PUBLIC SUMMARY

Timberlands Standard Management Plan and Monitoring Summary

For Certified Forests ES231

Last Revised: October 2024

 Sustainability October 2024

CONTENTS

TIMBERLANDS LIMITED

Timberlands Limited (Timberlands), with its main office based in Rotorua, provides a full range of forest management services primarily to Kaingaroa Timberlands. Kaingaroa Timberlands in turn own the world renowned Kaingaroa forest estate (situated in the central North Island of New Zealand) and other smaller adjacent forest investments in the Bay of Plenty, Waikato and Hawkes Bay regions. Timberlands employs over 140 staff and manage an array of forest operations, including:

- Management of over 210,000 ha of land (over 0.7% of NZ's land area) including;
  - Over 189,000 ha of forest plantation
  - Over 17,000 ha of natural forest containing rare species and habitats
- Establishment of 6,500 ha per year
- Pruning and thinning of 11,000 ha per year
- Harvesting and marketing in excess of 4.0 million tonnes per year
- A log merchandising yard, processing 1.5 million tonnes per year

As a forest management company, Timberlands focus on maximising the forest owner's returns through increasing forest value, optimising stumpage returns and maintaining operational and commercial standards to minimise risks, whilst balancing social and environmental benefits.

Our experienced managers and their teams have a full range of knowledge and expertise to achieve the best results for the forest owner. Supported by contemporary technical systems, broad networks and a wide range of resources, our teams effectively and efficiently plan, implement and manage forest plantation operations right across the value chain.

The Team at Timberlands plans, implements and manages all forestry operations from tree breeding right through to log sales. This is supported by the expertise of our Commercial Team, which ensures financial and tax implications on an international scale are also carefully considered to grow the forest owners' investments in line with their goals and objectives. This broad spectrum of management services is made up as follows:

- Financial Management and Compliance
- Forestry Technical
- Tree Crop Management
- Harvesting
- Distribution
- Marketing
- Health and Safety
- Sustainability

Our Strategic Plan

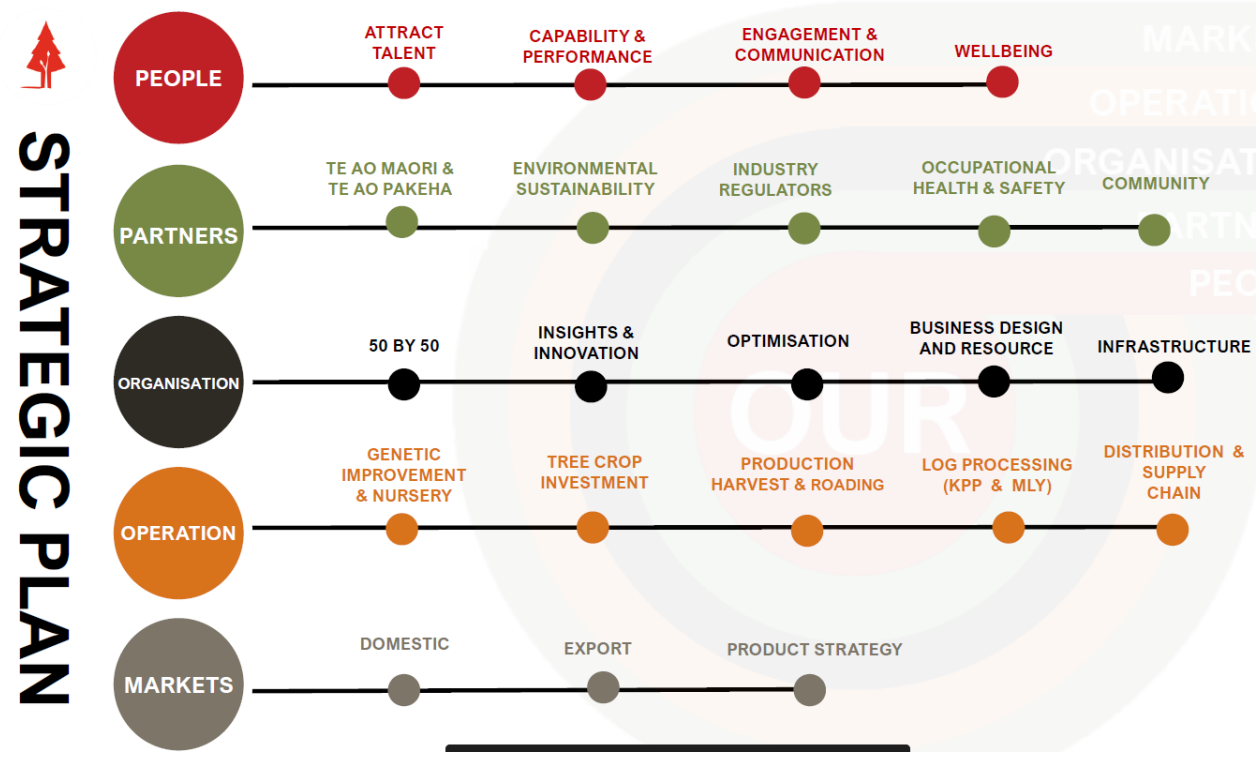
Timberlands strategic plan provide a framework for our overall direction with our strategic Vision committing us to be "*the best and safest production forest in the world*". Or strategic plan is currently under review.

