorus*), • Kowhai (*Sophora microphylla* & *S. tetraptera*), • Ti kōuka (*Cordyline australis*).		
HCV assessment	The forest is located in Acutely and Chronically Threatened Environments. This triggers National Priority 1 as per ecologist report (Forbes Ecology 2025).		
HCV class	HCV 3 Ecosystems and habitats Rare, threatened or endangered ecosystems, habitats or refugia.		
Management strategy	The management strategy is to restore and/or develop rare or threatened ecosystems, habitats, or refugia.		

Management actions and monitoring

Management actions are the works required to meet the management strategy. The monitoring is prescribed to assess the effectiveness of the management strategy and actions.

- Actively manage feral deer and possums.
- Annual drone and/or photopoint monitoring.
- Address any wilding pine issues that occur within the kanuka forest.
- Avoid impacts to the forest during harvest activities.

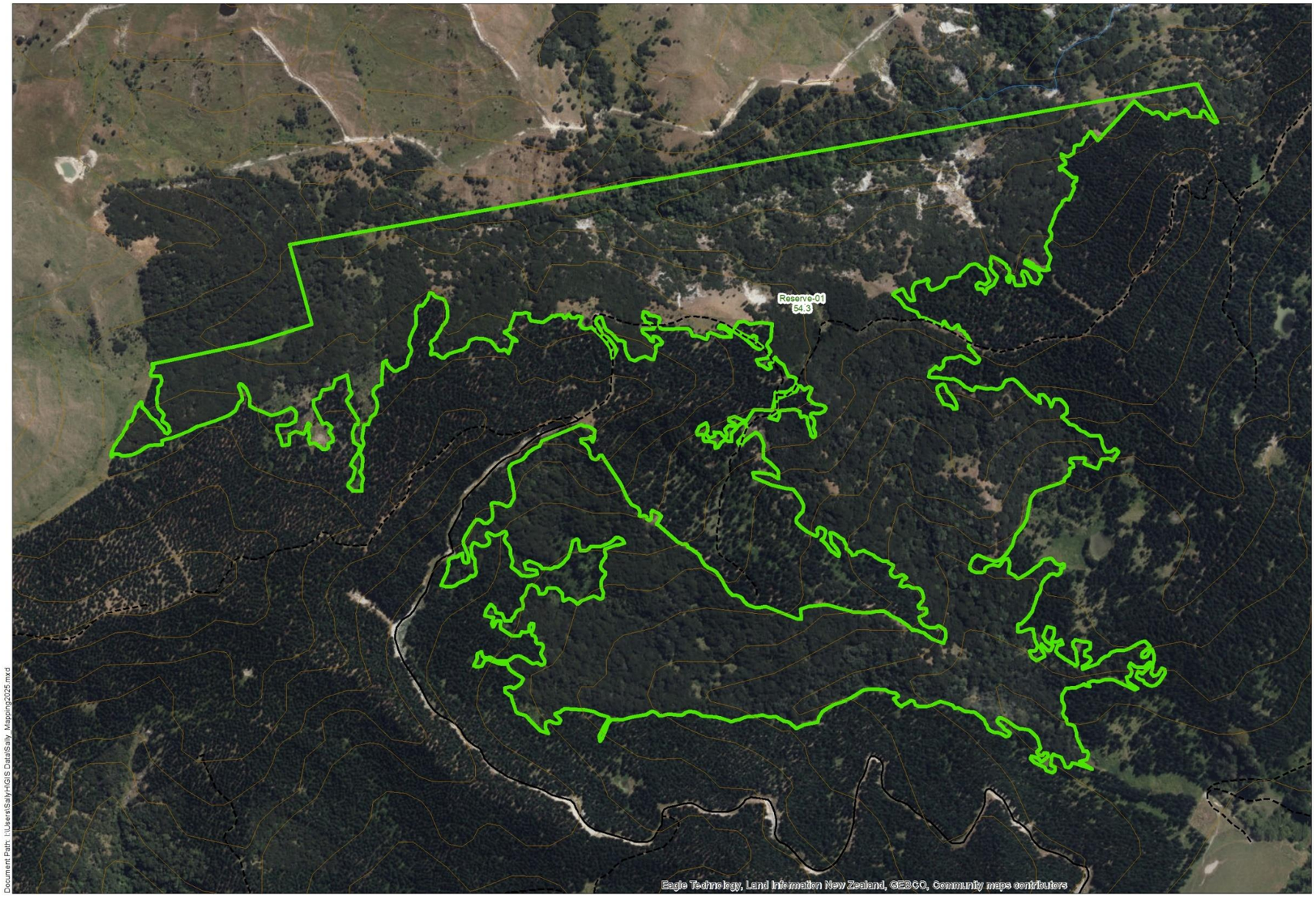
This HCV plan is subject to a full 5-yearly review, at which time modifications will be made if the management strategies are not effective.

