

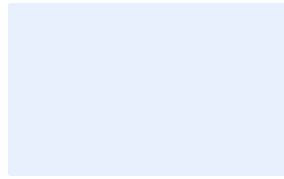


FSC® FOREST MANAGEMENT PLAN

Kauri Forestry LP

February 2024 – February 2029

Author
Signature



Author Name

Sally Moore

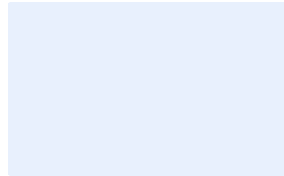
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1. What is this Plan?

About this Plan

This **specific** forest management plan provides details about the following 9 forests owned by Kauri Forestry LP, referred to as Kauri Forestry:

Forest	District	Region
Caves	Whangarei	Northland
Manganui	Kaipara & Whangarei	Northland
Mangarata	Kaipara	Northland
Ngatieke	Far North	Northland
Opore	Far North	Northland
Piroa	Kaipara	Northland
Wairere North	Whangarei	Northland
Wairere South	Whangarei	Northland
Wheki	Whangarei	Northland

This plan is to be used in conjunction with the PF Olsen Standard FSC® forest management plan¹, which outlines the typical management applied to PF Olsen FSC Group Scheme forests. Where the forests are managed in a different way than described in the standard forest management plan, this is detailed within this plan, which takes precedence.

Foundation Principle

Craigmore Sustainable NZ Ltd (Craigmore) is the investment manager for Kauri Forestry LP. Kauri Forestry and Craigmore are committed to adopting the Forest Stewardship Council (FSC) Principles and meeting the FSC Criteria relevant to forest management. Both parties are committed to the PF Olsen FSC Group Scheme **SCS-FM/COC-400064** processes and associated documents. Craigmore seeks FSC certification on behalf of Kauri Forestry LP, 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/ForestManagementPlan%20-%20Standard.pdf>

2. The Forest Land

Forest location

Forest	Location
Caves	Boyd Road, 10 km southwest of Ruakaka, 22km south of Whangarei
Manganui	Ararua and Bull Roads, 10 km north of Paparoa
Mangarata	Mangarata Block Road, 13 km east of Dargaville
Ngatieke	Broadwood Road, 23 km southeast of Kaitaia
Opare	Lucas Road, 1 km south of Moerewa
Piroa	Dodd Road, 5 km north of Maungaturoto
Wairere North	Moore Road, 30 km northwest of Whangarei
Wairere South	
Wheki	Baker Road, 19 km southwest of Whangarei

A location map is shown on the next page. Forest maps are shown in Appendix 1.

Forest Area²

Forest	Productive area (ha)	Natural indigenous reserve area (ha)	Planted indigenous reserve area (ha)	Total Forest Area (ha)
Caves	337.3	248.7		586
Manganui	861.9	196	15.3	1073.2
Mangarata	678.5	212.3		890.8
Ngatieke	485.7	134.4	27.7	647.8
Opare	1239.8	238.6	42.1	1520.5
Piroa	203.7	31.6		235.3
Wairere North	401.6	46.7		448.3
Wairere South	232.1	60.7	2.1	294.9
Wheki	563.7	71.3	15.9	650.9
Total	5,004.30	1,240.30	103	6,347.70

² Area as at February 2024

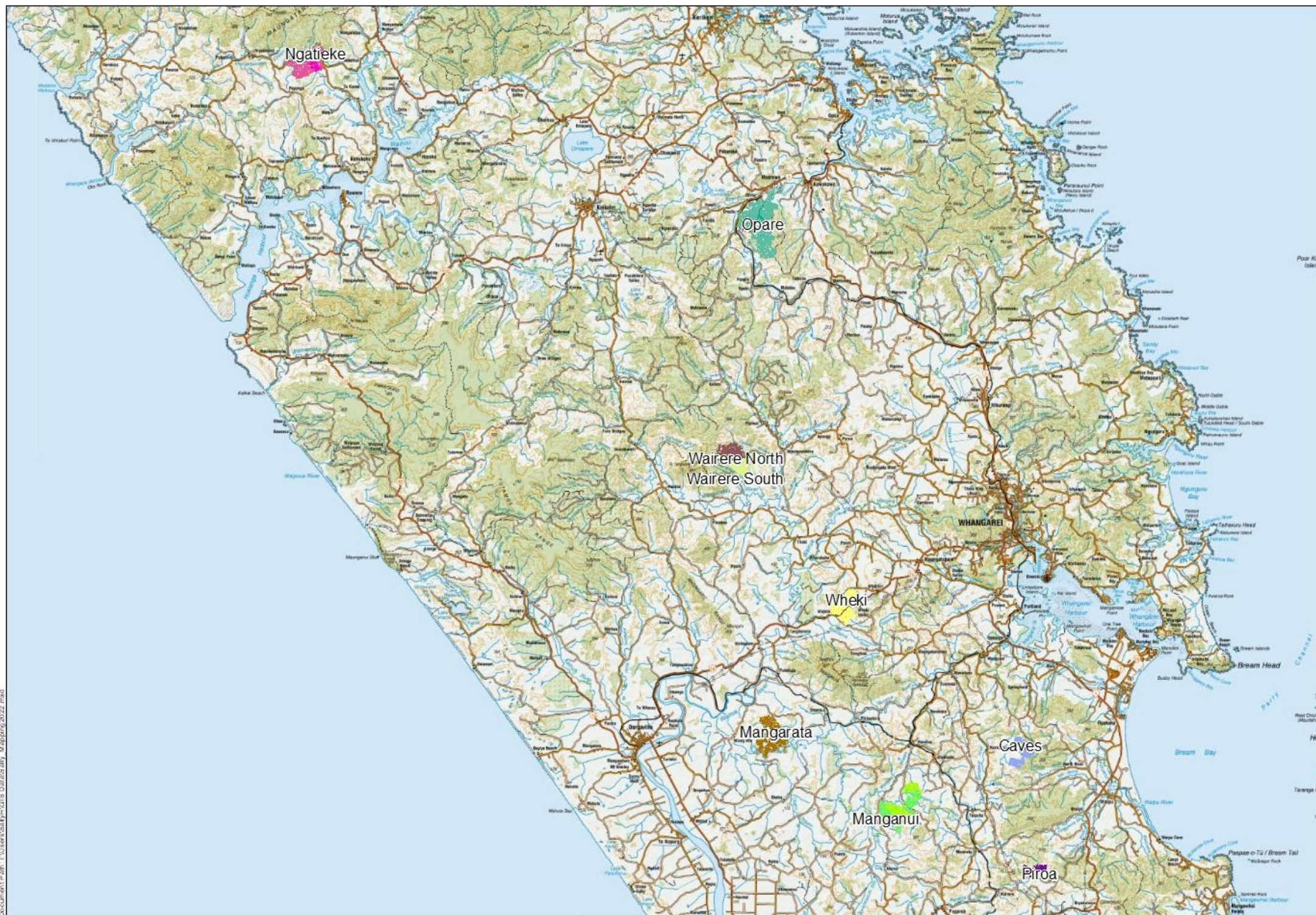
Kauri Forestry
Kauri Forestry LP



Legend

Patches

-  Caves
-  Manganui
-  Mangarata
-  Ngatieke
-  Opare
-  Piroa
-  Wairere North
-  Wairere South
-  Wheki



Document Path: I:\Users\Sally\My Documents\GIS Data\GIS ally Mapping\2022.mxd

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

Scale 1:400,000 @A3
0 4,050 8,100 16,200 24,300 32,400 40,500 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. CROWN COPYRIGHT RESERVED.

Print Date: 8/08/2023

Legal ownership

Appendix 2 shows the legal description of the land on which each forest is located.

Markets

Market/Export Port	Location	Market
Kerikeri	Between 30 – 80 km depending on log grades and forest. Max approx. 130km (Kaitaia)	Domestic
Kaitaia		
Moerewa		
Waipapa		
Northport (Marsden Point)	45-60km (112 km Ngatieke)	Export

Topography & harvest system

Forest	Topography	Dominant harvest system
Caves	Rolling hill	Mechanised felling /Cable hauler /Ground based
Manganui	Steep / broken	Mechanised felling / Cable hauler
Mangarata	Rolling hill	Mechanised felling / Ground based
Ngatieke	Steep / broken	Mechanised felling / Cable hauler
Opape	Steep / broken	Mechanised felling / Cable hauler
Piroa	Rolling hill	Mechanised felling /Cable hauler /Ground based
Wairere North	Rolling -steep hill	Mechanised felling /Cable hauler /Ground based
Wairere South	Rolling -steep hill	Mechanised felling /Cable hauler /Ground based
Wheki	Steep / broken	Mechanised felling / Cable hauler

Altitude for all the properties is low, ranging from near sea level (approx. 50 m asl) to a maximum of around 300 m asl. In those forests with the highest areas, much of that land is natural indigenous vegetation reserves (see Section 9).

Almost the entire estate is landuse classification LUC 6 – suitable for forestry or dry stock farming.

Soil

Soils are predominantly Acid Brown, originating from weathering of parent material. More recent soils are in valley floors and lower valley sides. Generally, the soils are good for tree growth being not too wet nor drought prone in summer. High soil clay components do require management care during harvesting and earthworks in wet winter months, as deep soil disturbance can lead to sediment generation, including difficult to control fine colloidal suspension when in water.

Forest	Soil Class	Features
Caves	Albic Ultic	Well structured, strongly weathered.
	Acid Brown	Weathered from volcanics with iron oxides, acid, not waterlogged nor droughty.
Manganui	Acid Brown	
Mangarata	Acid Brown	Weathered from volcanics with iron oxides acid, not waterlogged nor droughty.
Ngatieke	Acid Brown	
Opore	Yellow Ultic, Albi Ultic	Well structured, high clay, acid and leached, low nutrient, prone to surface erosion.
Piroa	Yellow Ultic, Albi Ultic,	Well structured, high clay, acid and leached, low nutrient, prone to surface erosion.
	Acid Brown	Weathered from volcanics with iron oxides, acid, not waterlogged nor droughty.
Wairere North & South	Oxic Granular	Limited root depth, high clay, stable, slow permeability, moderate infiltration. Droughty.
	Fluvial & Orthic Recent	Recent from river or erosion, weakly developed, high fertility, good water availability.
Wheki	Acid Brown	Weathered from volcanics with iron oxides acid, not waterlogged nor droughty.

Climate

- The Northland region experiences an orographic influenced climate.
- The location of the estate receives median rainfall of 1200-1500 mm per year with distinct winter maximums.
- The mean annual daytime temperature is around 15 ° Celsius with the least seasonal variation in New Zealand.
- The forest areas have mean daily temperatures at summer of approx. 21°C and 14°C in winters.
- Strong winds can occur, mainly in winter and spring and sometimes associated with degraded weather systems from the tropics which can bring heavy prolonged rainfall.

3. Ecological Information

Ecological Districts

The Kauri Forestry estate fall within the following Ecological Districts (EDs). Refer to following information about the EDs:

<https://www.doc.govt.nz/documents/science-and-technical/ecoregions1.pdf>

Forest	Ecological District 1	%	Ecological District 2	%
Ngatieke	Maungataniwha	94	Hokianga	6
Wairere North	Tutamoe	93	Tangihua	7
Mangarata	Tangihua	100	-	
Manganui	Tangihua	100	-	
Wheki	Tangihua	100	-	
Wairere South	Tangihua	76	Tutamoe	24
Piroa	Tangihua	59	Eastern Northland	41
Caves	Tangihua	45	Eastern Northland	55
Opare	Eastern Northland	100	-	

FSC requirement: Reserve Area % by Ecological District

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

Reserve areas³ in Kauri Forestry Estate

Forest	Productive area (ha)	Natural indigenous reserve area (ha)	Planted indigenous reserve area (ha)	Total Forest Area (ha)	% indigenous reserve
Caves	337.3	248.7		586	42.4
Manganui	861.9	196	15.3	1073.2	18.3
Mangarata	678.5	212.3		890.8	23.8
Ngatieke	485.7	134.4	27.7	647.8	20.7
Opape	1239.8	238.6	42.1	1520.5	15.7
Piroa	203.7	31.6		235.3	13.4
Wairere North	401.6	46.7		448.3	10.4
Wairere South	232.1	60.7	2.1	294.9	20.6
Wheki	563.7	71.3	15.9	650.9	11.0
Total	5,004.30	1,240.30	103	6,347.70	19.5

³ Area as at February 2024

Threatened Environments Classification

Most 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)
Caves		0.5	12.8	211.8	17.8	5.8	248.7
Manganui	2.4	24.1	0.2	126.1	0.5	42.7	196
Mangarata	0.4	91.8		120.1			212.3
Ngatieke	1.4	1.5	2.8	95.6	13.8	19.3	134.4
Opape		21.7	25.9	190.4		0.6	238.6
Piroa		0.9	2.8	27.3	0.3	0.3	31.6
Wairere North	2.1			15.5		29.1	46.7
Wairere South		7		51.5		2.2	60.7
Wheki		19.4	0.5	51.1		0.3	71.3
Total area* (ha)	6.3	166.9	45	889.4	32.4	100.3	1,240.30

* area as at February 2024

4. Cultural and Social Aspects

Forest history

All the areas that make up the Kauri Forestry estate were originally farms. Around 250 hectares of Opare Forest was already under forest at the time of its acquisition and the areas that have been harvested and replanted are now into second and third rotations. It sits over an area of higher erodibility than the other areas, explaining its early afforestation. All the remaining forest blocks were mostly dry stock farmland with, in some cases, a presence of small plantation woodlots as well as areas of natural forest and scrubland.

