

Wightman Forests



Wightman Forestries Ltd

Forest Stewardship Council® Forest Management Plan

For the period September 2022 – September 2027



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1. What is this Plan?

About this Plan

This **specific** forest management plan provides details about the Wightman Forestries Limited forests:

1. Juno
2. Rose Valley
3. Waipori

It is to be used in conjunction with the [Standard Forest Management Plan](#), which outlines the typical management applied to the Forest Stewardship Council (FSC®) Group Scheme estate 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

Wightman Forestries Limited (Wightman) is committed to adopting the Forest Stewardship Council (FSC) Principles and meeting the FSC Criteria relevant to forest management.

Wightman is committed to the PF Olsen FSC Group Scheme **NC FM/COC-000190** processes and associated documents.

Wightman seeks 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.

2. The Forest Land

Forest area Forest maps are in Appendix 1.

Forest	Net-stocked Area NSA (ha)	Indigenous Area (ha)	Total Forest Area (ha)
Juno	118.2	51.8	169.9
Rose Valley	91.6	91.1	182.7
Waipori	209.5	32.6	242.1
Total certified area	419.2	175.5	594.6

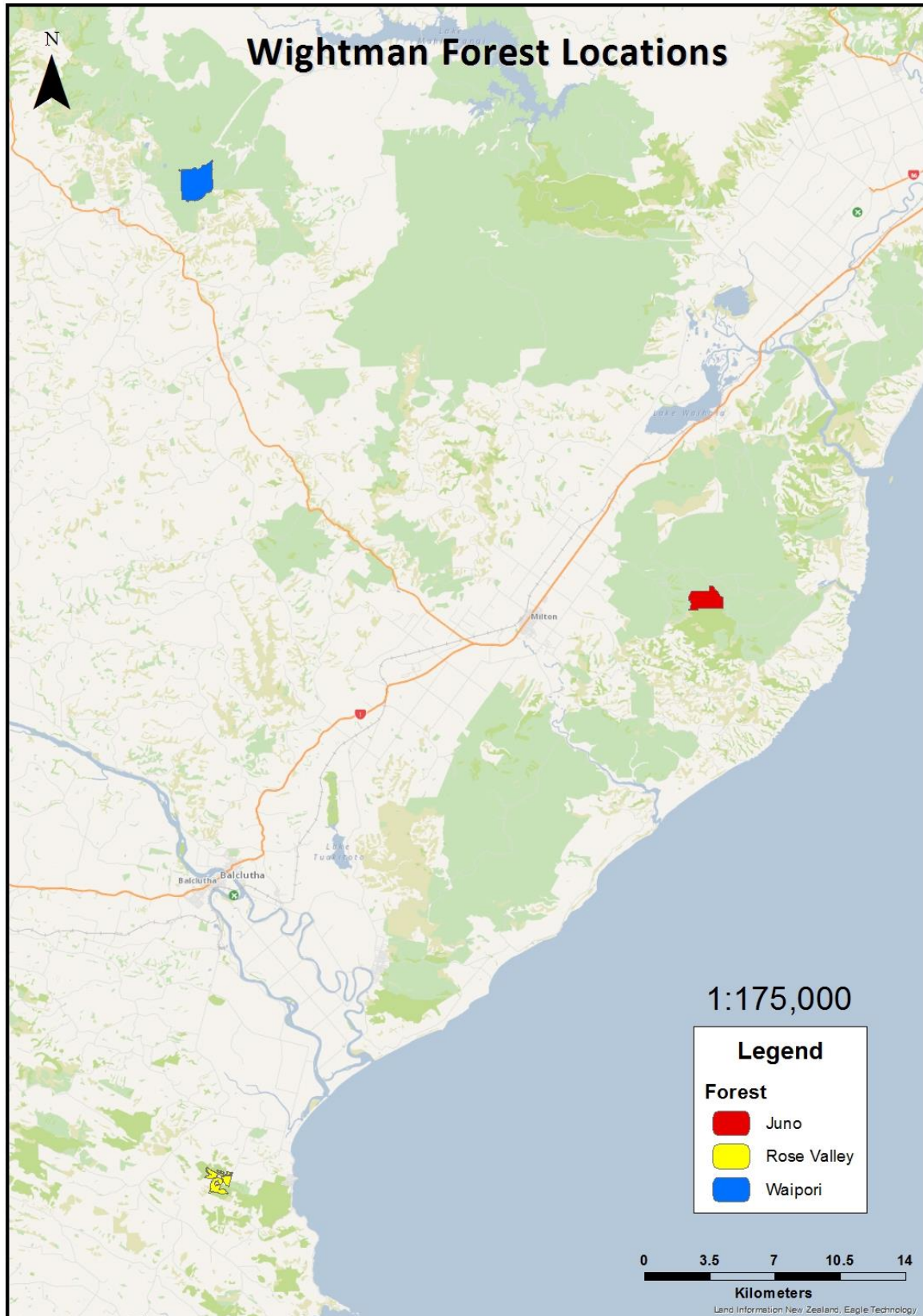
Location The location map is on the next page.

Forest	Location
Juno	Big Bush Road, approximately 15 km northeast Milton
Rose Valley	Rose Valley Road, approximately 7 km east to Kaka Point
Waipori	Lawrence Waipori Road, approximately 12 km northeast of Lawrence

Markets Port Chalmers will provide the market for any export grade logs, while Pan Pac will handle the processing of domestic grades. Lumber will take the chip. Other smaller sawmills may take volume on a case-by-case basis.

