

# PĀMU OTAGO FORESTS

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**Landcorp Farming Ltd**

**Forest Stewardship Council®  
Forest Management Plan**

**For the period August 2022 – August 2027**



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## 1. What is this Plan?

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### About this Plan

This **specific** forest management plan provides details about the following five forests, hereafter referred to as the Pāmu Otago forests:

1. 1403 Hindon
2. 1411 Waipori
3. 1417 Thornicroft
4. 1432 Dawson Downs
5. 1450 Waitepeka

This plan is to be used in conjunction with the PF Olsen Standard FSC® forest management plan, which outlines the typical management applied to the 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.

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### Foundation Principles

Landcorp Farming Ltd (Pāmu) is committed to adopting the Forest Stewardship Council (FSC®) Principles and meeting their Criteria relevant to forest management.

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

Pāmu 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.

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## 2. The Forest Land

### Forest area

Forest	Net-stocked Area (ha)	Reserves (ha)	Total Forest Area (ha)
1403 Hindon	81.2	10.7	<b>91.9</b>
1411 Waipori	974.7	1,447.1	<b>2,421.8</b>
1417 Thornicroft	218.6	0.0	<b>218.6</b>
1432 Dawson Downs	37.0	2.9	<b>39.9</b>
1450 Waitepeka	49.8	41.2	<b>91.1</b>
<b>Total certified area</b>	<b>1,361.3</b>	<b>1,501.9</b>	<b>2,863.2</b>

Forest maps are in Appendix 1.

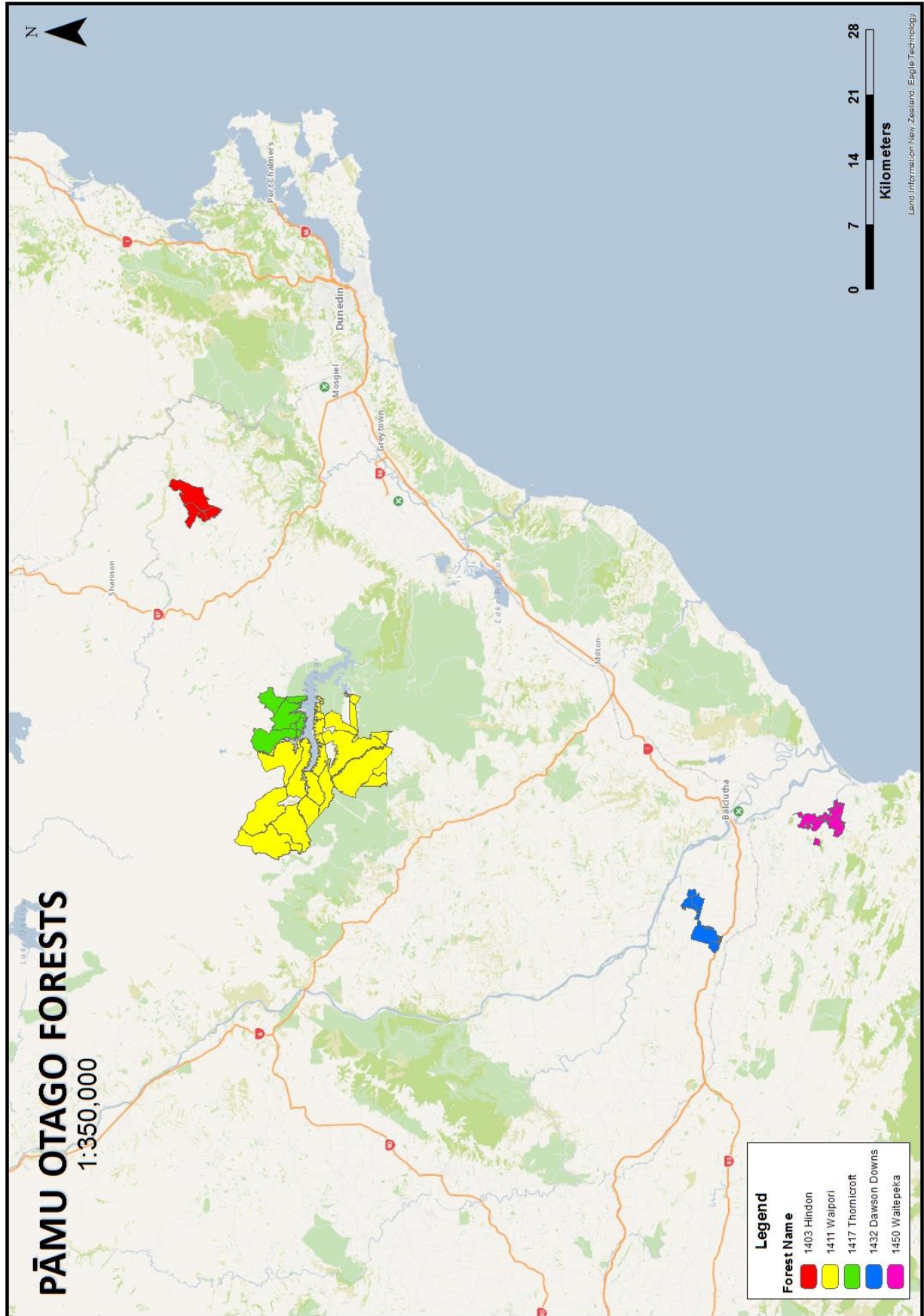
### Location

Forest	Location
1403 Hindon	East of SH87, on the junction between Wallaces Ford Road and George King Memorial Drive, approximately 50 km north-west of Dunedin
1411 Waipori	On the northern shores of Lake Mahinerangi between SH87, SH8 and SH1, approximately 65 km from Dunedin
1417 Thornicroft	On the northern and western shores of Lake Mahinerangi between SH87, SH8 and SH1, approximately 65 km from Dunedin
1432 Dawson Downs	On State Highway 1, approximately 12 km from Balclutha
1450 Waitepeka	On the Owaka Highway, approximately 12 km from Balclutha

The location map is on the next page.

### Markets

Port Chalmers will provide the market for any export grade logs, while the Pan Pac Mill will enable processing of domestic grades.



**Topography**

Topography allows for ground-based harvesting. It's described in the table below for each forest.

Forest	Topography
1403 Hindon	Flat to rolling station; forestry stands mostly located around steeper gullies. Altitude 240 - 500m above sea level
1411 Waipori	Flat to rolling station; forestry stands mostly located around steeper gullies. Altitude 300 - 780m above sea level
1417 Thornicroft	Flat to rolling, forestry stands mostly shelterbelts and gully plantings. Altitude 400 - 540m above sea level
1432 Dawson Downs	Flat to slightly rolling. Forestry stands mostly gully/riparian plantings. Altitude 40 - 100m above sea level
1450 Waitepeka	Flat to slightly rolling. Forestry stands mostly shelterbelts and gully/riparian plantings. Altitude ranges from 20 - 80m above sea level

**Soils**

Forest	Soils
1403 Hindon	Brown and Pallic (upland and high-country yellow brown earth, and yellow grey earth) soils
1411 Waipori	Brown (upland and high-country yellow brown earth) soils
1417 Thornicroft	Brown (upland and high-country yellow brown earth) soils
1432 Dawson Downs	Pallic (yellow grey earth) soils
1450 Waitepeka	Brown, Pallic and Ultic (lowland yellow brown, yellow grey / yellow brown intergrade, and yellow grey earth) soils

**Climate**

- The Otago region experiences a temporal or oceanic type climate near the coast, and a sub-continental type climate further inland.
- The forests in the Otago region are subject to warm dry summers and cool moist winters.
- The average rainfall is about 738 mm per year.
- Further inland the snow may lie for a few weeks in winter.
- The mean annual daytime temperature is around 11 degrees Celsius.

**Legal ownership**

You can find the legal descriptions of the forests in Appendix 2.

### 3. Ecological Districts

**FSC requirement:** The following table illustrates the percentage of area protected within each of the Pāmu Otago forests, compared to the total forest areas.

**Ecological District<sup>1</sup>**

Neither 1417 Thornicroft nor 1432 Dawson Downs meet the 10% minimum reserve threshold by forest; the remaining three forests in the Pāmu Otago cluster all pass the 10% threshold. However, because 1417 Thornicroft is located within the same ED (Waipori) as 1403 Hindon and 1411 Waipori, this property is able to borrow reserve area (21.9 ha) from them to meet the FSC reserve requirement at the ED level (10% of total area by ED). Likewise, 1432 Dawson Downs will be able to borrow reserve area (11.2 ha) from nearby PF Olsen Group Scheme member, Waitane Forest.

