OneFortyOne New Zealand Limited

Forest Management Plan Public Summary 2024

One Forty One

Front cover: Golden Downs Forest, Tasman Region. Photo: G Brown.

This is a working document and may be updated periodically as we continually evaluate, develop, and refine our forest management plans and objectives.

Printed copies are therefore obsolete.

Contents

1 Introduction

OneFortyOne (OFO NZ) is a trans-Tasman business with forests and mills in Australia and New Zealand.

OneFortyOne operates throughout the Green Triangle region of Australia, and the Nelson, Tasman, and Marlborough regions of New Zealand (Top of the South). As a trans-Tasman business, we employ more than 550 people directly and over 2,400 indirectly as contractors/subcontractors. We manage 160,000 hectares of land and plant approximately six million trees every year. We work with domestic processors and manufacturers to ensure that customers can use as much as possible of each tree.

Our aim is to be the company that people think about first when they are considering a career in forestry. We do this by focusing on what matters to our people – their ongoing health and wellbeing, employment conditions and opportunities for professional development. We strive to create a positive culture where everyone's contribution is recognised and appreciated. Forestry is critical to regional development, and we value and nurture our relationships with local communities. We are major employers in the regions where we work, and we are proud to invest in local environments and local people via our community grants program.

1.1 Our Purpose and Values

Growing a Better Tomorrow is about growing, producing, and delivering wood products in a responsible way that meets rising demand and helps create a sustainable future for people and the planet. We are built on the belief that forestry and wood products could be done differently to make a greater contribution. Today our forests and sawmills create a business that begins with seed and delivers high-quality wood products in a way that delivers secure careers, contributes to positive environmental outcomes, and shares benefits with the communities where we work. Together we are growing a better tomorrow.

This document is intended to provide OFO NZ New Zealand (OFO NZ NZ) stakeholders with an overview of how we manage our forests and operations while considering environmental, economic, social, and cultural factors.

2 Overview of OFO NZ

2.1 Forest Estate Description

As of December 2024, OFO NZ manages 79,601 hectares of which over 58,694 hectares is stocked. The forest area consists of three ex-Crown Forest License areas (Golden Downs West, Golden Downs East, Rai) in iwi ownership; freehold forests; and three joint venture forests. There have been no forest acquisitions or sales during the 2024 calendar year. A full description of the land and forest areas is captured in Table 1.

OFO NZ forest management unit (FMU) contains a range of non-plantation areas that are set aside and maintained as conservation/protection areas (e.g. natural indigenous forest, wetlands, HCV) for maintaining indigenous biodiversity. In 2024, 10,9630 hectares (17%) of the working forest area within the FMU is designated as *conservation areas network 1* (Table 3).

OFO NZ has two offices. The main office is in Richmond, Tasman region and the second office is in Blenheim, Marlborough region.

[1] Those portions of the management unit for which conservation is the primary and, in some circumstances, exclusive objective. Such areas include Representative Sample Areas, conservation zones, protection areas, connectivity areas, and high conservation value areas (FSC-STD-NZL-02-2023 Plantations EN).

Appendix IV shows the mapped erosion susceptibility classification (ESC) across the estate.

Table 1. Land and forest area description at 31/12/2024.

Land and Forest Area Description	Hectares
▪ Radiata pine	56,497
▪ Douglas fir	1,696
▪ Minor species	521
▪ Available for planting	2,985
▪ Potentially plantable (unstocked gaps, windthrow, snow, slip)	3,612
Total productive	**65,311**
▪ SNAs/ecological significant/wetlands/HCV/Conscov/TASACC	3,816
▪ Indigenous forests, riparians, mixed regenerating	6,550
▪ Transmission lines/fire breaks	343
▪ Retired from production	577
▪ Roads/landings	2,035
▪ Unplanted – other	969
Total non-productive	**14,290**
Total area	**79,601**

2.2 Land ownership

As a result of Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, and Te Ātiawa o Te Waka-a-Māui Claims Settlement Act 2014, and the Ngāti Toa Rangatira Claims Settlement Act 2014, the original four Crown Forest Land parcels (Wairau, Rai, Golden Downs West and Golden Downs East Crown Forestry Licenses) were transferred to iwi ownership as part of the Settlement redress to iwi.

- Wairau Crown Forest Land was included in the Settlement redress to Ngāti Rārua, which OFO NZ purchased in 2017. This Forest is now freehold.

- Golden Downs East Forest Land was included in the Settlement redress to Ngāti Toa Rangatira.

- Rai Forest Land was divided roughly in half and one half has been included in the Settlement redress to Te Ātiawa o Te Waka-a-Māui and the other half has been included in the Settlement redress to Ngāti Tama ki Te Tau Ihu.

- Golden Downs West Forest Land was divided into four separate parcels and one part included in the Settlement redress to Ngāti Toa Rangatira, one part to Ngāti Tama ki Te Tau Ihu, one part to Te Ātiawa Te Waka-a-Māui and one part is held jointly between Ngāti Tama ki Te Tau Ihu and Te Ātiawa o Te Waka-a-Māui.

Termination notices were issued to OFO NZ in respect to each of the Crown Forestry Licenses (CFL) in 2014. The notices have the effect that OFO NZ has 35 years under the CFL to harvest the remaining standing plantation trees, and any land cleared (harvested) of forestry trees is to be "returned" or handed back to iwi.

OFO NZ welcomed the Settlement and the opportunity to partner with our new iwi landowners. There is acknowledgement that the need for a long-term view in forestry (because of the time for the trees to grow) aligns well with iwi. New relationships have been formed. The Crown Forest Licenses are being replaced with separate Forestry Rights covering the land owned by Ngāti Toa Rangatira, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and the Golden Downs West land held in joint venture between Ngāti Tama and Te Ātiawa. The new Forestry rights each have a 20-year initial fixed term, followed by an automatic annual extension until a 35-year Termination notice is issued.

Ngāti Rārua, the beneficial owner of the land under the Wairau Crown Forest License area, decided in

2015 to sell their interest in the Wairau Forest land to OFO NZ. Figure 1 shows land ownership across the OFO NZ estate as of December 2024.

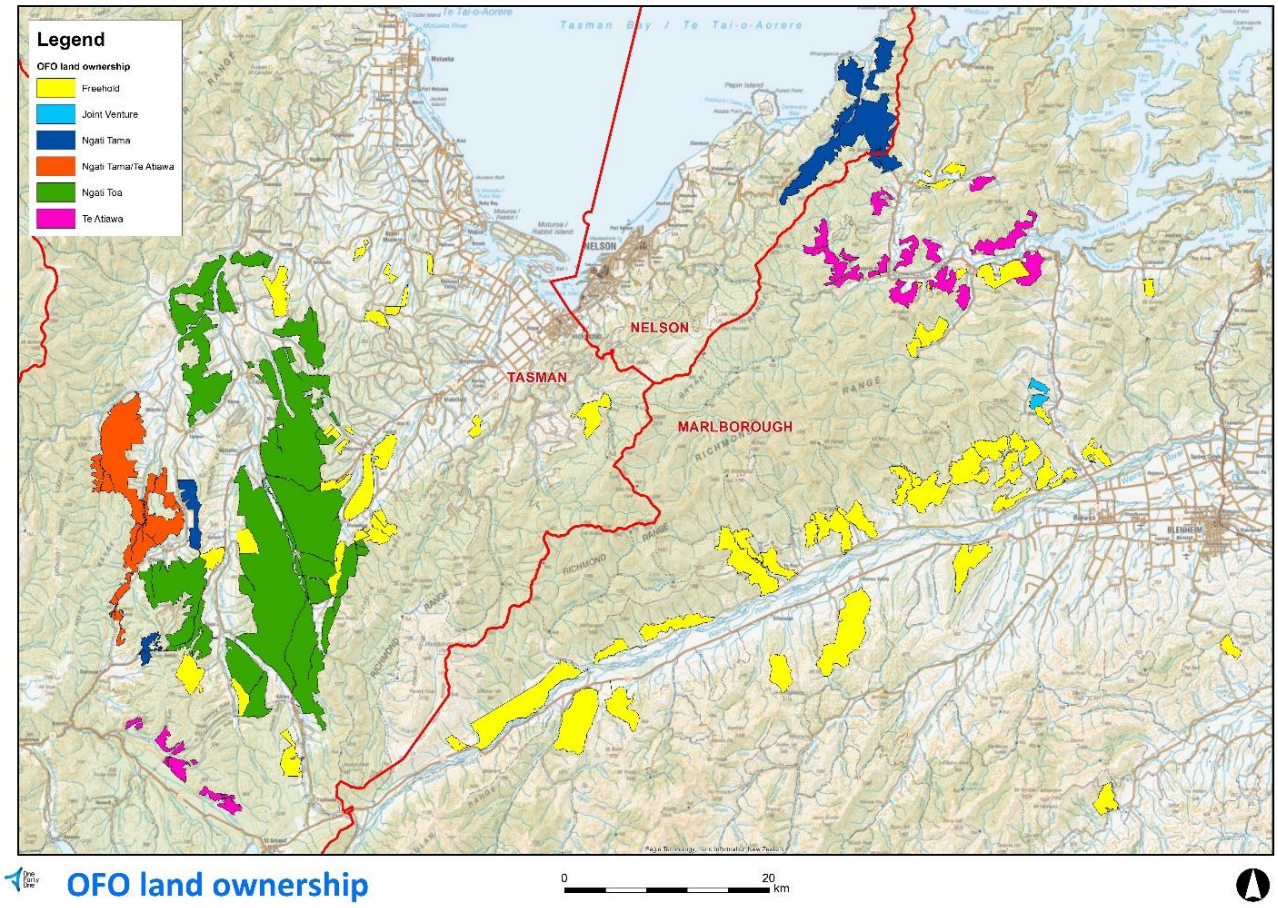


Figure 1. OFO NZ estate: location of forest blocks and land ownership within each of the Top of the South three council regions.

2.2.1 Golden Downs Forests

Golden Downs is the largest forest unit in the Tasman region, southwest of Nelson City. Golden Downs has a range of geographical features from very steep broken hill country bordering the Kahurangi National Park to easy rolling hill country and river flats. The State Highway from Nelson to the West Coast (SH6) bisects the forest. Several rivers flow through Golden Downs Forest including the Baton, Motueka, Motupiko, Wangapeka, Tadmor, Dart and Stanley Brook. Most of the forests are situated on Moutere gravel soils. Smaller outlying blocks to the west are on soils classed as Separation Point Granites, which are regarded as highly erodible. Land use adjacent to the forest is predominantly farming, forestry and conservation.

Many of the Nelson freehold forests lie on the foothills of the Waimea basin (Serpentine, Kainui, Moutere, Te Hepe and Brightwater). Smaller freehold forests are located adjacent to Golden Downs Forest (Korere). Topography consists of rolling to steep hill country. Land use adjacent to the forest is predominantly farming, lifestyle farming, viticulture, forestry and conservation.

The total area of these forests is 49,167 hectares.

2.2.2 Rai Forest

Rai Forest lies on both sides of the Nelson-Blenheim highway (SH6) in several blocks and extends from

the top of the Whangamoa saddle to the township of Havelock. Most of the valley systems leading off the highway and running out to the eastern coastline of Tasman Bay contain parts of the forest. The Whangamoa, Rai, Wakamarina and Pelorus Rivers run through parts of the forest. Soils are predominantly clay soils on steep topography. Mineral belts (Serpentine) run through small parts of the forest. Land use adjacent to the forest is predominantly dairy and dry stock farming, lifestyle farming, forestry and conservation.

The total area of these forests is 11,179 hectares.

2.2.3 Wairau Freehold Forest

The freehold forests in Marlborough include Wairau North and Manuka Island, which are situated on the eastern side of Mt Richmond Forest Park. The Wairau North Forest is made up of a series of blocks, which extend along the north bank of the Wairau River to the south-west of the SH63 Bridge (Washbridge). Topography consists of rolling to steep hill country. Soils are predominantly Onamalutu steepland soils. Land use adjacent to the forest is predominantly farming, viticulture, lifestyle farming, forestry and conservation.

The remaining Marlborough Freehold forests include Wairau South Forest, Linkwater, Wakamarina, Kaituna Mill, the Opouri Valley and the Awatere Valley. Topography consists of rolling to steep hill country. Land use adjacent to the forest is predominantly farming, lifestyle farming, viticulture, forestry and conservation.

The total area of these forests is 18,991 hectares.

2.2.4 Joint Venture Forests

Two relatively small joint venture forests are established in the Marlborough region. The joint ventures are set up as Forestry Right agreements.

The total area of the joint venture areas is 262 hectares.

2.3 Major plantation species area change report

The current strategy of OFO NZ is to replant all productive areas into *Pinus radiata*, which is driving an uplift in the overall *Pinus radiata* area each year. The stocked area of this species was 56,497 hectares as and 31 December 2024. Over 2024, the stocked area of Douglas fir (*Pseudotsuga menziesii)* decreased from 2,254 hectares to 1,696 hectares in line with the decision to replant Douglas fir harvested areas with *Pinus radiata*.

A major contributor to decreases is the harvesting of single rotation joint venture forestry right areas, which were handed back to other landowners. Other factors include mapping out of roads and landing, waterway setbacks, mapping of wind damage and slips and miscellaneous unstocked gaps.

3 Management Objectives

OFO NZ primary objective is to return value to the owners of the forests it manages through the development, management and harvesting of productive and high-quality forests in a safe and sustainable manner.

OFO NZ seeks to achieve its objective through innovative business strategies, proactive management of natural and physical resources, and building strong relationships with stakeholders. We have a strong commitment to managing the land the trees are growing on for our shareholders, landowners, stakeholders, and surrounding communities to ensure the long-term sustainability of our forests.

OFO NZ actively manages its responsibilities in the areas of biodiversity, soil and waterways protection, reserve management, recreation and public access and protection of archaeological sites within the forest estate. The following is a summary of the key objectives of OFO NZ NZ.

3.1 Forest Management Objectives

- Manage the forest estate as a renewable and sustainable resource.
- Practice silviculture consistent with best management practice and the maximisation of value to the forest owner.
- Monitor tree breeding to provide the most appropriate stock for the forests.
- Harvest trees as close as possible to the most economically effective age.
- Proactively manage risks to forest health such as fire, pests, and disease.
- Create employment and contracting opportunities for members of local communities within the constraints of meeting other performance criteria.

3.2 Health, Safety and Wellbeing Objectives

- Undertake industry benchmarking, external audits and reviews and participate in health and safety forums to challenge and inform us about how to improve.
- Focus on leadership, worker engagement and risk management, to ensure that wellbeing, health and safety is embedded in the way we do business and that we deliver positive outcomes.
- Ensure that all employees and contractors are trained and competent to undertake their jobs safely.
- Manage the estate in compliance with all health and safety regulations.

3.3 Quality Objectives

- Focus on effective planning to achieve process reliability across the forest growing and harvesting cycle.
- Establishment and silviculture practices are managed through best practice documents in a forestry operation manual.
- Process reliability in log manufacture incorporates calibration of processing equipment, operator training and a systematic sample (quality assurance) of product from all OFO NZ harvest crews on a weekly basis.
- Information is distributed internally on a weekly basis and shared with contractors and customers monthly.

3.4 Financial Objectives

- The pursuit of financial excellence will be dependent on obtaining and maintaining an internationally competitive cost position that allows the capture of the value naturally inherent in our estate, and which will be further enhanced by a dedication to customer needs.
- As a medium-sized organisation we can focus on a small number of critical customers whom we aim to provide with a consistent product and service.

3.5 Stewardship Objectives

- Manage the estate in compliance with:
  - OFO NZ NZ's Environmental Management System (EMS).
  - Relevant legislation includes the *Resource Management Act 1991, Heritage NZ Pouhere*

Taonga Act 2014, and *Health and Safety at Work Act 2015.*

- NZ Forest Accord (1991).
- Principles for Commercial Plantation Forest Management in NZ (1995).
- NZ Wilding Conifer Management Strategy.
- The requirements of voluntary forest certification system that OFO NZ is certified under.

- Identify and allow for environmental, cultural and social values when planning and undertaking operations to minimise negative impacts on the environment and the community.
- Identify and protect areas of significant ecological and scientific value within our managed forests and put in place processes to protect and enhance identified values.
- Manage our forests sustainably and minimise adverse effects of forest operations on soil and water values.
- Minimise impact of operations on archaeological and historic sites.
- Minimise impact of operations on amenity values (visual, noise, air) and neighbouring properties.
- Manage and use pesticides (including fertilisers) responsibly and seek to minimise the use of pesticides in our operations as far as practical.
- Capture and learn from environmental incidents through reporting, investigation and sharing of learnings.
- Ensure employees and contractor workers receive appropriate training to comply with the law and the requirements OFO NZ NZ's Environmental Management System (EMS).
- Monitor environmental outcomes, and research new ways to minimise impacts of forestry operations on the environment as well as maximise environmental benefits of forests.
- Recognise the recreational value of the forest estate to local communities and the public and proactively manage public access while managing the health, safety and wellbeing of people and environmental impacts.
- Identify areas within our estate that meet the definition of high conservation value forest, significant natural areas and significant biodiversity values, and manage these in accordance with relevant regulatory and certification requirements.
- Actively pursue initiatives to reduce carbon emissions from operations under our management.

3.6 Forest Stewardship Council® Certification

The Forest Stewardship Council® (FSC®) was founded in 1994 and is a global, not-for-profit organization dedicated to the promotion of responsible forest management worldwide. FSC defines standards based on agreed principles for responsible forest stewardship that are supported by environmental, social, and economic stakeholders. OFO NZ operations have been continuously certified by FSC *(License Code FSC-C074692)* since 2010.

All forests certified by FSC must comply with an international Standard with a set of rules called the *Principles* and *Criteria*. A new FSC Standard for New Zealand was released in early 2023 (*FSC-STD-NZL-02-2023 Plantations EN*). The requirements of FSC cover the full range of forest management, including complying with the law, environmental values (water quality impacts, soils, biodiversity, pesticide use), social requirements (worker rights, indigenous peoples' rights, stakeholder, and community benefits), alternative benefits of the forest beyond core forest products, and sound and economically viable forest management practices. FSC accredited auditors undertake annual audits of FSC certified forestry operations to confirm compliance with FSC requirements. For further information about FSC visit their websites https://fsc.org/en or www.anz.fsc.org.

3.7 External Agreements

As a member of the New Zealand Forest Owners Association, OFO NZ is bound by the requirements of

the New Zealand Forest Accord (1991) and the Principles for Commercial Plantation Forest Management in New Zealand (1995).

The Forest Accord protects remaining indigenous forest remnants within the plantation forest that meet minimum size and quality criteria from clearance and conversion to plantation forest. All New Zealand Forest Accord vegetation in the OFO NZ NZ's estate is identified in the company geographic information system (GIS) and is protected.

The Principles for Commercial Plantation Forest Management in New Zealand are complementary to the New Zealand Forest Accord and cover a range of broader principles to promote environmental excellence in plantation forest management, and the protection, preservation, and sustainable management of native forests.

4 Overview of Forest Operations

4.1 Species Selection

Establishment and silviculture practices are adopted with the objective of maximising the value of the forest resource while mitigating and/or managing any risk factors. Radiata pine (*Pinus radiata*) is the predominant species. Radiata pine has been selected as the preferred species following extensive trials and numerous regime analyses over time. Trials (figure 3) also exist within the forest evaluating other potential commercial species. The type of tree grown in the Nelson region has good density and branching habit, which assists in meeting product consistency and recovery.