As a matter of policy, Craigmore acquires farming properties for afforestation that are less suited to economic dry stock pastoral agriculture due to topography, erodibility and climatic factors. These are predominantly classed as landuse capability class (LUC) 6 & 7⁴. Where there are better classes of land embedded within the properties, efforts are made, within practical constraints, to sub-divide, lease or otherwise use such areas for ongoing pastoral agriculture.

Current social profile

The predominant land use surrounding the Kauri Forestry estate is pastoral agriculture, plantation forestry or small-scale lifestyle/agriculture along with areas of conservation land or private non-productive reserves. The town of Moerewa lies within 1 km of the Opare Forest boundary.

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
- Roding contractors
- Harvesting and cartage contractors

⁴ NZ Land Use Classification System

Historic and archaeological sites

Records from the 'Archsite' web resource shows there are some historic sites within the boundaries of Caves, Opare and Piroa forests or within 1 km of the forest boundary. Operations will be undertaken in accordance with the requirements of the Heritage New Zealand Pouhere Taonga Act 2014 where there are recorded archaeological sites, otherwise accidental discovery protocols will apply should any new sites be discovered during operations.

Forest	Comment
Caves	6 recorded sites - 3 within productive boundaries. Sites marked and no-plant buffers established under archaeological advice ⁵ .
Manganui	No records
Mangarata	No records
Ngatieke	No records
Opare	3 recorded sites - in reserve areas or rail corridor.
Piroa	1 recorded site - not planted, further mapping required
Wairere North & South	No records
Wheki	1 unrecorded site, not planted & requires archaeological survey

Tangata Whenua

The table below lists the Iwi Authorities associated with each forest area. Note: An area that encompasses the whole of Ngatieke Forest is recorded as a 'Treaty Area of Interest' in the Far North Proposed District Plan⁶.

⁵ Archaeological Survey and Assessment of Caves Forest, Waipu, Northland; Northern Archaeological Research Ltd; November 2021.

⁶ https://farnorth.isoplan.co.nz/eplan/property/9008414/0/64?_t=property

Forest	District	Iwi	Iwi Management Plan	Statutory Acknowledgements
Ngatieke	Far North	Te Rarawa		N
Opape	Far North	Ngāpuhi		N
Mangarata	Kaipara	Ngāti Whātua		N
Piroa	Kaipara	Ngāti Whātua Te Uri o Hau	Y ⁷	N
Manganui	Kaipara/ Whangarei	Ngāti Whātua		N
Caves	Whangarei	Ngātiwai	Y ⁸	N
Wairere North & South	Whangarei	Ngāpuhi		N
Wheki	Whangarei	Ngāpuhi		N

Tenure & resource rights

The Kauri Forestry estate is currently mostly freehold 'Fee Simple' land parcels. There is a small area of forest (approx. 6.6 ha) in Piroa Forest subject to a forestry right. The whole of Ngatieke Forest is recorded as a 'Treaty Area of Interest' in the Far North Proposed District Plan. There are no other known direct Iwi interests in any of the other forests and none anticipated. Access for customary use is managed through the PF Olsen permit system.

Neighbours

Appendix 3 lists the forest neighbours within 1 km of the forests' boundaries. Some of these parties will be consulted when operations are proposed in forest areas adjacent to their boundaries, both in terms of initial consultation preceding certification of these forests and specific operations that may cause potential for impacts such as noise, dust, shared road use and agrichemical application. In the case of the residents in the Moerewa town community, local newsletters and other media may be the only practical means of contact for the large number of residents.

⁷ <https://www.nrc.govt.nz/media/z5iipbv/te-uri-o-hau-environmental-management-plan-2011.pdf>

⁸ Te Iwi o Ngatiwai Iwi Environmental Policy Documents 2007

5. Regulations

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 table below shows the productive plantation area of each forest by the respective NES-CF ESC. A significant proportion of Opare Forest falls within the ESC 'High' and 'Very High' ESC zones.

Productive plantation area (ha) within each ESC Class

Forest	Low	Moderate	High	Very High	Total
Caves	295.8	39.8	1.7		366.4
Manganui	836.8	25.1			869.8
Mangarata	268.9	409.6			670.9
Ngatieke	51.3	351.4	83.0		487.1
Opare	75.1	54.2	263.4	847.1	1,241.5
Piroa	166.7	3.9	33.1		203.7
Wairere North	33.7	167.5	200.3		401.5
Wairere South	16.4	99.7	116.0		232.1
Wheki	453.1	110.6			566.5
Total	2,197.8	1,261.8	697.6	847.1	5,004.3

Council RMA Plans

The Kauri Forestry estate falls under the jurisdiction of the Northland Regional Council and several District Councils.

Northland Regional Plan

- Forestry activities are generally controlled by the rules under the NES-CF which for most of the forests in the lower erosion risk (green and yellow ESC) means they are permitted activities subject to the NES-CF regulations.
- Resource consents will need to be obtained for some activities in the ESC red and orange zones, e.g., earthworks and harvesting.
- Although activities will be generally permitted, Regional Plan maps should be reviewed to ensure activities close to sensitive areas can be checked for any more stringent rules under the regional plan.
- Any burning or agrichemical operations will be subject to air and discharge rules in the Regional Plan.

District Plans

Far North District Plan

- Operative plan August 2009. New Proposed Plan July 2022 – not operative as of September 2023.
- Refer to the District Plan maps – Operative + Proposed

Kaipara District Plan

- Operative plan November 2013 – undergoing review
- Refer to the District Plan maps – Operative

Whangarei District Plan:

- Operative September 2022
- Refer to the District Plan maps⁹

⁹ <https://gismaps.wdc.govt.nz/GISMapsViewer/?map=e6e864d6944d43ea8065c2472e2b8242>

District Council Plan Zones and Overlays

Forest	District Council	Relevant zoning and overlays
Caves	Whangarei	Rural Production zone Indigenous vegetation on adjacent eastern property - Natural Open Space Eastern boundary - Outstanding Natural Landscape Native patch embedded in productive area- Outstanding Natural Feature
Manganui	Kaipara Whangarei	Rural Zone Rural Production Zone
Mangarata	Kaipara	Rural Zone Esplanade reserve - Reserve management unit along Manganui River
Ngatieke	Far North	Rural Production Zone Indigenous reserves - Conservation / Outstanding Landscape Valley floors - Flood susceptible* Northern end - North Island Brown Kiwi* Part North end - Natural Open Space*
Opare	Far North	Rural Production Zone Valley floors - Flood Susceptible' Southern end - North Island Brown Kiwi*
Piroa	Kaipara	Rural Zone
Wairere North	Whangarei	Rural Production Zone Indigenous on adjacent western property - Natural Open Space
Wairere South		Western boundary - Outstanding Natural Landscape Central valley - Flood Susceptible
Wheki	Whangarei	Rural Production Zone Central valley - Flood Susceptible

* Source: Far North Proposed Plan July 2022 – not operative as of September 2023.

If resource consents are required, consideration should be given to any relevant Iwi management plan. See section 'Associations with Tangata Whenua' and check with the consenting authority for Iwi contacts or the presence of newly prepared plans.

Consents & Authorities held

Resource consents for Opare Forest covering the range of activities required for harvesting, roading quarrying and replanting on ESC red zone land have been obtained.

Consents and Authorities

Forest	Regional Council	Consent
Opare	Northland	<p>AUT.043475.01.05 - Harvesting, earthworks, stormwater discharge and quarrying.</p> <p>AUT.043475.06 - Replanting red zone land.</p> <p>AUT.044910.01.01 – Place and use culverts in the bed of unnamed tributaries of the Waiharakeke Stream.</p> <p>AUT.044910.02.01 – Divert unnamed tributaries of the Waiharakeke Stream.</p> <p>AUT.044910.03.01 – Remove existing culvert structures in the bed of unnamed tributaries of the Waiharakeke Stream.</p> <p>AUT.040723.01.01 – Afforestation and replanting of red zoned land.</p> <p>AUT.040723.02.01 – Mechanical land preparation of red and orange zoned land.</p>

Emissions Trading Scheme

The Kauri Forestry estate is managed in the NZ Emissions Trading Scheme (ETS). Most of the older age classes coming up for harvest are post-1989 forests registered under the stock change accounting system (see table below). Carbon units can be claimed up to harvest but must then be paid back down to the residual sequestered level of the harvested forest. Units can be re-earned if the forest is regrown.

There is a small area of pre-1990 forest in Opare Forest that earns no carbon credits. The area cannot be converted to a non-forest landcover unless the relevant carbon liability is met, via surrender of carbon credits or offsetting.

All the new and future productive areas will be registered under the 'averaging' accounting system. Under this system, carbon units can be claimed once, up to the average sequestration level for the Carbon Accounting Area (CAA), after which no more units are issued but no liabilities exist at harvest provided the area is replanted.

Eligible indigenous forest areas will be registered under permanent forestry (stock-change accounting).

Forest	*Area (ha)	ETS Status	Comment
Opare	113.5	Pre 1990	CCRA Notice
	869.8	Post 89	Registered in ETS
Piroa	7.2	Pre 1990 exempt	CCRA Notice
Wairere North	367.8	Post 89	Registered in ETS
Wairere South	252.4	Post 89	Registered in ETS

** Area as at February 2024. Areas are provisional figures- some are subject to ETS mapping standards and final approval by Te Uru Rakau. Figures will change as more post-1989 areas are registered.*

6. Managing environmental risk

Assessment of environmental risks

Refer to the Standard FSC Forest Management Plan.

NES-CF Red ESC Zone Monitoring

Under the updated FSC Forest Stewardship Standard for New Zealand (FSC-STD-NZL-02-2023 Plantations EN), there now requirements around the use, management and monitoring of plantation forests on Red ESC zone land. The table below identifies the areas of each of Kauri Forestry's forests affected by the updated standard. Appendix 4 contains details of each forest's Red ESC areas, as well as monitoring and management activities.

Forest	Area of Red ESC (ha)	Total Productive Area (ha)	Percentage of Forest affected
Opare	796.8	1,1961.1	67%

Infrastructure damage or service disruption

The following infrastructure is within /adjacent to the Kauri Forestry estate. Planning for forestry operations will consider risk to these services / values.

Forest	Powerlines	Public road	Other
Caves	-	Unformed through forest	House/farm buildings < 1 km
Manganui	Western edge	Unformed through forest	Manganui River esplanade House/farm buildings < 1 km
Mangarata	Adjacent and through north & northwest parts of forest	Mangarata Block Road, Manganui Road (unformed)	House/farm buildings < 1 km
Ngatieke	North edge	North frontage	House/farm buildings < 1 km Quarry nearby
Opare	North edge/central gully	Within north edge & Davis Road, and west edge	House/farm buildings < 1 km Rail nearby
Piroa	-	Adjacent and through	House/farm buildings < 1 km
Wairere North & South	-	Unformed on northeast boundary	House/farm buildings < 1 km
Wheki	Through south block	Unformed north/northwest boundary SH 14 through forest	House/farm buildings < 1 km Fibre optic cable path from SH 14 to Baker Road

Pests and diseases

The Northland Regional Pest Management Plan 2017-2027 includes plant and animal pest species that are or may be present in the forest¹⁰ or within the pasture areas to be afforested.

Pasture-based plant pest species may be suppressed under a forest canopy. Machine hygiene practices should be used to prevent spread from properties where identified pests are present.

Pest animal species are common throughout the region. These are likely to need periodic control both for commercial reasons and ecological reasons in the natural indigenous reserve areas.