Ecological District	Forest	Net Stocked Area (ha)	Reserve Area (ha)	Total Forest Area (ha)	Reserve %	Reserve Shortfall (ha)
<b>Gore</b>	1432 Dawson Downs	37.0	2.9	39.9	7.2%	<b>11.2</b>
<b>Lawrence</b>	1411 Waipori	232.7	79.7	312.4	25.5%	N/A
<b>Tokomairiro</b>	1450 Waitepeka	49.8	41.2	91.1	45.3%	N/A
<b>Waipori</b>	1403 Hindon	81.2	10.7	91.9	11.6%	N/A
	1411 Waipori	742.0	1,367.4	2,109.4	64.8%	N/A
	1417 Thornicroft	218.6	0.00	218.6	0.0%	<b>21.9</b>

**Threatened Environments Classification**

Across the Pāmu Otago forest cluster

- 2.1% of the total reserves fall into the < 10% remaining category (most threatened)
- 0.4% fall into the 10 – 20 % remaining category
- 14.2% fall into the 20 – 30 % remaining category
- 77.5% fall into the >30% protected and 10 – 20% remaining
- 5.8% fall into the > 30% remaining and > 20% protected category (least threatened).

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

Forest	< 10% indigenous cover remains	10 - 20% remains	20 - 30% remains	>30% remains and 10 - 20% protected	>30% remains and >20% protected	Total (ha)
1403 Hindon	3.9	5.9	0.9			10.7
1411 Waipori			211.9	1,164.7	70.5	1,447.1
1417 Thornicroft						0.0
1432 Dawson Downs	2.9					2.9
1450 Waitepeka	24.8				16.4	41.2
<b>Total (ha)</b>	<b>31.6</b>	<b>5.9</b>	<b>212.8</b>	<b>1,164.7</b>	<b>86.9</b>	<b>1,501.9</b>



## 4. Cultural and Social Aspects

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### Forest history

Landcorp Farming Ltd (more recently trading as Pāmu) was formed as a state-owned enterprise in 1987 to manage commercial farming and property activities of the Department of Lands and Survey (now Land Information New Zealand). The majority of the Pāmu farms in Otago have existed (in various shapes and forms) since that time. Some areas have been further developed, small areas have been subdivided, and a handful of properties have been purchased since 1987.

The plantation forest areas of these farms were initially planted for stock shelter and for soil stabilisation of gullies and waterbodies. As these first rotation areas have been harvested, replanting has focused on increasing the forested areas to enable efficient and profitable forest units.

The New Zealand Emissions Trading Scheme has also supported increased areas of forest in areas that have been marginal for profitable farming.

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### Current social profile

The area surrounding the Pāmu Otago forests is a mixture of pastoral farms and plantation forests, with small rural towns servicing the predominantly rural communities. The forests contribute to the social profile of the area. There is a modest contribution to the local economy by way of added incremental employment.

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### Historic and archaeological sites

There are no recorded archaeological sites in 1432 Dawson Downs or 1450 Waitepeka forests, or within 1 km of the forest boundary (Archsite web resource).

There are 971 archaeological sites within, or within 1 km of, 1411 Waipori and 1417 Thornicroft forests, the majority of which appear to be related to gold mining. There are two archaeological sites associated with 1403 Hindon forest: basalt bridge abutments on the southern and northern banks of Fortification Creek.

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### Associations with Tangata Whenua

While none of Pāmu Otago's forests have a direct association with tāngata 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 Pāmu Otago Forests are:

*Continued on next page...*

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- Te Rūnanga o Ōtākou (Otago Peninsula) or Kāti Huirapa Rūnaka ki Puketeraki (Karetane) – 1403 Hindon, 1411 Waipori and 1417 Thornicroft forests; and
  - Hokonui Rūnanga (Gore) – 1432 Dawson Downs and 1450 Waitepeka forests.
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**Tenure & resource rights** There are no known cultural interests in the Pāmu Otago forests, and no iwi management plans for the rohe.

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

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## 5. Regulations

### NES-PF

The table below shows the productive plantation area of each forest by the respective National Environmental Standards for Plantation Forestry (NES-PF) Erosion Susceptibility Classification (ESC). None of the forests are in ESC orange or red zones.

The forests are located on generally low erosion risk areas. The majority of the forest activities will be permitted activities under the NES-PF, if the permitted activity standards are met.

Forest	Low	Moderate	Other <sup>2</sup>	Total ha
1403 Hindon	83.4	8.5		91.9
1411 Waipori	2,281.1	140.4	0.3	2,421.8
1417 Thornicroft	213.1		5.5	218.6
1432 Dawson Downs	25.7	14.2		39.9
1450 Waitepeka	91.0			91.0
<b>Total ha</b>	<b>2,694.3</b>	<b>163.1</b>	<b>5.8</b>	<b>2,863.2</b>

### Council Resource Management Plans

All of the forests are within the Otago Region. Four of the forests are located in the Clutha District, and 1403 Hindon forest falls within the Dunedin City Council boundary.

- Under the Clutha District Plan the forests are in the Rural Zone. Several forests have designated reserves, water bodies requiring public access, esplanade reserves, and erosion-prone land, all of which have specific rules within the district plan. 1417 Thornicroft also has a cemetery associated with the property.
- Under the Dunedin City Plan 1403 Hindon forest is in the Rural Hill Country Zone with an esplanade strip reserve along Deep Stream (northern edge of the property). At the southern end of the property, there is a national grid corridor that has a buffer distance of 37 m.
- 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).

<sup>2</sup> Other refers to areas of water, shingle etc

**Consents & authorities held**

There are two current resource consents and two Archaeological Authorities relevant to the Pāmu Otago forests.

Forest	Consent ID	Authority	Consent Type
<b>1403 Hindon</b>	2307	Clutha District Council	Planting or replanting
<b>1411 Waipori</b>	LUC-2010-306	Dunedin City Council	Planting or replanting
	2017/804	Heritage New Zealand	Authority to modify or destroy arch site/s
	2018/600	Heritage New Zealand	Planting or replanting

**Emissions Trading Scheme**

All of the Pāmu Otago forests have areas that qualify under the New Zealand Emissions Trading Scheme (ETS). Currently between 5 - 61% of the net stocked area within each of the Pāmu Otago forests is post-1989 forest land. There are plans to increase these post-1989 areas over time as areas unsuitable for farming are retired and planted with trees to help offset Pāmu’s emissions.

Forest	Area currently under ETS (ha)	Percentage of Net Stocked Area (%)
<b>1403 Hindon</b>	33.3	41%
<b>1411 Waipori</b>	151.5	16%
<b>1417 Thornicroft</b>	14.2	6%
<b>1432 Dawson Downs</b>	22.7	61%
<b>1450 Waitepeka</b>	2.6	5%

## 6. Managing environmental risk

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### Infrastructure damage or service disruption

Forestry operations may pose a risk to the following infrastructure:

- 1403 Hindon forest has a powerline running through the southern end of the property.
  - A powerline runs along the northern edge of Lake Mahinerangi, cutting through both 1411 Waipori and 1417 Thornicroft.
  - 1432 Dawson Downs is immediately adjacent to SH1.
- 

### 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.

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### Pest control programme

Pest issues specific to the estate are detailed below. Refer to the section on High Conservation Value Forests (HCVF) for specific pest management within the HCVF areas.

- **Darwin’s barberry**
  - Survey forests annually
  - Remove any found: spray, or cut/paste stump
  - Intensive survey around any individuals found

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- **Wilding conifers**
  - Survey forest boundary annually
  - Removal of any found, in consultation with landowner
  - Spray, or cut/paste stump
- **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

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**Fire**

Pāmu Otago'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.