4.2 Silviculture Management

OFO NZs objective of tree crop management is to produce high-quality structural logs with high wood stiffness and small branching. The estate is managed on a standard regime for radiata pine, being the species most adapted to the sites that the estate occupies. Figure 2 outlines the silviculture management timeline.

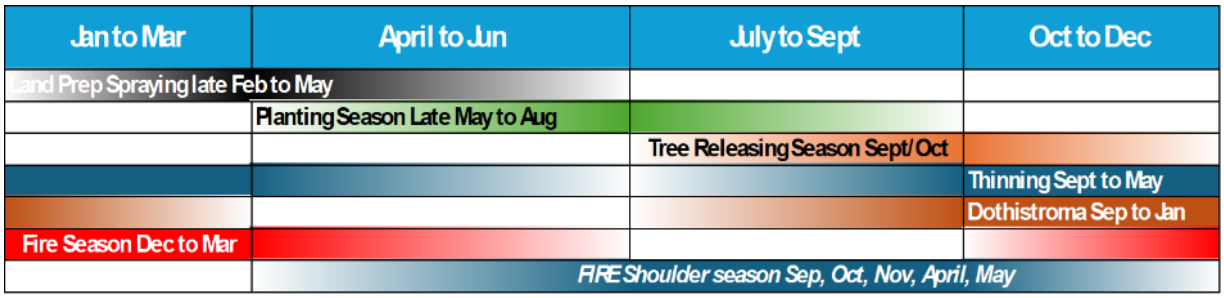


Figure 2. Planned management activity timeline.

4.2.1 Land Preparation

On ground-based sites (typically below 26 degrees slope) mechanical land preparation is practiced to slash rake the site and windrow woody debris, where required, so that cuttings and seedlings can be planted into the soil. Approximately 35% of the area to be planted each year is treated by this method.

A pre-plant spray is used on all sites to kill weeds and regenerating conifers from the cones of the previous crop, before establishing the radiata cuttings or seedlings. A record of our pesticide management is kept.

Figure 3. N100 Douglas fir trial plot, Golden Downs Forest.

4.2.2 Establishment and Thinning

The current establishment strategy is to plant all sites into radiata pine for a structural regime.

Approximately 2% of the planting stock is cuttings with the remaining stock a 75/25 mix of control and open pollinated bareroot seedlings. Clonal plants are being trialled but no significant areas are planted in clonal material. The initial stocking for most of the sites is 800 seedlings per hectare (sph) with the intention of a non-commercial thinning to take place when the trees achieve a target mean top height (MTH) of 14 meters to a final crop stocking of 550sph. A Limited area of Manuka Island is being planed at 1000sph to allow an option of future commercial thinning.

In areas where either the terrain makes thinning to waste too risky or where the risk of windthrow is too high, a plant and leave strategy is used. In this case, an initial stocking of 667 sph is practiced.

No commercial pruning is undertaken as a stand regime, however pruning of roadside trees for a combination of road clearance, fire reduction and log grade improvement is underway.

In addition to manual chainsaw thinning and mechanized thinning, OFO NZ has begun operationally e-thinning within the estate. There are two broad categories of e-thinning: “Phase 2” stands age 12-20 years which were left untended but are too large to risk manual thinning and “Phase 3” stands which are at tending age but are being e-thinned for safety or value improvements.

4.2.3 Forest health

An annual forest health survey is undertaken within the OFO NZ estate as part of the New Zealand Forest Owners Association’s national biosecurity surveillance program. This program takes a national, risk-based approach to monitoring forest biosecurity.

Under the national program, much of the OFO NZ estate is considered low risk and it is not considered necessary to undertake 100% annual surveillance. Approximately 44% of the OFO NZ estate is assessed in the NMA surveillance.

To supplement the area surveyed in the national program, OFO NZ directs areas planned for *Douglas fir* harvesting to be assessed as part of the non-model allocation (NMA) surveillance. This additional surveillance is to reassure Douglas-fir customers that our forests are free from *Phytophthora kernoviae and Phytohthora ramorum.*

Surveillance undertaken by SPS Biosecurity Ltd in 2024 no significant findings with all observations consistent with previous surveys. Detailed reports are available on request to approved parties.

4.2.4 Fire Protection

Management of rural fires comes under the jurisdiction of Fire and Emergency New Zealand (FENZ).

In October 2021 FENZ implemented a unified district structure across New Zealand. At this point the funding by FENZ of contractors and forest company fire training, along with the maintenance of fire appliances, ceased in the Nelson /Marlborough district.

To maintain the collaboration FENZ, OFO NZ NZ, Tasman Pine Forests and PF Olsen came together under a memorandum of understanding (MOU) to offer FENZ both people and plant resources in assisting FENZ meet its legal mandate and responsibility for the suppression of wildfire. As part of this MOU a rural fire contractor has been employed to maintain equipment, arrange training, represent the Top of the South on the NZ Forest Owners Association Fire Committee, as well as being a key liaison point to FENZ.

OFO NZ provides trained personnel to Te Tau Ihu fire region and has four fire appliances: two appliances in Tapawera and one each in Canvastown and Kaituna. OFO NZ provides experienced employees in Incident Management Team (IMT) and OFO NZ contractors contribute to firefighting positions.

OFO NZ have been enhancing (maintenance and installation) the waterpoint coverage with the goal of a network of waterpoints suitable for helicopter dipping within 2 km of all areas of the estate allowing immediate aerial attack of any fire starting within or neighbouring the estate.

Fire events within the estate in 2024 included skid spontaneous combustion and a 0.6ha lightning strike fire. OFO NZ employees and contractors assisted FENZ on a Tasman fire, and contractors on a fire in Canterbury.

The Nelson/Marlborough Forest Industry Fire Prevention Guidelines for Forestry Operations are reviewed and updated annually. The guidelines ensure consistency in fire prevention management of similar risk forestry operations and clarify rules around operation restriction in very high and extreme fire conditions. The Build-up index (BUI), a measure of the relative availability of heavy fuels to burn, is used as the basis to determine fire risk in the estate (Figure 4).

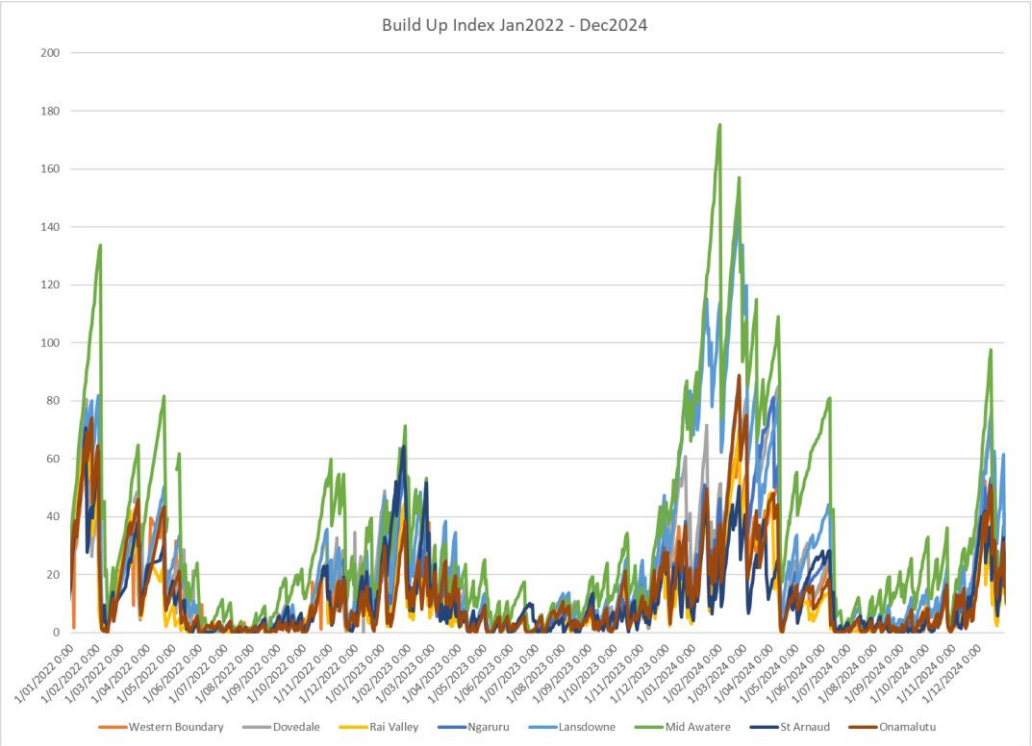


Figure 4. Build Up Index (BUI) by weather stations and date for 2022 to 2024. BUI's exceeding 60 require additional risk reduction and readiness activities, as per the Fire Prevention Guidelines for Forestry Operations.

The fire weather index (FWI), a measure of potential fire intensity, is used to escalate the fire risk from the base BUI. Typically, windy conditions will increase the FWI above 25 and are classed as extreme fire danger days with additional restrictions and risk reduction activities undertaken (Figure 5).

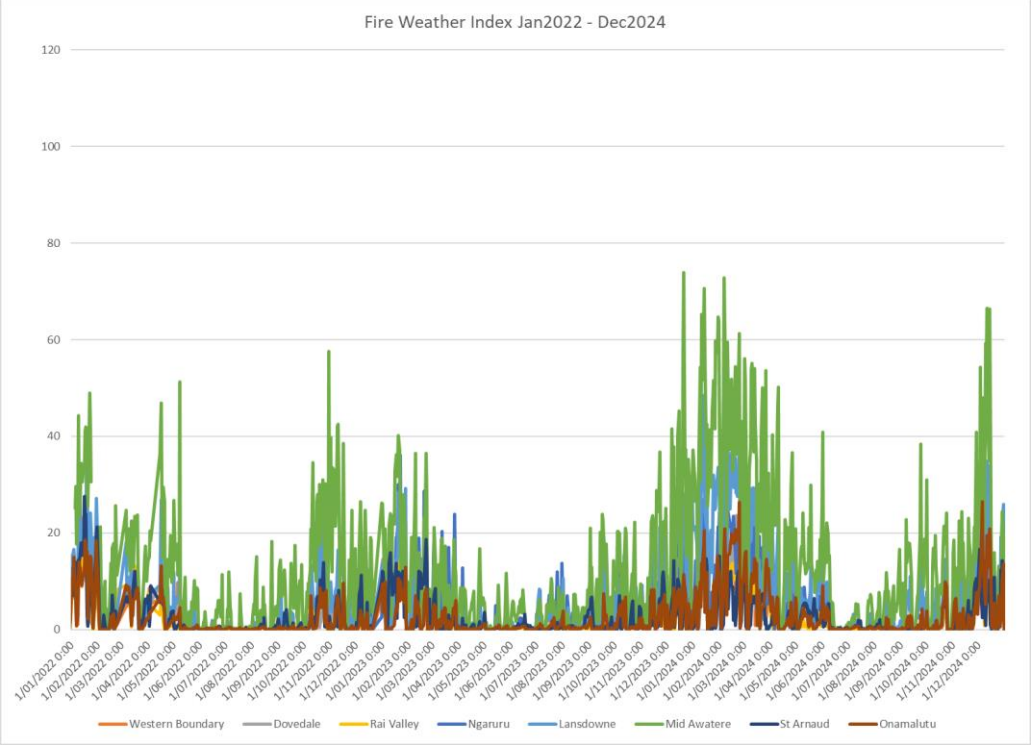


Figure 5. Fire Weather Index (FWI) by weather station for date 2022 to 2024.

4.3 Harvest Operations

4.3.1 Harvest Planning

A comprehensive planning process determines how and when to harvest the wood resource in the estate. Planning for harvesting the forest is developed from a long-term forest estate model which is then refined down to a more detailed five-year plan and then translated into annual harvest plans.

This process involves balancing a range of factors such as predicted forest growth, customer requirements (grade and volume), harvesting capacity, access, third-party ownership requirements, and other environmental constraints. OFO NZ aims to harvest its estate as close as possible to the optimum tree age for each stand.

The estate has a relatively even age class distribution although within each region there are significant variations. This means that the total harvest levels can be relatively stable over time, but there will be regional fluctuations in harvesting activity. However, the ability to alter the harvest to respond to market demand fluctuations does exist.

Minor species within the estate were first established by the NZ Forest Service as part of a mandate to identify other viable timber species. Minor species that are small remnants are harvested when adjacent harvest operation allows. Stumpage harvest programs are focused on minor species as well as on Douglas fir.

All harvesting and engineering and forestry operations carried out in OFO NZ managed forests must have a harvest plan or work prescription in place. One aspect of harvest planning is the identification of all environmental risks of the operation and specifying controls to manage those risks and to ensure compliance with all legal, certification and company requirements including resource consent conditions and permitted activity rules. Key factors considered in harvest planning are:

- Health and Safety – the method that is the most appropriate for the topography and nature of land so that the potential for injury is minimised.
- Environment – the method creates the least impact on the environment.
- Financial – the method is the most practical and cost effective for the area taking safety and environmental considerations into account.

4.3.2 Harvesting

OFO NZ is committed to adopting harvesting techniques and technology that minimise the impact on the environment and reduce the risk of accidents and injuries. Harvesting is undertaken by two key methods:

- Ground-based harvesting – Used on easier terrain (generally <25 degrees), trees are felled and extracted by machines to a processing area. In ground-based terrain, all falling is carried out with mechanised felling machines to minimise the risk of injury during the falling operation. Only a very small proportion of ground-based areas are manually felled where the area is inaccessible to machinery. The stems are typically transported to the processing area by skidders or forwarders, and in some instances by shovel logging.
- Cable harvesting – Used on steeper country (generally >25 degrees), fallen stems are extracted using a hauler (either swing yarder or tower) with trees attached by strops to a cable or extracted by grapple or claw, then hauled to a processing area. Only a very small proportion of manual falling in steep country is used due to inaccessibility to machinery.

4.3.3 Annual Production

Timber production by species, total volume per hectare, stocking per hectare, age, regime type, log grades, total recovered volumes against predicted volume and harvesting methods are key metrics monitored by OFO NZ NZ. Harvested volumes for 2024 from the OFO NZ estate was over one million cubic meters (

Table 2).

Table 2. Annual harvested volume (m3) between 1 January and 31 December 2024. Minor species comprise macrocarpa, eucalyptus, larch, alder, muricata, cedar.

Harvested	Volume (m^3)
Radiata pine	907,507
Douglas fir	302,406
Minor species	3,068
Total	**1,212,981**

4.4 Forest Modelling

Forest modelling is undertaken on several different levels to predict the productivity of the forest estate. Modelling seeks to achieve a non-declining wood yield to be determined, as well as indicating future harvest volumes by region, forest, harvest unit with an indication of the harvest methods required. The estate model also includes predictions of log grade outturn to assist in developing potential future markets and meeting customer demands.

Operational areas within the estate are mapped quarterly from a mixture of satellite imagery, plane imagery and UAV imagery. Aerial photography is undertaken each quarter, and the estate is remapped to account for harvest depletions, mapping corrections and any stand losses due to windstorm or fire events.

Stand records are maintained in a geographical information system (LRM) summarizing every operation undertaken. Detailed inventory (stocking and stem form) is collected from the stands within the estate as the stands approach maturity/harvest age. LRM supports resource planning (Figure 6) and supply chain planning processes (Figure 7). Together these processes form the basis of timber production management. The information generated is commercially sensitive and is therefore not reported in the management plan or made public.

Plan	Model	Timeframe in View	Purpose
Sales and Operational Plan (S&OP)	Quarterly	1-12months	*Operationalises the long-term plan, creating scenarios to balance the supply and demands*
Master Production Schedule (MPS)	Quarterly	1-9 months	*Translates the S&OP plan into a detailed weekly view to manage the harvest timings and Woodflow*
Weekly Woodflow	Weekly	Weekly	*Matches customer orders with Production in detail optimised "right grade, right customer, right stand"*
Cut cards	Weekly	Weekly	*Cutting instructions are given to the harvest crews to cut the required graded from the stand*

Figure 6. Resource planning matrix.

Team	Process	Model	Model Cycle	Timeframe	Period Length
Resources Team	Long Term Plan (LTP)	Estate Model	Annual	90 Years	Year
	5 Year Plan (LTP)	Estate Model	Annual	5 Years	Year
Operations Team	Sales and Operational Plan (S&OP)	Remsoft Scheduler	Quarterly	12 Months	Month
	Master Production Schedule (MPS)	Remsoft Scheduler	Quarterly	6-9months	Week

Figure 7. Sales and operation planning horizon matrix.

4.5 Health, Safety and Wellbeing

At OFO NZ we are driven to ensure that every person comes to work and goes home safe and well every day.

Our Safety Culture reflects our values, attitudes, perceptions, competencies and behaviours. It influences the safety and wellbeing of our people and how we perform our work, the values we convey and the relationships we develop. It says a lot about our commitment to safety as well as the effectiveness of our management system.

Through OFO NZ's Strategy a plan is set out to strengthen our safety culture through continuous improvement, learning and innovation. It is a journey of continuous improvement, and we are dedicated to empowering people at all levels to take a proactive and collaborative approach to all aspects of health, safety and wellbeing. OFO NZ NZ's Health and Safety policy is attached under Appendix I.

5 Environmental Stewardship

OFO NZ is committed to maintaining a high standard of environmental stewardship when managing our forests and activities and ensuring the long-term sustainability of our operations. Environmental effects are a key consideration when planning and managing our operations, second only to ensuring operations are undertaken safely.

The following sections provide more information about the key aspects of OFO NZ NZ's environmental stewardship programs. OFO NZ Environmental Policy and Principle is attached under Appendix II.

5.1 The Environment and Forestry Activities

Forestry activities encompassing silvicultural and harvesting operations can have both beneficial and adverse impacts on the environment depending on the quality of environmental and operational planning and management.

Well managed forests can:

- enhance water quality;
- stabilise and conserve soil;
- provide a buffer against flood flows during storms;
- shade waterways keeping water cool for enhanced freshwater aquatic life;
- provide habitat for rare, threatened and endangered native species;
- sequester carbon to combat climate change; and
- provide recreational, economic, and social benefits to the community.

OFO NZ implements a range of measures at each stage of its operations to prevent or minimise the adverse impacts of its forestry activities on the environment. The company audits and reviews its performance standards regularly to ensure that its systems continue protecting natural and physical resources effectively.

OFO NZ NZ's Environmental Management System (EMS) is the primary tool used for ensuring that company operations meet the highest environmental standards. The EMS contains processes to be followed from initial planning through to completion of operations. It also sets out auditing, monitoring and review procedures that help to ensure continuous improvement of environmental performance.

The EMS sets out clearly the company's obligations, and those of its contractors, to protect identified environmental values in the areas we operate. These areas include waterbodies and wetlands, indigenous vegetation, riparian, neighbours' boundaries, protected areas, historic and cultural sites, and high value landscapes. Specific procedures, including monitoring the impact of operations, are followed to ensure protection of these special values.

Any forest establishment work (including pesticide application), earthworks and harvesting operations that have the potential to impact on areas of high ecological value are identified as high risk. Work in such areas is carefully planned, mapped, and prescribed. Specific environmental protection requirements are provided for operators to follow. Operators undergo training and receive specific in-situ advice to ensure they understand the importance of these issues.

Contractors must follow the prescription plan and monitor their operations on a day-to-day basis to ensure that such sites are safeguarded. Ensuring that protected areas and sensitive areas (e.g. adjacent indigenous vegetation, wetlands, riparians and streams) are not damaged is a focus.