¹⁰ <https://consult-nrc.objective.com/portal/biosecurity/rpmp/rpmp?pointId=2010825>

A full list of species and a description of the control programmes can be found online at: [Regional Pest Management Plan | Northland Regional Council](#)

Plant pests

Plant pest species noted within the Kauri Forestry estate includes the following. Those that fall under the RPMP have the specific programme noted in brackets, or NPPA which refers to the National Plant Pest Accord:

- Woolly nightshade (Sustained control)
- Wilding conifer (Sustained control)
- Kahili ginger (Sustained control)
- Broom (Sustained control)
- Gorse (Sustained control)
- Pampas
- Blackberry
- Willow
- Glyceria
- Cotoneaster (Sustained control)
- Elephant's ear (Sustained control)
- Jasmine (Sustained control)
- Willow-leaved hakea (Sustained control)
- Chinese privet (Sustained control)
- Queen of the night (Sustained control)
- Agapanthus (Sustained control)
- Tree privet (Sustained control, NPPA)
- Jerusalem cherry
- Japanese honeysuckle (NPPA)
- Moth plant (NPPA)
- Climbing asparagus (NPPA)
- Smilax (NPPA)
- African clubmoss (NPPA)
- Tradescantia (NPPA)
- Blue morning glory (NPPA)

Animal pests

The following animal pests have been sighted, or they are highly likely to be present. Those that fall under the RPMP have the specific programme noted in brackets:

- Feral goat (Sustained control)
- Possum (Sustained control)
- Feral pig (Sustained control)

- Feral cat (Sustained control)
- Rat (Sustained control)
- Mouse
- Mustelids (Sustained Control)
- Rabbit and hare (Sustained control)
- Rainbow skink
- Goldfish
- Gambusia

Diseases

- Kauri dieback (Sustained control)
 - Apply national protocols¹¹ for management of kauri dieback disease (*Phytophthora agathidicida*) if there is a possibility of activity or soil disturbance nearby (e.g., at plantation and reserve boundary interfaces).
 - Consideration should also be applied to new planting boundaries given the eventual intent of roading and harvesting.

Fire

All the Kauri Forestry Estate is within the Fire and Emergency NZ (FENZ) Northland Zone¹². The plan references the thresholds for fire restriction levels and the coordination of forestry risk management responses between forest owners/managers and FENZ.

7. Commercial Plantation Estate

Current crop and afforestation

Of the total Kauri Forestry productive estate of 5,004.3 ha:

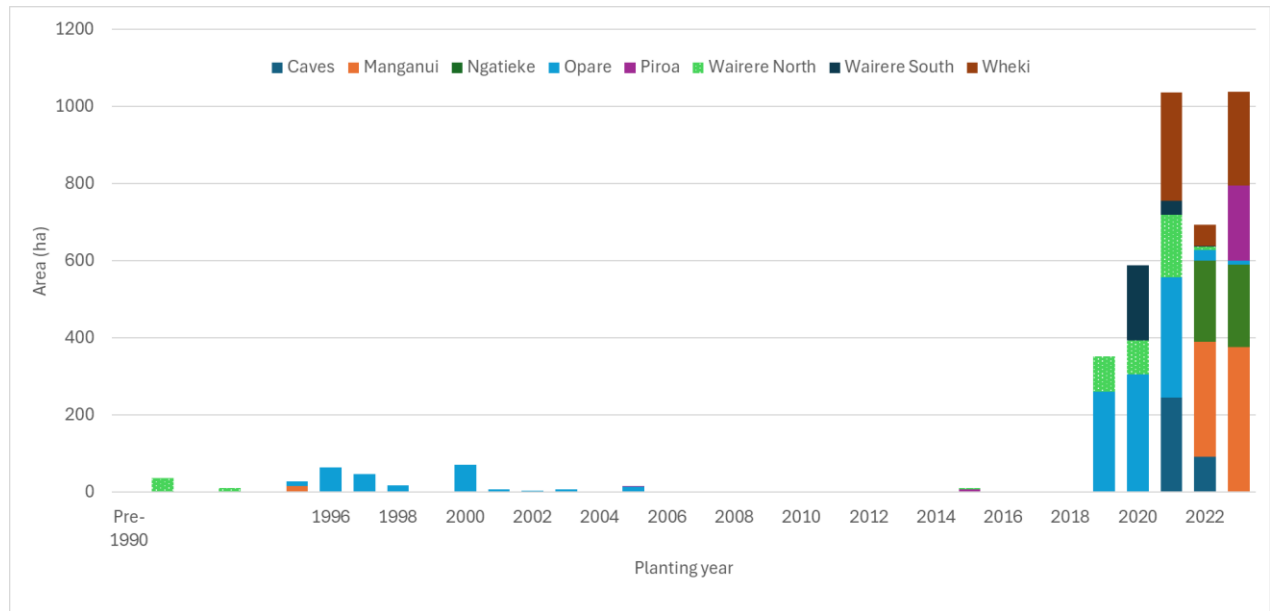
- 315 ha is established in maturing or mature (18 years old plus) trees, mostly in Opare Forest.
- 4,603.1 ha is younger plantings aged between 0 and 10 years.

¹¹ <https://www.kauriprotection.co.nz/assets/Documents-PDFs/Best-Practice-Guides/Guide-Land-disturbance-activities-around-kauri.pdf>

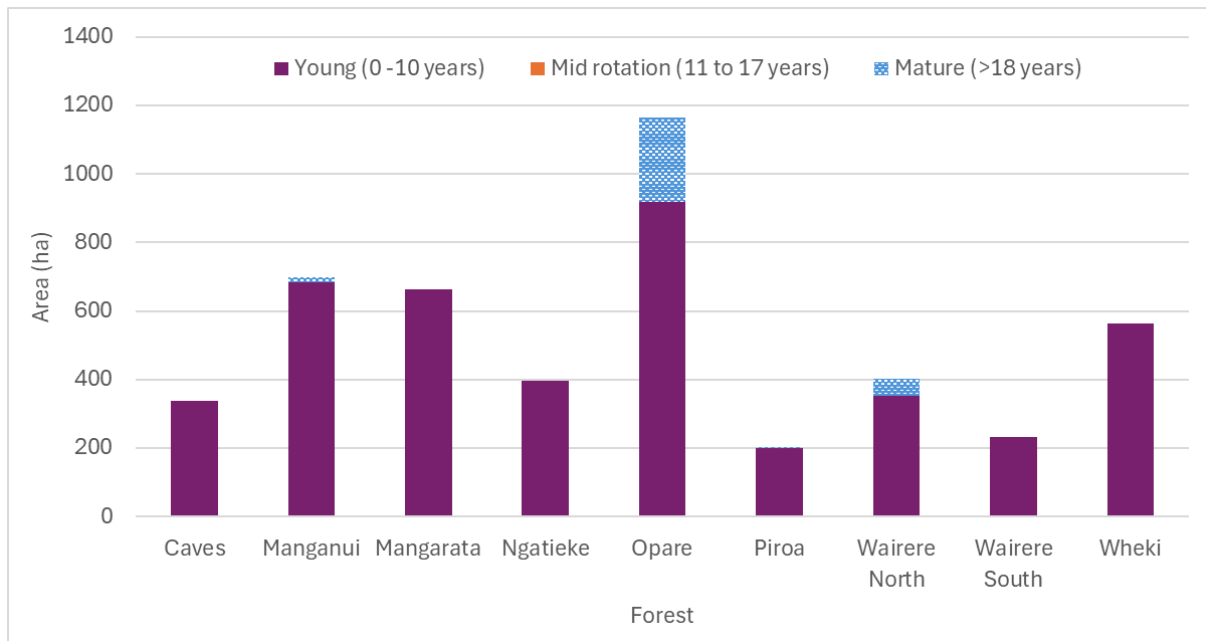
¹² <https://www.fireandemergency.nz/assets/Documents/fire-plan/Northland-Fire-Plan-2021-2024-approved.pdf>

Significant afforestation is planned for the Kauri Forestry estate during the life of this plan.

Forest area by planting year

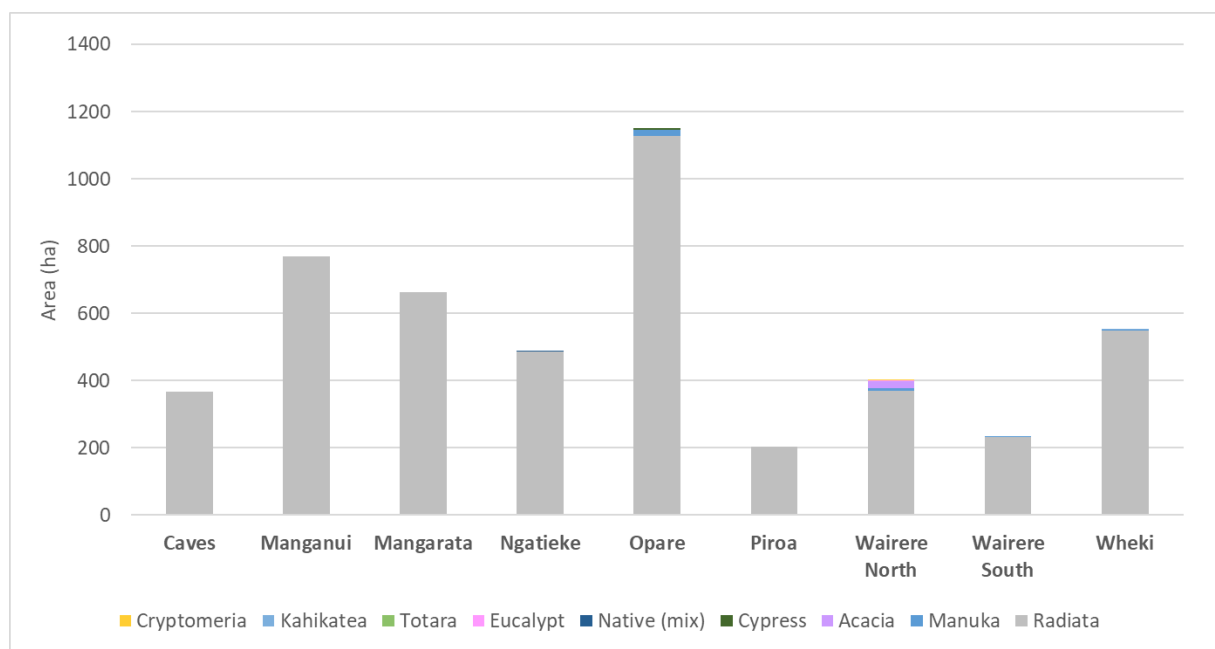


Forest area by crop age



The plantations are predominantly radiata pine. This species exhibits 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 as well, has proximity to an export port. Other species are being planted primarily for non-timber purposes such as riparian protection and erosion control.

Planted area¹³ by species



Tending

Of the older age-class radiata stands, 169 ha are managed under a thinned but unpruned structural regime. The balance is clearwood thinned and pruned stands.

The tending regime for all recent and future planted stands will be reviewed in relation to the most appropriate silvicultural regime as they reach the applicable age. At this point the expectation is that most or all stands will be tended according to a structural (thin only) regime, with roadside pruning.

Tree nutrition

Apart from Opare the soils are not generally seen to be deficient in nutrients for healthy tree growth. The soil will have residual fertility from past farming fertiliser applications that will be in excess of normal requirements for tree growth. Opare has the potential to be marginal for phosphate, especially once the historical quick-release farming fertilisers are depleted. If deficiency is detected, a once-per-rotation application of slow-release Rock Phosphate is known to be effective on similar soils.

¹³ Area as at February 2024. NB doesn't include cutover / area awaiting replanting where species has not yet been allocated.

8. Harvesting Strategy

Harvesting strategy

The optimum harvest age for *Pinus radiata* is around 27 years old. The actual age of harvest will be subject to many variables.

Over the next 5 years, harvesting is planned for the remaining older age classes (mainly 22 to 30 years) in Opare Forest.

Infrastructure

Basic infrastructure is mostly in place throughout the estate, with the utilisation of the existing farm track network. Prior to harvesting, infrastructure maintenance and upgrades will be required.

9. Indigenous Biodiversity

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 management plan for the Kauri Forestry estate.

Natural indigenous vegetation reserve areas by protection category

Forest	Special	Full	Limited	Passive	Other	Total* (ha)
Caves		90	38.9	119.8	0	248.7
Manganui		40.9	62.4	77.5	15.2	196
Mangarata		101.4	65	42.1	3.8	212.3
Ngatieke	72.2	11.4	5.4	45.4	0	134.4
Opare		51.4	51.1	132.7	3.4	238.6
Piroa		1.4	12.4	17.1	0.7	31.6
Wairere North			17	29.7		46.7
Wairere South		3.3	30.5	23.5	3.4	60.7
Wheki		51.4	7.4	12.5	0	71.3
Total* (ha)	72.2	351.2	290.1	500.3	26.5	1,240.3

* Area as at February 2024

Protection granted to the natural indigenous vegetation reserves

Forest	SNA ¹⁴ (ha)	QEI Covenant (ha)	NZ Forest Accord (ha)	PNA ¹⁵ (ha)	Management plan (ha)	Total (ha)
Caves	74.1		17.4	57.7	99.5	248.7
Manganui			91.2	50.8	54	196
Mangarata		17.7	62.6	78.4	53.6	212.3
Ngatieke	80.8		29.1		24.5	134.4
Opape	51.1		171.5		16	238.6
Piroa			3.3	13.8	14.5	31.6
Wairere North			20.8		25.9	46.7
Wairere South			31		29.7	60.7
Wheki	*8.5	*8.5	10	42.9	9.9	71.3
Total (ha)	*214.5	*26.2	436.9	243.6	327.6	1,240.3

* Wheki area of 8.5 ha is both QEII covenant and SNA area. As a result, area totals do not add up accordingly.