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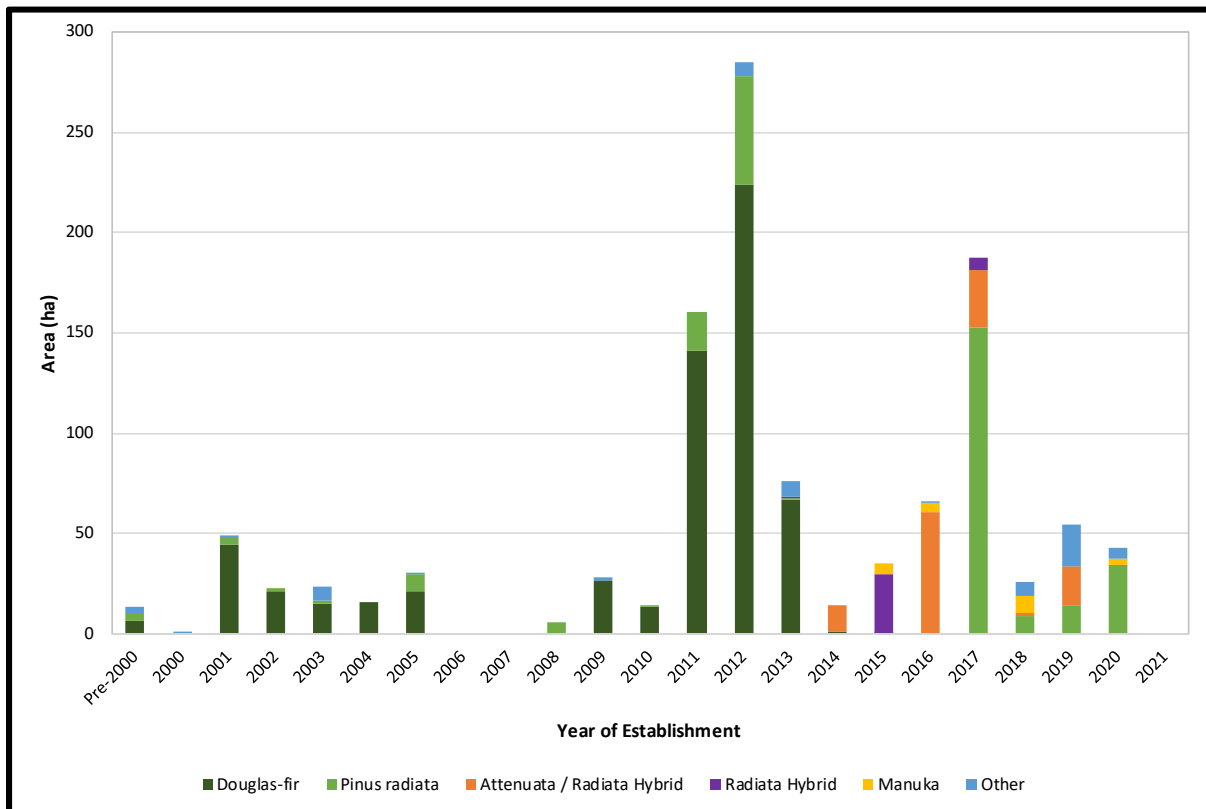
## 7. Commercial Plantation Estate

### Current crop

Pāmu Otago forests contain Douglas-fir (52%), *Pinus radiata* (27%), *Pinus attenuata* / *P. radiata* hybrids (11%), *P. radiata* hybrids (3%), manuka (2%) and other minor species (5%) (as shown below). The majority of the trees were planted from 2000 onwards, with 13 ha planted between 1970 and 2000.

Radiata pine will be grown in areas on the properties up to approximately 550 m above sea level, while radiata / attenuata hybrids and cypresses will be planted on higher altitude areas. Eucalypts may be planted on parts of 1450 Waitepeka to produce chip for animal bedding.

Indigenous riparian plantings will continue on most of the Otago farms, while more totara woodlot plantings are planned for 1450 Waitepeka.



**Tending**

The current tending policy for the Pāmu Otago forests is to prune stands that are less than three hectares in size. This clearwood regime undertakes two lifts to 2.5 and 5 metres, at approximately ages five and eight, and one thin-to-waste at eight years of age.

Stands that are larger than three hectares are fence-line pruned and managed on a framing regime (one waste thin at age nine).

Any Douglas-fir stands are managed on a framing regime with one waste thin at age 13.

**Tree nutrition**

To date, none of the Pāmu Otago forests appear to have nutrient deficiencies. However, foliage analysis will be carried out if anything becomes noticeable.

Due to adequate levels of rainfall, routine testing for boron deficiencies is not required.

## 8. Harvesting Strategy and Contractors

**Harvesting strategy**

There is no harvesting planned for the Pāmu Otago forests within the next five years, due to the age classes of the forests.

**Infrastructure**

As there is no harvesting being undertaken over the next five years, there are not expected to be any infrastructure works carried out during this timeframe.



## 9. Indigenous Biodiversity

### Protected ecosystems

Pāmu has protected the majority of the remaining indigenous vegetation present within the Otago forests with QEII Covenants. They have also retired and planted some additional areas with indigenous species to become reserve areas. Each of the covenanted areas has its own management programme which Pāmu will manage.

There are no significant natural areas (SNA's) identified within the Otago properties<sup>3</sup>.

Forest	Reserves	Protected Ecosystems	QEII Covenants	Total (ha)
1403 Hindon	2.2		8.5	10.7
1411 Waipori	37.7		1,409.4	1,447.1
1417 Thornicroft	0.0			0.0
1432 Dawson Downs	2.9			2.9
1450 Waitepeka	25.3	7.7	8.2	41.2
<b>Total (ha)</b>	<b>68.1</b>	<b>7.7</b>	<b>1,425.1</b>	<b>1,501.9</b>

### High Conservation Value (HCV) Forests

There are two areas of HCVF in the Pāmu Otago forests. The 1411 Waipori property contains a sub-alpine modified primary shrubland-tussockland / moss-field and exotic grassland, bordering the Te Papanui Conservation area.

The second area is within 1450 Waitepeka, 3.2 hectares of contiguous lowland palustrine harakeke/*Coprosma propinqua* flax land on wetland swamp. This wetland has been identified by the Otago Regional Council as being regionally significant.

Both are protected under QEII covenants. The management plans for both areas are in Appendix 4. Appendix 5 details the generic ecological management plans for each forest.

### Rare and threatened species

Some of the protected areas within 1411 Waipori have been identified as potential habitat for jewelled geckos. Other species will be identified over time and recorded in the iNaturalist app.

<sup>3</sup> Note: The [Loch Luella wetland complex](#) has been identified (by Otago Regional Council) as being of regional significance. Pāmu has determined to protect the wetlands, however, this occurred after the current Forest Management Plan for 1411 Waipori had been publicly notified for consultation. Detail of the wetlands will be included in the next version of the Forest Management Plan.

**Fish**

According to the NES-PF Fish Spawning Indicator Tool, the following fish species are likely to be present (green) or absent (white) within the Pāmu Otago forests.

Forest	Fish species	Brown Trout	Dusky Galaxis	Eldons Galaxis	Giant Kokopu	Koaro	Long-finned Eel	Rainbow Trout	Redfin Bully	Taieri Flathead Galaxis
1403 Hindon		Green	Green	Green	White	White	White	White	White	Green
1411 Waipori		Green	Green	Green	White	Green	White	Green	White	White
1417 Thornicroft		Green	White	Green	White	Green	White	White	White	Green
1432 Dawson Downs		Green	White	White	White	White	Green	White	White	White
1450 Waitepeka		Green	White	White	Green	White	Green	White	Green	White

## 10. Other Special Values: Everything but the timber

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### Recreational usage

- 1411 Waipori
    - Running events
    - Motorcycling events
    - 4WD events
    - Access for fisherman to Lake Mahinerangi via unformed paper roads
    - Access hunters and mountain bikers
    - Sheep-dog trials (farm areas only)
  - 1417 Thornicroft
    - Running events
    - Motorcycling events
    - Sheep-dog trials (farm areas only)
  - 1450 Waitepeka
    - Duck shooting opportunities for local hunters
    - Access to the Awakiki Conservation Area via Dent’s Block
  - 1403 Hindon and 1432 Dawson Downs don’t offer any public recreational usage opportunities.
- 

### Public access roads

According to the information available on the Herenga ā Nuku Outdoor Access Commission (OAC) website<sup>4</sup>, the Pāmu Otago forests contain or are adjacent to public conservation land, marginal strips or Council reserves, and have unformed public access roads running through the properties (see table below). To learn about access these areas either visit the OAC website or contact the Council or local Department of Conservation office.

Any users are expected to abide by the intent of the Outdoor Access Code<sup>5</sup> published by the OAC, or signage or barriers places at track or public access points.