OFO NZ has developed a natural hazards risk matrix to reference for adverse effects environmentally, to property or neighbours from severe weather conditions.

The EMS is designed to ensure that the company follows all the regulatory requirements and meets agreed industry standards.

5.2 Operational Planning

Planning is the first critical step in managing the environmental outcomes of our operations. It sets the framework for the **plan/do/check/adjust** structure of continuous improvement.

The National Environment Standards for Commercial Forestry (NES-CF) contain permitted activity standards for many activities. While the EMS is in alignment with the NES-CF, at times the EMS will require a higher level of standards and performance.

Where a planned activity cannot meet the EMS standards but does meet the NES-CF permitted activity rule(s), the approval of the relevant operational manager is required. Once the relevant operational manager has given documented approval, the proposed activity may proceed in accordance with the NES-CF.

At the beginning of the planning phase of harvesting, establishment, or earthworks operations, it is determined whether a resource consent under the *Resource Management Act* or an Authority under the *Heritage NZ Pouhere Taonga Act* is required. OFO NZ undertakes consultation with all those parties who may be affected by the operation. Where a resource consent is required, an application, which includes an assessment of the actual and potential effects of the proposed activity, is submitted to the local authority. The application also provides details of the measures to be used to prevent or minimise adverse effects.

The OFO NZ Operations team is responsible for activity and operation plan development, implementation, and operational compliance. Planning requires equal consideration of safety, values and environmental effects. The activity/operations plan and/or prescription ultimately sets and determines the scale of the environmental impacts of our operations. All operations must have a work prescription and plan before work commences (for harvesting operations this is called a harvest plan). Each operation is assigned an environmental risk rating (high, medium or low) based on the characteristics of the site. This alerts the contractor of the relative risk level of the job and is also used by OFO NZ to prioritise the frequency of operational and post-operation audits.

Prior to commencing operations, hazard identification is undertaken onsite with the contractor to ensure all safety and environmental hazards are clearly identified with controls in place. Contractors are required to comply with the relevant prescription as well as with applicable resource consent conditions. Compliance is monitored by OFO NZ operational staff during and on completion of operations.

5.3 Protection of Threatened Species

Planted forests can provide significant habitat for threatened species. Forestry operations can unintentionally damage or destroy plants, animals and/or their habitats. Pesticide spraying operations can kill non-target plants, mechanical land preparation, earthworks and harvesting can damage or destroy plants and habitats, animal poisoning can kill birds or other animals (cattle, sheep, dogs etc.).

OFO NZ is committed to managing our forests to maintain a diversity of indigenous flora and fauna species. Of particular importance are rare, threatened and endangered (RTE) species living within the estate.

The NZ Forest Owners Association in conjunction with the Department of Conservation (DOC) and other recognised technical specialists have prepared Management Plans for a range of threatened species living in forest estates around the country.

5.4 Indigenous Vegetation Protected Areas

5.4.1 General

10,944 hectares (17.1%) of OFO NZ's estate is designated as *conservation areas network (CAN)*. The network comprises of indigenous vegetation remnants located within the boundaries and comprises:

- Crown Forest License Covenants protected under the Conservation Covenant Act
- Tasman Accord areas protected under the Reserves Act
- Significant Natural Areas (SNA) wetlands mapped/listed/described in a regional plan
- FSC® High conservation value forest (HCV)
- Wetlands
- Indigenous vegetation meeting the NZ Forest Accord
- Sites of Special Wildlife interests and Recommended Areas for Protection
- Ecologically significant areas that have been assessed by a qualified ecologist.

All protected areas are identified in the company GIS mapping system and managed as permanent areas.

5.4.2 Protection Status within Ecological Districts/Regions

A requirement of OFO NZ NZ's FSC® certification is to ensure a minimum of 10% of the management unit area is identified, mapped and managed as *conservation areas network (CAN)*. The identified *CAN* shall be managed to retain or restore it to the condition of indigenous forest or wetlands. Table 3 shows OFO NZ exceeds the 10% minimum in all ecological districts/regions (Appendix III) except in the Wairau ecological region (i.e. Hillersden and Wither Hills districts).

As an offset, OFO NZ poisoned plantation forest in the Hillersden ecological district in 2021 and 2024, which resulted in an increase in the set asides for the reporting periods. OFO NZ will be further assessing the Wairau region for increased set aside opportunities as we complete harvest of the first rotation over the next ten years.

Another set aside commitment in 2024 is investment in the Powelliphanta snail sanctuary (over $28,000) in OFO NZ managed forest in the Richmond region, adjacent to the Wairau region. Details are covered under the OFO NZ Public Monitoring Summary.

To meet the FSC reserve set aside commitments, OFO NZ contributed over $500,000 between 2019 to 2023 to fund a wilding conifer control program in the Mt Richmond Forest Park. This program was in collaboration with the Mount Richmond Forest Park Management Unit Wilding Conifer stakeholder group. The work is regarded as a priority ecological effort for the neighbouring ecological district/regions of Nelson and Richmond (Appendix III).

Table 3. OFO NZ conservation areas network: Thresholds for ecological districts/regions across the estate. Unstocked gaps, areas awaiting planting, roads and landings within the working forest are not included.

Ecological Region	Ecological District	Total reserve set aside (Ha)	% working forest set asides per ecological DISTRICT	% working forest set asides per ecological REGION
Northwest Nelson	ARTHUR	2,190	59.6%	59.6%
Nelson	BRYANT	456	35.1%	13.6%
Nelson	MOUTERE	4,143	12.4%	
Nelson	RED HILLS	179	45.4%	
Richmond	FISHTAIL	1,007	15.6%	19.1%
Richmond	PARA	441	14.3%	
Richmond	PELORUS	1,907	23.8%	
Sounds Wellington	D'URVILLE	109	20.8%	23.7%
Sounds Wellington	SOUNDS	40	37.7%	
Spenser	ROTOROA	200	17.2%	17.2%
Inland Marlborough	WAIHOPAI	59	17.6%	17.6%
Wairau	HILLERSDEN	214	4.0%	3.8%
Wairau	WITHER	0	0%	
		10,944	**17.1%**	

As part of the Native Habitat Tasman voluntary program with Tasman District Council, OFO NZ remapped existing ecologically assessed protected areas within the Tasman region.

Under our OIO consent, the company completed remapping areas in October 2023 (558 hectares) in our Marlborough forests (Red Hills, Fishtail, Para, Waihopai ecological districts) for inclusion as legal terrestrial indigenous significant natural areas (SNAs). It was proposed to have these formally captured under the National Policy Statement for Indigenous Biodiversity (NPS-IB) by Marlborough District Council. With the Government repealing the NPS-IB in December 2023, these SNA's could not be included in the proposed Marlborough Environment Plan. As a result, OFO NZ is treating these areas as legal SNAs and the relevant NES-CF regulations will be applied by the business. Wetlands totaling 10.3 hectares in the Manuka Island block have been assessed by Council and included as formal SNA wetlands under the proposed Marlborough Environment Plan in 2022/2023.

In addition to cash contributions to the Mount Richmond Forest Park Management Unit Wilding Conifer stakeholder group, in 2023 the business invested a further $359,969 in wilding control over the OFO NZ estate:

- Department of Conservation for direct costs of wilding control in the Mount Richmond Forest Park;
- Wilding control on land adjacent to the OFO NZ estate; and
- Within the OFO NZ estate in significant natural areas, wetlands and riparians.

Figure 8. Manuka Island block and Mt Richmond Forest Park where extensive wilding control is undertaken for a 1-km buffer between land tenures.

5.4.3 Management of High Conservation Value Forests

Under the FSC® Principles and Criteria, certified forestry companies are required to identify reserves within the forest estate that meet the FSC® definition of High Conservation Value (HCV) and develop management plans, as required, to maintain or enhance the high conservation value attributes that define such forests. HCV's are defined as those areas that possess one or more of the following attributes:

- HCV1: Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).
- HCV2: Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.
- HCV3: Forest areas that are in, or contain rare, threatened or endangered (RTE) ecosystems.
- HCV4: Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).
- HCV5: Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).
- HCV6: Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

Note: Reference to regionally in this instance refers to a global region, not a region within New Zealand, (i.e. sites must be at least nationally significant to meet HCVF criteria 1 and 2).

OFO NZ has undertaken an assessment of the entire estate (forest management unit – FMU) using a range of data and information sources. The stakeholder group involved in the process included representatives from Department of Conservation, Tasman, Marlborough and Nelson regional

councils, Forest and Bird, Nelson-Marlborough Fish and Game Council, consulting ecologists completing surveys for Marlborough and Tasman regional councils, and OFO NZ employees.

The outcome of the assessment against the six HCV classifications concluded the following:

- HCV 1 – Blair Athol Gully at Tadmor, Golden Downs Forest, meets the criteria under HCV 1. Identified containing Nationally Endangered *Olearia polita* (small leaved tree daisy). Also, on adjoining Department of Conservation-managed land is the Nationally Critical *Ranunculus 'Hope'* (Hope buttercup), and Nationally Vulnerable *Gratiola concinna.*

- HCV 2 – It is unlikely that OFO NZ's forest management unit (FMU) will contain this HCV as the area is extensively modified by previous land use and existing plantation activities. It was determined the FMU does not contain any HCV 2 sites.

- HCV 3 – National and regional scale assessments for RTEs have been conducted by organisations represented in the above stakeholder representative group. While there are many important significant natural areas (SNA) throughout the FMU there are no sites considered to meet the very high HCV 3 criteria. OFO NZ FMU does not contain any HCV 3 sites

- HCV 4 – Ecosystem services are provided by plantation and set aside forests within the OFO NZ FMU. However, the guidance document indicated that to be considered an HCV 4 the forest would provide such services "in a critical situation". While forestry provides many ecosystem services, the assessment did not find any sites providing a critical service. OFO NZ FMU does not contain any HCV 4 sites

- HCV 5 – This HCV is targeted at communities living in or near forests in the developing world. In OFO NZ NZ's FMU there are no communities located within the forest blocks and no local communities obtain their basic day-to-day living from within the forests. OFO NZ FMU does not contain any HCV 5 sites.

- HCV 6 - While there are known sites of historic and cultural significance in the OFO NZ FMU, there were none that meet the high threshold of the HCV 6 criteria. OFO NZ FMU does not contain any HCV 6 sites.

5.4.3.1 HCV 1 Blair Athol Gully

Olearia polita (small-leaved tree daisy) is a shrub or small tree with a tangled appearance and small rounded leaves that are shiny green above and white underneath (Figure 9). In spring it bears abundant small, fragrant flowers.

At Blair Athol Gully adjacent to the Big Bush Conservation Area, it grows in the dry-to-wet transition between swampy stream-fed areas and dry soil, on the flats in the open and partly swampy silver beech and manuka scrub. This is New Zealand's largest population and the only significant population on protected public land managed by the Department of Conservation (DOC). *O.polita* is also found within an adjoining area (1.67 ha) on OFO NZ NZ's estate.

The OFO NZ Public Monitoring Summary contains further information on this HCV 1.

Figure 9. Nationally endangered Olearia polita (small-leaved tree daisy) located in OFO's Tadmor block adjoining the Big Bush Conservation Area managed by DOC.

5.5 Archaeological Site Management

There are many registered and un-registered archaeological sites within the forest. All sites are protected under the *Heritage New Zealand Pouhere Taonga Act 2014*. An archaeological site is any site in New Zealand that was associated with human activity prior to 1900.

Archaeological sites (including historic buildings) are vulnerable to damage when undertaking earthworks and harvesting. OFO NZ has an archaeological and historic management procedure, which specifies the procedures that must be followed when working around archaeological sites, either known or discovered during operations.

All known sites are recorded in GIS and are considered in the planning of operations. No operations are undertaken that could potentially damage or modify an archaeological site without the necessary authority from Heritage New Zealand Pouhere Taonga. Once the authority is obtained this becomes part of the operational prescription to ensure the conditions of the Authority are complied with.

When a notable site is identified during an operation, the accidental discovery procedure (ADP) requires all work to cease within 20m of the site and the site is visited by an archaeologist and, in the

case of Māori sites, local tangata whenua representatives. If the feature is confirmed as an archaeological site a management plan is developed with input from the archaeologist and iwi representatives and, if necessary, an authority is sought from Heritage New Zealand Pouhere Taonga.

In areas of forest with a high likelihood of new sites being discovered, employees and contractors are provided training on identification of archaeological site features and procedures that must be followed in the field (Figure 10).

Figure 10. Harvest crew inspecting pakohe/argillite flakes in the Collins block. This archaeological site is significant to iwi and is protected. An archaeological authority has been obtained to protect against modifying/damaging potential artifacts outside the site.

5.6 Environmental Incident Management

While OFO NZ strives for excellence in the performance of its forestry activities it is inevitable that incident will occur on occasions. When the company becomes aware an incident has occurred, it acts promptly to minimise and remedy adverse impacts on the environment. All incidents are required to be reported, and significant incidents are investigated to ensure employees and contractors learn from the experience and management processes are reviewed and revised to avoid repeat incidents.

5.7 Climate Change

OFO NZ has developed a Carbon Emissions Reduction Strategy:

"OneFortyOne commits to reduce scope 1 and 2 greenhouse gas emissions by 75% from 2021 levels by 2030. We aim to achieve net zero scope 1, 2 and 3 greenhouse gas emissions by 2050. We will do this primarily by supporting emission reduction technologies in our operations, partnering with suppliers that are consciously taking steps to reduce their own greenhouse gas emissions, and using our forests and expertise to create incremental carbon removal in achieving our net zero goals."

The 2024 (financial year) greenhouse gas (GHG) emissions have been calculated to meet the Australian regulatory GHG reporting standards. To comply with these standards, OFO NZ Group has transitioned to the Diligent ESG reporting platform for calculating its emissions profile. Diligent uses assumptions based on lifecycle analysis (LCA) principles and international GHG reporting standards (previously FICAT). Results obtained include a carbon emission profile, an estimation of forest sequestration due to forest growth and an estimation of the carbon stored in the end use products.

At the end of June 2024, OFO NZ estate storage calculations (above and below ground) was approximately 42 million tonnes of CO_{2e} (carbon dioxide equivalent). In addition, the end use products created from OFO NZ NZ's processing customers store an estimated 339,106 tonnes of CO_{2e}.

OFO NZ forestry operations, including transport and shipping, emitted an estimated 73,188 tonnes of CO2e. Through our Green Emissions Reduction Strategy, we are committed to reducing these emissions through process innovation including the introduction of equipment with lower emission profiles.

6 Benefits from the Forest

Through our management of large areas of forest land, OFO NZ is an integral part of the communities in which it operates, and as a significant business and employer, contributes to the sustainable development of these communities. Community relations are an important focus for the company and OFO NZ is committed to being ethically and socially responsible.

6.1 Stakeholder Engagement

OFO NZ strives to actively engage with stakeholders in the many communities in which we operate, and particularly those directly or indirectly affected by our operations. Prior to commencing harvesting in a new area, OFO NZ engages with representatives of the local community to keep them informed of plans and develop mitigation strategies for identified concerns. Typically, this includes forest neighbours, residents of any rural access roads affected by logging traffic.

6.1.1 Coronation Forest – 70th Anniversary

Since 1954, OFO NZ holds the annual week-long Coronation Forest education event for schools in the Nelson-Tasman region.

In 2024 we celebrated the 70th anniversary (Figure 11) of the event with 138 students (from three local schools) aged between 9 and 13 participating. We also held an anniversary event that was well attended by OFO NZ staff, Ngāti Toa representatives, the mayor, contractors, school representatives and past people that were involved with the event. An area of native trees was planted at the Coronation Forest shelter to recognise this significant milestone.

Figure 11. Coronation Forest: 70th Anniversary Commemoration.

In terms of the education day, each student learns about the value of plantation forestry in providing wood for buildings, jobs for people and allowing native forests to be protected. Activities delivered include:

- Planting three to five plantation trees.
- Walking a conservation trial with an ecologist describing the values in New Zealand's natural forest.
- Undertaking a plantation forest study. This activity includes setting up a plot and measuring trees, understanding log quality and observing the biology of plantation ecosystem.

6.2 Local Economy (Socio-Economic Conditions)

OFO NZ has offices in Richmond and Blenheim, and our contracted workforce is spread through several smaller communities in the vicinity of the forests that we manage. The estate that OFO NZ manages is in areas of rural New Zealand. Forestry and related wood processing remain significant contributors to employment in Nelson-Tasman and Marlborough. Nelson is the largest town centre in the Top of the South region and has a strong tourist base, which is enhanced by the plantation forests and their recreational opportunities.

OFO NZ is a significant contributor to the local economy in the Top of the South, both directly through our business expenditure with suppliers and indirectly through our log supply (Figure 12).

In 2023 OFO NZ embarked on a project to harness wood waste from our estate and convert it to a renewable resource. The project has resulted in a signed 5-year agreement that will see wood fiber previously left in the forest turned into biofuel (media release on Harnessing Forestry Waste).

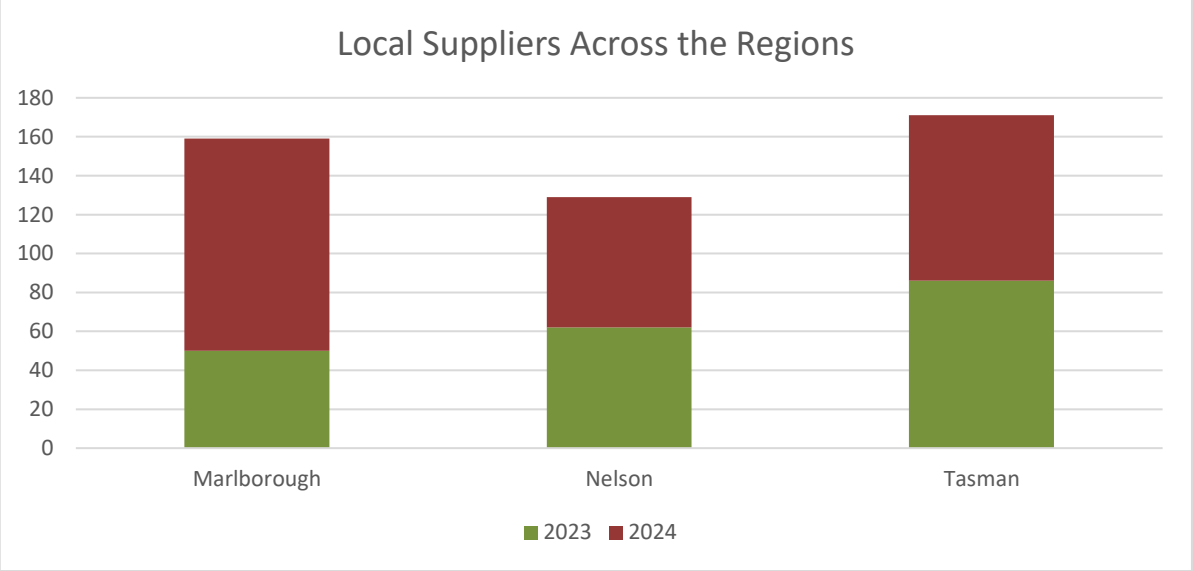


Figure 12. Between 200-260 local suppliers provided goods and services to OFO NZ in 2023 and 2024.