High Conservation Value (HCV) Forests

Natural areas within the Kauri Forestry estate were assessed against the HCV criteria. None met the criteria for HCV status (2023 Wildland Consultants report¹⁶).

¹⁴ Significant Natural Areas (SNAs) are areas that contain significant indigenous vegetation and/or significant habitats of indigenous fauna. SNAs are identified by the local territorial authority and protected by the Resource Management Act 1991.

¹⁵ Protected Natural Area- indigenous areas worthy of protection as identified in the Protected Natural Areas Programme surveying from 1981, under the Reserves Act 1977.

¹⁶ Wildlands. (2023). Natural area survey and Assessment of High Conservation Value Areas of Craigmore Forests, Northland. Contract Report No. 6691.

Biodiversity values by forest

Forest	Flora	Fauna present or highly likely
Caves	Overview <p>Mostly regenerating secondary indigenous forest types such as tōtara-rewarewa-taraire/kānuka-(rimu)-[miro] forest, kahikatea-tōtara forest, rimu-kauri-tōtara-rewarewa forest, and tōtara-karaka-(pūriri) forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Waipu Ecological District.</p>	Bats <ul style="list-style-type: none"> Long-tailed bat (Threatened-Nationally Critical)
	Threatened flora <ul style="list-style-type: none"> Kānuka* (Threatened-Nationally Vulnerable) Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) White rātā* (<i>Metrosideros diffusa</i>; Threatened-Nationally Vulnerable) Climbing rātā* (<i>Metrosideros fulgens</i>; Threatened-Nationally Vulnerable) Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) 	Birds <ul style="list-style-type: none"> Black shag/kawau (At Risk-Relict) Little black shag/kawau tūi (At Risk- Naturally Uncommon) Little shag/kawau paka (At Risk-Relict) Marsh crake/koitareke (At Risk-Declining) NZ pipit/pīhoihoi (At Risk-Declining) North Island fernbird/mātātā (At Risk- Declining)
	Ecological values <ul style="list-style-type: none"> Two PNAs within forest- Waipu Caves Forest (Q07/118) and North River Forest (Q07/117). Outstanding Natural Feature – Waipu Caves and Karst falls within c.3 ha of SECF-08. Outstanding Natural Landscape ‘North River and Waipu Caves forest and remnants’ falls within reserves on eastern boundary. Adjacent to QEII covenant and DOC Scenic Reserves. 	Fish <ul style="list-style-type: none"> Longfin eel (At Risk- Declining) Torrentfish (At Risk- Declining) Inanga (At Risk- Declining) Freshwater mussel (At Risk-Declining)
		Herpetofauna <ul style="list-style-type: none"> Hochstetter’s frog (At Risk-Declining) Copper skink (At Risk- Declining)
		Invertebrates <ul style="list-style-type: none"> Kauri snail (At Risk- Declining)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened – Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Manganui	<p>Overview</p> <p>Mostly regenerating secondary indigenous forest types such as tōtara-taraire-(rewarewa)-(kahikatea) forest, kahikatea-tōtara-(mataī)/[tītoki] forest, tōtara-(tānekaha)-(taraire)-(pūriri) forest, and (tōtara)-(rewarewa)/taraire/kohekohe forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Tokatoka Ecological District.</p> <p>Threatened flora</p> <ul style="list-style-type: none"> Kānuka* (Threatened-Nationally Vulnerable) Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) White rātā* (<i>Metrosideros diffusa</i>; Threatened-Nationally Vulnerable) Climbing rātā* (<i>Metrosideros fulgens</i>; Threatened-Nationally Vulnerable) Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) <p>Ecological values</p> <ul style="list-style-type: none"> Two PNAs within forest- Ararua Road Bush (Q08/014), Manganui-Taylors Road Bush and Surrounds (Q08/019). Adjacent to SNA, QEII covenant and DOC reserve. 	<p>Birds</p> <ul style="list-style-type: none"> Grey duck/pārera (Threatened-Nationally Vulnerable) NZ dabchick/weweia (Threatened- Nationally Increasing) <p>Fish</p> <ul style="list-style-type: none"> Longfin eel (At Risk- Declining) Inanga (At Risk- Declining) <p>Herpetofauna</p> <ul style="list-style-type: none"> Elegant gecko (At Risk- Declining) Ornate skink (At Risk- Declining) <p>Invertebrates</p> <ul style="list-style-type: none"> Kauri snail (At Risk- Declining) Land snail (At Risk- Declining)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Mangarata	Overview <p>Mostly regenerating secondary indigenous forest types such as (kahikatea)-[kauri]-[rimu]/tōtara-(taraire)-[pūriri] forest, kahikatea-[rimu]/tōtara-(pūriri) forest, tōtara-(kahikatea)-(rimu)-(kānuka) forest, and tōtara-(kahikatea)-[tītoki] forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Tokatoka Ecological District.</p>	Birds <ul style="list-style-type: none"> • Grey duck/pārera (Threatened- Nationally Vulnerable) • NZ dabchick/weweia (Threatened- Nationally Increasing)
	Threatened flora <ul style="list-style-type: none"> • Kānuka* (Threatened-Nationally Vulnerable) • Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) • Climbing rātā* (<i>Metrosideros fulgens</i>; Threatened-Nationally Vulnerable) • Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) 	Fish <ul style="list-style-type: none"> • Longfin eel (At Risk- Declining) • Inanga (At Risk- Declining)
	Ecological values <ul style="list-style-type: none"> • Three PNAs within forest- Boar Stream Bush (P07/110), Manganui River Complex (P07/086), Manganui Trig Forest (P07/108). • QEII covenant 5-02-015 within forest. • Adjacent to DOC reserve. 	

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Ngatieke	<p>Overview</p> <p>Mostly regenerating secondary indigenous forest types such as kahikatea-tōtara-rimu- [northern rātā]/(taraire)-(tōwai)-(pūriri) forest, rewarewa/pūriri-taraire-(tōtara)/kohekohe forest, and tōtara-taraire-rimu forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Hokianga Ecological District but less reduced in Maungataniwha Ecological District.</p>	<p>Bats</p> <ul style="list-style-type: none"> Long-tailed bat (Threatened- Nationally Critical)
	<p>Threatened flora</p> <ul style="list-style-type: none"> Kānuka* (Threatened-Nationally Vulnerable) Mānuka* (At Risk- Declining) Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) Northern rātā* (<i>Metrosideros robusta</i>; Threatened-Nationally Vulnerable) Kauri~ (<i>Agathis australis</i>; Threatened- Nationally Vulnerable) 	<p>Birds</p> <ul style="list-style-type: none"> NZ pipit/pīhoihoi (At Risk- Declining) <p>Fish</p> <ul style="list-style-type: none"> Longfin eel (At Risk- Declining) Torrentfish (At Risk- Declining)
	<p>Ecological values</p> <ul style="list-style-type: none"> Three PNAs within forest- Ngatieke Airstrip Bush (O05/066), Orawau (O05/065), Maungataniwha Forest (O05/009). Adjacent to QEII covenant and DOC reserve. 	<p>Herpetofauna</p> <ul style="list-style-type: none"> Northland green gecko (At Risk- Declining) Copper skink (At Risk- Declining) Ornate skink (At Risk- Declining) <p>Invertebrates</p> <ul style="list-style-type: none"> Kauri snail (At Risk- Declining) Landhoppers- 4 indigenous species: 2 threat status not assessed, 2 taxonomic status indeterminate <i>Syrphetodes</i> sp. beetle (At Risk- Naturally Uncommon) <i>Tuiharpalus hallae</i> beetle (At Risk- Naturally Uncommon) <i>Diapriidae</i> parasitoid wasp (At Risk- Naturally Uncommon)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Opare	Overview <p>Mostly regenerating secondary indigenous forest types such tōtara-[rimu]-[tānekaha]/kanuka forest, tōtara-kānuka-(kahikatea)-[pūriri] forest, tōtara-karaka-(pūriri) forest, and kānuka-(tōtara) forest and scrub. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within both Tangihua and Kerikeri Ecological Districts.</p>	Birds <ul style="list-style-type: none"> NZ pipit/pīhoihoi (At Risk- Declining) Red-billed gull/tarāpunga (At Risk- Declining)
	Threatened flora <ul style="list-style-type: none"> Kānuka* (Threatened-Nationally Vulnerable) Mānuka* (At Risk- Declining) Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) 	Fish <ul style="list-style-type: none"> Longfin eel (At Risk- Declining) Lamprey (Threatened- Nationally Vulnerable) Inanga (At Risk- Declining)
	Ecological values <ul style="list-style-type: none"> Three PNAs within forest- Waiharakeke Stream Alluvial Forest (P05/054), Tarakihi Wetlands and Environments (P06/076), Davis Road Bush (P06/070). 	Herpetofauna <ul style="list-style-type: none"> Copper skink (At Risk- Declining) Elegant gecko (At Risk- Declining)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Piroa	<p>Overview</p> <p>Mostly regenerating secondary indigenous forest types such as kahikatea-tōtara-kānuka forest, kahikatea-tōtara forest, kahikatea-tōtara-(rimu)-(rewarewa) forest, and tōtara-kahikatea-taraire forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Tokatoka and Waipu Ecological Districts.</p> <p>Threatened flora</p> <ul style="list-style-type: none"> • Kānuka* (Threatened-Nationally Vulnerable) • Mānuka* (At Risk- Declining) • Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) • Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) <p>Ecological values</p> <ul style="list-style-type: none"> • Three PNAs within forest- Dodd Road Forest Remnant (Q08/236), Waipu Gorge Forest Remnants (Q08/222), Smale's Road Forest Remnants (Q08/241). 	<p>Bats</p> <ul style="list-style-type: none"> • Long-tailed bat (Threatened-Nationally Critical) <p>Birds</p> <ul style="list-style-type: none"> • Little shag/kawau paka (At Risk- Relict) • NZ pipit/pīhoihoi (At Risk- Declining) <p>Herpetofauna</p> <ul style="list-style-type: none"> • Hochstetter's frog (At Risk- Declining) • Elegant gecko (At Risk- Declining)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Forest	Flora	Fauna present or highly likely
Wairere North and South	Overview <p>Mostly comprising regenerating secondary indigenous forest types such as kauri/pūriri-tōtara-taraire/kānuka forest, kauri-kahikatea-[rimu]/tōtara/kānuka forest, taraire-(kahikatea)-(kohekohe)-(rimu) forest and treeland, and tōtara-tānekaha-kānuka forest. These vegetation and habitat types are representative of conifer-broadleaved species forest which has been greatly reduced in extent within Tangihua Ecological District.</p>	Bats <ul style="list-style-type: none"> Long-tailed bat (Threatened-Nationally Critical)
	Threatened flora <ul style="list-style-type: none"> Kānuka* (Threatened-Nationally Vulnerable) Mānuka* (At Risk- Declining) Akatea* (<i>Metrosideros perforata</i>; Threatened-Nationally Vulnerable) Northern rātā* (<i>Metrosideros robusta</i>; Threatened-Nationally Vulnerable) Climbing rātā* (<i>Metrosideros fulgens</i>; Threatened-Nationally Vulnerable) Kauri~ (<i>Agathis australis</i>; Threatened-Nationally Vulnerable) 	Birds <ul style="list-style-type: none"> NZ pipit/pīhoihoi (At Risk- Declining) Red-billed gull/tarāpunga (At Risk- Declining)
	Ecological values <ul style="list-style-type: none"> Five PNAs within the forests- Mangakahia Forest and Te Tarahiorahiri (P06/001), Pipiwai Stream Old Growth Forest Remnant (P06/061), Pipiwai Stream Riverine Forest Remnant (P06/062), Mangaroa Stream Riverine Forest and Gumland (P06/059), Mangaroa Wetland (P06/060). Part of Outstanding Natural Landscape 'Mangakahia Forest and bush margins' falls in reserve on southwest boundary. Adjacent to DOC reserve. 	Fish <ul style="list-style-type: none"> Longfin eel (At Risk- Declining) Torrentfish (At Risk- Declining) Inanga (At Risk- Declining)
		Herpetofauna <ul style="list-style-type: none"> Copper skink (At Risk- Declining) Elegant gecko (At Risk- Declining)

* Threat classification elevated as precautionary measure due to myrtle rust susceptibility

~ Threat classification listed as Threatened- Nationally Vulnerable due to the impacts of kauri dieback *Phytophthora agathidicida*

Rare and threatened species management

The general management of these species is shown below. Specific ecological management activities are outlined in Appendix 5. iNaturalist¹⁷ (Biodiversity in Plantations) will be used to record sightings of important indigenous fauna or flora discovered in the forest.