Topography Topography allows for predominantly ground-based logging. Some hauler logging will be required on localised steep sections.

Forest	Topography
Juno	Flat to moderately steep. Extends from 280 m to 440 m above sea level
Rose Valley	Flat to moderately steep. Extends from 80 m to 220 m above sea level
Waipori	Rolling to moderately steep. Extends from 240 m to 460 m above sea level



Soils

The soils are predominantly derived from variable loess cover over different parental material. They are generally suited to plantation forestry, with leaching possible in heavy rainfall areas.

Forest	Soil Types
Juno	Loess overlying schist and sedimentary rocks.
Rose Valley	Variable cover of loess over tuffaceous greywacke and slope deposits.
Waipori	Variable cover of loess over schist.

Climate

Otago:

- Prevailing winds are westerlies, with strong winds at exposed coastal locations
- Annual rainfall decreases with increasing distance from the western ranges and the eastern coast
- Central Otago is the driest region in New Zealand, with inland areas summer temperatures exceeding 30°C
- Annual rainfall in the western ranges can exceed 2450 mm whilst in Central Otago to the coast rainfall is 360 mm to 980 mm per year.
- Temperatures are generally cooler than the rest of the country with frequent frosts and snowfalls
- On average, coastal Otago receives less sunshine than a lot of New Zealand

Legal ownership

The legal description and land area for each forest is shown in Appendix 2. The tenure is freehold.

3. The Ecological Landscape

FSC® requirement: Ecological District¹

The following table illustrates the percentage of area protected within each of the Wightman forests, compared to the total forest areas.

All three forests meet the 10% minimum reserve threshold by ecological district (ED). There are no reserve shortfalls that need to be met.

Ecological District	Forest	Total Forest Area (ha)	Indigenous (ha)	Indigenous (%)	Meets FSC®?	Reserve Shortfall (ha)
Lawrence	Waipori	242.1	32.6	13%	Yes	N/A
Tokomairiro	Juno	169.9	91.1	30%	Yes	N/A
Tahakopa	Rose Valley	182.7	51.8	50%	Yes	N/A

Threatened Environments Classification

Across the Wightman forests:

- 6.9% of the total reserves fall into the < 10% remaining category (most threatened)
- 9.6% fall into the 10 – 20 % remaining category
- 13.4% fall into the 20 – 30 % remaining category
- 70.1% fall into the > 30% remaining and > 20% protected category (least threatened)

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)
Juno		0.1				51.7	51.8
Rose Valley	3.1	16.8				71.2	91.1
Waipori	9.1		23.5			0.1	32.6
Total Area (ha)	12.2	16.9	23.5	0.0	0.0	123.0	175.5

¹ More information on the ED's can be found here: <https://www.doc.govt.nz/documents/science-and-technical/ecoregions4.pdf>

4. Cultural and Social Aspects

Forest history Juno forest is second rotation, while Waipori forest is mixed with some first rotation and some second rotation crop. Rose Valley is a first rotation crop.

Current social profile The predominant land uses surrounding the forests are pastoral farms, woodlots, indigenous forest and plantation forestry (Ernslaw One and Rayonier), with small rural towns servicing the predominantly rural communities. The forests contribute to the social profile of the area. The Wightman Forests are privately owned. There is a modest contribution to the local economy by way of added incremental employment.

Historic and archaeological sites Records from the 'Archsite' web resource indicate there are no known historic sites within or near the forests.

There is a Crown Land water race outside the Waipori forest boundary, as located in an 1875 survey plan. As it predates 1900, it is a protected archaeological site though is not recorded in the Archsite website.

Forest	Nearest Archaeological Site
Juno	Closest site 1.3 km away (adze findspot)
Rose Valley	Closest site 5 km away (adze findspot)
Waipori	Closest site 2.1 km away (adze findspot)

Associations with Tangata Whenua Ngāi Tahu has statutory acknowledgements and kaitiakitanga. There are 18 regional Papatipu Rūnanga that each have a representative on Te Rūnanga o Ngāi Tahu governing council, which oversees the tribe's activities. The nearest Papatipu Rūnanga to the Wightman Forests are Te Rūnanga o Ōtākou based on the Otago Peninsula, and Hokonui Rūnanga based in Gore.

Resource rights There are no known cultural interests in the forest estate and no iwi management plans for the rohe.

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

5. Regulations

NES-PF ESC

The table below shows the proportion of each forest by the respective National Environmental Standards for Plantation Forestry (NES-PF) Erosion Susceptibility Classification (ESC) zone.

The forests are located on low to moderate erosion risk areas. This means that most forest activities will be permitted activities under the NES-PF, if the permitted activity standards are met.

Forest	Low (Green ESC)	Moderate (Yellow ESC)	Total (ha)
Juno	118.2		118.2
Rose Valley	91.6		91.6
Waipori	93.4	116.1	209.5
Total NSA (ha)	303.2	116.1	419.2

Council RMA Plans

The Wightman forests fall under the jurisdictions of the Otago Regional and the Clutha District Councils.

The Otago Regional Council has rules in the Regional Water Plan for discharges of sediment and riverbed disturbance, to protect threatened indigenous fish, many of which are found only in Otago. Chapters 12 and 13 of the Plan contain the rules which prevail over the NES-PF (specifically Rules 12.C and 13.5).

Under the Clutha District Plan all three Wightman forests are in the Rural Resource Area. Rules RRA8 (Riparian margins), RRA14 (tree planting on boundaries), and RRA15.IV (standards for activities in Outstanding Landscapes) all have the ability to prevail over the NES-PF.