6.3 Sponsorship

During 2024, OFO NZ was pleased to contribute a total of $136,540 to 29 community organisations in the Top of the South. A total of $55,000 was given as sponsorships (four organisations); and $81,540 in community grants to 25 recipients. Details on OFO's community grant program and/or to apply for grant funding, are located on Community Grants - One Forty One.

6.4 Employment

Forest management requires educated and well-trained employees, who understand not just their technical roles, but also the impact on those they lead, health and safety, the environment, and the community.

OFO NZ directly employs approximately 44 employees full and part-time. In addition, OFO NZ engages a significant number of contractors who undertake a range of forest management activities from mensuration and forest protection through to engineering and harvesting.

Employees and contractors receive various levels of training on an on-going basis and are encouraged to continuously improve their performance.

OFO NZ has an active role in initiating training courses to assist young people enter the industry in Nelson-Tasman and Marlborough. OFO NZ currently has five forestry scholarship students who we support with scholarship funding and holiday work.

In 2024 we employed a Forestry Graduate to learn more about the business by rotating around teams and projects.

We work closely with our community to promote forestry to youth as a career including participating a regional and school career days, promoting the industry via Nelson Regional Development Agency, LifeLab website, Young Enterprise Scheme (YES) sponsorship and judge support, forestry careers day "Fantastic Futures" and arranging school trips to a working forest (Figure 13) via Nelson Regional Development Agency. We connect students interested in studying Forestry with employees and our scholarship students to learn more about the industry. Attended the University of Canterbury, School of Forestry, 'Meet the Employer' evening to promote OneFortyOne, the region and Forestry as a career option.

Figure 13. Engaging with secondary students in the Top of the South regions to promote forestry as a career.

6.5 Recreation

OFO NZ forests are used for a wide range of recreational activities, including walking, running, mountain biking, car rallies, horse riding, hunting, and other activities. In many cases, the forest is a major recreation resource for local communities.

Since 2021/22, we have access agreements with Nelson-Marlborough Fish and Game for recreational bird hunting, and with community groups for hang gliding, horse riding, and MTB park development over two forest blocks.

Information for forest users can be found on the website under Public Information - One Forty One, and includes up-to-date information on public access easements (PAEs) and the Public Access Policy.

6.6 Commercial Leases

Stock grazing leases have been established in many areas within the OFO NZ estate. These leases have been established because the land itself was more suited for agricultural use than forests due to access

or climatic reasons. OFO NZ maintains grazing permits and charges a commercial lease in line with the term and land value. In 2024, sixteen grazing licenses over 64 hectares were issued/renewed; and 12 licenses were issued giving access to 53,005 hectares for bee keeping.

6.7 Disputes Resolution

It is OFO NZ intention to proactively manage relationships with stakeholders to avoid situations that progress into complaints or disputes. However, despite the best intentions, such situations will inevitably arise from time to time.

It is OFO NZ goal to manage all complaints and disputes ethically and proactively to achieve timely and mutually acceptable solutions wherever practical, and to avoid creating ill-will with OFO NZ stakeholders and risk to the business of OFO NZ or compromising the values or reputations of our clients.

OFO NZ has a *Complaints and Disputes* procedure that details the steps that will be followed in the event of a dispute. This procedure is on the website under Public Information - One Forty One.

7 Monitoring

7.1 General

OFO NZ conducts a comprehensive monitoring program to aid understanding of the impact of its activities on the environment and the impact of the environment on its ability to grow the best trees. This understanding leads to the development of strategies to ensure the company continues to manage its activities in a sustainable way.

In addition to the monitoring reported here, there is extensive operational supervision and management that covers planning, design, performance management and completion reporting of operations and environmental audits. Forest growth and measurement is recorded in forest information systems and are not reported here. Operational decisions are recorded in road line and operations meeting minutes. Contractor performance reporting systems include metrics on delivery, value, volume, productivity, quality control results, environmental and safety performance metrics.

7.2 Operations Monitoring

OFO NZ regularly conducts internal health and safety, and environmental audits to confirm operations have been carried out in accordance with work prescriptions and regulatory requirements, and to identify any corrective actions required.

In the recently updated OFO NZ Environmental Management System, it has been scheduled that the business will undertake five-yearly environmental systems audits with contractors operating in our estate to ensure they comply with our Environmental Management Systems and company procedures.

Regional councils also conduct compliance monitoring of operations undertaken under resource consent or the National Environmental Standards for Plantation Forestry (NES-CF) permitted activity rules.

7.3 Biodiversity Monitoring

OFO NZ conducts a range of surveys across the estate to monitor both impacts of forestry operations on indigenous fauna and to monitor the health and changes to populations. The monitoring programs currently include:

- Annual stream monitoring in selected streams across the estate.
- High conservation value (HCV) forest site to monitor the health of species resulting in HCV status. This monitoring is led by DOC.
- Threatened species (RTE) such as keas, falcons and giant land snails. Sightings are recorded by contractors and OFO NZ employees in the OFO NZ-developed Threatened Species.
- Fish passage habitat by a local aquatic freshwater ecological consultant.

7.4 Forest Growth and Yield

Forest growth is measured primarily from inventory data and through growth modeling. OFO NZ uses YTGen and Woodstock software to assist in modeling forest growth. As well as inventory data, a network of permanent sample plots (PSP) exist to assist in improving the growth models. Foliage sampling for needle nutrient levels and forest health surveys is also undertaken to assist in monitoring forest growth and performance.

7.4.1 Inventory

Regular forest inventory sampling monitors forest growth and development over the period of therotation. Cengea's Forest Management Module (FMIS) is used as the primary software for the storage of stand records. Inventory monitoring generally includes:

- Pre-assessment as required (age 6-10) – prior to tending operations.
- Quality Control (Age 1 and age 8 - 12) – following establishment and tending.
- Tactical (age 17 - 23) – to obtain tree size and estimate of recoverable volume by log grade to assist harvest planning and forecast medium and long-term log grades.
- Pre-Harvest (24 - 28) – to obtain estimate of recoverable volume by log grade.

Remapping of forest and cutover is undertaken using both satellite images and aerial surveys. This generally occurs in association with significant forest events such as harvesting or following storm damage.

7.4.2 Permanent Sample Plots (PSP) and Trials

Within the OFO NZ estate 135 Permanent Sample Plots (PSP's) exist. These plots are measured at regular intervals to monitor growth over the rotation. The results of these plots are used to assist in refining forest growth models. PSPs and other trials monitor key factors (e.g. silviculture, establishment practices, fertilising trials and genetics (Figure 14).

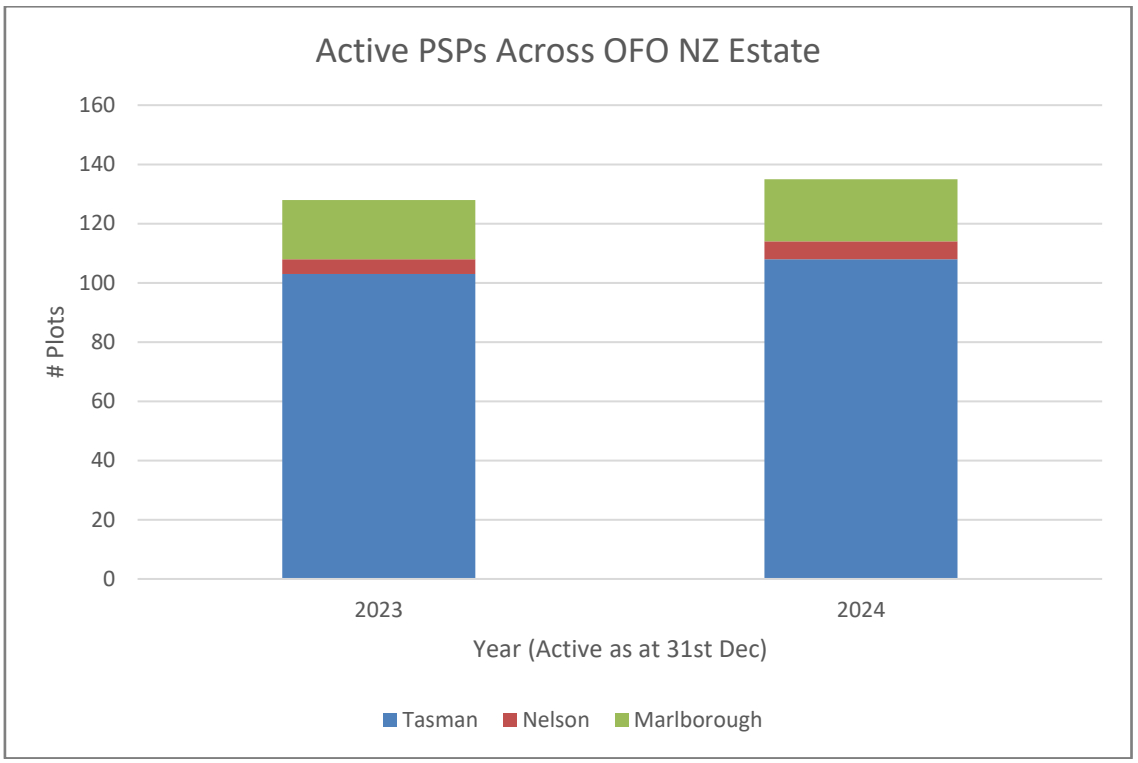


Figure 14. Active PSPs in the OFO NZ estate by region.

OFO NZ is a shareholder in the Radiata Pine Breeding Company and hosts several of their genetic research trials in the estate (Figure 14).

Figure 15. Radiata Pine Breeding Company forest genetics trial at Berrymans, Golden Downs Forest.

7.4.3 Nutrition Monitoring

An annual nutrient assessment is undertaken each year to monitor the levels of foliage nutrient levels across the estate. Age three trees are targeted as well as any stands that are beginning to show signs of deficiencies.

7.4.4 Forest Health Monitoring

An annual forest health survey is undertaken as part of the national Forest Health Surveillance System to the New Zealand Forest Owners Association (NZFOA) standards to detect any potential new pests and diseases, as well as to monitor changes in existing pest and diseases. Further details on forest health monitoring are in the OFO NZ Public Monitoring Plan.

7.5 Research Projects

- OFO NZ is involved with or contributing to several research projects to improve understanding of the effects of plantation forestry.

- OFO NZ contributes funding through the Forest Growers Levy (introduced in 2014), for research that benefits the forest industry. OFO NZ is also part of the Precision Silviculture Program, a seven-year project funded by Forest Growers Research, Forestry Companies, and the Ministry of Primary Industries to transform forest management practices by applying sensing technologies, robotics and automation across forest management operations including nursery tree production, planting, establishment practices, pruning and thinning.

  The program addresses labour shortages, the need to improved safety in all forestry operations, and the goals of reducing forestry value chain costs, maintaining a pruned log supply, enhancing productivity, and maintaining license to operate through sustainable practices and reduced chemical inputs. It also supports the transition towards a bioeconomy through developing more effective methods for delivering biomass waste streams for conversion into bioenergy or other uses.

- Since 2019, OFO NZ has funded and supported the Kea Conservation Trust and a Masters (now PhD) student on research and monitoring of Kea (*Nestor notabilis*) within the estate. The objective of the Masters project is to gain an understanding of Kea abundance, habitat use and feeding behaviour in plantation forests. It is hoped that this understanding can help shape management practices that allow forestry and Kea to inhabit the same space in a safe manor. The report was published in 2023. A subsequent article was published in the NZ Institute of Forestry Journal about the study.

- In 2021, Manaaki Whenua-Landcare Research approached OFO NZ to assist with data from OFO NZ estate for a 2-year project assessing the 'window of vulnerability' (WOV), which is the period between post-harvest to subsequent canopy closure [from replanting]. This research is important for forest managers to understand landslip susceptibility during the WOV period, and in relation to possible impacts on downstream receiving bodies (i.e. waterbodies, neighbours). The publication was submitted for publishing in late 2023 – Closing the 'window of vulnerability' » Manaaki Whenua (landcareresearch.co.nz)

- In 2023, OFO NZ was part of a collaborative project between four regional forestry companies and the University of Canterbury assessing the likely impact of climate change on radiata pine site productivity. The research indicated that the less productive sites, particularly due to higher altitude, will become more productive with increasing temperature.

- In 2020, OFO NZ in partnership with the Ministry for Primary Industries' and funded under the Sustainable Food and Fiber Futures Fund, commenced a long-term paired catchment study. Partners involved with the study include Manaaki Whenua – Landcare Research, Cawthron Institute, and Envirolink Ltd. The study involves the establishment of a 7-year monitoring program within paired catchments in the estate to study the performance of sediment control practices utilised in forest operations (including slash). The three catchments (treatment area 1, treatment area 2, control area) are adjoining catchments of similar sized-area, geology and topography, planted in *Pinus radiata* of similar age. Visual clarity monitoring was introduced to the project at

the end of 2023 for all five sites (Figure 16).

The *Donald Creek Study 2020-2027* is updated each milestone year and can be viewed on the OneFortyOne website.

Figure 16. Donald Creek visual clarity water sample collection introduced in late 2023 at five sites within the project study area.

Appendix I – Health, Safety & Wellbeing Group Policy

HEALTH, SAFETY & WELLBEING POLICY - GROUP

1. Purpose

OneFortyOne (OFO) is committed to fulfilling its responsibilities in relation to the health, safety and wellbeing of its employees, contractors and visitors, the need to strive towards the elimination of work-related injuries and illnesses and create an environment where people can thrive. This policy outlines our commitments for achieving our vision of every person getting home safe and well every day.

2. Scope

This Policy applies to all Australian and New Zealand employees and contractors of OFO and to visitors at OFO sites. It also applies where our people are required to work off site.

Business	Melbourne	Wood Products	GT Forests	Kaituna	NZ Forests
Applicable	Yes	Yes	Yes	Yes	Yes

3. Our Commitment

OFO strives to ensure the health, safety and wellbeing of our employees, contractors and visitors by providing and maintaining a working environment that is safe and healthy. OFO is committed to:

- Complying with all applicable legal, site and other health & safety requirements.
- Maintaining systems for identifying hazards, assessing, eliminating or reducing risks in line with the Health, Safety & Wellbeing risk appetite statement (found at Board Approved OFO Risk Appetite Statement - 7th Dec 2023)
- Supporting wellbeing through consideration of our physical, mental and emotional health.
- Setting a caring, ethical and engaging culture.
- Applying adequate resourcing for health, safety and wellbeing, including expertise, systems of work, plant & equipment and capital improvement, information, instruction, training and supervision.
- Driving continuous improvement, establishing objectives and targets, creating plans and reporting on performance.
- Consulting with relevant people and groups on things that may impact their health, safety and wellbeing.
- Communicating regularly to share, learn and improve.
- Provide appropriate care and support to those that are injured or become ill due to work and assist in recovery and return to work.

4. Our Leaders

At OneFortyOne our leaders are accountable for people's health, safety and wellbeing and you can expect that they will:

- Proactively live our Home Safe and Well commitment.
- Lead by Example, demonstrate a personal commitment to safety by consistently following safety procedures and encouraging others to do the same.
- Build an empowered environment that encourages all to join into an open dialogue about how we deliver home safe and well together.
- Encourage reporting and ensure procedural fairness.
- Prioritise Health, Safety and Wellbeing protection over production.
- Support workers to Stop work and report if they think they and/or others, are in immediate danger.

5. Everyone's Commitment

Every one of our employees, contractors and visitors has a responsibility for health safety and wellbeing. OFO requires everyone to:

- Take reasonable care for their own health, safety and wellbeing.
- Take reasonable care for the health, safety and wellbeing of other employees, contractors, visitors and anyone else who may be affected by what they do or fail to do when working.
- Co-operate with OFO in connection with any action taken by OFO to comply with any requirements imposed by or under applicable health and safety laws and comply with this policy.
- Not wilfully or recklessly interfere with or misuse anything provided in the interests of health and safety protection.
- Actively participate in relevant risk assessment, training and investigations.
- Report hazards, incidents and injuries as soon as possible; and comply with procedures and practices that are relevant to the work they are performing.
- While attending customer or contractor premises and sites, take reasonable care for their own and/or others health and safety and comply with any safety requirements imposed by the customer or contractor.
- Stop work and report if they and/or others are in immediate danger.

Appendix II – OFO NZ Environmental Policy and Principles

Environmental Management System – Policy & Principles

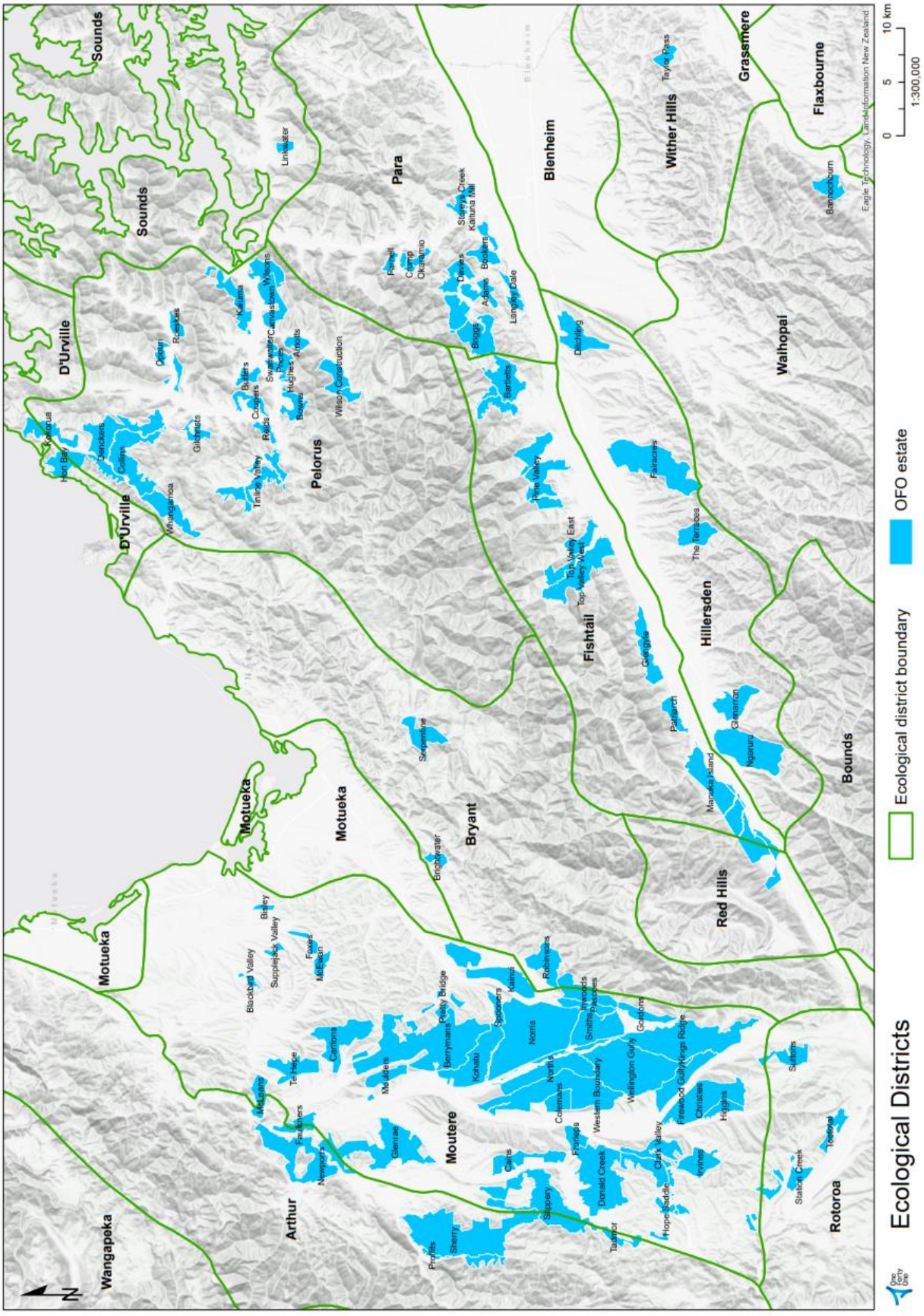
Environmental Policy	Maintain OFO's environmental stewardship and performance by demonstrating the promotion and care of a healthy functioning environment[1].
Environmental Management Principle	To identify, evaluate and manage the significant environmental effects[2] of plantation forestry on the environment. To train and empower employees to manage operations to ensure that desirable environmental outcomes are planned and achieved, and that environmental effects are accepted and sustainable. To work towards the sustainable management of the natural and physical resources we own or manage, to provide for the well-being of future generations.
Community Principle	To provide for managed recreational and community activities within and adjacent to our forests. To consult with stakeholders and demonstrate openness in questions concerning all significant environmental aspects of our activities.
Continuous Improvement Principle	OFO has Forest Stewardship Council® (FSC-C074692) certification. FSC® Principles and Criteria and related Policies and Standards provide for the long-term commitment to continuous improvement in our forest management practices. OFO's Environmental Management System is one of the foundations of its certification.
Compliance Principle	To manage and control activities to comply with environmental legislation and regulations, and the following voluntary codes: ○ Resource Management Act 1991 ○ Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2017 ○ Regional Environment Plans from the Nelson, Marlborough and Tasman Councils ○ New Zealand Forest Accord ○ Principles for Commercial Plantation Forestry Management in NZ ○ NZS 8409 Management of Agrichemicals (and subsequent versions) ○ NZFOA Environmental Code of Practice for Plantation Forestry ○ NZFOA Forest Practice Guidelines ○ Climate Change Response Act ○ Forests (Regulation of Log Traders and Forestry Advisers) Amendment Act 2020 ○ Forest Stewardship Council® Principles and Criteria ○ NZ Wilding Conifer Management Strategy
Tangata and Mana Whenua Principle	To develop a relationship with tangata and mana whenua that is equitable and has clarity and transparency in all processes.