Biodiversity group	Management response
Flora	The rare flora species (excluding kauri) are in the <i>Myrtaceae</i> family. The Myrtle family are at risk of myrtle rust, hence their threat class has been elevated. Kauri has similarly had an increase in the threat class due to the impact of kauri dieback (PA) in the North Island. Implementation of forest hygiene measures in line with national guidelines will help safeguard these species from the effects of these pathogens.
Birds	Indigenous vegetation will benefit from the exclusion of domestic stock within the natural areas, possum, feral pig and goat control, and careful harvesting along the boundary of indigenous vegetation. Birds identified as present or highly likely within the Kauri Forestry estate will benefit from reserve/riparian protection and wider pest control implemented across the forests.
Bats	Long-tailed bats are likely to be present in some the forests as suitable bat habitat is present, and populations are known nearby. Targeted pre-harvest surveys are recommended. Populations will benefit from wider pest control implemented across the forests. These species will also be afforded protection from forestry operations in parallel with riparian and reserve protection.
Lizards & frogs	Herpetofauna identified as present or highly likely within the Kauri Forestry estate will benefit from wider pest control implemented across the forests. These species will be afforded protection from forestry operations in parallel with riparian and reserve protection.
Fish	These species will be afforded protection from forestry operations in parallel with riparian protection.
Invertebrates	Invertebrates identified as present or highly likely within the Kauri Forestry estate will benefit from wider pest control implemented across the forests. These species will be afforded protection from forestry operations in parallel with riparian and reserve protection.

¹⁷ <https://www.inaturalist.org/projects/biodiversity-in-plantations>

10. Other Special Values: Everything but the timber

Recreation

The Kauri Forestry estate is open for recreation subject to safety requirements. Any approved access is managed through the PF Olsen forest access permit system (for areas outside legal public access areas). For information on how to apply for a permit, please phone the PF Olsen Northland Office 09 407 7012.

Following the intent of the Outdoor Access Code¹⁸ (published by Herenga ā Nuku – Outdoor Access Commission) and any signage / barriers in place within the forest, is expected behaviour of forest visitors. Closures will also apply during times of high fire risk, any *force majeure* state and during forestry operations.

Public access roads

According to the information available on the Herenga ā Nuku – Outdoor Access Commission website¹⁹, there are formed and unformed legal roads running through some parts of the forests. A map is included in Appendix 6. Refer also to the Herenga ā Nuku – Outdoor Access Commission website²⁰.

These areas are open to the public, subject to any temporary closures as required for safety. Temporary closures can only be undertaken in conjunction, and with the authority, of the local Territorial Authority.

Anyone who accesses legal public access areas within the Kauri Forestry estate are expected to abide by the intent of the Outdoor Access Code and signage or barriers placed at track or public access points. Requirements for valid DOC permits for firearms and/or dogs must be observed.

Non-Timber Forest Products

There are no FSC certified non-timber forest products²¹ from the Kauri Forestry estate.

¹⁸ <https://www.walkingaccess.govt.nz/assets/Publication/Files/Outdoor-Access-Code/0fcf4d2e5b/Outdoor-Access-Code.pdf>

¹⁹ <https://www.herengaanuku.govt.nz/>

²⁰ <https://maps.walkingaccess.govt.nz/Viewer/?map=b1d1e76a6c754d11b3f3fd9dfce1eb12>

²¹ 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.

Other Special Values

There is a grazing lease in Opare Forest (approx. 47.7 ha).

11. Future Planning

Plan changes & reviews

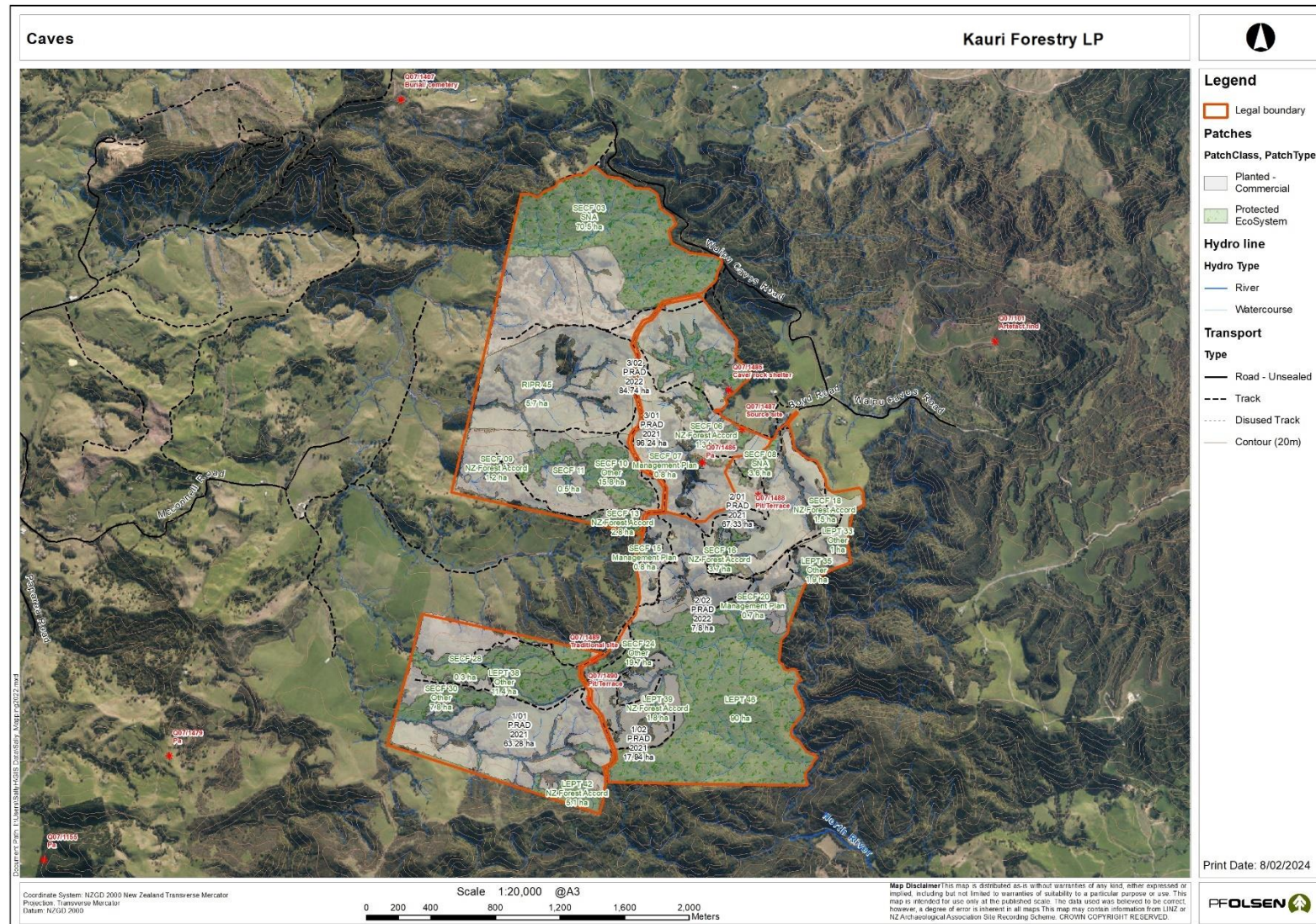
The next major review date for this plan is January 2029 (5 years).

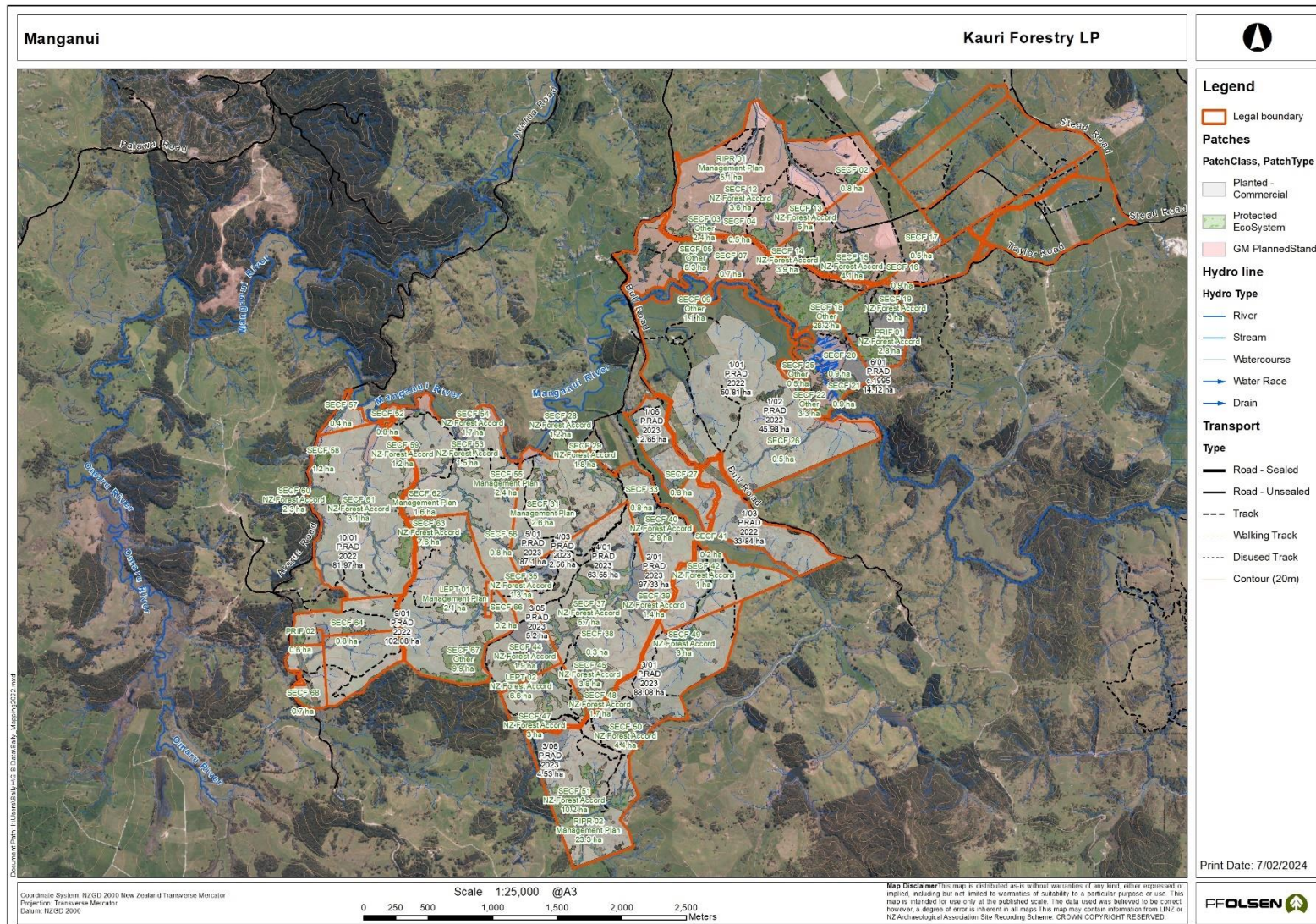
Minor revisions may be made at any time. Any material changes made will be documented below.

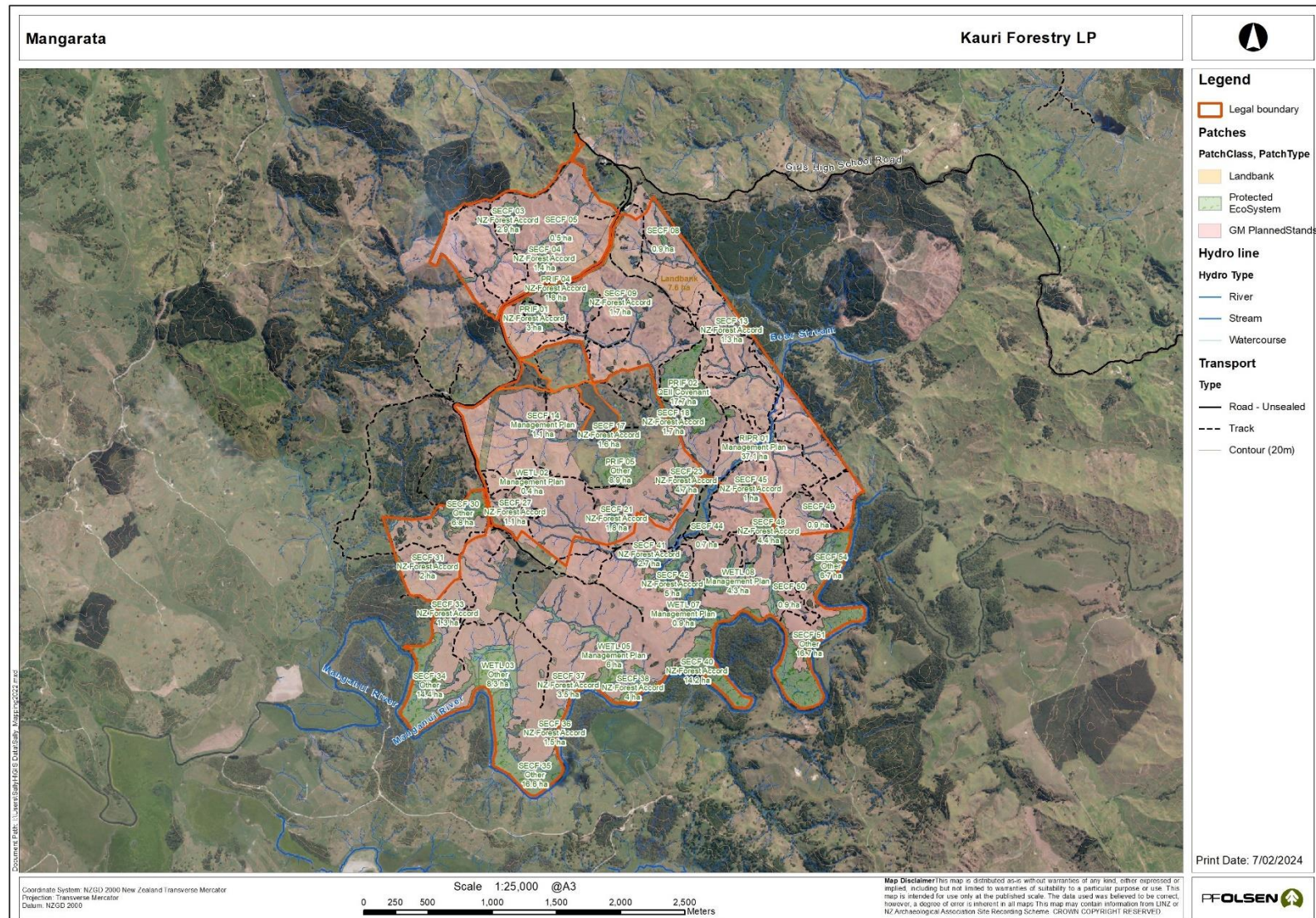
Change	Date	Section/Page
Addition of Red ESC monitoring to plan, and adjusted Appendices accordingly	12/12/2024	Page 20
Updated FSC certificate	04/06/2025	1/Page 4