Consents & authorities held

There are no current resource consents or Archaeological Authorities for the forests.

Emissions Trading Scheme

Waipori Forest currently has several areas registered and applications have been submitted to include further areas of the forest. An application has been submitted for Rose Valley.

6. How we manage environmental risks

Pests and diseases

The [Otago Pest Management Plan 2019 – 2029](#) includes several pest plant and animal species that are or may be present within the forests. These include:

- Broom, sustained control
- Gorse, sustained control
- Nassella tussock, progressive containment
- Nodding thistle, sustained control
- Old man’s beard, progressive containment
- Perennial nettle, progressive containment
- Ragwort, sustained control
- White-edged nightshade, progressive containment
- Wild Russell lupin, sustained control
- Wilding conifers, progressive containment
- Feral rabbits, sustained control

A full list of species can be found in the pest management plan.

Pest control programme

Pest issues specific to the estate are detailed below.

- **Darwin’s barberry**
 - Survey forests annually
 - Remove any found: spray, or cut/paste stump
 - Intensive survey around any individuals found
- **Wilding conifers**
 - Survey forest boundary annually
 - Removal of any found, in consultation with landowner
 - Spray, or cut/paste stump

Continued on next page...

...continued

- **Broom, gorse, ragwort**
 - Survey forest boundary annually
 - Based on survey, decide on a timeline to create 10m weed free buffer along boundaries where neighbouring block is relatively weed free
 - Control along roadsides as required to maintain access
 - **Possum, rabbit**
 - Survey forests every 5 years
 - Apply control when limits are exceeded
 - Possum: 5% Residual Trap Catch (RTC)
 - Rabbit: level 3 modified McLean Scale
 - **Deer, pigs, sheep, goats**
 - Control when deer sign becomes apparent, particularly during the establishment phase of the plantation
 - Ground shooting via forest access permit system
-

Fire

Wightman's forests are within the Te Kei Forest and Emergency NZ region for forest fire management. The [Fire Plan for Local Area Otago, Te Kei](#) contains additional key information regarding the protection of land and management of fires.

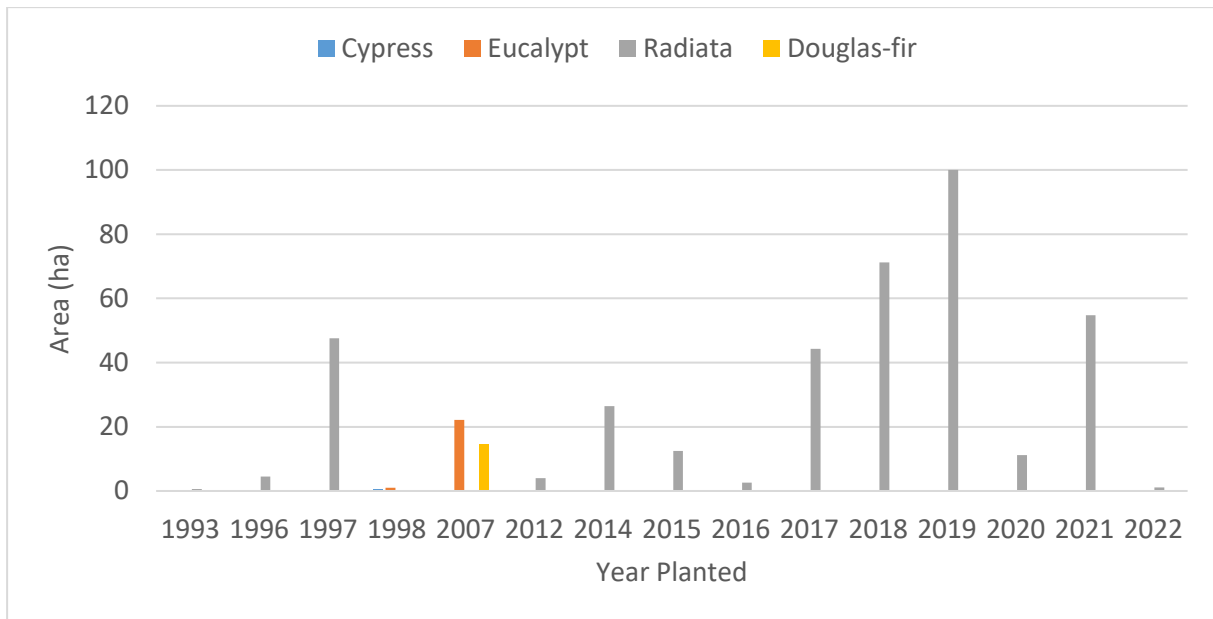
- Juno contains two fire ponds within the forest.
 - Rose Valley contains two fire ponds and a creek suitable for water extraction.
 - There are no fire ponds established in Waipori however there is a suitable waterbody (stream) in the forest.
-

7. Commercial Plantation Estate

Current crop

The predominant plantation species across the three forests is *Pinus radiata* (381 ha). There is one stand of Douglas-fir (14.5 ha) planted in 2007 in Waipori forest. Waipori and Juno also contain small areas of cypresses (0.6 ha) and eucalypts (23.2 ha).

Re-establishment will aim to use high quality tree stocks suitable for the site and market. These will be investigated at prior to replanting.



Tending

Current crop’s tending regime:

- Framing regime on all sites.
 - New plantings will be at 650 stems per hectare with no tending.
-

Tree nutrition

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

8. Harvesting Strategy

Harvesting strategy

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

A small area of approximately 3 ha may be harvested in Juno within the next three years, otherwise these small stands will remain until the surrounding younger trees are ready to harvest.