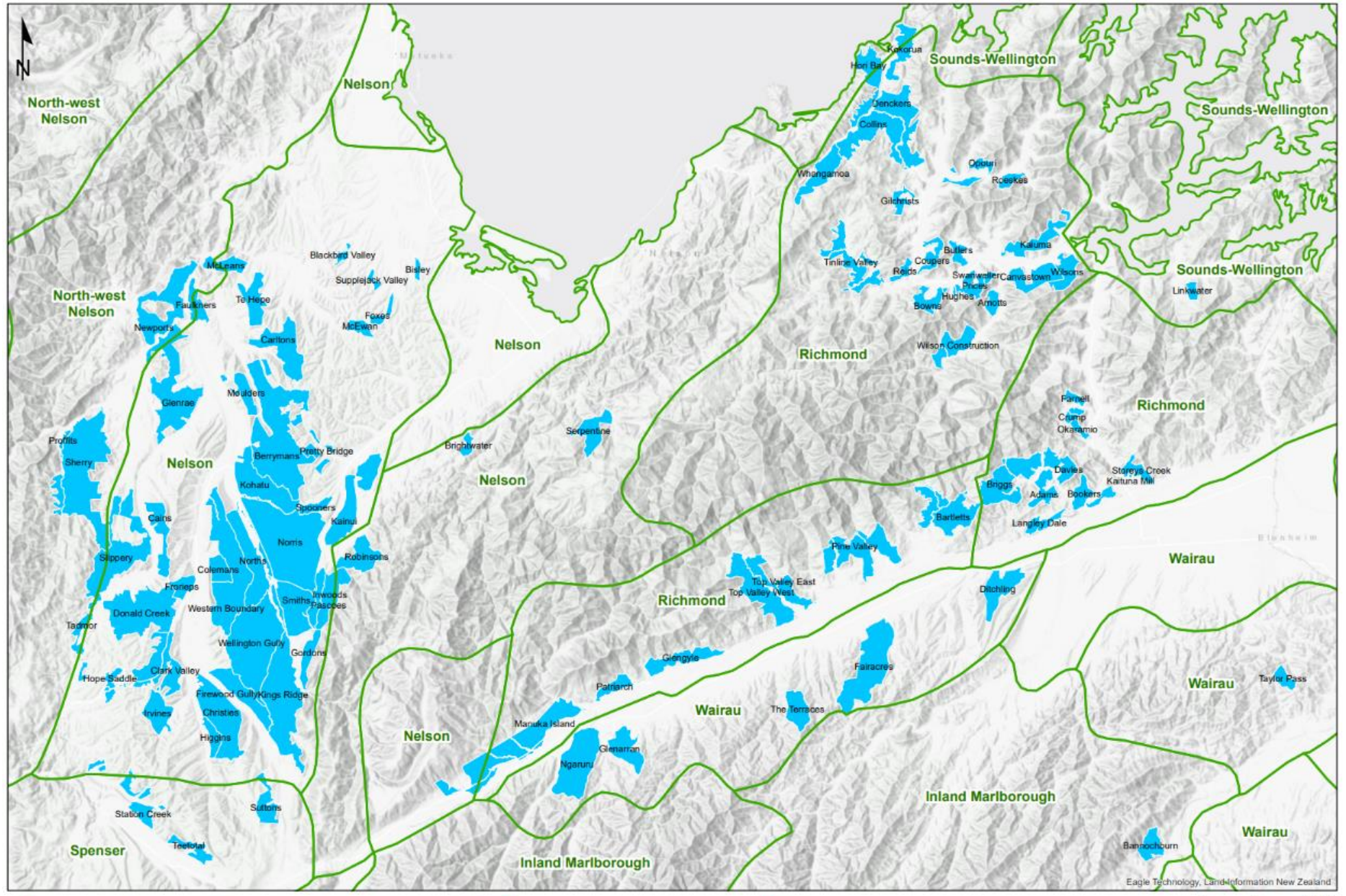
Shaun Truelock
General Manager NZ Forests
OneFortyOne New Zealand Limited

16/5/2024

1 *Environment* includes the atmosphere, waterways, soil, landscape, ecosystems, people and communities.
2 *Significant (environmental) effect* includes adverse or beneficial effects. It can be temporary or permanent, past, present or future and any cumulative effects that arise over time or in conjunction with other effects that have been evaluated as having the potential to cause a significant impact on the environment. The main environmental effects relate to: Changes to soil structure and fertility, soil erosion, water quality and yield, air quality, landscape, neighbour relations, biological diversity, pollution of land or water from fuel/chemicals/pesticides/contaminants, carbon sequestration, and cultural values/recreation/aesthetics.

Appendix III – Ecological Districts and Regions over OFO NZ Estate




N
North-west Nelson
Nelson
Sounds-Wellington
Richmond
Wairau
Inland Marlborough
Spenser
Eagle Technology, Land Information New Zealand
Ecological Regions
Ecological region boundary
OFO estate
0 5 10 km
1:300,000

Appendix IV – Public Monitoring Summary

Appendix IV

OneFortyOne New Zealand Limited

Public Monitoring Summary 2024

Front cover: Manuka Island, Marlborough Region. Photo: R. Woolley.

This is a working document and may be updated periodically as we continually evaluate, develop, and refine our monitoring programs.

Printed copies are therefore obsolete.

Contents

1 Introduction

The purpose of this report is to describe the range and general results of monitoring programs that are undertaken by OneFortyOne New Zealand Ltd (OFO NZ).

The Public Monitoring Summary is produced as a requirement of OFO NZ's Forest Stewardship Council® (FSC®-C074692) commitments.

This document provides a summary of the key indicators monitored by OFO NZ that are not confidential It can be read in conjunction with the *OneFortyOne New Zealand Forest Management Plan Public Summary 2024*.

Further information can be provided on request. Please contact OFO NZ by email environment@onefortyone.co.nz.

2 What OFO NZ Monitors

OFO NZ undertakes routine monitoring in a range of areas including:

- Forest Health and Monitoring
- Pest Control
- Health and Safety
- Recreation
- Consent compliance
- Carbon
- Biodiversity

Key monitoring results are summarised in this report. Further results are available on request where they are not confidential.

Additional environmental monitoring that is undertaken but not reported includes:

- Archaeological sites – all registered archaeological sites with an archaeological authority are monitored post-harvest by an archaeologist.
- Environmental incidents – all incidents are recorded into a database where they can be tracked and closed off.
- Environmental operational audits – operations are audited and monthly and/or at the completion of the operation against the company EMS Environmental Standards.
- Environmental system audits – carried out on contractors every five years to monitor compliance with the company EMS.

3 Forest Health and Monitoring

3.1 General

Forest health monitoring is undertaken in the OFO NZ managed estate at two levels:

- Type I Monitoring: Forest health surveillance – focus is on coverage of the whole estate and a wide range of disorders.
- Type II Monitoring: Specific surveillance of a particular disorder, which includes –
  - Foliage sampling for nutrient deficiencies
  - Survey for Dothistroma (*Dothistroma septosporum*) infection

3.2 Forest Health Surveillance

A sample of the forest is surveyed annually by an independent forest health specialist as part of the non-model allocation (NMA) component of surveillance funded by the Forest Growers Commodity levy. Additional areas of *Pseudotsuga menziesii* not included in the NMA area are also surveyed by an independent forest health specialist.

The survey comprises a combination of:

- surveys carried out by driving through portions of forests.
- 'investigative' health plots – to check on symptoms observed.

The surveys are primarily designed to give an acceptable probability of detecting new injurious organisms in time for effective eradication/mitigation or control. A secondary objective is to provide an indication of how forest health is changing over time and how forest management may be impacting on any trends.

3.3 Foliage sampling

OFO NZ carries out an annual foliage sampling program for Radiata pine to ascertain the nutritional status of selected stands (e.g. age 3-year stands). Fertiliser is applied to stands identified with nutrient deficiencies. Foliage sampling also allows changes to be monitored in nutrient levels throughout the growth of a stand and/or for successive rotations.

3.4 Fertilising

Current site fertility management decisions are based on annual foliar analysis. The primary objective is to correct elemental deficiencies in the tree when values fall below a deficiency threshold or an imbalance between elements creates an induced deficiency (Figure 17). Optimal nutrient ratios are also considered for their opportunity to increase growth.

A measure of plantation forestry sustainability is crop nutrition. Each year the 3-year-old age class foliage is sampled for foliar nutrition, and fertiliser is applied to correct selected deficiencies. The application of fertiliser is a measure of the fertility of the land occupied by the current 3-year-old age class. Boron is applied to approximately half of the Estate by 4-years old. Nitrogen and/or phosphorus is applied to less than 5% of the Estate by 10 years old but depends on foliar sampling results and product costs. These fertilisers are generally applied aerially in spring or autumn.

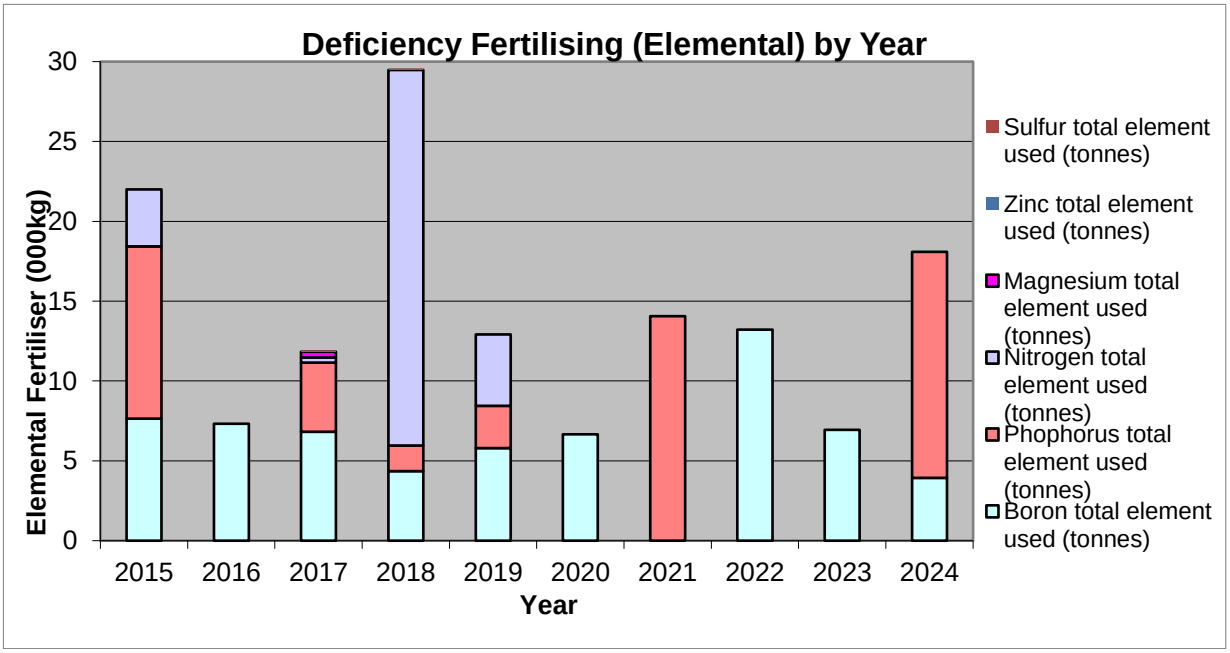


Figure 17. Total elemental fertiliser applied to the FMU each calendar year recorded over a 10-year period.

3.5 Dothistroma

Dothistroma septosporum is a fungus that affects radiata pine and causes needle cast. While it rarely kills trees, it can severely affect growth. Dothistroma primarily affects stands of radiata pine between 2 and 16 years of age.

Each year susceptible age classes are assessed by aerial and ground survey. Stands that have an infection level greater than 15% are sprayed once in that year with cuprous oxide.

The total area of Dothistroma sprayed since 2000 is shown below in Figure 17. The area sprayed each year is a function of the susceptible age class and seasonal weather conditions (i.e. mild and wet summer produces higher disease levels).

Dothistroma is also managed pre-emptively through silvicultural practices such as:

- Use of Trichoderma inoculum to improve tree resilience to disease.
- planting tree stocks with genetics selected for dothistroma resistance.
- post-plant releasing which improves stand ventilation.
- thinning to promote air circulation within the stand.

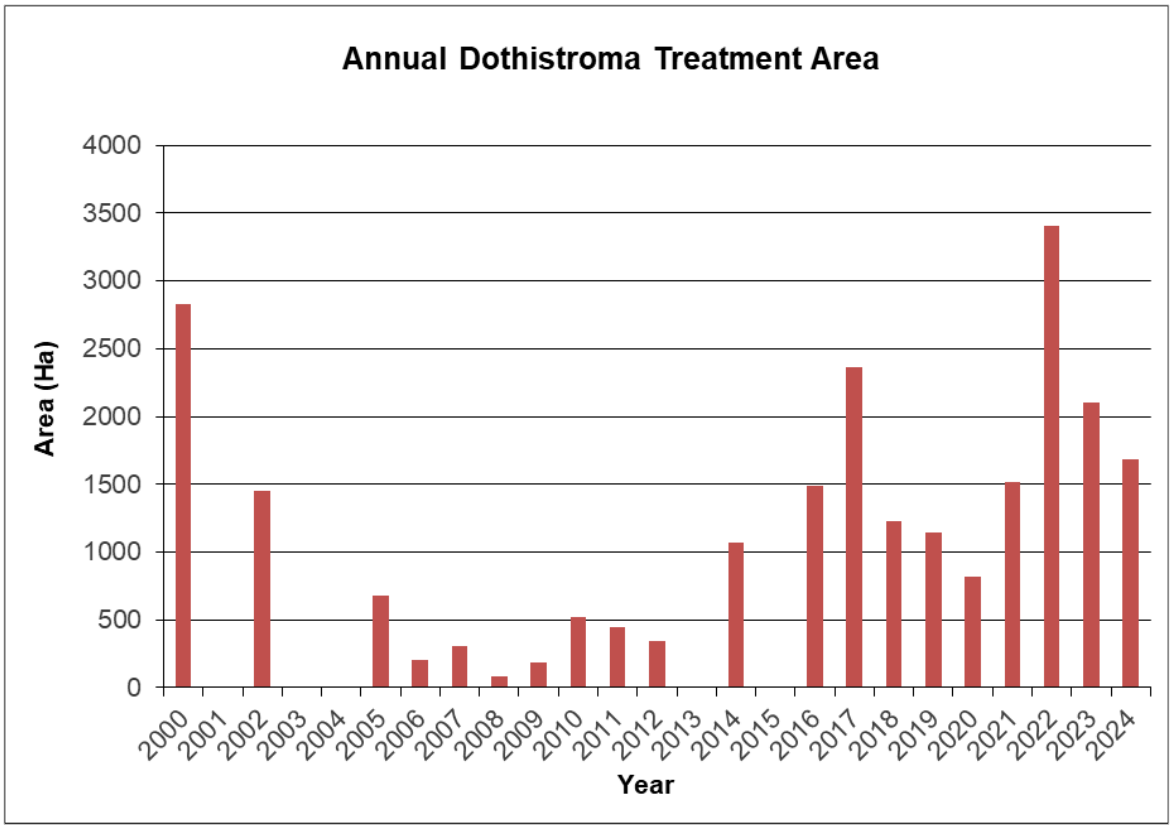


Figure 18 Dothistroma treatment applied to area (hectares) over a 24-year period.

3.6 Pest control

Pests have significant economic, environmental, and cultural impacts on the forest estate and wider community. A 'pest' can be a plant, animal, fungi, micro-organism, or pathogen that is adversely affecting something of value including people's wellbeing, plantation crops, and indigenous

biodiversity values.

Pests are currently controlled in the estate for the following objectives:

- To maintain safe working conditions (e.g. wasp control, clearing roadside vegetation for safe driving, reducing hindrance levels in stands for silvicultural operations).
- To comply with Regional Pest Management Strategies.
- To maintain ecological, landscape, and amenity values.
- To ensure that a successful crop is established.
- To be a responsible neighbour, in situations where weeds are spreading from the Estate.
- To eradicate a new invasive pest species, or to slow the spread of an existing plant pest species.
- To promote forest fire safety by reducing the amount of flammable vegetation in forests.

OFO NZ is committed to having an integrated pest management program that achieves industry best practice. The number of pest animals (ungulates) eliminated in OFO NZ estate are shown in Figure 19.