Refer to Appendix 5 – Ecological Workplan for the management actions.

High Conservation Value (HCV) Area

Mangapakeha Forest- Reserve block

RobMiJon Holdings Ltd



LEGEND

Patches

PatchClass, PatchType

HCV

Transport

Type

Road

Track

Unclassified

contour

Print Date: 11/04/2025

Document Path: I:\Users\Sally\HGIS Data\Sally_Mapping2025.mxd

Coordinate System: NZGD 2000 New Zealand Transverse Mercator
Projection: Transverse Mercator
Datum: NZGD 2000

1:5,000

0 50 100 200 300 400 500 Meters

Aerial view of the HCV area LEPT-01, from the southeast.

Appendix 5: Ecological Workplan

Review Date: 15/04/2025

High Conservation Value Forest:

Activity Type	Required actions	Area/s	Due date
Annual drone or walk through check	Forest manager to do annual onsite check of sites. Note any issues including weeds, wilding pines, animal browse.	Mangapakeha – Reserve block	End of 2025 then annually
Pest control	Formalise a pest control plan for deer and possums - possibly using an external contractor. May include both shooting and trapping (with initial and ongoing Residual Trap Catch for possum density).	Mangapakeha – Reserve block	End of 2025
Photopoint monitoring	Establish two photopoint vegetation monitoring sites. Repeat photos annually.	Mangapakeha – Reserve block	End of 2025 then annually
Wilding control	Remove wildings from the indigenous vegetation.	Mangapakeha – Reserve block	End of 2025 then 5 yearly.

Other:

Activity	Action detail	Area/s	Due date
Wilding control	Remove wildings and regenerating pines from the wetland.	Mangapakeha – Main block	End of 2025 then five yearly.
iNaturalist entries	Species and status frequencies (especially new finds) entered by public, crews, operational supervisors.	Mangapakeha – Main and Reserve blocks	
Train crews Provide identification resources	Include photos of species in rare species ID posters and train (during inductions) crews to be alert for presence of threatened species and to avoid damage within operational areas. Record any sightings in iNaturalist database.	Mangapakeha – Main block	