OUR VISION

"We commit to being the best and safest production forest in the world"
Mo ake tonu atu

"Kei te whakapau kaha matou ki te waiho hei ngahere haumaru mahi pai i te ao whanui"
Forever and ever"

Our plan is based on a principal "Big Hairy Audacious Goal" ("BHAG") strategy to improve the productivity of our forest from 25 (2018) to 50 cubic metres per hectare per year by 2050. We will do this with a positive impact on health and safety, our customers, the environment, our communities, our people and our shareholders. Including our BHAG we have five pillars summarised as follows:



Timberlands Forest Management Approach

Our business is undertaken in accordance with our Forest Management Approach. Figure 1 shows Model of Continuous Improvement.

Timberlands is committed to managing all aspects of its business commercially and competitively, to world-class standards through the following:

1. A systematic approach to forest management
2. Continual improvement in performance outcomes
3. Compliance with relevant legislation and best forest management standards, in particular the Principles and Criteria of the Forest Stewardship Council and the NZ Standard: Sustainable Forest Management AS/NZS 4708:2021
4. Meeting the spirit and in particular relevant legislation related to the Treaty of Waitangi
5. Provision of resources to meet best forest management standards
6. A process of regular review of the forest management system, and
7. Proactive engagement with stakeholders.

We achieve this policy through the implementation of our Strategic Plan, and Annual Plan and Budget. Our Ten Year Cut (harvest) Plan guides our Annual Plan and Budget as it provides the main driver for our activity from harvesting through replanting and then the consequent silvicultural operations. The Ten Year Cut plan is a rolling plan that is updated each year and based on a number of criteria, including minimum age, ageclass distribution and the estate model.

Forest Values We Manage

Timberlands are responsible for managing many forest values, which are best categorised and summarised under Social, Environment and Economic as follows:

Social

- People
- Culture
- Health and Safety
- Community
- Recreation

Environment

- Land and soil
- Water
- Air
- Biodiversity
- Landscape

Economic

- Resource (the tree crop)

- Our clients

This is by no means an absolute list and many of the values fall across the three categories. These values are described in the summary plan with mechanisms to measure, manage, monitor and review.

Other Key Policies

Aside from our Forest Management Approach we strive to manage the forest values through a number of other policies and processes. In particular, our Health and Safety Policy and Sustainability Policy are integral components of our management approach. Copies of these are provided on our website.

Stakeholder Engagement

Feedback and engagement on how we perform is critical to our continued improvement. Therefore, a key component of our management is feedback on our management activities outlined this document and in the relevant plans for each of the certified forest estates we manage (Kaingaroa Timberlands and Te Manawa o Tuhoe). Feedback via the following contact details is warmly welcomed and will be considered in the development and revision of our management.

Rotorua Office
Phone: +64 7 343 1070
Fax: +64 7 343 1071

Email: info@tll.co.nz

Website: www.tll.co.nz.

We regularly engage with over 2,000 stakeholders, which includes iwi, contractors, workers, staff, recreational permit holders and representative groups, environment groups and other local community representatives. Our engagement approach differs depending on the people and the topics, but includes e-mail, text, meetings, phone calls, newsletters and most importantly face to face dialogue. If you wish to be included in our engagement, in particular for regular contact then please let us know and we'll include you on the mode that works best for you.