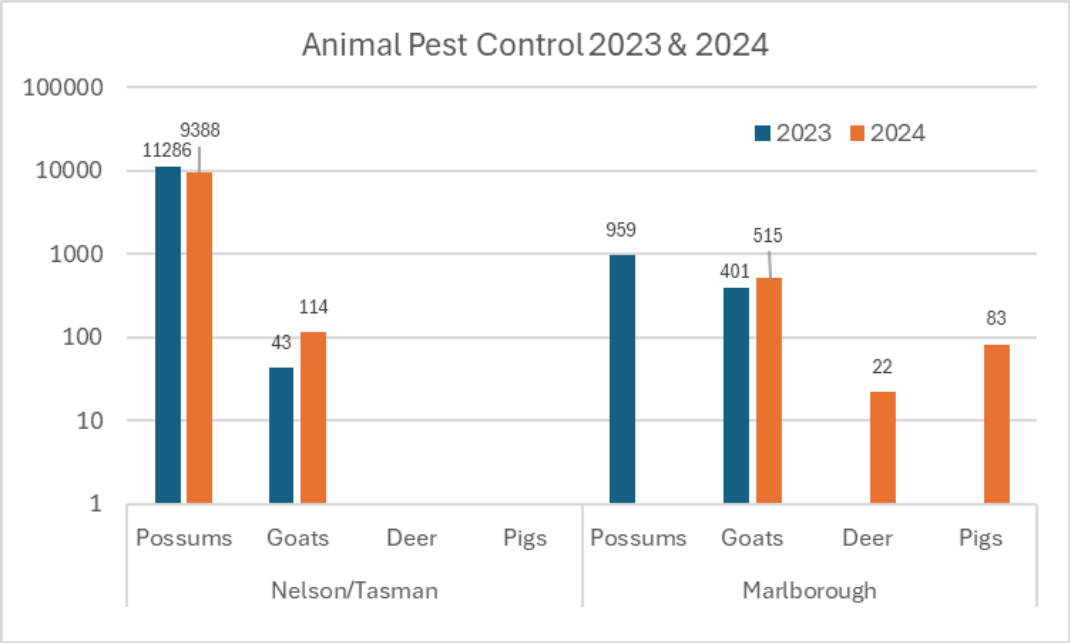


Figure 19. Animal pest control cull numbers in Nelson/Tasman & Marlborough regions for 2023 & 2024.

4 Pesticide application

OFO NZ are committed to minimising the quantity and toxicity of pesticides used in its management activities (Figure 20). Methods to reduce the volume and use lower toxicity pesticides include:

- Planning pest control areas to reduce programme size,
- Optimise timing of application to reduce rates required e.g. spraying broom in October when in full leaf to maximise pesticide uptake,
- Use of spray additives to enhance pesticide coverage and penetration into target weeds,
- Spray regime that favours pre-plant over post plant control for lower toxicity products,
- Use of spray equipment that allows precise rates and deposition of pesticides,
- Reducing pesticide rates to the lowest possible that still achieve desired level of weed control.

Some factors that can increase the use of pesticides that are beyond OFO NZ control include:

- Climate and its impact on weed growth,

- Economics favouring the use of pesticides to increase value (e.g. E-thinning),
- Worker safety e.g. the use of aerial releasing over spot spraying in higher risk terrain,
- Regulations and the requirement to control pest (e.g. wilding pine and noxious weeds).
- A detailed analysis is documented as part of the annual reporting for FSC® certification.

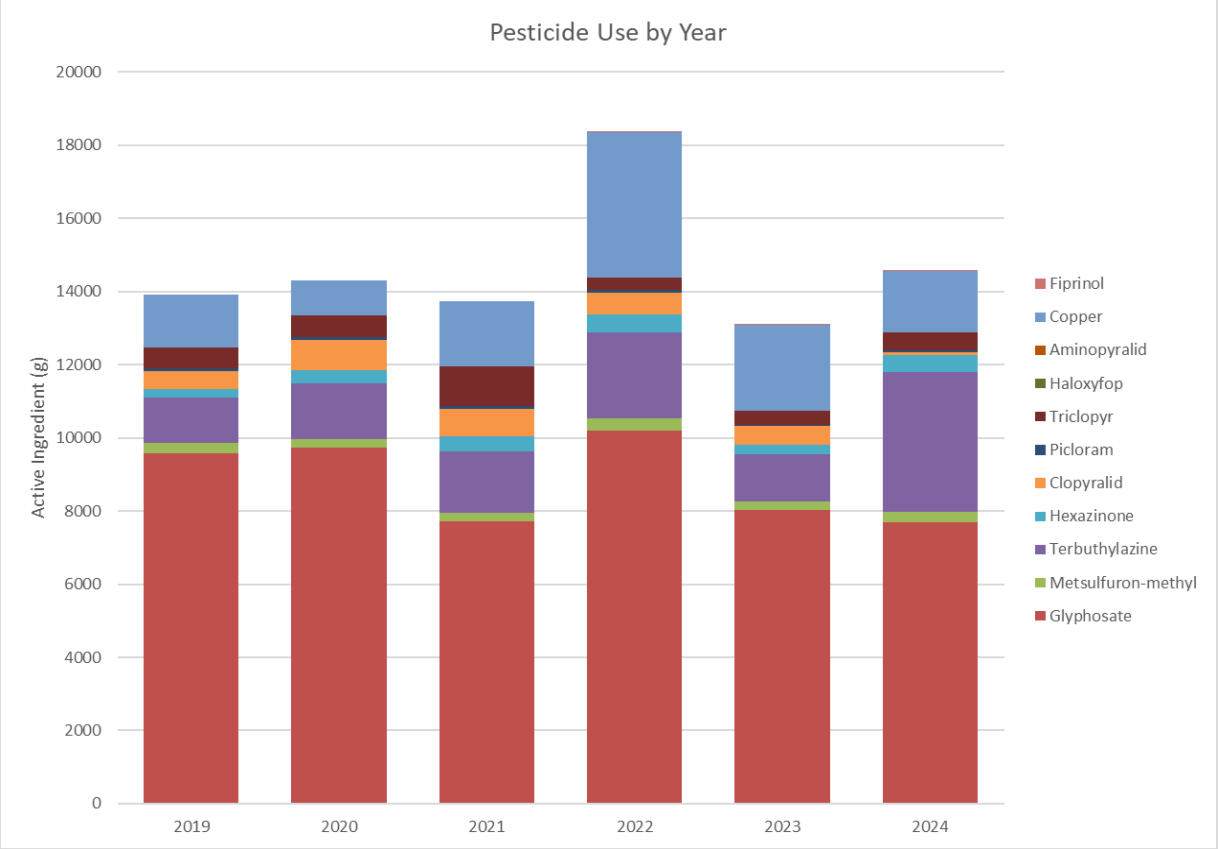


Figure 20. Pesticide use by year from 2019.

5 Health and Safety Monitoring

OFO NZ monitors a range of leading and lagging safety indictors.

The following graph (Figure 21) summarises the KPI lagging indicators that are monitored monthly. These graphs include the total recordable injury frequency rate and average lost days rate. Rates are calculated using total number of recordable injuries and number of days lost over 1 million hours worked. OFO NZ contributes to the industry reporting incident system or IRIS. This data is used as benchmark against OFO NZ performance. The three KPI's that are benchmarked are:

- LTIFR: Number of injuries that result in lost per million hours worked.
- ALTR: Number of Medical Treatment injuries per million hours worked.
- Severity Rate: Average number of lost days per LTI.

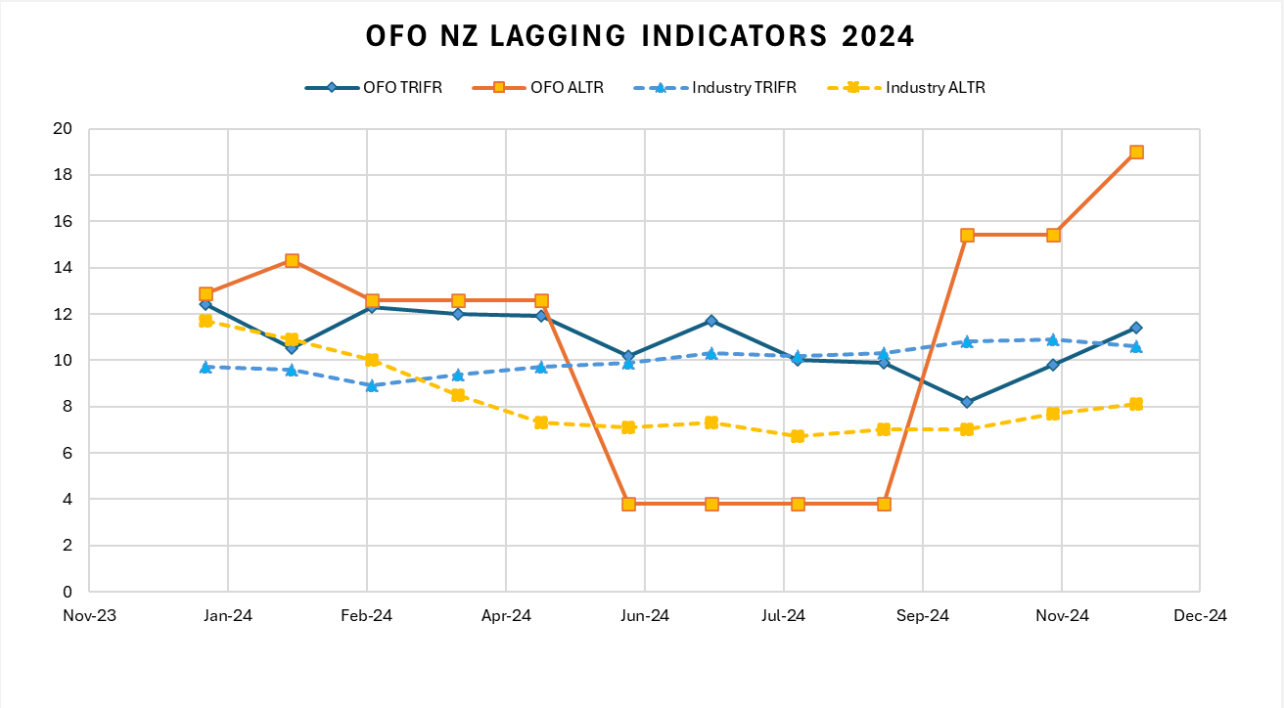
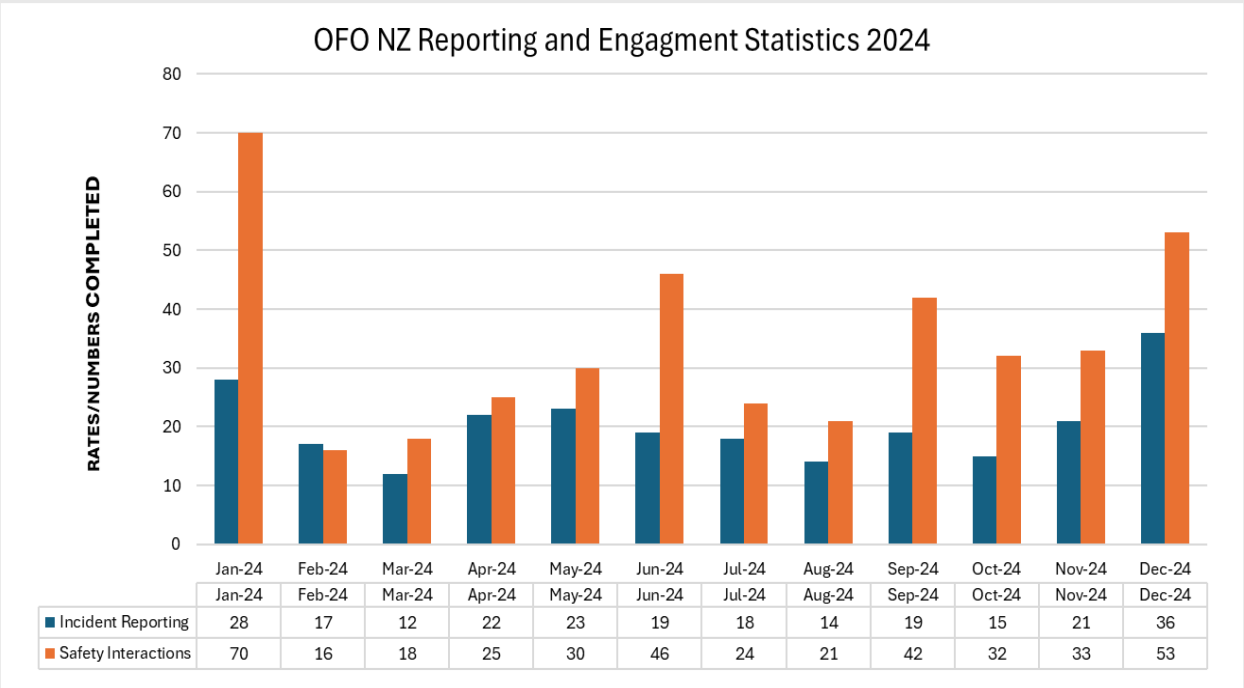


Figure 21. OFO NZ operations TRIFR and severity rates benchmarked against IRIS database (NZ forest industry). OFO NZ employee and contractor injury statistics are combined for 2024.

The following graph (Figure 22) includes two of our leading indicators, tracking proactive safety or wellbeing conversations completed by OFO NZ employees. The discussions with other OFO NZ employees or contractors. It also provides the numbers of incident reports (focused on near misses) completed in the business. These are critical to provide trends and learnings to continually improve wellbeing and safety performance.



	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Incident Reporting	28	17	12	22	23	19	18	14	19	15	21	36
Safety Interactions	70	16	18	25	30	46	24	21	42	32	33	53

Figure 22. Incident reporting and Safety Interactions (proactive discussions between contractor and OFO NZ employees.

6 Recreational Permits

Access to our forests is managed through an access permit system. Commercial forests are multi-hazard work sites and therefore access must be carefully managed to ensure the safety of all parties concerned. Access may be closed to all or parts of OFO NZ forests, at short notice, during periods of high risk (e.g. forest operations, elevated fire danger levels, extreme winds, etc).

Figure 23 shows the range of recreational permits issued for hunting, mountain biking, motorsports/car rallies, hang gliding, horse riding, and other recreational pursuits. Hunting is the most popular recreation pastime in the forests.

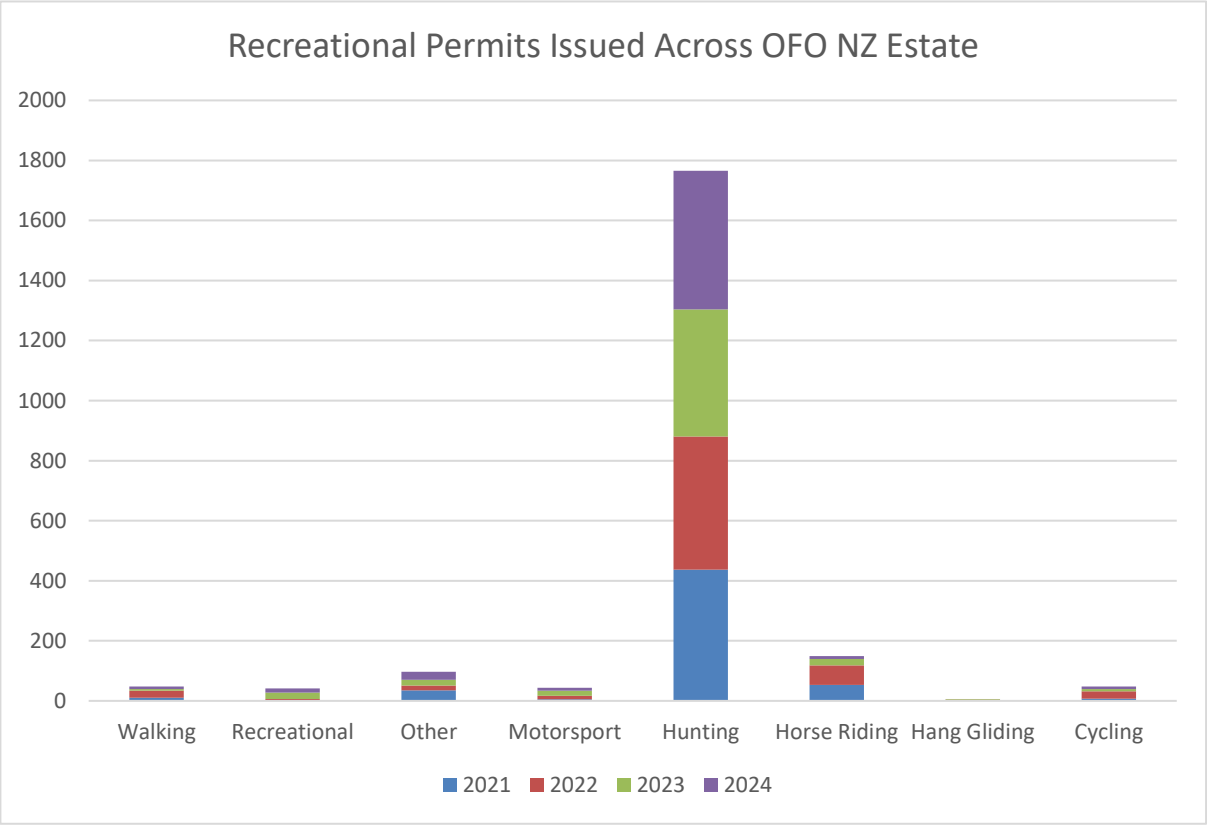


Figure 23. Most common recreational pursuits across the OFO NZ estate that permits are issued for. Walking/bike riding/driving on public access easements (PAE's) do not require a permit and are therefore not included in the figures.

7 Employment

OFO NZ has two offices (Richmond, Tasman region and Blenheim, Marlborough region). OFO NZ has approximately 52 directly employed people and engage a significant number of people on a contract basis to undertake infield forestry activities including silviculture, engineering, planning work, harvesting and distribution.

The graph below (Figure 24) shows the number of people employed or contracted by OFO NZ, split by gender. The workforce demographics over the operational areas split by gender is represented in Figure 25.

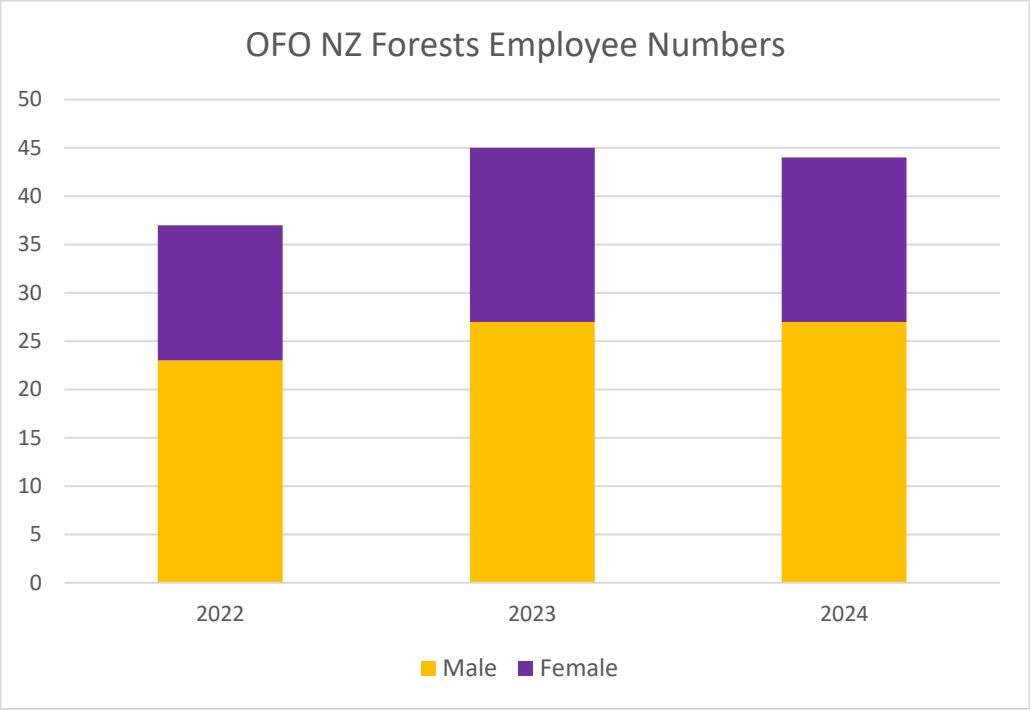


Figure 24. Number of male and female employees employed by OFO NZ over the years indicated.