Appendix 6: NES-CF Red ESC Zone Monitoring

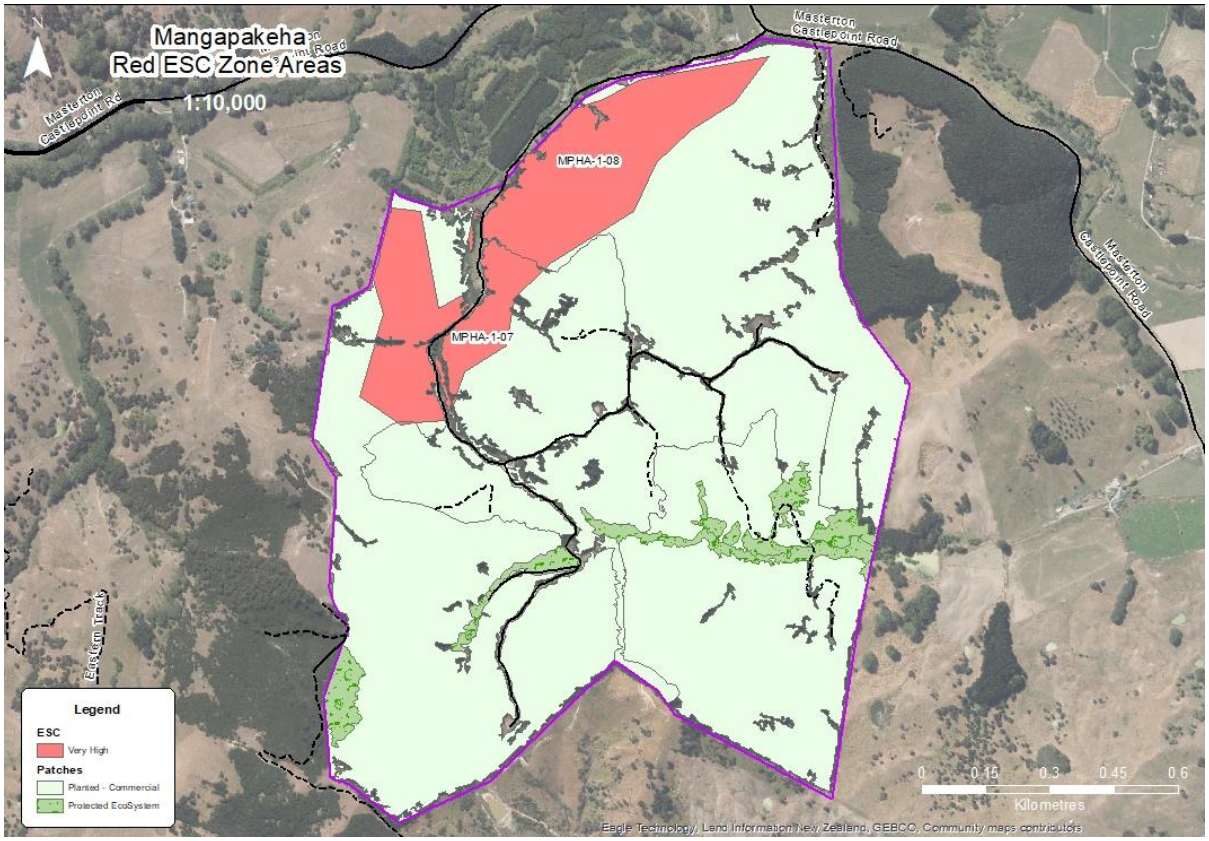
Monitoring Actions

Activity	Actions
Monitoring of Red ESC Areas	• Orbica monitoring system - Take monthly satellite imagery of the identified Red ESC areas within the forest. - Analyse the imagery to determine levels of erosion and revegetation. • Using the PF Olsen Red ESC monitoring web tool, we will: - Document the extent of any erosion and/or revegetation. - Determine if sediment has or will reach any water body. - Take any practicable appropriate steps to disconnect any sediment pathways to water bodies and minimise exacerbation of the erosion where feasible. • Harvesting erosion - Harvest managers will be aware of Red Zone areas that are being harvested and will follow NES-CF permitted activity regulations OR resource consent conditions. - Prior to harvesting commencing the harvest manger will determine if harvesting activities are likely to result in sediment reaching water bodies, and which water bodies will be affected. All practicable steps will be taken to disconnect harvesting disturbance from water bodies.

Mangapakeha Forest

The current total productive area of Mangapakeha Forest is 162.1 hectares. Of its current total productive area, 14% is Red ESC class.

Stand	Area of Red ESC within the Stand (ha)	Total Stand Area (ha)	Stand Affected (%)
MPHA-01-07	3.4	38.8	9%
MPHA-01-08	19.9	95.0	21%
Total Area	**23.3**	**133.8**	



Mangapakeha Forest – Main Block Red ESC