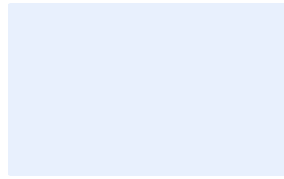




FSC® FOREST MANAGEMENT PLAN

Waiohotu Forest
Torlesse Pine Company
April 2023 – April 2028

Author
Signature



Author Name

Fleur Kent

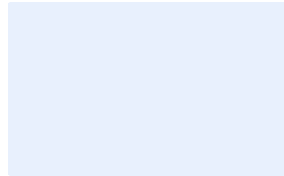
Author Role

Author Name.

Date

04 April 2023

Reviewed By



Name

Heather Arnold

Role

Environmental Manager

Date

10 April 2023

DISCLAIMER

This document has been prepared by PF Olsen Limited specifically for the purposes stated in the document and is for your information only. PF Olsen Limited has used reasonable endeavours to ensure that the data and any other information in the document including any estimates, quotes, valuations and analyses is based on reliable sources and, where applicable, industry appropriate methodology and software.

Although the information in this document is provided in good faith, PF Olsen Limited does not make any express or implied representations or give any warranties or guarantees as to the accuracy or completeness of the information. PF Olsen Limited does not accept liability for any claim, action, cost, loss or damage arising directly or indirectly from use or reliance on the information in this document and you agree to indemnify PF Olsen Limited against any losses, damages, costs, liabilities or expenses in relation to claims or disputes incurred as a result of you using or acting in reliance on the information in this document.

PF Olsen Limited
PO Box 1127 | Rotorua 3040 | New Zealand
T: 07 921 010 | info@pfolsen.com | nz.pfolsen.com

PF Olsen (Aus.) Pty Limited
Suite 6, 50 Upper Heidelberg Road | Ivanhoe | Vic | 3079 | Australia
T: 1800 054 659 | ausinfo@pfolsen.com | au.pfolsen.com

TABLE OF CONTENTS

DISCLAIMER.....	2
1. What is this Plan?	4
2. The Forest Land.....	5
3. Ecological Information	7
4. Cultural and Social Aspects	9
5. Regulations.....	10
6. Managing environmental risk	12
7. Commercial Plantation Estate.....	13
8. Harvesting Strategy	14
9. Indigenous Biodiversity	15
10. Other Special Values: Everything but the timber	17
11. Future Planning	19
Appendix 1: Forest Map	20
Appendix 2: Forest Neighbours	21
Appendix 4: Schedule of Ecological Management.....	22

1. What is this Plan?

About this Plan

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

It is to be used in conjunction with the **standard** forest management plan¹, which outlines the typical management applied to the Forest Stewardship Council (FSC®) Group Scheme estate forests.

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

Foundation Principle

As a policy the:

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

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

¹ <https://nz.pfolsen.com/site/pfolsen/ForestManagementPlan%20-%20Standard.pdf>

2. The Forest Land

Location and access

Waiohotu Forest is a 15.9-hectare forest in the Waikato region. The location of the forest is shown in Appendix 1.

Forest Area

Forest	Net Stocked area (ha)	Indigenous area (ha)	Awaiting planting (ha)	Total forest area (ha)
Waiohotu	15.9	4.31	0	20.2

Legal ownership

The legal description of the forest land is:

Pt Lot 1 & Pt Lot 3, DPS 7267, Whaitikuranui 2E2 West 3C, Blocks III & IV, Patetere SD XV, COT 22C/145 and 53B/621, Valuation #: 05411-05500 and 05411-05200

The farm is freehold over which TPC holds a registered forestry right.

Markets

The location of the forest in relation to potential markets is listed in the table below.

Distances from forest to log markets

Potential Market or Export Port	Distance from Forest (km)	Log market
Port of Tauranga	50	Export
Waipa Sawmill	45	Domestic
Kinleith	35	Pulp

Topography

Waiohotu forest is flat/rolling to moderately steep. Ground based, and possibly small hauler log extraction methods will be utilised at harvesting.

Altitude is 50 to 150 m.

Soil

Soils are predominantly yellow-brown loams and suitable for production forestry. The forest has approximate Land Use Classification percentages as follows:

- Ile3 10%
- IIs1 10%
- IIIw1 10%
- VIe1 50%
- VIIe6 20%

Climate

The average rainfall at nearby Tirau is about 1,300 mm/yr and is relatively well distributed during the year.