Infrastructure

Infrastructure is largely in place throughout the forests. A small area of roading may be completed in Waipori in 2022. Prior to harvesting, infrastructure maintenance and minor upgrades may be required.

9. Indigenous Biodiversity

Protected ecosystems

There are 175.5 hectares of reserves within the three Wightman forests. There are no Significant Natural Areas, QEII Covenants, DOC covenants / reserves, or High Conservation Value Forest (HCVF) in any of the forests.

Appendix 4 summarises the ecological work planned for the forests.

Forest	Reserve Area (ha)
Juno	51.8
Rose Valley	91.1
Waipori	32.6
Total	175.5

Rare and threatened species

Lizards

Six indigenous lizard species have been identified within 10 km of the forests:

1. Herbfield skink (Waipori)
2. Jewelled gecko (Rose Valley)
3. Kōrero gecko (Juno)
4. McCann’s skink (Juno and Waipori)
5. Southern grass skink (Juno and Waipori)
6. Tautuku gecko (Rose Valley)

Existing protected ecosystems and reserves will be protected during forestry operations to maintain habitat. Any lizards present will also benefit from predator control operations carried out within the estate.

Kārearea (NZ falcon)

Kārearea sightings have been recorded within four kilometres of both Juno and Waipori forests. The NZFOA New Zealand Falcon Management Guide: Plantation Forestry is to be followed if kārearea are found within the forest boundaries.

Other Species

Other species may be present within the forests. They include:

- Mohua / Yellowhead in Rose Valley
- Pihoihoi / New Zealand Pipit in Rose Valley
- Long-tailed bats in Rose Valley

iNaturalist (Biodiversity in Plantations) will be used to record sightings.

Fish

Brown trout are the only fish species likely to be within the forests according to the NES-PF Fish Spawning Indicator² tool and Freshwater Environments New Zealand.

There are records of rare/threatened/endangered species near the forests:

Forest	Fish species	Location
Juno	Taieri flathead <i>Galaxias depreciseps</i> ; Threatened: Nationally Vulnerable	Approx 800m from forest boundary
Waipori	Clutha flathead galaxias <i>Galaxias "species D"</i> ; Threatened: Nationally Critical Dusky galaxias <i>Galaxias pullus</i> ; Threatened: Nationally Endangered Longfin eel/Tuna <i>Anguilla dieffenbachia</i> ; At Risk: Declining	Approx 3km from forest boundary, same catchment
Rose Valley	Longfin eel/Tuna <i>Anguilla dieffenbachia</i> ; At Risk: Declining	Approx 1.5km from forest boundary, same catchment

High Conservation Value Forests (HCVF)

All natural areas within Juno, Rose Valley, and Waipori forests were assessed against the FSC HCVF criteria during an ecological assessment by Wildlands³. No natural areas were identified as meeting the HCVF criteria.

² <https://mpi.nes.cloud.eaglelegis.co.nz/NESPF/>

³ Wildlands (2022). *Natural area identification and assessment in three Wightman Forests in South Otago*. Contract Report No. 6457.

10. Other Special Values: Everything but the timber

Recreational usage

The forests are open for recreation subject to safety requirements. Closures will generally apply during times of high fire risk, any *force majeure* or during forestry operations. Access is granted through the PF Olsen forest access permit system.

Public access roads

The forests do contain some primary public access roads. See maps in Appendix 5. These routes remain open to the public, subject to any temporary closures as required for safety, as described above. Temporary closures can only be undertaken in conjunction, and with the authority, of the local Territorial Authority.

These unformed public roads are publicly viewable on the Walking Access Commission website⁴. Any users are expected to abide by the intent of the Outdoor Access Code⁵ published by the Walking Access Commission, or signage / barriers in place at track or public access points.

Non-Timber Forest Products

There are no FSC certified non-timber forest products⁶ arising from the PF Olsen Group Scheme member estate.

⁴ <https://maps.walkingaccess.govt.nz/Viewer/?map=b1d1e76a6c754d11b3f3fd9dfce1eb12>

⁵ <https://www.walkingaccess.govt.nz/assets/Publication/Files/Outdoor-Access-Code/0fcf4d2e5b/Outdoor-Access-Code.pdf>