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<sup>4</sup> <https://www.herengaanuku.govt.nz/>

<sup>5</sup> <https://www.herengaanuku.govt.nz/knowledge/responsible-behaviour/the-outdoor-access-code-2/>

Forest	Public Access
<p><b>1403 Hindon</b></p>	<ul style="list-style-type: none"> <li>• Doesn't contain any unformed public access roads or tracks</li> <li>• Not adjacent to any reserve areas / public conservation land</li> </ul>
<p><b>1411 Waipori</b></p>	<ul style="list-style-type: none"> <li>• Department of Conservation – public conservation areas               <ul style="list-style-type: none"> <li>- Bungtown Bog Scientific Reserve</li> <li>- Cotton Scenic Reserve</li> <li>- Otago Pioneer Quartz Conservation Area</li> <li>- Pioneer Stream Historic Reserve</li> <li>- Stony Stream Reserve</li> <li>- Te Papanui Conservation Area</li> </ul> </li> <li>• Marginal Strips               <ul style="list-style-type: none"> <li>- Lake Mahinerangi Marginal Strip</li> <li>- Nardoo Stream Marginal Strip</li> <li>- Pioneer Stream Marginal Strip</li> <li>- Stony Stream Marginal Strip</li> <li>- Waipori River Marginal Strip</li> <li>- Waitāhuna River Marginal Strip</li> </ul> </li> <li>• Unformed public access roads               <ul style="list-style-type: none"> <li>- Off Mitchells Flat Road into Cotton Reserve</li> <li>- From Cotton Reserve to Loch Luella</li> <li>- Alongside the Waitāhuna River</li> <li>- Off Waipori Road to Lake Mahinerangi</li> <li>- Off Mountain Off Waipori Road to Lake Mahinerangi</li> <li>- Off Lammerlaw Road to Lake Mahinerangi</li> </ul> </li> </ul>
<p><b>1417 Thornicroft</b></p>	<ul style="list-style-type: none"> <li>• Department of Conservation – public conservation areas               <ul style="list-style-type: none"> <li>- Waipori Cemetery Reserve</li> </ul> </li> <li>• Marginal Strips               <ul style="list-style-type: none"> <li>- Knights Dam Marginal Strip</li> <li>- Lake Mahinerangi Marginal Strip</li> </ul> </li> </ul>
<p><b>1432 Dawson Downs</b></p>	<ul style="list-style-type: none"> <li>• Marginal Strips               <ul style="list-style-type: none"> <li>- Kaihiku Stream Marginal Strip</li> <li>- Kaihiku Stream Esplanade Reserve</li> </ul> </li> </ul>
<p><b>1450 Waitepeka</b></p>	<ul style="list-style-type: none"> <li>• Department of Conservation – public conservation areas               <ul style="list-style-type: none"> <li>- Awakiki Bush Scenic Reserve</li> <li>- Awakiki Bush Track</li> <li>- Waitepeka Wildlidge Management Reserve</li> </ul> </li> <li>• Marginal Strips               <ul style="list-style-type: none"> <li>- Pūerua River Deviation</li> <li>- Pūerua River Marginal Strip</li> </ul> </li> <li>• Unformed public access roads               <ul style="list-style-type: none"> <li>- Off Owaka Highway</li> <li>- Off Port Molyneux Road</li> </ul> </li> </ul>

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**Other special values**

- All of the properties have commercial hives on them.
- Other special values across all five properties include plantings and retirement of some areas for erosion and waterway protection.
- Members of the public also access 1411 Waipori to visit and photograph the backcountry gold mining areas.

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**Non-Timber Forest Products**

There are no FSC® certified non-timber forest products<sup>6</sup> arising from the PF Olsen Group Scheme member estate.

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<sup>6</sup> 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

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**Plan changes & reviews**

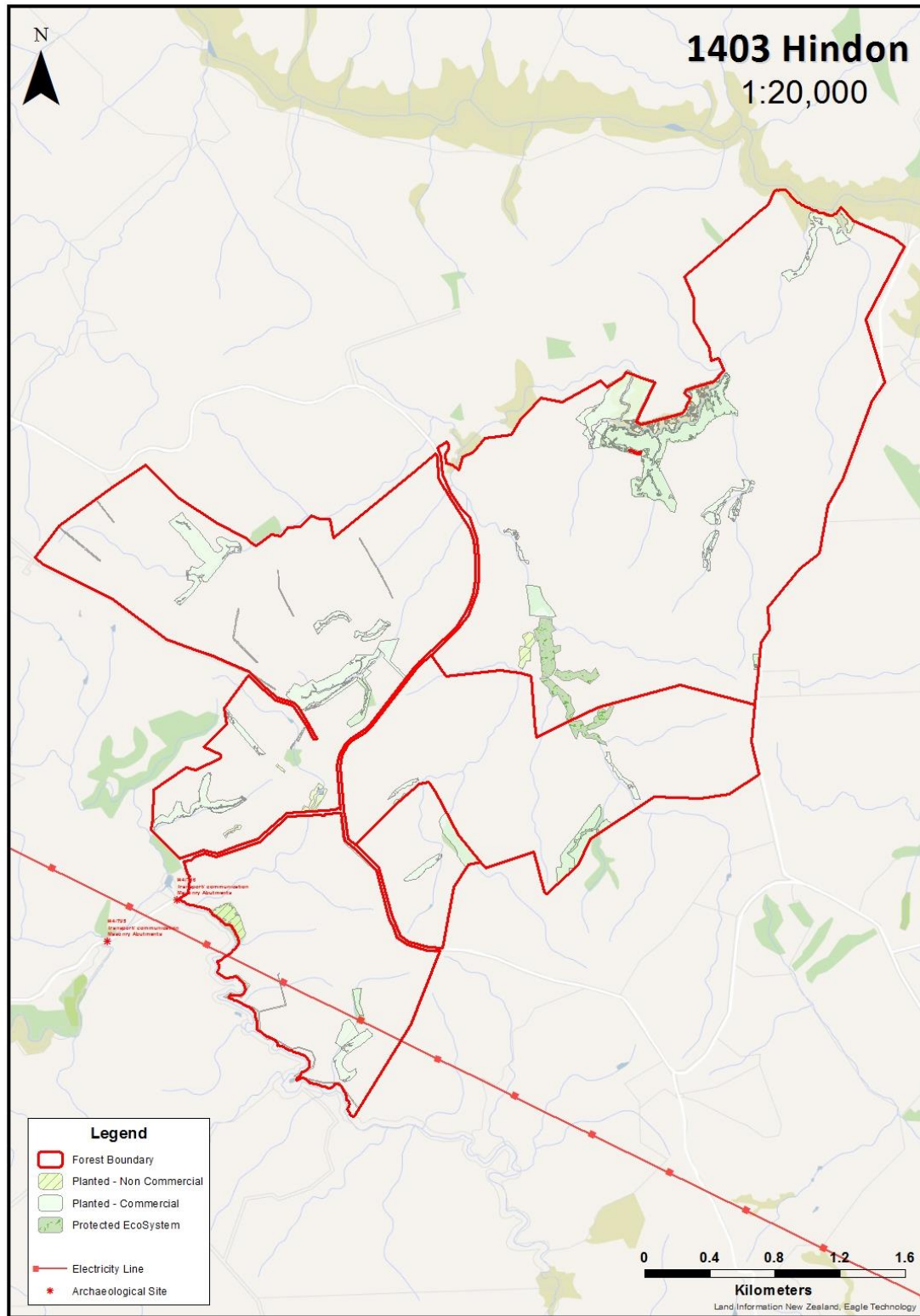
The next major review date for this plan is **August 2027**