The mean annual temperature is around 13.8°C. Frosts are common with around 50 ground frosts per year.

3. Ecological Information

Ecological District

Waiohotu Forest is located within the Hinuera and Tokoroa Ecological District (ED), in the Waikato Ecological Region. The District has:

The forest is located on a dairy farm with limited ecological values. A small area of indigenous trees is located in the Pond Sidling area of about half a hectare. It has some tawa and rewarewa, but due to its small size and fragmentation from other indigenous areas it is of low ecological value. It is however protected.

A small raupo dominated wetland and dammed pond are also adjacent to Pond Sidling. These areas, while small, represent a rare remnant and are protected by the farm owner. Dabchick have been observed in the pond.

A clean spring fed stream runs through the property. It has been fenced from cattle and some indigenous riparian plants established. This is managed by the farm owner and is not part of Waiohotu Forest

FSC requirement: Ecological District

Waiohotu Forest falls within the Hinuera and Tokoroa Ecological Districts (EDs). Waiohotu Forest is required to have a 10% minimum of the working forest area (productive area + plantation forest infrastructure) set aside as reserves, by Ecological District. Where Ecological District boundaries arbitrarily bisect a forest management unit with similar ecological character and landforms, the areas bisected can be considered as one ecological unit. This is applicable to Waiohotu Forest, therefore the forest meets the 10% reserve requirement (as provided for in the guidance note of the NZ FSC Standard).

Reserve areas in Waiohotu Forest by Ecological District

Ecological District	Total Forest Area (ha)	Reserve Area (ha)	Reserve %	Meets FSC?	Reserve Shortfall (ha)
Hinuera	1.4	0.0	27%	YES	N/A
Tokoroa	14.5	4.3		YES	N/A

Threatened Environments Classification

Waiohotu Forest falls under the Threatened Environments categories of <10% remaining. The remaining indigenous vegetation associated with the forest has been identified and afforded the appropriate protective status.

Threatened Environment Classification	Area (ha)
<10% remaining	4.3
10 – 20% remaining	0.0
20 – 30% remaining	0.0
>30% remaining & <10% protected	0.0
>30% remaining & 10 – 20% protected	0.0
>30% remaining & >20% protected	0.0
Total Area (ha)	4.3

4. Cultural and Social Aspects

Forest history

As a small woodlot, Waiohotu Forest has no history of significance.

Current social profile

The predominant land uses surrounding Waiohotu Forest are pastoral and dairy farming. Forestry plantings are scattered throughout the district.

The forest is small and has little effect or relevance to the local community. It does provide an alternative land use and some wind protection for the farm that it is located on.

Historic and archaeological sites

The 'Archsite' web resource does not record any known historic sites in Waiohotu Forest, or within 1 km of the forest boundary. Accidental discovery protocols will apply should any physical evidence be discovered during operations.

Tangata Whenua

Local Tangata Whenua have been previously consulted and are not concerned with the woodlots due to their small size and low intensity.

Tenure & resource rights

There are no current resource consents or Heritage NZ Authorities that apply to Waiohotu Forest.

Neighbours

Appendix 2 lists the forest neighbours. Some or all of these parties should be consulted when operations are proposed in forest areas adjacent to their boundaries.

5. Regulations

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

The National Environmental Standards for Commercial Forestry are a Resource Management Act regulation. They have replaced most council rules except where the councils may have more stringent rules in accordance with the regulations. The NES-CF applies to forests of greater than 1 hectare, established for commercial reasons and will be harvested.

The regulations are generally based on the Erosion Susceptibility Classification (ESC) of the underlying land. The following table shows the proportion of each forest ESC.

In general, earthworks will need resource consent in orange ESC zone > 25°, and in the green and yellow ESC zones most operations will be permitted subject to meeting the NES-CF regulations. The ESC coverage of Waiohotu is shown in [Map 4](#).

Productive plantation area (ha) within each ESC Class

Forest	Low	Moderate	High	Very High	Very High (8e)	Total
Waiohotu	4.0	9.2	2.8	-	-	15.9

Council RMA Plans

Waiohotu Forest is within the South Waikato District and the Waikato Region.