INTRODUCTION

This summary management plan has been produced in accordance with our commitment to the FSC® Principles and Criteria and the AS/NZS 4708:2021 Sustainable Forest Management Standard. The main purpose is to provide a summary of our management approach to certified forests. Our management of the Kaingaroa Timberlands estate is covered in this plan and any specific management for other certified forest estates is provided in separate summary management plans.

Certification

Our management of two forest estates has been certified to the Forest Stewardship Council (FSC) standards:

- Kaingaroa Timberlands (covered in this plan)
- Te Manawa O Tuhoe (ref Summary TMOT Forest Estate Management Plan ES233)

Timberlands is also certified to AS/NZS 4708:2021 which is managed through Responsible Wood and endorsed by PEFC for our management of the Kaingaroa Timberlands forest estate and Te Ngae Nursery.

Forest Stewardship Council® (FSC®)

Timberlands (FSC-C004143) has committed, and is certified, to the Forest Stewardship Council® (**FSC®**) Principals and Criteria providing independent verification our forests are well managed. Our FSC certificate (SCS-FM/COC-00059P) can be found on our website. Also a summary of Timberlands Limited FSC certification detail and links to audit reports can be found through the FSC certificate holder database https://search.fsc.org/en/.

Founded in 1993 FSC is an international non-profit organisation that promotes good forest management through an independent forest certification system. The FSC is divided into three chambers; Economic, Social and Environmental (in New Zealand a fourth chamber for Maori has been established). FSC is controlled by an elected board from the three chambers and is administered from Bonn in Germany.

FSC certification provides independent and credible verification that the product comes from forests that have been managed in accordance with the FSC Principles and Criteria. FSC is supported and promoted by prominent international environmental and social advocacy groups such as WWF, Greenpeace and Friends of the Earth.

FSC has 10 Principles each containing several Criteria which need to be achieved to obtain and retain FSC certification. These can be found on the FSC website (www.fsc.org) or FSC NZ website https://nz.fsc.org/en-nz/about-fsc. The National Standard for Certification of Plantation Forest Management in New Zealand which provides local interpretations of the FSC Principles and Criteria and can be found at the FSC NZ website: https://nz.fsc.org/en-nz/about-fsc.

Timberlands has taken a pro-active and constructive engagement approach where we lead or participate in a number of FSC forum and initiatives, for example;

- Longstanding FSC membership and certification, including Timberlands Sustainability Manager participation in five FSC General Assemblies.
- Timberlands Sustainability Manager a member (and previous chair) the NZ FSC Standard Development Group.
- Timberlands Sustainability Manager was a member of the FSC Pesticides Policy Working Group and consequent Pesticides IGI Working Group.
- Timberlands Technical Manager a member of FSC's Sustainable Intensification Advisory Group.