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

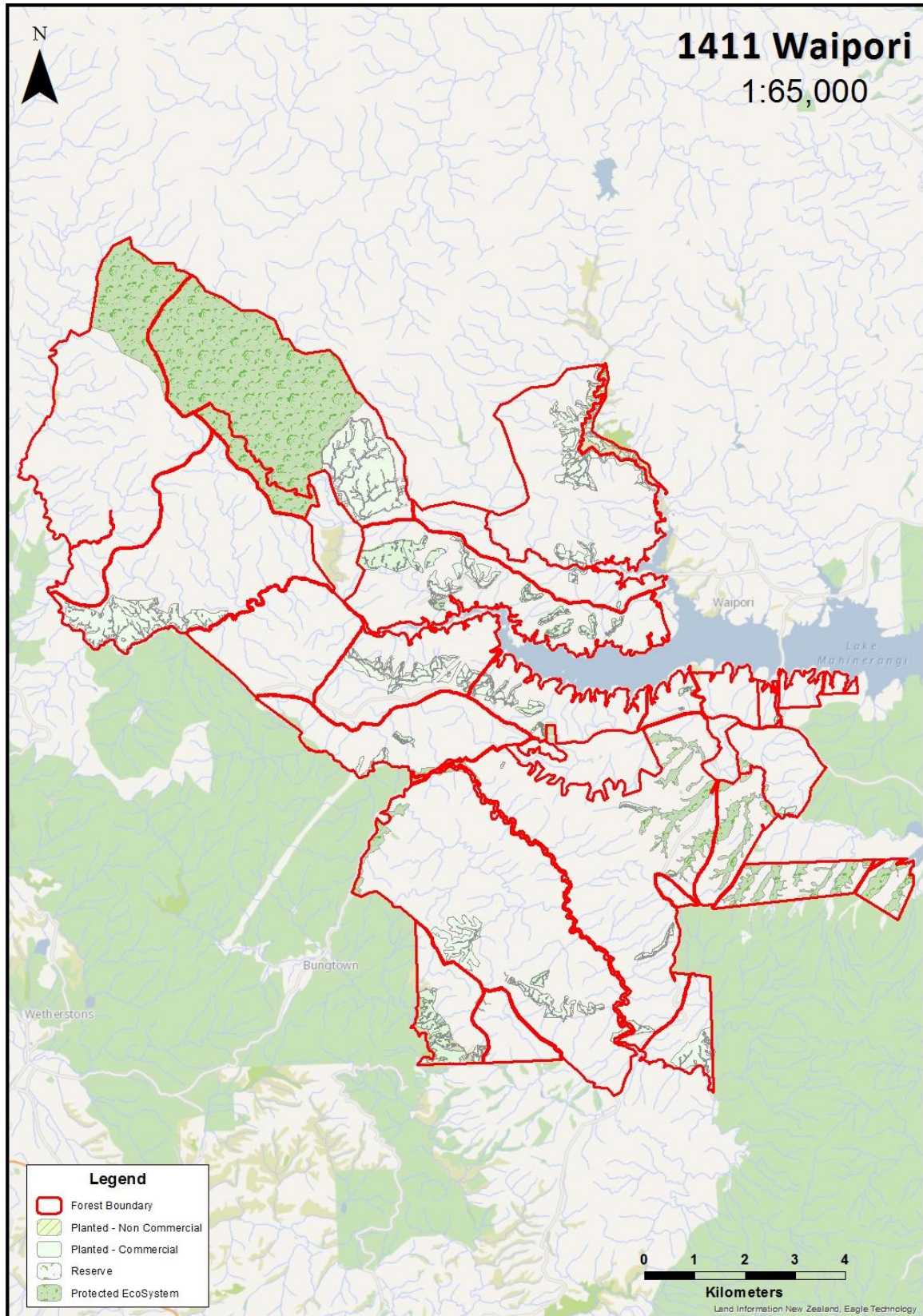
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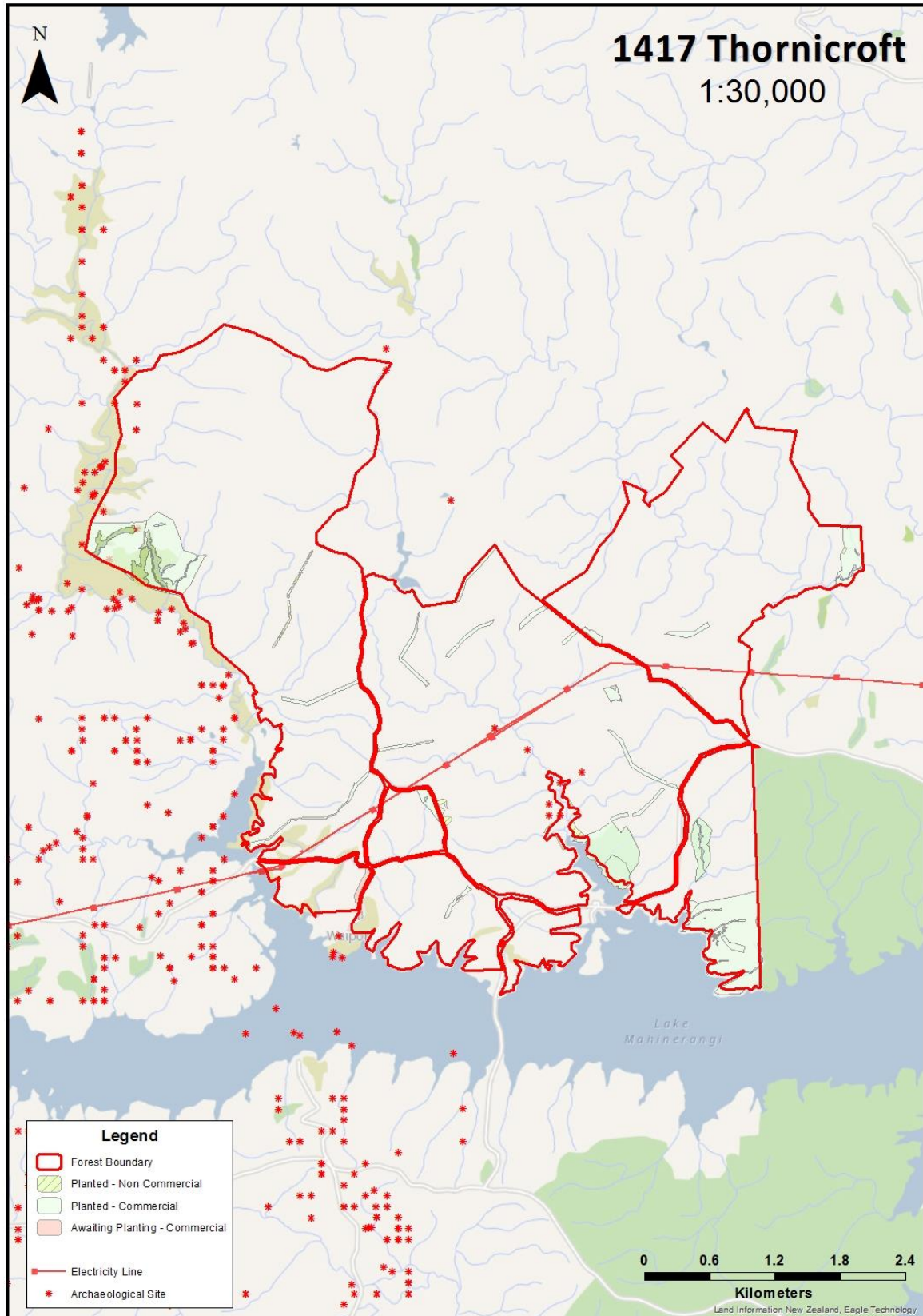
## Appendix 1: Forest Maps