The South Waikato District Council and the Waikato Regional Council have their own planning documents and associated rules, developed through public process. Neither the Waikato Regional Council plans nor the South Waikato District Council plan have rules for forestry that are more stringent than the NES-CF.

Consents & authorities held

There are no current resource consents or Heritage NZ authorities that apply to Waiohotu Forest.

Emissions Trading Scheme

Forests in New Zealand are governed by rules related to New Zealand's Kyoto commitments to reduce the nation's carbon footprint and contribution to associated climate change.

The forest was planted on "Kyoto compliant" land that was not forest as at 31st December 1989 (Waiohotu Forest was established between 1997 and 1999). These forest areas have not been registered to participate in the NZ Emissions Trading Scheme and are not subject to the accrual of emissions credits and liabilities under that scheme.

6. Managing environmental risk

Assessment of environmental risks

Refer to the Standard FSC Forest Management Plan.

Infrastructure damage or service disruption

Waiohotu Forest has no public access tracks within the forest and no other infrastructure/community service values.

Pests and diseases

Pests and diseases are managed according to statutory obligations and best practices as identified by scientific research and past experience, with the type and intensity of treatment (if any) subject to what is at risk and the age of trees.

Fire

The forest is within the Ngā Tai ki te Puku Emergency NZ region for forest fire management. The [Fire Plan for Waikato 2024 – 2027](#) contains key information regarding the protection of land and management of fires.

7. Commercial Plantation Estate

Current crop

Waiohotu Forest is predominantly a radiata pine forest, *Cupressus lucitanica* and *Eucalyptus fastigata*.

Species	Area (ha)	Area (%)	Year Planted
<i>Pinus radiata</i>	15.0	94.3	1997 - 1999
<i>Cupressus lucitanica</i>	0.5	3.1	1997 - 1998
<i>Eucalyptus fastigata</i>	0.4	2.5	1998

Tending

The tending regime executed to date in Waiohotu forest is thinning and pruning.

Tree nutrition

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

8. Harvesting Strategy

Harvesting strategy

Waiohotu Forest will be harvested as closely as possible to the optimum economic age as practical. This is the age at which the growth in volume and improvement in quality is offset by the cost to maintain the forest for another year. The optimum rotation length for radiata pine is expected to be within 25 to 30 years, while the optimum rotation lengths for eucalyptus and cypresses is 20 – 40 years and 35+ years, respectively.

Of importance in this assessment is the actual growth of the tree crop, the market for the wood at the time of the harvest and the outlook for the near future. These factors, together with logistics such as the availability of suitable harvest contractors and the requirements of resource consents, will determine the actual harvest time.

Harvesting is not planned to take place during the 5-year period of this management plan, although this may change depending on the markets, growth (possible inventory) and the landowner's motivations.

Infrastructure

The required roading and other infrastructure work for harvesting will be detailed in the Annual Cutting Plan. Forest infrastructure includes roads, tracks, landings, bridges and culverts.

During harvest planning upgrades of existing roads/culverts/bridges and planning for new roads, landings and crossings will be identified and scheduled. The type of infrastructure designed and constructed is influenced by topography, harvest duration and intensity of use.

Once established, these infrastructural assets require maintenance.

9. Indigenous Biodiversity

Protected ecosystems

No work is planned in the small terrestrial and wetland ecosystems (except possum control).

The table below details the areas in each protection category within Waiohotu Forest, categorised by protective function

Protected ecosystem & reserve areas by protection category

Protective Function	Protective Category		Total Area (ha)
	Limited	Passive	
Terrestrial Ecosystem		0.3	0.3
Wetland Ecosystem	4.0		4.0
Total Area (ha)	4.0	0.3	4.3

High Conservation Value (HCV) Forests

To date, no High Conservation Value Forests have been identified.

Threatened species

To date, the only rare species sighted within Waiohotu forest has been two sightings of Dabchicks within the wetland reserve. These birds are classified as Nationally Vulnerable.

iNaturalist² (Biodiversity in Plantations) will be used to record sightings of important indigenous fauna or flora discovered in the forest.

Stream Protection and riparian setbacks

A summary of the stream categories within the Waiohotu Forest is shown below. The total length of waterways within the forest is 5.43 kilometres.