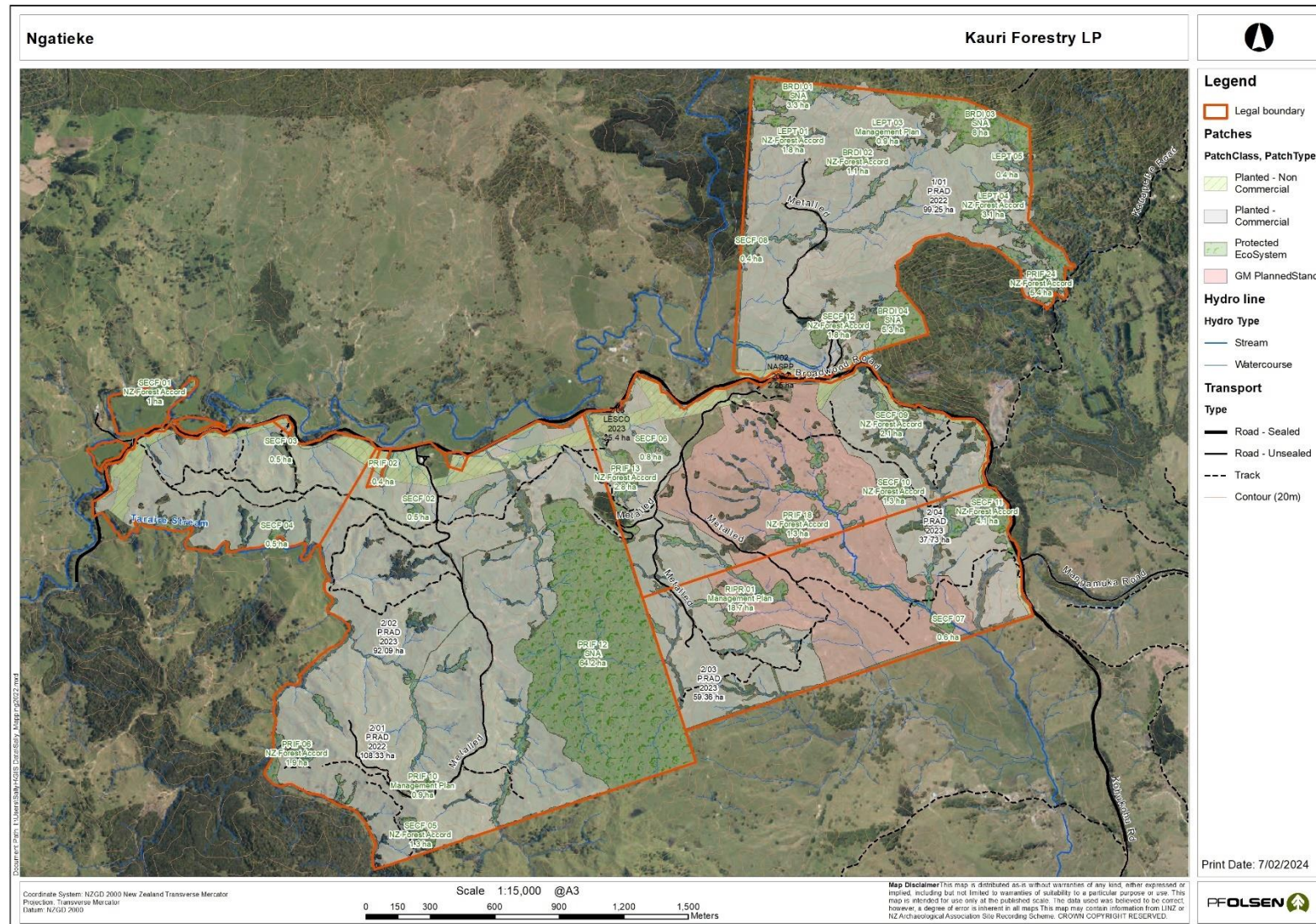
Appendix 1: Forest Maps

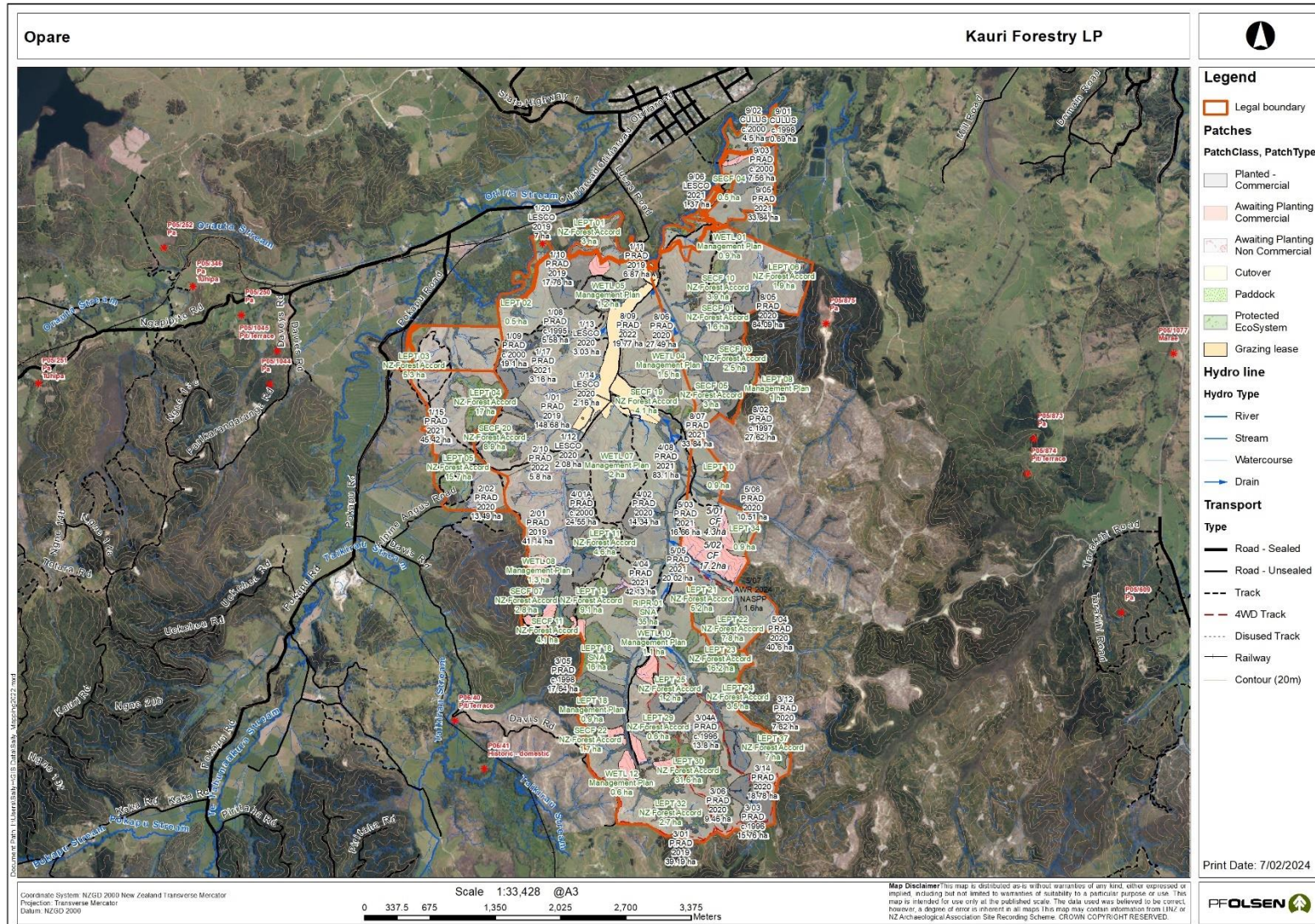
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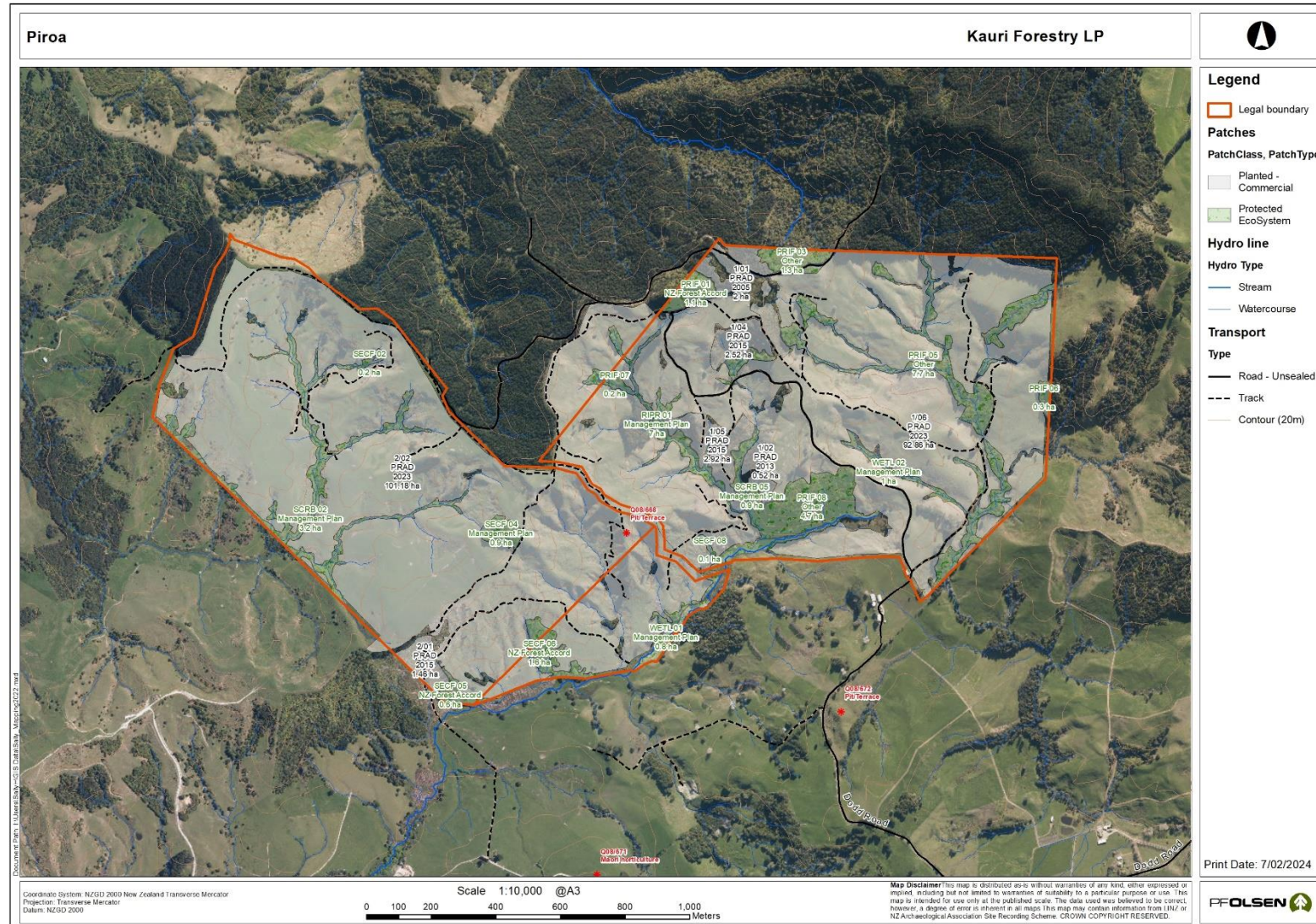