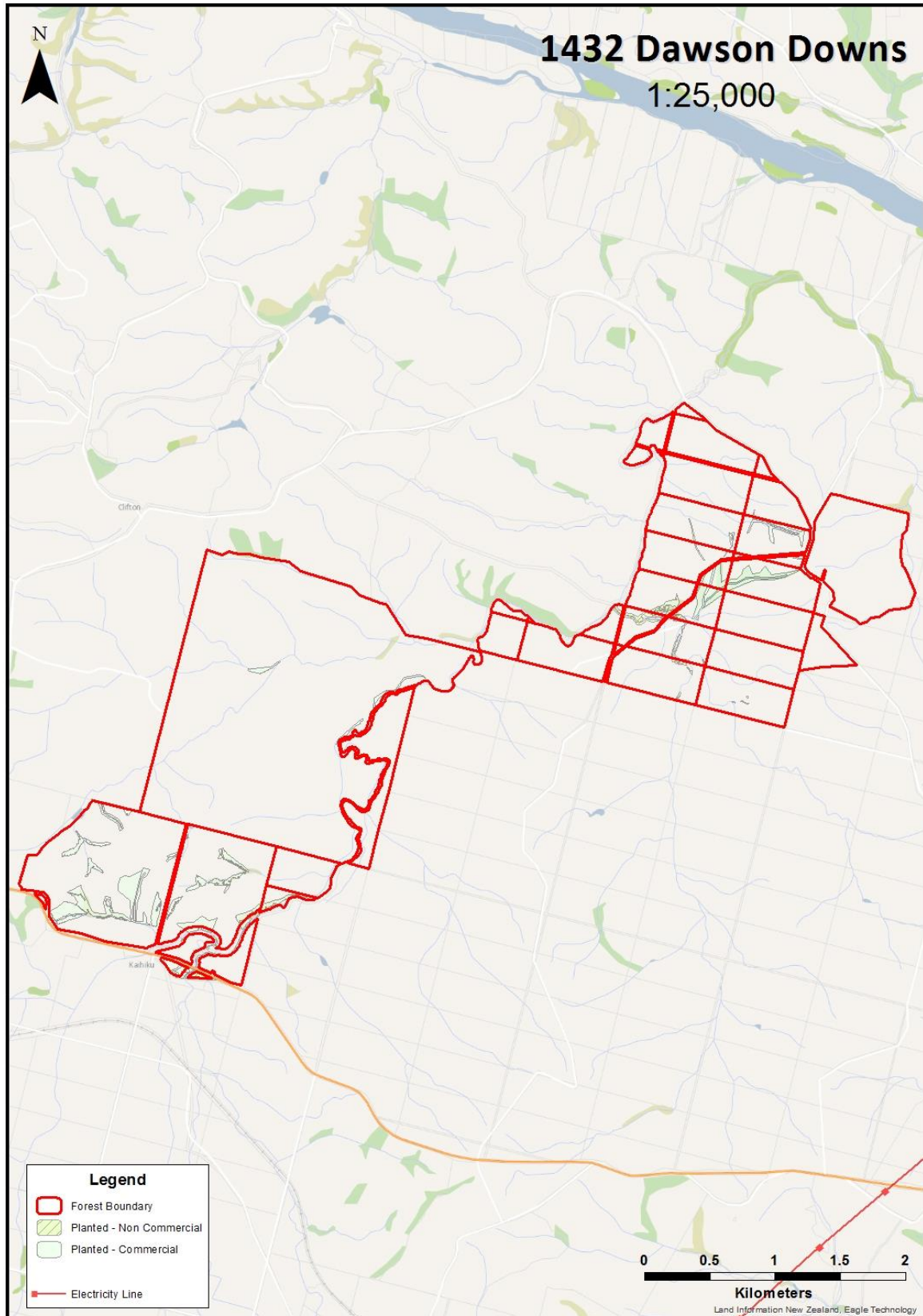




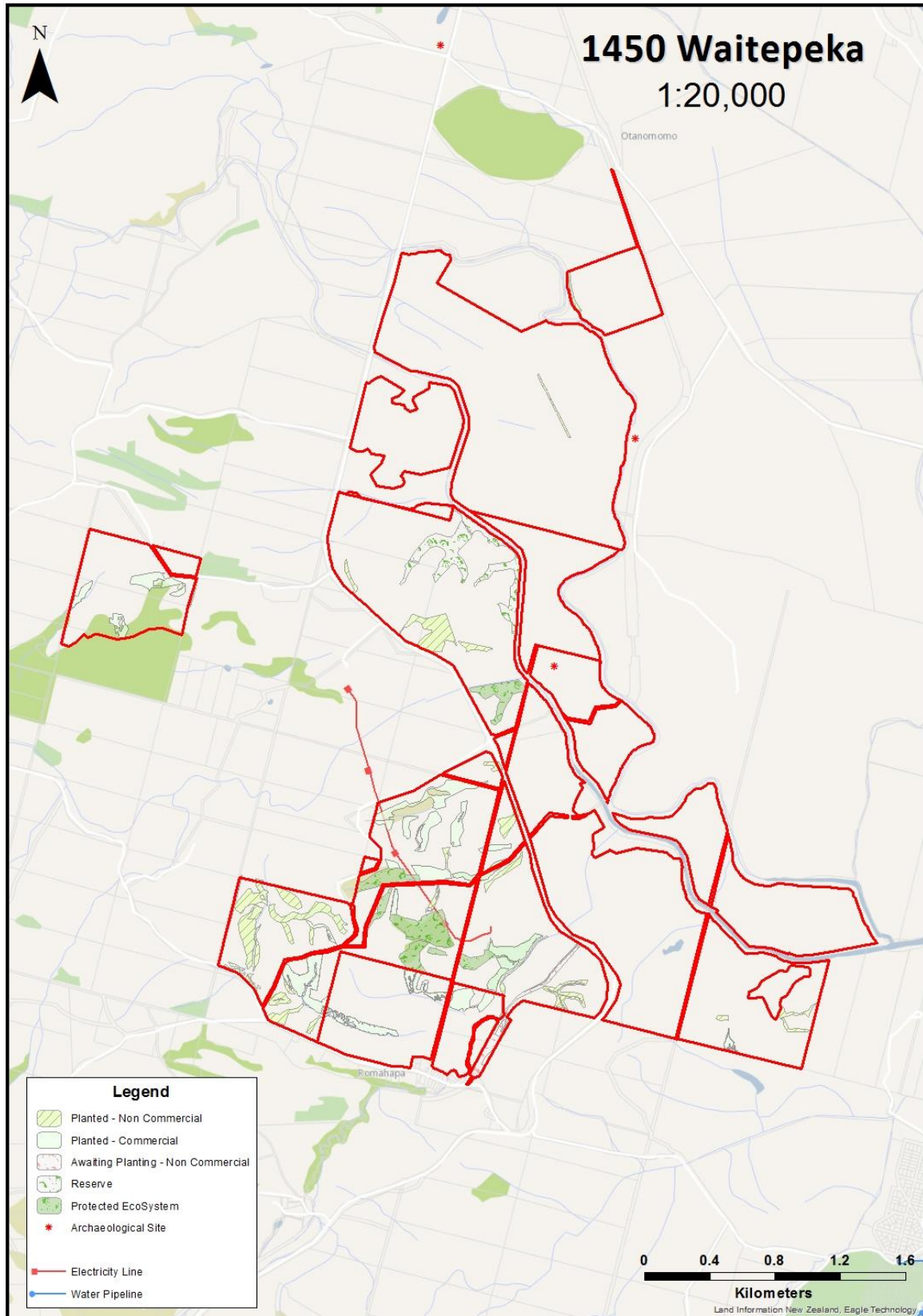












## Appendix 2: PĀMU Otago Forest’s Legal Descriptions

Forest	Legal Description
<p><b>1403 Hindon</b></p>	<ul style="list-style-type: none"> <li>• OT12C/1145               <ul style="list-style-type: none"> <li>○ Section 1 Survey Office Plan 23513</li> <li>○ Section 2 Survey Office Plan 23513</li> <li>○ Section 3 Survey Office Plan 23513</li> <li>○ Section 4 Survey Office Plan 23513</li> </ul> </li> <li>• OT14C/424               <ul style="list-style-type: none"> <li>○ Section 15 Blk VII Mount Hyde Survey District</li> </ul> </li> </ul>
<p><b>1411 Waipori</b></p>	<ul style="list-style-type: none"> <li>• 13D/952               <ul style="list-style-type: none"> <li>○ Section 4 Survey Office Plan 23490</li> </ul> </li> <li>• OT15D/1117               <ul style="list-style-type: none"> <li>○ Part Section 7 SO Plan 23534</li> <li>○ Section 1 SO Plan 23534</li> <li>○ Section 10 SO Plan 23534</li> <li>○ Section 11 SO Plan 23534</li> <li>○ Section 12 SO Plan 23534</li> <li>○ Section 2 SO Plan 23534</li> <li>○ Section 3 SO Plan 23534</li> <li>○ Section 4 SO Plan 23534</li> <li>○ Section 5 SO Plan 23534</li> <li>○ Section 6 SO Plan 23534</li> <li>○ Section 8 SO Plan 23534</li> <li>○ Section 9 SO Plan 23534</li> </ul> </li> <li>• OT13D/954               <ul style="list-style-type: none"> <li>○ Part Section 13 Blk IV Waipori Survey District</li> <li>○ Section 1 Survey Office Plan 19939</li> <li>○ Section 1 Survey Office Plan 23526</li> <li>○ Section 10 Survey Office Plan 23526</li> <li>○ Section 11 Survey Office Plan 23526</li> <li>○ Section 12 Survey Office Plan 23526</li> <li>○ Section 13 Survey Office Plan 23526</li> <li>○ Section 14 Survey Office Plan 23526</li> <li>○ Section 15 Survey Office Plan 23526</li> <li>○ Section 16 Survey Office Plan 23526</li> <li>○ Section 17 Survey Office Plan 23526</li> <li>○ Section 18 Survey Office Plan 23526</li> <li>○ Section 19 Survey Office Plan 23526</li> </ul> </li> </ul>