Length of stream by REC class

² <https://www.inaturalist.org/projects/biodiversity-in-plantations>

REC Class	Length (m)	Length (km)
VSmall_Low_Wet_Soft	494.8	0.49
Med_Low_Wet_Soft	923.2	0.92
Large_Low_Wet_Hard	594.8	0.59
Large_Low_Wet_Soft	2,582.8	2.58
Small_Low_Wet_Soft	652.2	0.65
Small_Low_Wet_Hard	177.6	0.18
Total	5,425.4	5.43

Fish

No fish species have been identified from the NES-PF Fish Spawning Indicator tool within Waiohotu Forest. The Freshwater Environments New Zealand indicates that brown trout, long fin eel and *Gollum galaxis* may be present.

Key ecological management activities are outlined in Appendix 4.

10. Other Special Values: Everything but the timber

Recreation

Following the intent of the Outdoor Access Code³, published by Herenga ā Nuku – Outdoor Access Commission, and any signage / barriers in place within the forest, is expected behaviour.

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

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 contact the PF Olsen Central North Island Office 07 921 1010.

Public access roads

There is one public road at the western boundary of the farm, but no forest stands near this location. All signage of roads and tracks must be followed and those using the routes require a permit if there is any intention to access the forest from the road routes or across the farm.

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.

Any users are expected to abide by the intent of the Outdoor Access Code⁴ published by the Herenga ā Nuku – Outdoor Access Commission, or signage / barriers in place at track or public access points.

³ <https://www.walkingaccess.govt.nz/assets/Publication/Files/Outdoor-Access-Code/0fcf4d2e5b/Outdoor-Access-Code.pdf>

⁴ <https://www.walkingaccess.govt.nz/assets/Publication/Files/Outdoor-Access-Code/0fcf4d2e5b/Outdoor-Access-Code.pdf>

Other special values

In the regional landscape context, Waiohotu Forest and its indigenous ecosystems in combination provide well-defined 'environmental services'. These include:

- Enhanced water quality, and buffering of regionally significant water bodies from agricultural nitrification;
- Soil stabilisation and conservation;
- Providing a buffer against flooding during storms;
- Temperature moderation in waterways for maintenance of aquatic life including threatened native species and world-renowned sports fisheries;
- Enhance wildlife and plant habitat leading to increased biodiversity;
- Expanded habitat opportunities for some declining and or threatened fauna;
- Carbon sequestration and buffering of the effects from a nationally adverse carbon generation footprint.

Some of these environmental services have quantifiable and significant financial value (e.g. nitrogen and carbon).

Over the term of this plan, the regulatory environment will continue to be actively monitored and where possible efforts made to secure the introduction of properly structured market mechanisms to ensure forestry is not disincentivised, relative to other land uses. Other environmental services will continue to be supplied or enhanced based on good corporate citizenship and responsible environmental management.

Non-Timber Forest Products

There are no FSC certified non-timber forest products⁵ from Waiohotu Forest.

⁵ 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 July 2028.

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

Change	Date	Section/Page
Update Foundation Principle	Sept-24	Page 4
Updated from NES-PF to NES-CF in Regulations	Sept-24	Page 9
Moved whole FMP to new template	Sept-24	Whole plan
Updated FSC certificate	Jun-25	Page 4

Waiohota Forest

Scale: 1:50,000

Projection: NZGD 2000 (New Zealand Transverse Mercator)

Map Data: 2018

Map Information: 80% Zealandic Eagle Technology

Scale: 0 1.5 3 4.5 6 Kilometres

Source: New Zealand's Department of Conservation, and Forests for the use of the Forest's Community. Updated 30th March 2018.

Pf Olsen

Environmental Consulting

Appendix 2: Forest Neighbours

Not Publicly Available.

Appendix 4: Schedule of Ecological Management

Review Date:

Activity Type	Required actions	Area/s	Due date
iNaturalist Entries	Species and status frequencies (especially new finds) entered by public, crews, operational supervisors	Forest Wide	Ongoing
Pest Control – Animals	Use ground control methods as required Coordinate operations with the Regional council and the Department of Conservation Record kill returns, RTC (possum) and RTI (rat).	Forest Wide	As Required