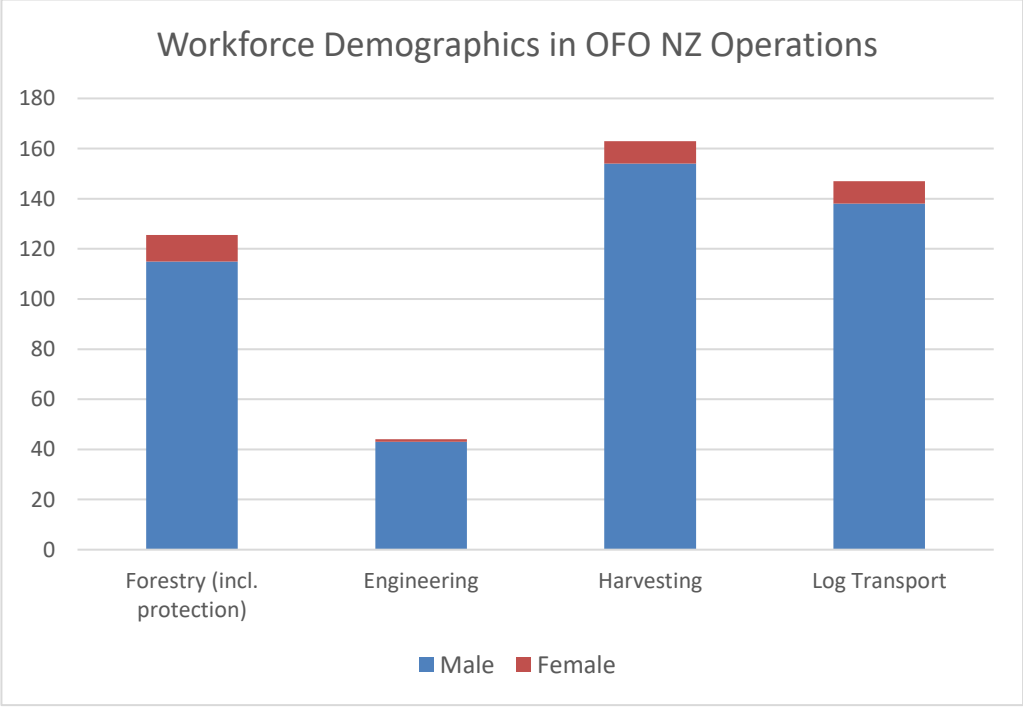


Figure 25. 2024 workforce demographics (male vs. female) in OFO NZ forest operations for 2024.

8 Regional Council Monitoring

Regional Councils monitor OFO NZ operations to assess compliance with resource consents or permitted activity standards. Monitoring of completed harvesting and/or earthwork operations is carried out by the Councils on an as-required basis, after they are notified by OFO NZ of completion of post-harvest works.

There are three Regional Councils across the OFO NZ estate – Tasman District Council (TDC), Nelson City Council (NCC) and Marlborough District Council (MDC).

The graph below shows the total number of monitoring assessments carried out in each region and the compliance outcome. Any minor non-compliances were fixed within the scheduled period for remediation and reported back to the relevant council.

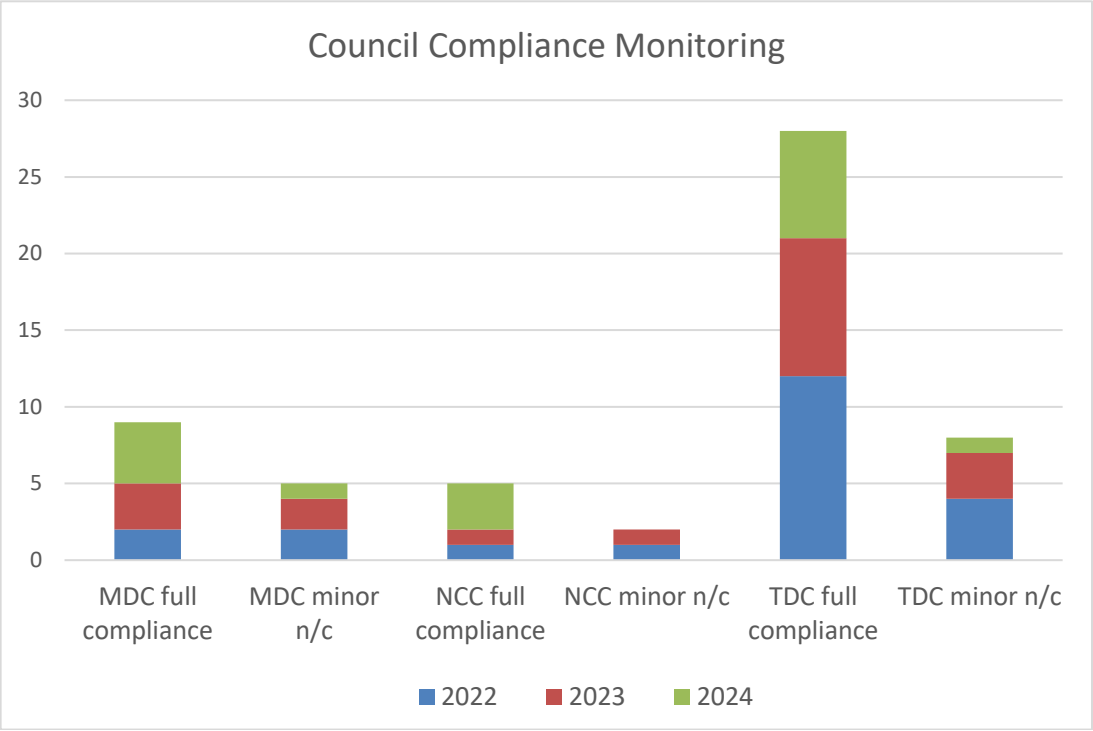


Figure 26. Three regional council monitoring visits. 'Full compliance' also includes initial 'minor non-compliance' (n/c) after remedial actions is completed. Remedial action is generally completed within 4 weeks of receipt of a n/c monitoring report.

9 Carbon

OFO NZ undertakes an annual calculation of the carbon sequestered in our forests and the estimated Greenhouse Gas (GHG) emissions from forest management and transport operations.

The calculated total carbon stocks include:

- Live tree biomass
- Forest Litter and Mineral Soil SOCref (reference soil organic carbon).

The estimated greenhouse gas emissions include emissions from:

- Scope 1 emissions – Fuel use of company vehicles, and nitrous-oxide emissions from fertiliser application.
- Scope 2 emissions – GHG emissions from the use of electricity by OFO NZ NZ.
- Scope 3 emissions - Fuel based carbon dioxide emissions associated with our contract operations

including forest harvesting, engineering, forestry operations and internal transport and onsite processing of logs

- Scope 3 emissions - Fuel based carbon dioxide emissions associated with transport of logs from the forest to market (log truck transport and shipping of export logs).

Total carbon stored and changes in biomass during the 2024 financial year for the OFO NZ estate is summarised in Table 4.

Table 4. Total carbon pool –OFO NZ 2024 FY.

Carbon Pools (Tonnes CO_2 equivalent) @ 30/6/2024	OFO NZ NZ
Carbon stored in Final Products (tCO2-e)	488,331
Above Ground Carbon stored (tCO2-e)	17625574
Total Carbon stored (tCO2-e)	41,891,628

GHG emissions for the OFO NZ group for the FY 2024 year, from forestry, harvesting and transport activities, are shown in Figure 27. The largest emissions arise from shipping, followed by harvesting operations and road transport. Total annual emissions equate to around 1% of the total carbon stored in our forests.

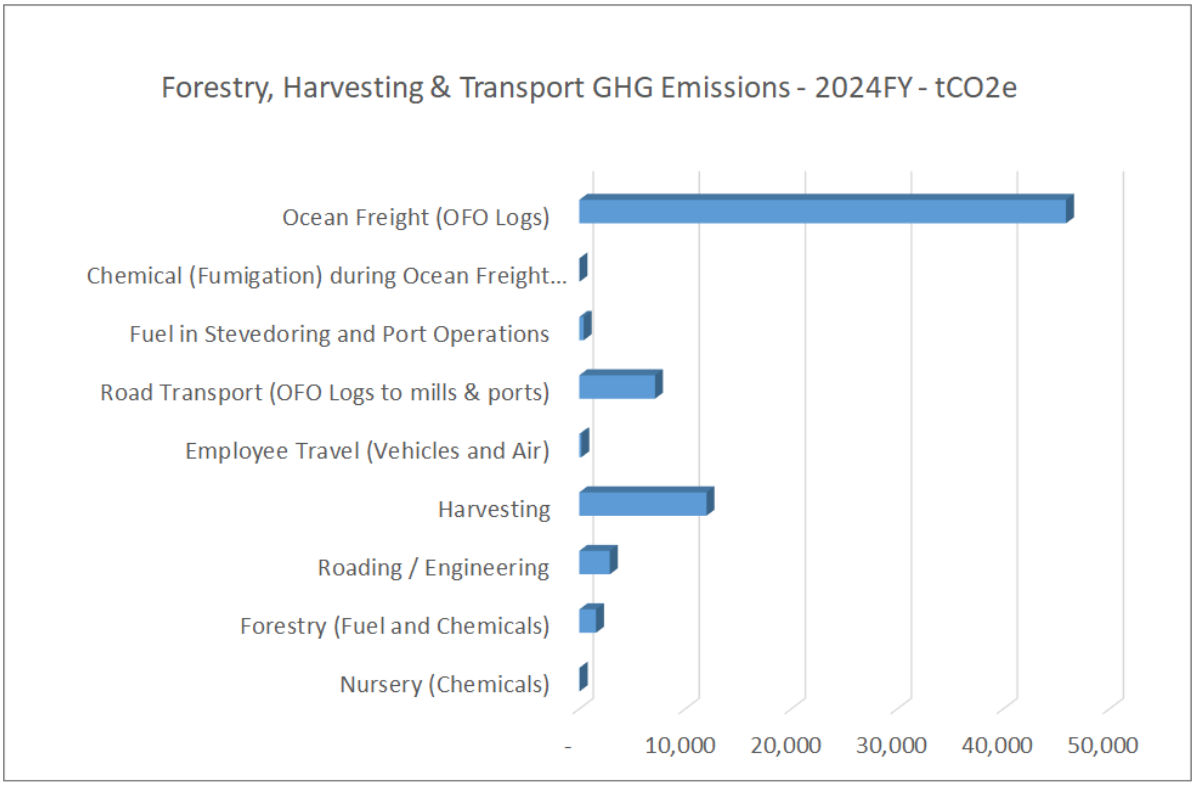


Figure 27. GHG emissions for the OFO NZ Group for FY 2024.

Avoided Emissions

Early in 2024 OFO NZ NZ, Canterbury Woodchip Supplies Ltd, and Fulton Hogan began supplying woodchip, from the binwood operations to a local horticulture business in Tasman region, to replace coal as boiler fuel. For the 2024 financial year it is estimated the wood chip substitution for coal fuel has resulted in a reduction of 7,000 tonnes CO2E of fossil fuel generated GHG emissions.

10 Biodiversity Monitoring

10.1 High Conservation Value Forest

There is one HCV 1 forest identified in the OneFortyOne New Zealand Ltd (OFO NZ) managed estate. This is in Blair Athol Gully in the Tadmor block, Golden Downs Forest, Tasman region. This area is adjacent to the Big Bush Conservation Area that is managed by the Department of Conservation (DOC).

Olearia polita (small-leaved tree daisy) is a shrub or small tree with a tangled appearance and small rounded leaves that are shiny green above and white underneath. In spring it bears abundant small, fragrant flowers.

At Blair Athol Gully adjacent to the Big Bush Conservation Area, it grows in the dry-to-wet transition between swampy stream-fed areas and dry soil, on the flats in the open and partly swampy silver beech and manuka scrub. This is New Zealand's largest population and the only significant population on protected public land managed by the Department of Conservation (DOC). *O.polita* is also found within an adjoining area (1.67 ha) on OFO NZ managed land. A management agreement was signed with DOC in 2001 for the ongoing protection of this threatened species. Part of the agreement includes DOC Rangers annually monitor the area to confirm there has been no deterioration in site condition and to monitor the management requirements going forward (Figure 28).

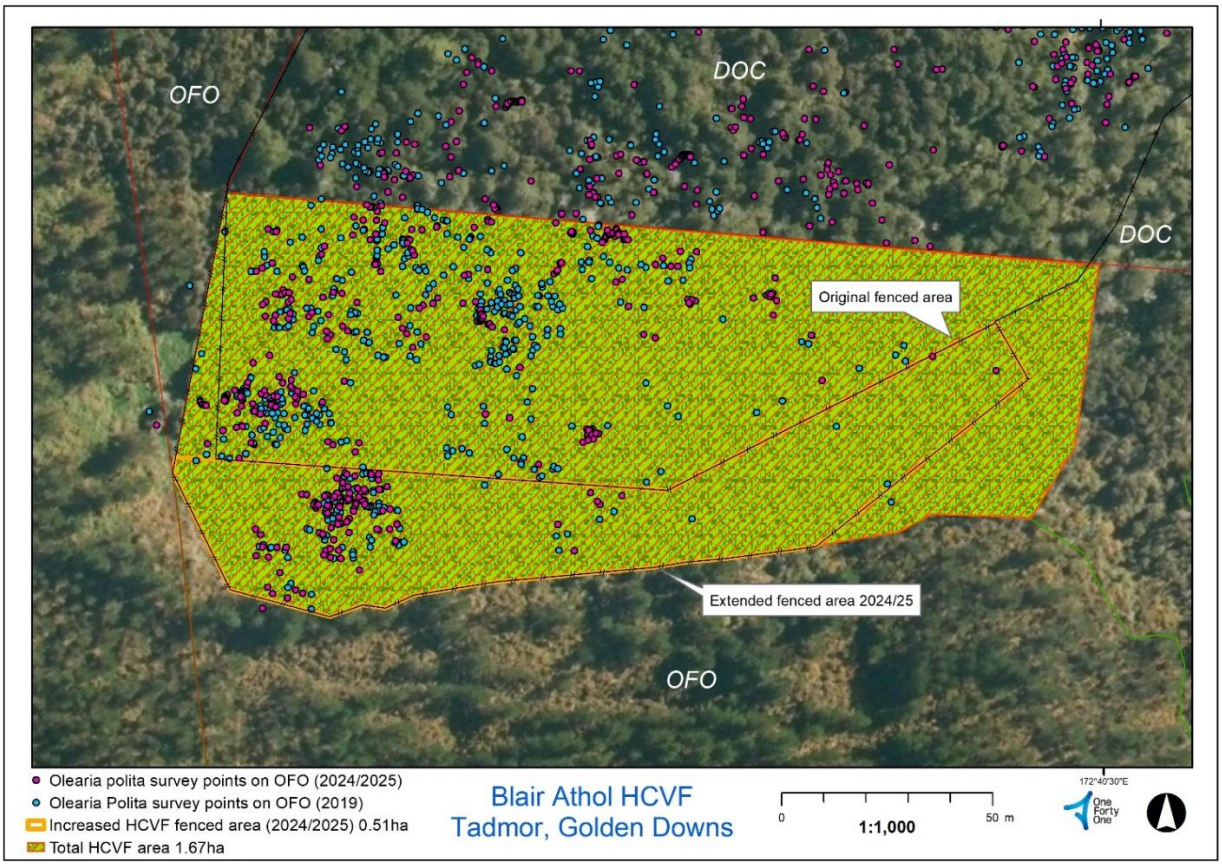


Figure 28. Oleria polita DOC census count 2019 and 2024-25. Total HCV area on OFO NZ managed land is 1.67ha. Area extended fence on OFO NZ managed land =0.51ha.

DOC constructed a wire fence to exclude wild cattle in 2001. In 2008 approximately 200m of the fence (nearly all the southern boundary) was damaged by kanuka that toppled in a large snowfall, by which time the cattle had been removed from the area. Pigs were causing considerable damage across the entire site and during the winter of 2012 a pig-proof fence was constructed on the same line as the previous cattle fence by DOC Rangers with the help of local Institute of Technology students.

OFO NZ has completed weed control work every 2-years from 2018, within the margins of the protected site on OFO NZ-managed land, targeting broom, gorse, spanish heath, blackberry, and regenerating pine.

The *O.polita* census in September 2011 returned 673 plants across both DOC and OFO NZ lands. This compared to 670 counted in 1999, showing the population to be stable but aging. The census was not aged-classed, but at that time there were only 5-10 plants seen under one metre high. Strong *O.polita* regeneration became evident around 2013, amongst the kanuka poles felled in the 2008 snowfall. Much of this was outside the original pig-proof fence. The 2019 census identified 758 *O.polita* plants within DOC/OFO NZ original fenced area and outside the fence on OFO NZ managed land (Figure 29).

In 2024-25 OFO NZ extended the original fenced area to include an additional 0.51 ha fenced on OFO NZ-managed land. The original area (1.67 ha) of the HCV has not been extended with the inclusion of this fence (Figure 28).

A census count in November 2024 with a team of DOC and OFO NZ employees, focused on *O.polita* mostly outside the original fenced area on OFO NZ managed land. The census count was completed in March 2025 across the remaining original fenced area.

Summary

While the 2024-25 survey covered most of the area, when comparing GIS data between 2019 and 2024-25 surveys there appears at least one dense patch was missed in the 2024-25 survey. Relatively few *O.polita* plants were in the beech forest, with most found in the tight scrub in the gully. It is highly likely that several *O.polita* were missed because they occur in such dense vegetation.

In 2024-25 census a total of 755 plants were counted. This is similar to the 758 plants counted in 2019. Most of the plants counted were large, though a few patches of seedlings were found. Overall, the *O.polita* is considered to have a **relatively stable population with recruitment**.