Forest	Legal Description
	<ul style="list-style-type: none"> <li>○ Section 2 Survey Office Plan 23526</li> <li>○ Section 20 Survey Office Plan 23526</li> <li>○ Section 3 Survey Office Plan 19939</li> <li>○ Section 3 Survey Office Plan 23526</li> <li>○ Section 4 Survey Office Plan 19939</li> <li>○ Section 4 Survey Office Plan 23526</li> <li>○ Section 5 Survey Office Plan 23526</li> <li>○ Section 7 Survey Office Plan 23526</li> <li>○ Section 8 Survey Office Plan 23526</li> <li>○ Section 9 Survey Office Plan 23526</li> </ul>
<p><b>1417 Thornicroft</b></p>	<ul style="list-style-type: none"> <li>● 13D/952               <ul style="list-style-type: none"> <li>○ Section 1 Survey Office Plan 23490</li> <li>○ Section 2 Survey Office Plan 23490</li> <li>○ Section 3 Survey Office Plan 23490</li> <li>○ Section 4 Survey Office Plan 23490</li> <li>○ Section 5 Survey Office Plan 23490</li> <li>○ Section 6 Survey Office Plan 23490</li> <li>○ Section 7 Survey Office Plan 23490</li> <li>○ Section 8 Survey Office Plan 23490</li> </ul> </li> <li>● OT13D/954               <ul style="list-style-type: none"> <li>○ Section 8 Survey Office Plan 23526</li> </ul> </li> </ul>
<p><b>1432 Dawson Downs</b></p>	<ul style="list-style-type: none"> <li>● Lot 1 DP 18007</li> <li>● Lot 1 DP 18008</li> <li>● Part Sect 1 Blk LXX Clut SURD</li> <li>● Part Sect 4 Blk LXX Clut SURD</li> <li>● DCDB Document ID: CT 267/37               <ul style="list-style-type: none"> <li>○ Part Sect 1 Blk LXIX Clut SURD</li> <li>○ Part Sect 1 Blk LXXVII Clut SURD</li> <li>○ Part Sect 1 Blk LXXVII Clut SURD</li> <li>○ Part Sect 2 Blk LXIX Clut SURD</li> <li>○ Part Sect 2 Blk LXXVII Clut SURD</li> <li>○ Part Sect 3 Blk LXIX Clut SURD</li> <li>○ Part Sect 3 Blk LXXVII Clut SURD</li> <li>○ Part Sect 3 Blk LXXVII Clut SURD</li> <li>○ Part Sect 4 Blk LXIX Clut SURD</li> <li>○ Part Sect 4 Blk LXXVII Clut SURD</li> </ul> </li> </ul>

Forest	Legal Description
	<ul style="list-style-type: none"> <li>• DCDB Document ID: CT 267/39               <ul style="list-style-type: none"> <li>○ Part Sec 6 Blk LXIX Clut SURD</li> <li>○ Part Sect 1 Blk LXX Clut SURD</li> <li>○ Part Sect 10 Blk LXIX Clut SURD</li> <li>○ Part Sect 11 Blk LXIX Clut SURD</li> <li>○ Part Sect 11 Blk LXXVII Clut SURD</li> <li>○ Part Sect 2 Blk LXX Clut SURD</li> <li>○ Part Sect 5 Blk LXIX Clut SURD</li> <li>○ Part Sect 6 Blk LXIX Clut SURD</li> <li>○ Part Sect 7 Blk LXIX Clut SURD</li> <li>○ Part Sect 8 Blk LXIX Clut SURD</li> <li>○ Part Sect 9 Blk LXIX Clut SURD</li> </ul> </li> <li>• OT10B/693               <ul style="list-style-type: none"> <li>○ Lot 1 Deposited Plan 19098</li> </ul> </li> <li>• OT12C/571               <ul style="list-style-type: none"> <li>○ Part Section 11 Blk 83 Clut Survey District</li> </ul> </li> <li>• OT14C/1101               <ul style="list-style-type: none"> <li>○ Lot 1 Deposited Plan 22586</li> <li>○ Lot 2 Deposited Plan 22586</li> <li>○ Lot 3 Deposited Plan 22586</li> <li>○ Lot 4 Deposited Plan 22586</li> <li>○ Lot 5 Deposited Plan 22586</li> <li>○ Lot 6 Deposited Plan 22586</li> </ul> </li> <li>• OT262/247               <ul style="list-style-type: none"> <li>○ Part Section 9 Blk 83 Clut Survey District</li> </ul> </li> <li>• OT359/93               <ul style="list-style-type: none"> <li>○ Lot 2 Deposited Plan 7411</li> </ul> </li> </ul>
<b>1450 Waitepeka</b>	<ul style="list-style-type: none"> <li>• 1371               <ul style="list-style-type: none"> <li>○ Section 1 Survey Office Plan 21685</li> <li>○ Section 1 Survey Office Plan 21688</li> <li>○ Section 1 Survey Office Plan 23483</li> <li>○ Section 2 Survey Office Plan 21685</li> <li>○ Section 2 Survey Office Plan 21688</li> <li>○ Section 3 Survey Office Plan 23484</li> <li>○ Section 5 Survey Office Plan 23483</li> <li>○ Section 6 Survey Office Plan 23483</li> <li>○ Section 9 Survey Office Plan 23483</li> </ul> </li> </ul>

Forest	Legal Description
	<ul style="list-style-type: none"> <li>• OT13D/949               <ul style="list-style-type: none"> <li>○ Section 5 Survey Office Plan 23485</li> <li>○ Section 1 Survey Office Plan 21691</li> <li>○ Section 1 Survey Office Plan 21695</li> <li>○ Section 1 Survey Office Plan 23473</li> <li>○ Section 1 Survey Office Plan 23474</li> <li>○ Section 1 Survey Office Plan 23484</li> <li>○ Section 1 Survey Office Plan 23485</li> <li>○ Section 1 Survey Office Plan 23486</li> <li>○ Section 1 Survey Office Plan 23487</li> <li>○ Section 2 Survey Office Plan 21691</li> <li>○ Section 2 Survey Office Plan 23484</li> <li>○ Section 2 Survey Office Plan 23485</li> <li>○ Section 2 Survey Office Plan 23486</li> <li>○ Section 3 Survey Office Plan 23487</li> <li>○ Section 4 Survey Office Plan 23487</li> <li>○ Section 5 Survey Office Plan 23487</li> </ul> </li> <li>• OT13D/950               <ul style="list-style-type: none"> <li>○ Section 2 Survey Office Plan 23487</li> </ul> </li> <li>• OT18A/821               <ul style="list-style-type: none"> <li>○ Lot 1 Deposited Plan 19119</li> </ul> </li> <li>• OT18A/462               <ul style="list-style-type: none"> <li>○ Lot 1 Deposited Plan 22263</li> </ul> </li> </ul>

## Appendix 3: PĀMU Otago Forests Neighbour Information

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Not Publicly Available



## Appendix 4: High Conservation Values Forests

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### 1411 Waipori Forest, ALPN-01

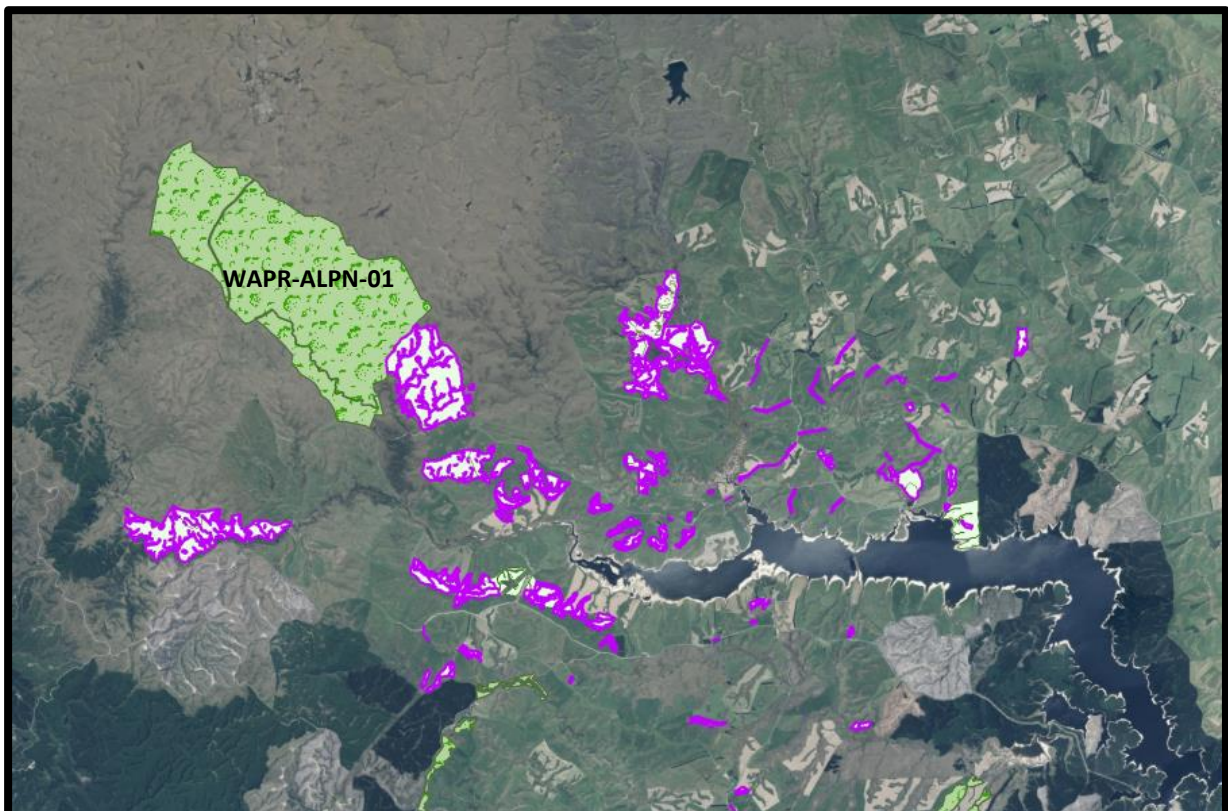
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**Location**

WAPR-ALPN-01, 1,329.7 ha, QEII Covenant 5-12-270

- Enclave area on southern flanks of Te Papanui Conservation area. Stony Stream abuts SE corner.
- Access through Waipori Station to NW of Lake Mahinerangi.
- Key required for access beyond formed road end and again from western side of Stoney Stream.