⁶ 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

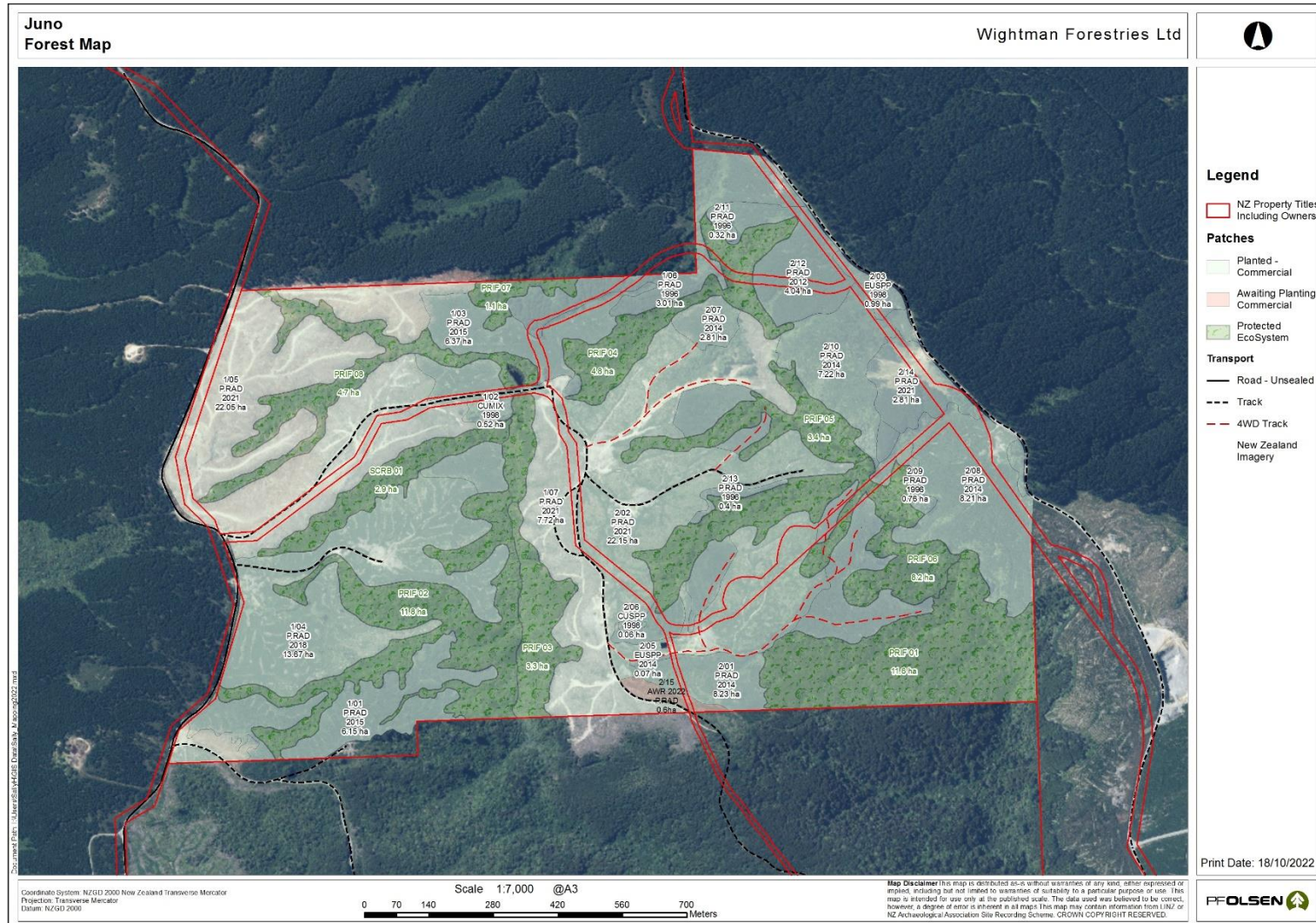
Plan changes & reviews

The next major review date for this plan is **September 2027**

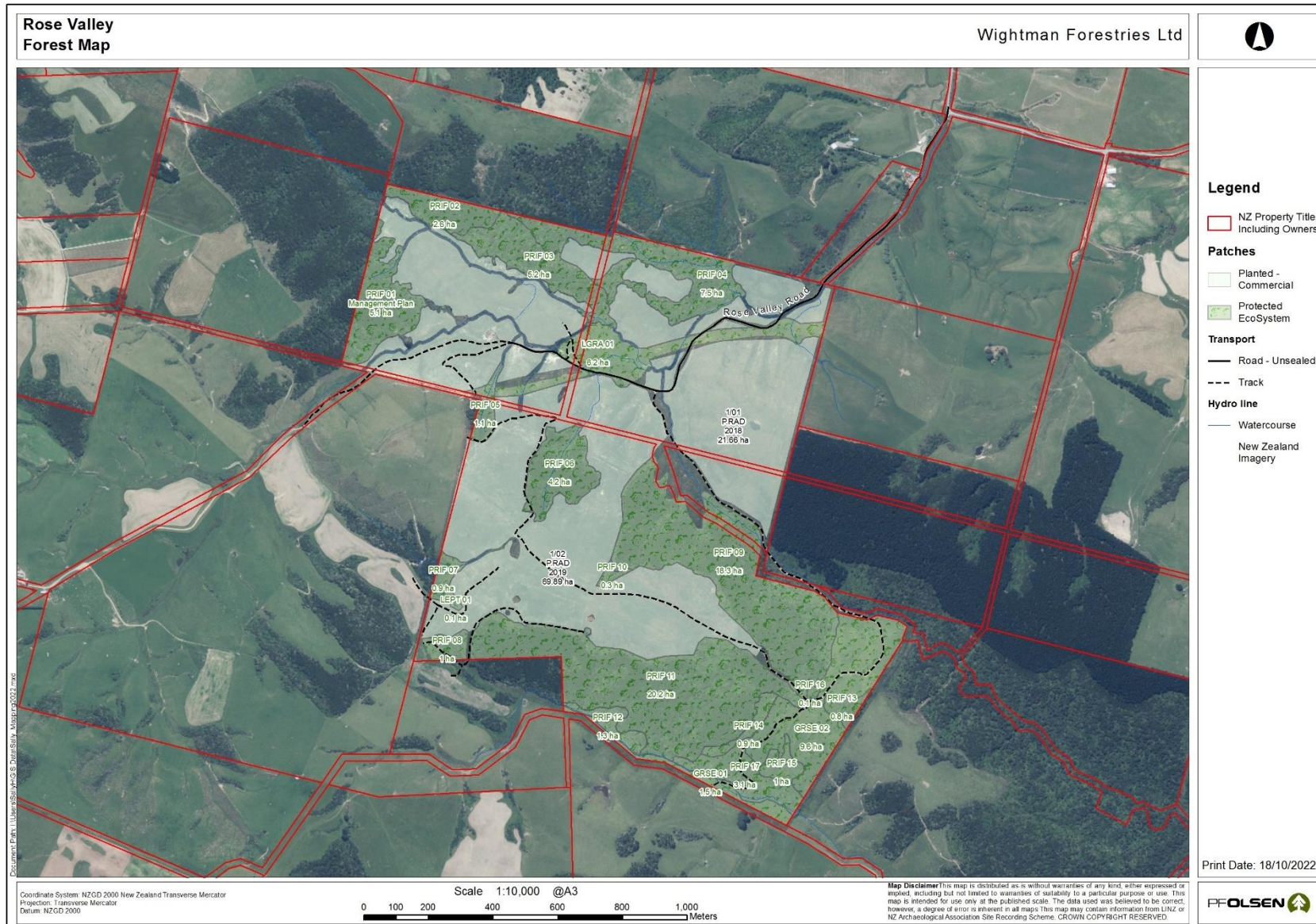
Minor revisions may be made at any time. Any material changes made will be documented below.