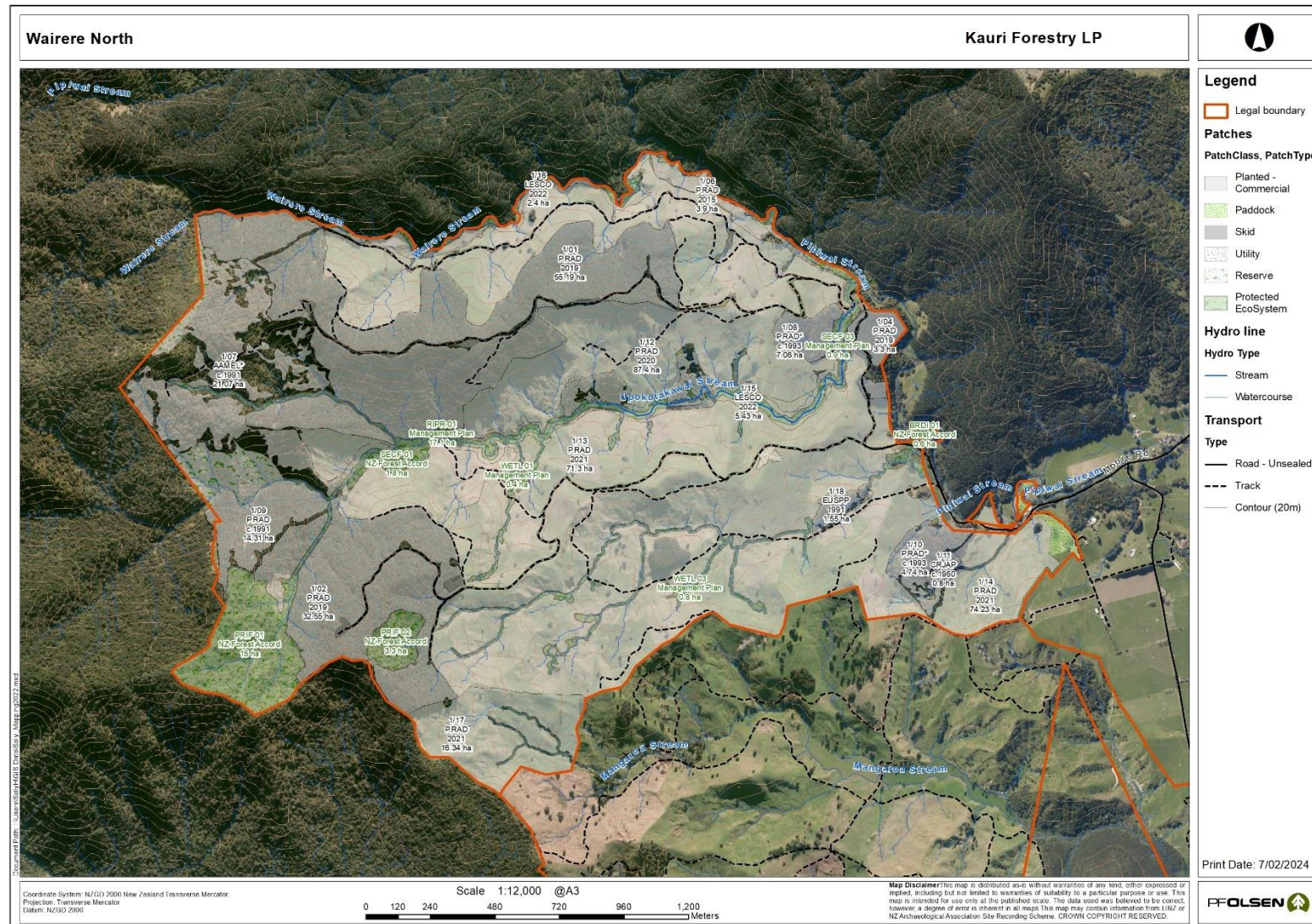


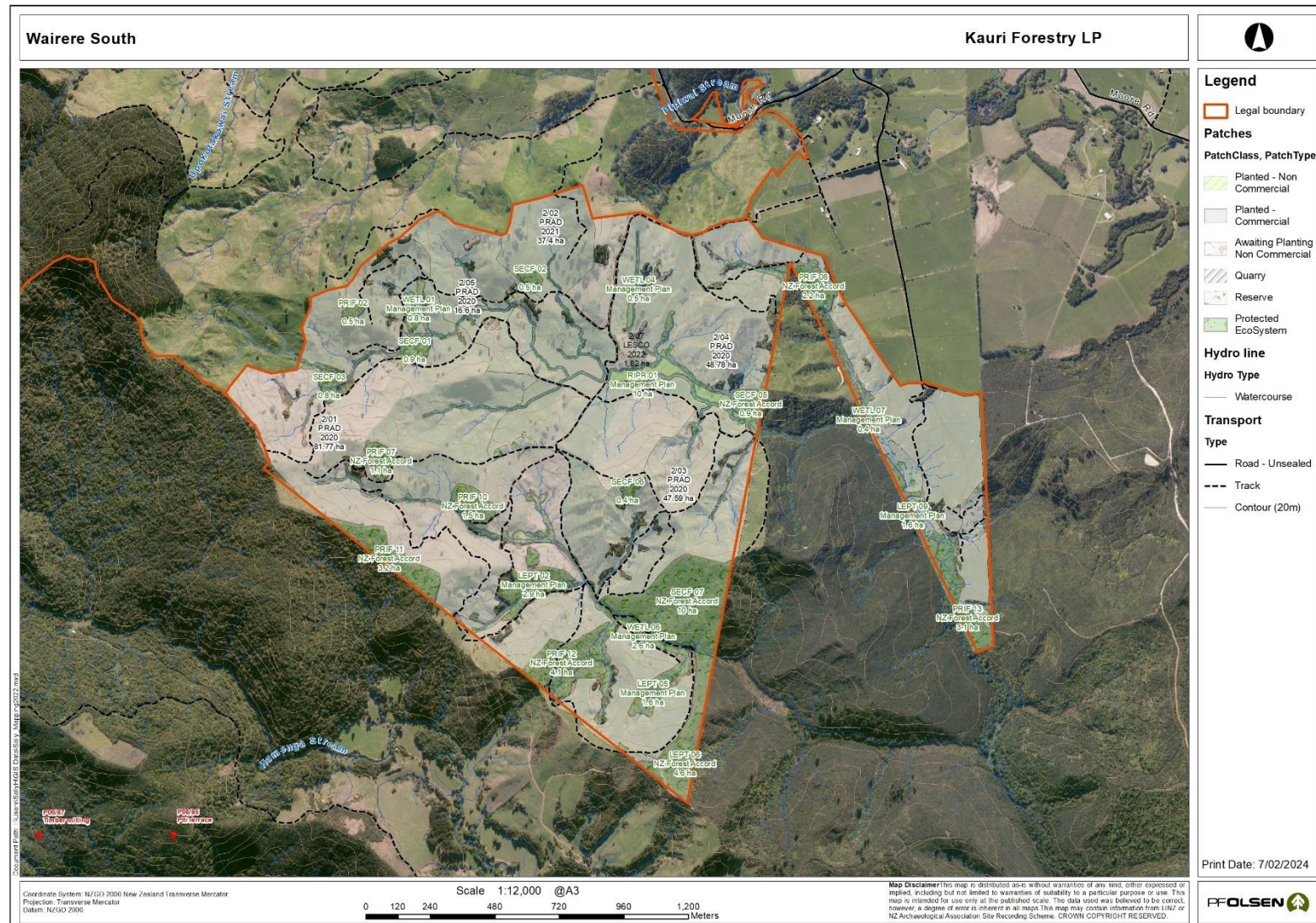














Appendix 2: Legal Ownership

Property Name	Tenure
Caves	Allot 154 PSH of Ruarangi. Lot 4 DP 545707, SO 1307, SO 39037. Lot 6 DP 545707 Parcel ID List 4956590, 5116907, 8125618, 8125620
Manganui	1/1, Lot 1,2,3 4 Deposited Plan 29960. 1/1, Lot 3 Deposited Plan 575863. 1/1, Allotment 249 Parish of Matakoho and 1/1, Part Allotment 248 Parish of Matakoho. 1/1, Part Allotment 263 Parish of Matakoho defined On Deposited Plan 17599 . 1/1, Part Allotment 254 Parish of Matakoho, Part Eastern Portion Allotment 256 Parish of Matakoho and Part South Western Portion Allotment 256 Parish of Matakoho, 1/1, Section 262 Parish of Matakoho. 1/1, Allotment 257A Parish of Matakoho. 1/1, Part Section 237 Parish of Mareretu. 1/1, Lot 1 Deposited Plan 88674. 1/1, Allotment 382 and Allotment 386-388 Parish of Mareretu and Lot 1-2 Deposited Plan 49983. 1/1, Allotment 1, 2 & 3 Mareretu Parish, 1/1, Lot 1-2 Deposited Plan 135832. 1/1, Lot 1 Deposited Plan 480899
Mangarata	Lot 5 DP 575539 DP 575539. Section 4 Block XV Maungaru, SD SO 52006. Lot 6 DP 575539, DP 575539
Ngatieke	1/1, Section 24-25 and Section 27 Block I Mangamuka Survey District, 1/1, Section 35-36 Block I Mangamuka Survey District, 1/1, Lot 41 Deposited Plan 7196, 1/1, Lot 41 Deposited Plan 7196, 1/1, Part Lot 1 Deposited Plan 193262.
Opape	1/1, Lot 1-2 and Lot 5 Deposited Plan 107976. 1/1, Motatau 2Sec19 Block and Part Motatau 2Sec 40 Block. 1/1, Lot 2 Deposited Plan 561372. 1/1, Lot 1 Deposited Plan 561372 and Part Motatau 2Sec3 Block and Part Motatau 2Sec5 Block. 1/1, Lot 5 Deposited Plan 90982. 1/1, Lot 1-2 Deposited Plan 148032. 1/1, Section 16 and Part Section 17-18 Block XV Kawakawa Survey District. 1/1, Lot 1 Deposited Plan 90982.
Piroa	1/1, Lot 5 & 6 & 7 Deposited Plan 555519.
Wairere North & South	1/1, Lot 2, 4-5, 7 Deposited Plan 128532, 1/2, Lot 6 Deposited Plan 128532, 1/2, Lot 8 Deposited Plan 128532. 1/1, Lot 3 Deposited Plan 537945. 1/2, Lot 6 Deposited Plan 128532, 10,775 m2 Fee Simple, 1/2, Lot 8 Deposited Plan 128532. 1/1, Lot 1 Deposited Plan 537945.
Wheki	1/1, Section 40 Block II Tangihua Survey District, 1/1, Lot 1 & 3 Deposited Plan 567102. 1/1, Lot 1 Deposited Plan 14002. 1/1, Lot 3 Deposited Plan 187423. 1/1, Part Lot 1 Deposited Plan 61374 and Part Section 45 Block II Tangihua Survey District,

Caves

[illegible]

Title	Legal Description	Owners

Mangarata

Page 52 of 75

Ngatieke

Title	Legal Description	Owners

[illegible]

Piroa

Title	Legal Description	Owners

Wairere North

Title	Legal Description	Owners

[illegible]

Wairere South

[illegible]

[illegible]

Appendix 4: NES-CF Red ESC Zone Monitoring

Monitoring Actions

Activity Type	Actions
Monitoring of Red ESC Areas	<ul style="list-style-type: none">• Orbica monitoring system<ul style="list-style-type: none">- 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:<ul style="list-style-type: none">- 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<ul style="list-style-type: none">- 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.