**NOTE:** Pāmu will manage WAPR-ALPN-01 in accordance with their own specific QEII covenant plans. They will inform PF Olsen of the work carried out, where chemicals are used, the amount used, the area treated and the active ingredients of the products. Pāmu will also inform PF Olsen of any animal pest control carried out (method, pests targeted, number killed).



**HCVF class**

HCV3 - Forest areas that are in or contain rare, threatened, or endangered ecosystems.

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**Species composition** Sub-alpine modified primary shrubland-tussockland/mossfield and exotic grassland

**Work programme**

Timing	Activity type	Actions
<b>2023</b>	Stock exclusion	<ul style="list-style-type: none"> <li>Fence off area to ensure stock cannot access</li> </ul>
<b>Annual</b>	Walk-through check / drone survey	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check. This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> <li>Note any issues including weeds, wilding pines, animal browse.</li> </ul>
<b>Annual</b>	Photopoint monitoring	<ul style="list-style-type: none"> <li>Establish photopoint vegetation monitoring of both sites.</li> <li>Repeat photos annually.</li> </ul>
<b>Ongoing</b>	Pest control - Animals	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning (with initial and ongoing Residual Trap Catch for possum density).</li> </ul>
<b>Ongoing</b>	Pest Control - Plants	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>

# 1450 Waitepeka Forest, WETL-01

**Location**

WPKA-WETL-01, 3.2 ha, QEII Covenant 5-12-073

- 8km S of Balclutha on SH 92, near Gott Rd corner

**NOTE:** Pāmu will manage WPKA-WETL-01 in accordance with their own specific QEII covenant plan. They will inform PF Olsen of the work carried out, where chemicals are used, the amount used, the area treated and the active ingredients of the products. Pāmu will also inform PF Olsen of any animal pest control carried out (method, pests targeted, number killed).



**HCVF class** HCV3 - Forest areas that are in or contain rare, threatened, or endangered ecosystems.

**Species composition** Contiguous lowland palustrine harakeke/Coprosma propinqua flaxland on wetland swamp

Recognised as a significant wetland area in the Otago Regional Council water plan.

**Work programme**

Timing	Activity type	Actions
2023	Stock exclusion	<ul style="list-style-type: none"> <li>Fence off area to ensure stock cannot access</li> <li>Extend fence to include all forest within the stand</li> </ul>
2023	Sycamore & elder control	<ul style="list-style-type: none"> <li>Possibly using an external contractor, carry out sycamore and elder control within the wetland and areas immediately adjacent.</li> <li>Drill and poison or chainsaw felling preferred methods.</li> <li>Monitor and control on an annual basis for as long as required to keep wetland clear of these species.</li> </ul>
Annual	Walk-through check / drone survey	<ul style="list-style-type: none"> <li>Forest manager to do annual check of site. This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> <li>Note any issues including weeds, wilding pines, animal browse.</li> </ul>
Annual	Photopoint monitoring	<ul style="list-style-type: none"> <li>Establish photopoint vegetation monitoring of both sites.</li> <li>Repeat photos annually.</li> </ul>
Ongoing	Pest control - Animals	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning (with initial and ongoing Residual Trap Catch for possum density).</li> </ul>
Ongoing	Pest Control - Plants	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>



## Appendix 5: Schedule of Ecological Management

NOTE: Pāmu will manage all of the QEII covenanted areas and carry out any restoration / protection activities that are required in accordance with their own specific QEII covenant plans. They will inform PF Olsen of the work carried out, where chemicals are used, the amount used, the area treated and the active ingredients of the products. Pāmu will also inform PF Olsen of any animal pest control carried out (method, pests targeted, number killed) across the five Otago forests.

### 1403 Hindon

Activity Type	Actions	Area/s	Due Date
<b>Walk-through check / drone survey</b>	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check to note any issues including weeds, wilding pines, animal browse.</li> <li>This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest control - Animals</b>	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning (with initial and ongoing Residual Trap Catch for possum density).</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Plants</b>	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>	All indigenous areas within forest	31-Dec (annually)

1411 Waipori

Activity Type	Actions	Area/s	Due Date
<b>Walk-through check / drone survey</b>	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check to note any issues including weeds, wilding pines, animal browse.</li> <li>This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning</li> <li>Initial measurement of Residual Trap Catch (RTC) for possum density</li> </ul>	All indigenous areas within forest	31-Dec-23
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Carry out pest control according to pest control plan for forest</li> <li>Annual RTC monitoring of possum density</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Plants</b>	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Photopoint monitoring</b>	<ul style="list-style-type: none"> <li>Establish photopoint vegetation monitoring of ALPN-01.</li> <li>Repeat photos annually.</li> </ul>	ALPN-01	30-Apr (annually)
<b>Stock exclusion</b>	<ul style="list-style-type: none"> <li>Fence off area to ensure stock cannot access</li> </ul>	ALPN-01	Completed

1417 Thornicroft

Activity Type	Actions	Area/s	Due Date
<b>Walk-through check / drone survey</b>	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check to note any issues including weeds, wilding pines, animal browse.</li> <li>This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning</li> <li>Initial measurement of Residual Trap Catch (RTC) for possum density</li> </ul>	All indigenous areas within forest	31-Dec-23
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Carry out pest control according to pest control plan for forest</li> <li>Annual RTC monitoring of possum density</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Plants</b>	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>	All indigenous areas within forest	31-Dec (annually)



1432 Dawson Downs

Activity Type	Actions	Area/s	Due Date
<b>Walk-through check / drone survey</b>	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check to note any issues including weeds, wilding pines, animal browse.</li> <li>This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning</li> <li>Initial measurement of Residual Trap Catch (RTC) for possum density</li> </ul>	All indigenous areas within forest	31-Dec-23
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Carry out pest control according to pest control plan for forest</li> <li>Annual RTC monitoring of possum density</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Plants</b>	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>	All indigenous areas within forest	31-Dec (annually)

1450 Waitepeka

Activity Type	Actions	Area/s	Due Date
<b>Walk-through check / drone survey</b>	<ul style="list-style-type: none"> <li>Forest manager to do annual onsite check to note any issues including weeds, wilding pines, animal browse.</li> <li>This can be done via a combination of a walk-through check on the ground and use of a drone to carry out an aerial assessment of the block.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Formalise a pest control plan - possibly using an external contractor.</li> <li>May include shooting, trapping and/or poisoning</li> <li>Initial measurement of Residual Trap Catch (RTC) for possum density</li> </ul>	All indigenous areas within forest	31-Dec-23
<b>Pest Control - Animals</b>	<ul style="list-style-type: none"> <li>Carry out pest control according to pest control plan for forest</li> <li>Annual RTC monitoring of possum density</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Pest Control - Plants</b>	<ul style="list-style-type: none"> <li>Carry out any pest plant control based on annual walk-through check / drone survey information and the Regional Pest Management Plan.</li> </ul>	All indigenous areas within forest	31-Dec (annually)
<b>Photopoint monitoring</b>	<ul style="list-style-type: none"> <li>Establish photopoint vegetation monitoring of WETL-01.</li> <li>Repeat photos annually.</li> </ul>	WETL-01	30-Apr (annually)
<b>Sycamore &amp; elder control</b>	<ul style="list-style-type: none"> <li>Possibly using an external contractor, carry out sycamore and elder control within the wetland and areas immediately adjacent.</li> <li>Drill and poison or chainsaw felling preferred methods.</li> <li>Monitor and control on an annual basis for as long as required to keep wetland clear of these species.</li> </ul>	WETL-01	31-Dec-23 (annual monitoring)
<b>Stock exclusion</b>	<ul style="list-style-type: none"> <li>Fence off area to ensure stock cannot access</li> <li>Extend fence to include all forest within the stand</li> </ul>	WETL-01	Completed