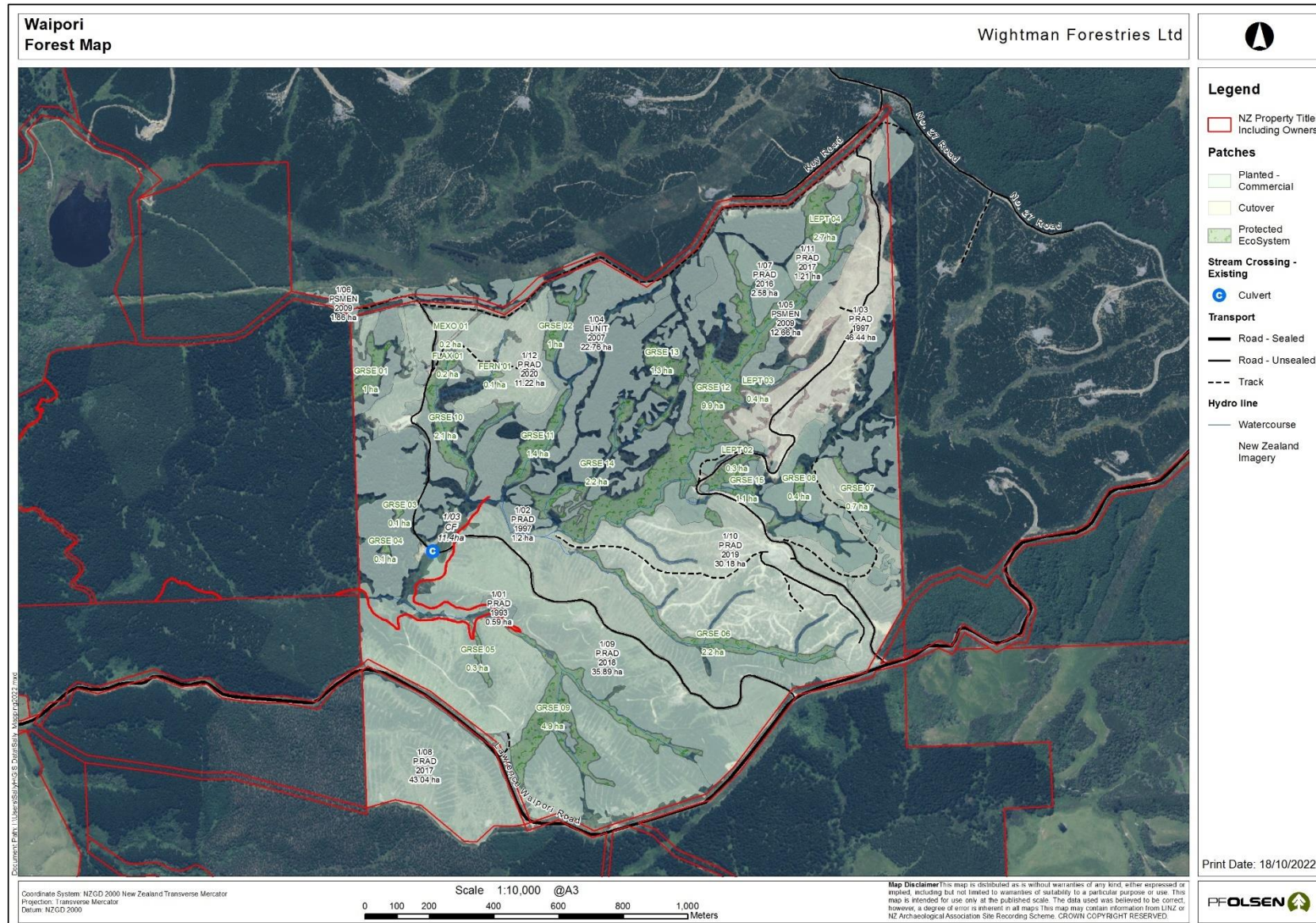
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Appendix 1: Forest Maps



- Legend**
- NZ Property Titles Including Owners
- Patches**
- Planted - Commercial
 - Awaiting Planting - Commercial
 - Protected EcoSystem
- Transport**
- Road - Unsealed
 - Track
 - 4WD Track
 -  New Zealand Imagery