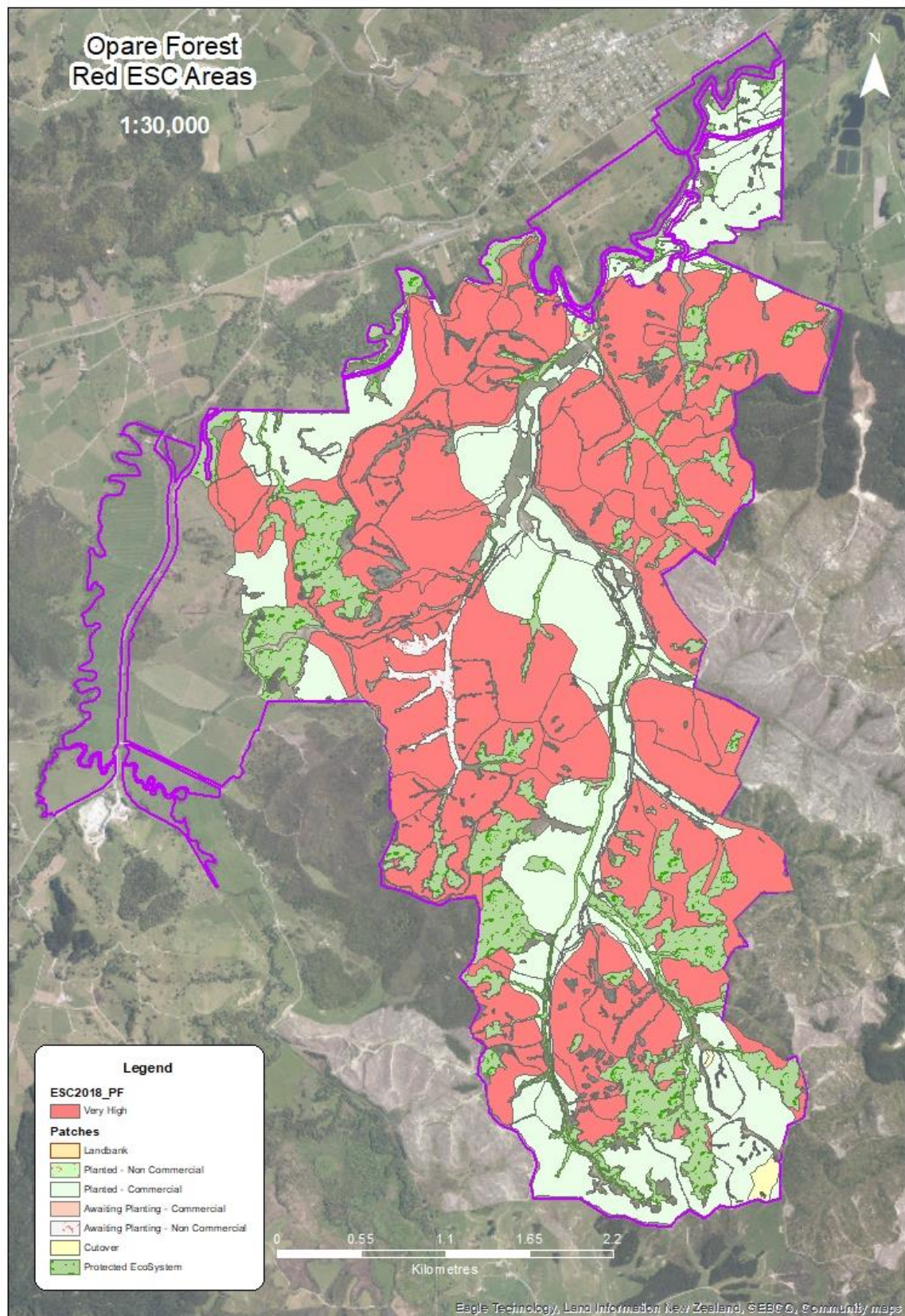
Stands to be monitored by forest

Opare Forest

The current total productive area of Opare Forest is 1,196.1 hectares. Of its current total productive area 67% is Red ESC class.

Stand	Area of Red ESC within the Stand (ha)	Total Stand Area (ha)	Percentage of Stand Affected
OPRE-01-01	97.93	148.68	66%
OPRE-01-04	3.63	3.63	100%
OPRE-01-08	5.58	5.58	100%
OPRE-01-09	19.06	19.09	100%
OPRE-01-10	17.71	17.76	100%
OPRE-01-11	6.87	6.87	100%
OPRE-01-12	2.08	2.08	100%
OPRE-01-13	1.01	3.02	33%
OPRE-01-14	1.61	2.16	75%
OPRE-01-15	26.88	45.43	59%
OPRE-01-16	1.07	11.45	9%
OPRE-01-17	3.16	3.16	100%
OPRE-01-19	0.46	1.05	44%
OPRE-01-20	4.32	6.99	62%
OPRE-01-21	3.66	3.66	100%
OPRE-02-01	41.14	41.14	100%
OPRE-02-02	5.31	13.49	39%
OPRE-02-04	2.25	2.25	100%
OPRE-02-06	4.77	4.77	100%
OPRE-02-07	13.01	13.01	100%
OPRE-02-07A	1.38	1.38	100%
OPRE-02-10	4.83	5.80	83%
OPRE-02-11	15.86	15.86	100%
OPRE-03-01	4.64	39.19	12%
OPRE-03-03	0.20	15.76	1%
OPRE-03-04A	13.80	13.80	100%
OPRE-03-05	14.59	17.64	83%
OPRE-03-06	0.74	9.46	8%
OPRE-03-07	1.27	6.35	20%
OPRE-03-08	7.20	11.22	64%
OPRE-03-09	6.46	7.75	83%
OPRE-03-10	8.45	8.68	97%
OPRE-03-11	8.34	9.44	88%
OPRE-03-12	3.27	7.62	43%

Stand	Area of Red ESC within the Stand (ha)	Total Stand Area (ha)	Percentage of Stand Affected
OPRE-03-13	19.22	20.59	93%
OPRE-03-14	1.68	18.78	9%
OPRE-03-16	3.68	4.24	87%
OPRE-03-17	6.98	12.31	57%
OPRE-04-01A	23.19	24.55	94%
OPRE-04-02	13.43	14.34	94%
OPRE-04-03	8.57	8.57	100%
OPRE-04-04	8.94	42.14	21%
OPRE-04-06	0.14	16.61	1%
OPRE-04-07	0.15	8.75	2%
OPRE-04-08	37.45	83.10	45%
OPRE-05-03	0.45	12.34	4%
OPRE-05-04	15.52	16.66	93%
OPRE-05-05	38.49	40.60	95%
OPRE-05-06	18.63	20.01	93%
OPRE-05-07	10.40	10.51	99%
OPRE-05-08	1.57	1.57	100%
OPRE-05-09	0.08	2.91	3%
OPRE-08-01	22.29	23.14	96%
OPRE-08-02	2.83	2.83	100%
OPRE-08-03	27.61	27.61	100%
OPRE-08-04	2.23	2.23	100%
OPRE-08-05	16.07	16.07	100%
OPRE-08-06	76.02	84.09	90%
OPRE-08-07	27.49	27.49	100%
OPRE-08-08	31.17	33.83	92%
OPRE-08-09	11.48	11.53	100%
OPRE-09-05	17.88	19.77	90%
OPRE-09-06	0.29	33.85	1%
Total Area	769.80	1,166.24	



Appendix 5: Schedule of Ecological Management

Activity Type	Actions	Area/s	Due Date
Walk-through check / drone survey	Forest manager to do annual onsite check on issues including weeds, wilding pines, animal browse. This can be done via a combination of a walk-through check on the ground and/or use of a drone to carry out an aerial assessment of the block.	Focus on high-ranking natural indigenous vegetation reserves within the forests	31-Dec (annually)
Domestic livestock exclusion	Exclude livestock from natural indigenous vegetation reserve areas. Ensure boundary fencing is adequate to exclude stock from neighbouring farmland.	All forests	End 2024 (grazing removed as planned planting is completed)
Pest control - Animals	Formalise a pest control plan (an external contractor could be engaged). May include shooting, trapping and/or poisoning. <ul style="list-style-type: none"> - Feral pigs- Wairere North, Wheki - Feral goats – all forests - Possums – all forests 	Focus on high-ranking natural indigenous vegetation reserves within forests	Pest plan developed and implemented by 07/2024
Biosecurity - machine hygiene	Ensure machine cleaning before entering / leaving the forest- reduce risk of kauri dieback and rainbow skink transmission.	All forests	Ongoing
Fish passage survey	Undertake a check of existing culverts for fish passage. Install solution if fish passage is not provided.	All forests	Summer 2024/25

Activity Type	Actions	Area/s	Due Date
Pest control - Plants	Carry out forest-wide pest plant control in accordance with the Regional Pest Management Plan. Focus on boundaries.	Focus on boundary control.	31-Dec (annually)
	Control woolly nightshade (Sustained control in NRPMP)	Manganui, Ngatieke, Opape, Piroa, Wairere North and South	
	Control cotoneaster (Sustained control in NRPMP)	Mangarata, Ngatieke	
	Control elephant's ear (Sustained control in NRPMP)	Ngatieke	
	Control jasmine (Sustained control in NRPMP)	Ngatieke	
	Control willow-leaved hakea, privet (tree and Chinese) (Sustained control in NRPMP)	Opape	
	Control queen of the night (Sustained control in NRPMP)	Wheki	
	Control agapanthus (Sustained control in NRPMP)	Wheki	
	Carry out pest plant control within natural indigenous vegetation reserves based on annual walk-through check / drone survey information and in accordance with the Regional Pest Management Plan.	Natural indigenous vegetation reserves within forests.	31-Dec (annually)

Activity Type	Actions	Area/s	Due Date
Pest control – Plants	Check, plan and implement wilding conifer control in SNA areas.	All SNAs within forests that have existing older pine plantings: Manganui, Opare, Piroa, Wairere North	Survey and budget and plan by 07/2024 If required, commence implementation by 01/2025 then 5 yearly wilding control
	Control smilax- one patch in Manganui (approximately NZTM E1709083, N6017062).	Manganui: north of SECF-19 on road edge	Summer 2024/25
	Control selaginella - one patch in Manganui (approximately NZTM E1707647, N6016931). - one patch in Opare (approximately NZTM E1693098, N6083201).	Manganui SECF-09 Opare: northern end of RIPR-01	Summer 2024/25
	Control tradescantia - one patch in Manganui (approximately NZTM E1709154, N6016449). - one patch in Opare (approximately NZTM E1693098, N6083201).	Manganui stand 6/01 near SECF-18 Opare: northern end of RIPR-01	Summer 2024/25
Bat surveys	Carry out targeted pre-harvest surveys for long-tailed bats	Caves, Ngatieke, Piroa, Wairere North and South, Wheki	Pre-harvest, summer prior
Threatened species sightings	Sightings to be recorded in iNaturalist. NZFOA Rare Species Guidelines to be followed if species are found within the forest boundaries.	All forests	Ongoing

Activity Type	Actions	Area/s	Due Date																				
Water monitoring	<p>Measure water quality parameters, and undertake comprehensive eDNA water testing to:</p> <ul style="list-style-type: none">- establish aquatic / amphibious / riparian terrestrial rare species presence.- provide water quality indicator (TICI). <p>If threatened species are identified:</p> <ul style="list-style-type: none">- Findings will be reported in iNaturalist- Review forestry and harvesting operations to ensure that any potential impacts are recognised and managed appropriately to not adversely affect the threatened species (in line with the National Policy Statement for Indigenous Biodiversity). <p>If an unexpected result is produced, a repeat test will be implemented.</p>	<p>10 sites, as described below.</p> <table><tr><th>Forest</th><th>Sample point</th></tr><tr><td>Caves</td><td>E1719655, N6022287. Unnamed stream near Waipu Caves.</td></tr><tr><td>Manganui</td><td>E1708405, N6018045. Unnamed tributary of Waiwhakangari Stream.</td></tr><tr><td>Mangarata</td><td>E1693277, N6023786. Unnamed tributary of the Boar Stream.</td></tr><tr><td>Ngatieke</td><td>E1648539, N6099506. Kopopuwhakapeka Stream.</td></tr><tr><td>Opare</td><td>E1691926, N6081542. Unnamed tributary of the Waiharakeke Stream.</td></tr><tr><td>Piroa</td><td>E1722916, N6008655. Unnamed tributary of Ahuroa River.</td></tr><tr><td>Wairere North</td><td>E1689793, N6054417. Unnamed tributary of the Pipiwai Stream.</td></tr><tr><td>Wairere South</td><td>E1689607, N6053332. Upokotakawai Stream is a tributary of the Pipiwai Stream.</td></tr><tr><td>Wheki</td><td>E1701776, N6038150. Omaerae Stream is a tributary of the Wairoa River.</td></tr></table>	Forest	Sample point	Caves	E1719655, N6022287. Unnamed stream near Waipu Caves.	Manganui	E1708405, N6018045. Unnamed tributary of Waiwhakangari Stream.	Mangarata	E1693277, N6023786. Unnamed tributary of the Boar Stream.	Ngatieke	E1648539, N6099506. Kopopuwhakapeka Stream.	Opare	E1691926, N6081542. Unnamed tributary of the Waiharakeke Stream.	Piroa	E1722916, N6008655. Unnamed tributary of Ahuroa River.	Wairere North	E1689793, N6054417. Unnamed tributary of the Pipiwai Stream.	Wairere South	E1689607, N6053332. Upokotakawai Stream is a tributary of the Pipiwai Stream.	Wheki	E1701776, N6038150. Omaerae Stream is a tributary of the Wairoa River.	<p>Baseline established spring 2021 & 2022. Implement annually for 5 years to monitor effects of landuse change.</p> <p>Switch to 5-yearly during mid-rotation (age 5, 10, 15, 20, 25 years), and increase frequency to annual just prior and during next harvest.</p>
Forest	Sample point																						
Caves	E1719655, N6022287. Unnamed stream near Waipu Caves.																						
Manganui	E1708405, N6018045. Unnamed tributary of Waiwhakangari Stream.																						
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Appendix 6: Public Access Maps

On following pages