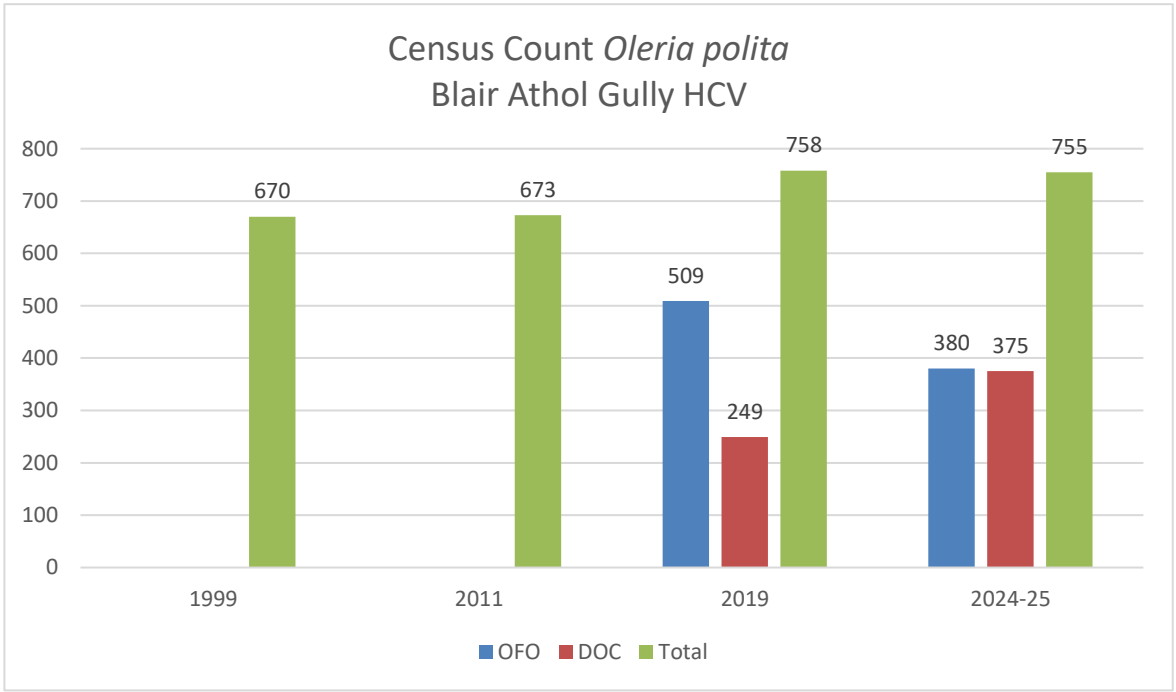


Figure 29. Census counts by Department of Conservation (DOC) from 1999. Census are planned on a 5-yearly basis since 2011.

10.2 Stream Monitoring

Steam health monitoring in the OFO NZ estate has been undertaken since 2014 and since inception, there have been three changes to methodology to refine the information gathered.

eDNA kits with comprehensive analysis in the lab, were introduced in 2022 to strengthen the reliability of the program. eDNA testing will be carried out during the annual stream health monitoring every three years, therefore eDNA testing was not done in the 2024/25 season. Next season (2025/26) will be the second round of eDNA data collection within the program. This gives an opportunity to compare eDNA results between streams and forest regions.

In December 2024 and January 2025, 30 streams were scheduled to be monitored using NIWA's stream health monitoring assessment kit (SHMAK) and shuffle test assessment, and Cawthron Institutes' Rapid Habitat Assessment Protocol. Due to stream conditions, 26 streams were fully assessed, two streams were partially monitored, and another two streams were unable to be monitored for this season (Figure 30).

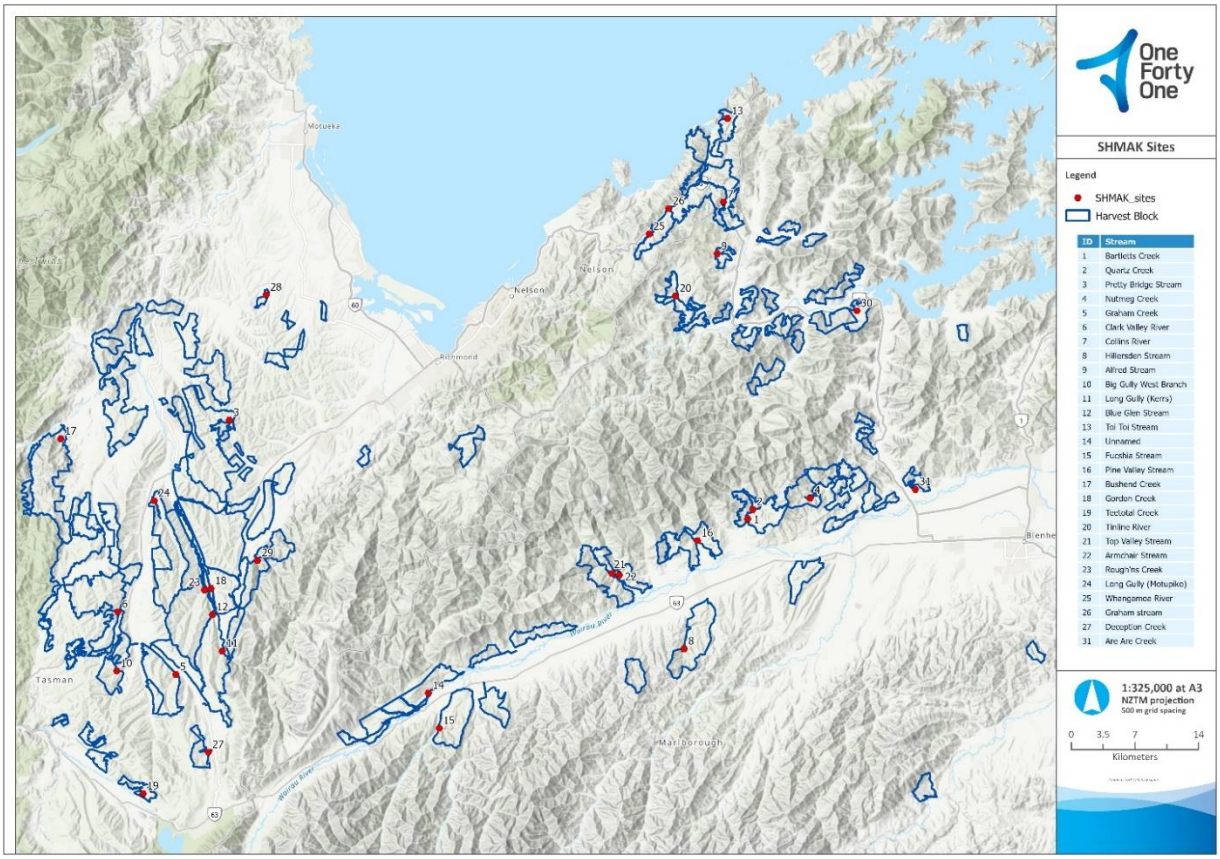


Figure 30. Stream locations within the OFO NZ estate included in the annual stream health monitoring program.

10.3 Threatened Species Sightings

Plantation Forests in New Zealand are known to provide suitable habitat for a range of New Zealand indigenous species, including several species that are classified as 'Threatened' and 'At Risk'. These species can occupy our indigenous protected areas, and in many cases the plantation forest itself, including the cutover.

All employees and contractors of OFO NZ are encouraged to report sightings of threatened species (rare, threatened or endangered (RTE)). OFO NZ provides training to all staff and contractors on what

these species are and look like through a field guide document, which provides basic information and coloured photos. In 2022 a new threatened species app was developed and rolled out to OFO NZ employees and contractors.

Reporting of sightings is important for several reasons:

- From a forestry perspective it enables us to take precautions to prevent the species from harm or protect important habitat areas such as nesting sites.
- Sightings of key species such as falcon are reported through to national databases - which help build up a picture of the range and populations of key species but also helps to promote understanding of the biodiversity values of plantation forestry.

Figure 31 shows the cumulative number of sightings of threatened species throughout the OFO NZ estate, with the NZ Falcon (karearea) the most common species recorded.

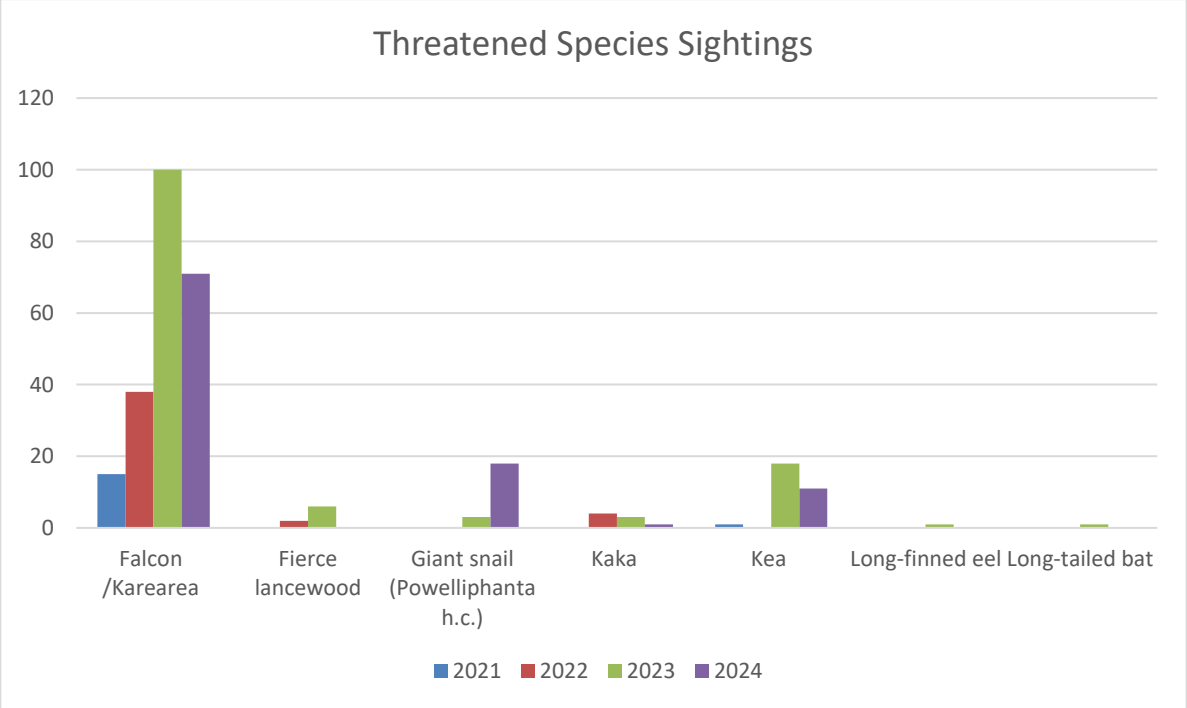


Figure 31. Threatened species sightings across the OFO NZ estate, recorded by employees and contractors through the Threatened Species app.

10.4 Kea Monitoring

In 2023 the Kea Conservation Trust applied OFO NZ funding to engage a local contractor to continue work initiated in OFO NZ's forest in 2019 by a Masters student.

The local contractor accessed known sites of interest to continue monitoring and determine if kea were continuously residing in OFO NZ plantation forests. The information collected will assist OFO NZ to manage kea habitat, particularly in the breeding period, and with pest control (Figure 32).

Further monitoring is planned in 2025 by the Kea Conservation Trust will be undertaken during the kea breeding season (July-December annually) in the OFO NZ Golden Downs Forest.

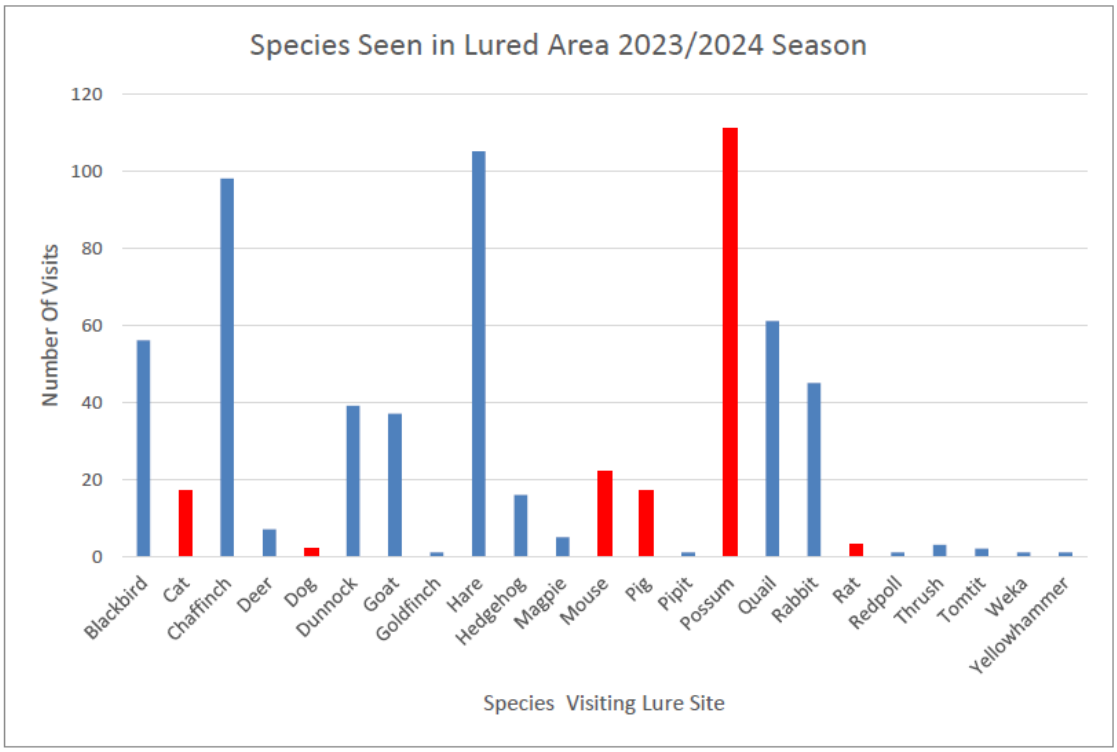


Figure 32. Visitation of fauna species to all 'lured' sites in the OFO NZ Estate with areas of known kea interest. Red bars represent pest species of concern to nesting kea.

10.5 Fish Passage

Fish passage improvements project between 2018 to 2021 and again in 2023/24 (Figure 33) enabled assessment of stream culverts and fish habitat. OFO NZ continued to work with a local aquatic freshwater ecological consultant to retrofit fish passage (e.g. ramps, ropes) to provide for fish passage in stream crossings across the estate.

Due to the extensive damage from the August 2022 storm event in the regions and the consulting ecologists' unavailability due to other work commitments, the program resumed in 2023 with monitoring in Marlborough Forest blocks completed.

This project will recommence in Summer 2024/25 to reinspect Tasman region, originally assessed in 2018.

Status	Count	%
1 Not currently a barrier	120	35.93%
2 Fish passage remediation fitted	79	23.65%
3 Structure requires maintenance	5	1.50%
4 Barriers	4	1.20%
8 Dry and/or little or no upstream aquatic habitat	126	37.72%
Grand Total	334	100.00%

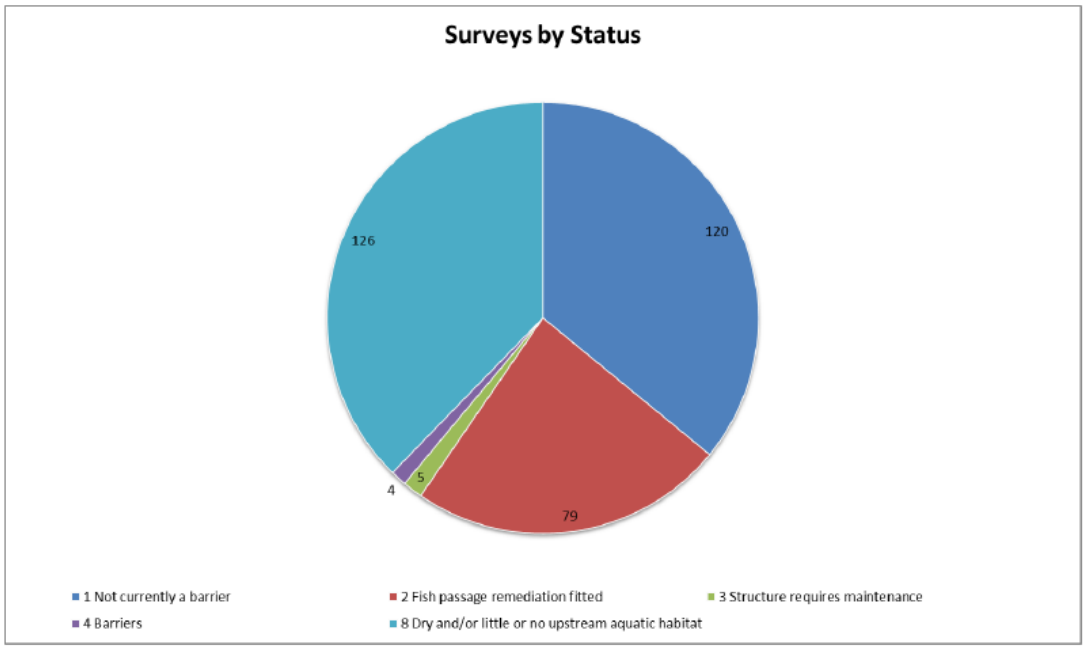


Figure 33. Summary of fish passage/habitat surveys and structure statuses across all OFO NZ regions at 2023/24.

10.6 Powelliphanta Giant Land Snail

Since 2023, OFO NZ has been working with DOC and landowner Ngati Tama to develop a management strategy for the protection of the *Powelliphanta hochstetteri consobrine* (giant land snail – photo right) found in plantation block in the Rai Forest, adjacent to the Mt Richmond Forest Park and within the Richmond ecological region, where its known habitat for this snail subspecies is located.

Part of the management strategy included the construction of a pig and weka proof sanctuary where live snails (if found) can be translocated from the plantation forest, away from operations to a safe snail haven.

The graph below shows findings of live snails or empty shells recorded by OFO NZ contractors or employees. Snail findings were in the cutover, plantation forest or in mixed native vegetation within the forest block.

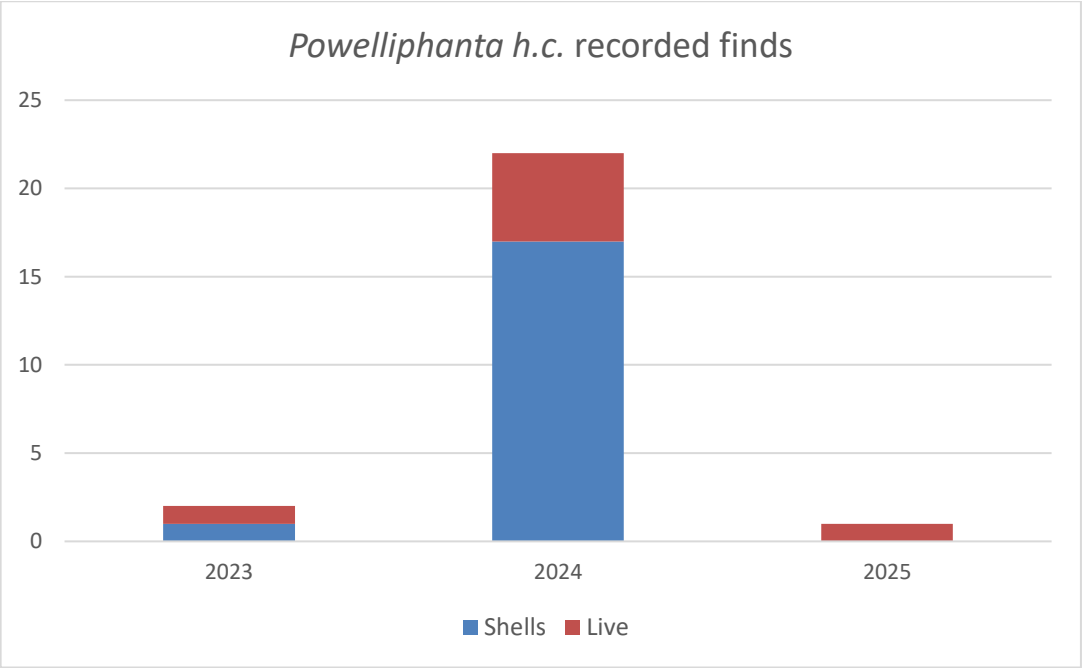


Figure 34. Live snails and shells (dead) found in the plantation forest.

END