Appendix 2: Legal Descriptions

Forest	Legal Description
Juno	<ul style="list-style-type: none"> • Section 24 and 25 Block VIII, Akatore Survey District 94.2 ha • Section 36 Block VIII and 13 Block VIII Akatore Survey District 20.0 ha • Section 47 Block VIII and 36 Block VIII, Akatore Survey District, 54.4 ha • Section 63 Block VIII and Section 59 Block VIII Akatore Survey District, 14.4 ha
Rose Valley	<ul style="list-style-type: none"> • Section 21 Block III and Section 26 Block IV, Glenmaru Survey District 107.7 ha • Section 11 Block VI and Section 12 Block IV South Molyneux Survey District 40.2 ha • Section 9 Block VI and Section 10 Block IV South Molyneux Survey District, 38.2 ha
Waipori	<ul style="list-style-type: none"> • Part Section 46 Block Tuapeka East Survey District, 56.6 ha • Section 50 Block X and Section 52 Block X and Section 55 Block X, Tuapeka East Survey District, 197.6 ha

Appendix 3: Forest Neighbours

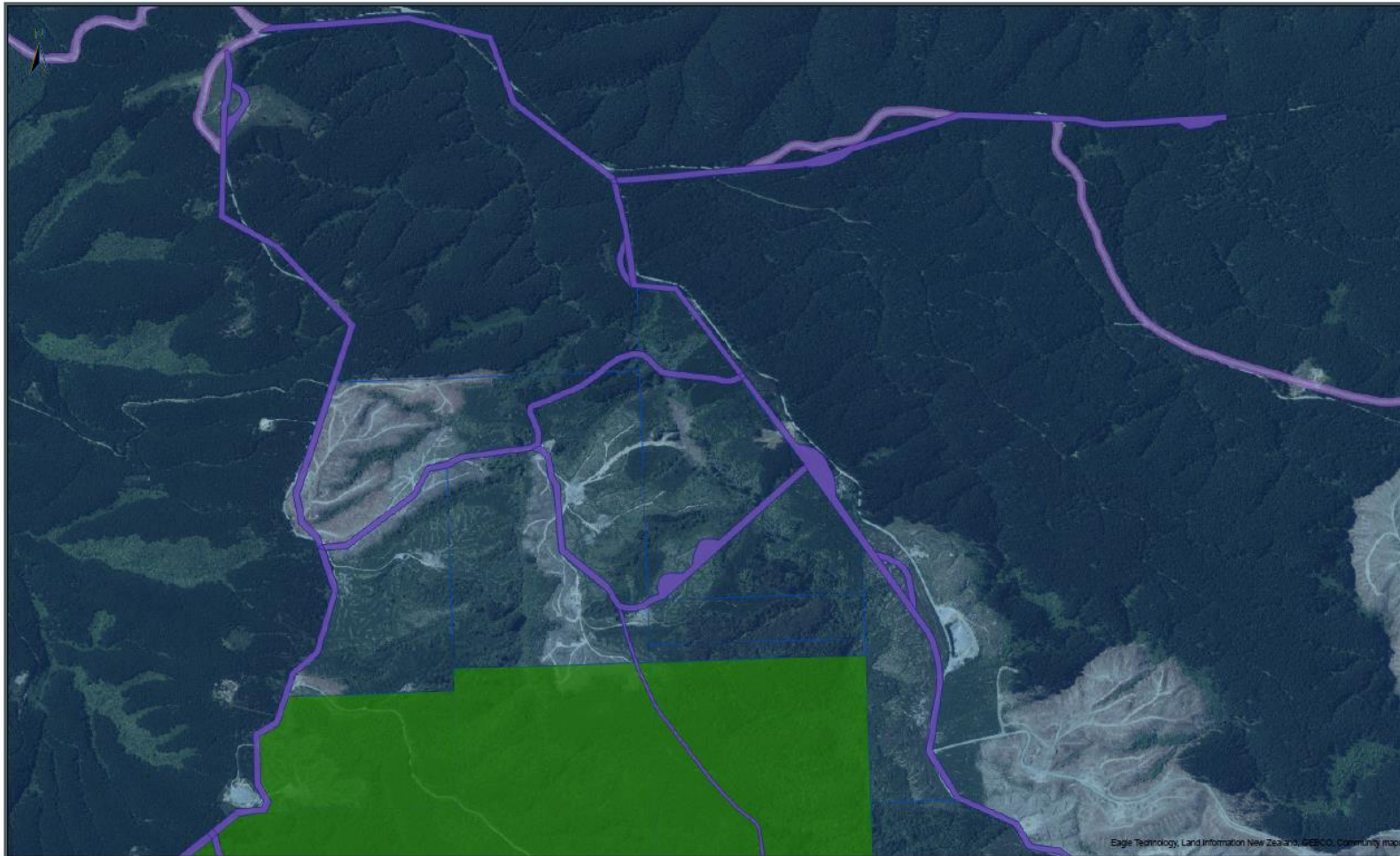
Not Publicly Available

Appendix 4: Schedule of Ecological Management

Review Date:

Date due	Purpose	Activity	Action detail	Date completed
Dec 2022	Pest plant control	Remove barberry- Juno	Ecological pest plant species Darwin’s barberry was recorded at Juno forest during the Wildlands field survey. Forest manager to locate and create eradication plan.	23/12/22 Searched where located during the ecological survey, but was not relocated – continue to survey and destroy any plants found
Dec 2022	Pest plant control	Remove Chilean flame creeper- Waipori	Ecological pest plant species Chilean flame creeper was recorded at Waipori forest during the Wildlands field survey. Forest manager to locate and create eradication plan.	19/12/22 Plan developed – to be eradicated in 2023.
When adjacent stands harvested	Pest plant control	Wilding control- Rose Valley and Waipori	Remove wilding pines from Waipori (LEPT-04), and survey of Rose Valley areas (PRIF in particular).	
June 2023	Pest animal control	Control feral deer, pigs and goats- all forests	Extensive browse and rooting evident. Forest manager to investigate control plan- potentially engage external contractor. Imperative to work with neighbouring forest owners (Juno, Waipori) for success.	
June 2023	Stock exclusion	Maintain boundary fencing- Rose Valley	Check and maintain boundary fencing to exclude neighbouring stock from the forest. Heavy browse of reserve areas was evident during Wildlands survey- possibly from feral goats.	
Dec 2023	Pest plant control	Boundary control broom and gorse- all forests	Monitor forest boundary for broom and gorse, implement control as required to avoid spread to neighbours where neighbouring property is clear of weeds or actively controlling.	

Appendix 5: Public access, marginal strips and public access easements

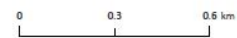


Map key

- NZ Road Parcels
- DOC Public Conservation
- Easement
- NZ Primary Parcels

Juno

Map scale: 1:11,186



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Map key

- NZ Road Parcels
- DOC Public Conservation
- NZ Primary Parcels

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Rose Valley

Map scale: 1:11,186

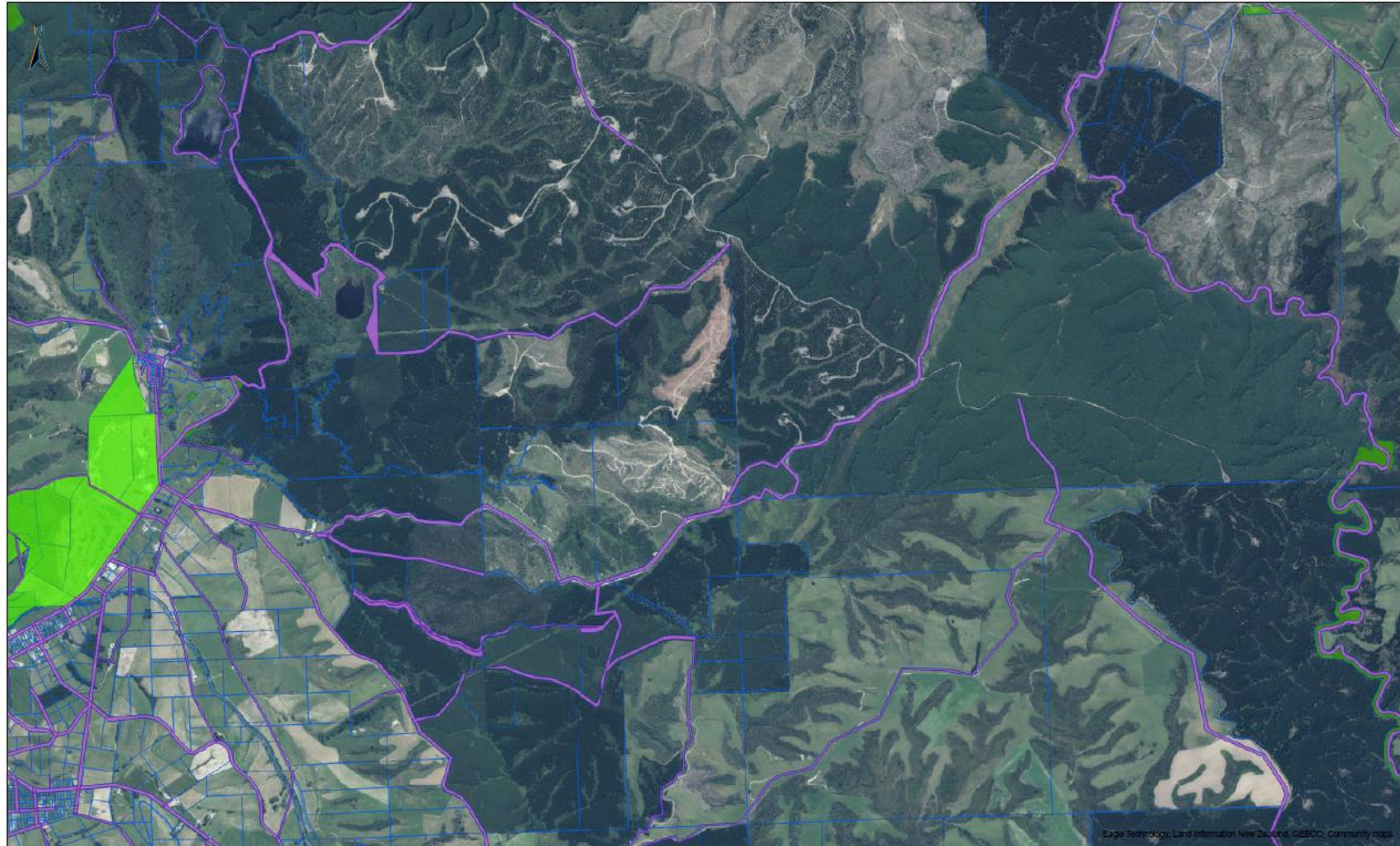
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0 0.3 0.6 km



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Map key

- NZ Road Parcels
- DOC Public Conservation Reserve Land
- NZ Primary Parcels

Date: 15/11/2022 10:30 AM

Waipori

Map scale: 1:22,372

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