AS/NZS 4709:2021 / PEFC Certification

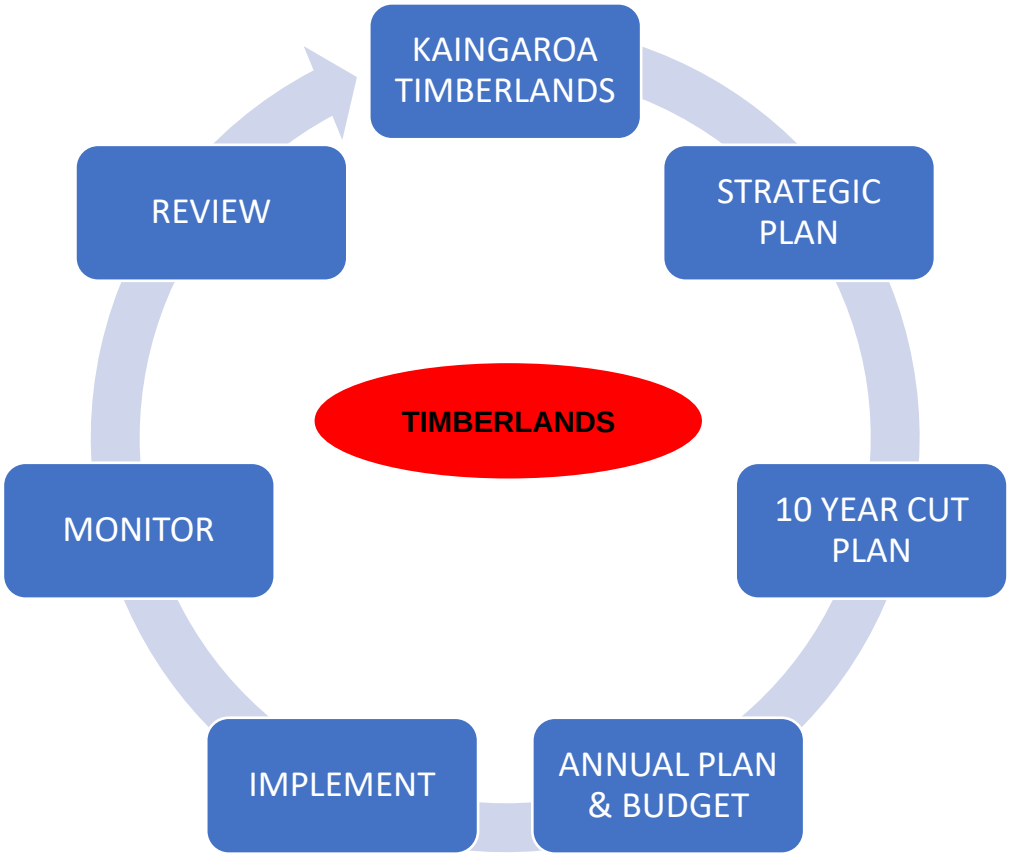
Timberlands is also committed to and accredited to Responsible Wood under the AS/NZS 4708:2021 Sustainable Forest Management standard. This certification is also endorsed by the internationally recognised Program for the Endorsement of Forest Certification Schemes (PEFC). As such our approach and systems are also designed to match these requirements. Further information on PEFC and Responsible Wood can be found on their websites: www.pefc.org and https://www.responsiblewood.org.au/

Continuous Improvement

While Timberlands strive for excellence in our performance it is inevitable that, given the large scale and wide range of the operations we manage, stakeholder engagement processes and multiple research programs, room for improvement can always be found. When the company recognises a basis for improvement, it will act promptly to minimise and remedy adverse impacts on the environment. Furthermore, the operation is investigated to ensure that staff and strategic alliance partners and their employees learn from the experience, and the company's management processes are reviewed and revised to avoid any repetition.

Monitoring, assessment and review processes are built into all levels our management systems and culminate in the yearly review of our 10 Year Cut Plan and annual reviews of our workplan and budget. Figure 1 shows Timberlands' Model of Continuous Improvement.

Figure 1: Timberlands/Kaingaroa Timberlands Continuous Improvement Model



ESTATE DESCRIPTION

Forest Statistics

The Kaingaroa Timberlands estate of 215,318 hectares consists of nine Forests, all located in New Zealand's Central North Island region. Of that total, 191,913 hectares are occupied by standing crop or are in the process of being replanted following harvest, and together are classed as the actual productive forest area. 17,343 hectares is indigenous vegetation (ranging from tussock to tall forest) managed for conservation purposes. Some areas are manged with multiple conservation and economic values, such as recreational, cultural, and production, where all values can be conserved or met concurrently. Over 10% of the forest management unit is managed for conservation (biodiversity an cultural) purposes. The balance of 6,062 hectares is considered unstocked (unplanted gaps in stands including skids, firebreaks, etc) or unplantable (roads, water bodies, transmission corridors, etc).

Some 97% of the planted area is established in radiata pine, with Douglas fir and other species including eucalyptus making up the balance. After almost a hundred years of trial planting, radiata has proven to be the species that grows most economically in the soil and environmental conditions of the Central North Island.

Timberlands also manages the following sites associated with the Kaingaroa Timberlands estate:

- a log processing plant and warehousing yard at Kaingaroa
- a log warehousing yard at Murupara
- a tree nursery and forest genetics facility at Te Ngae, Rotorua
- a tree nursery at Rerewhakaitu
- four fire depots and three fire lookouts
- a forest wide VHF radio network
- space at the Port of Tauranga

History

While some areas were planted as early as 1901 most of the forest estate was established by the NZ Government in the 1920's and 1930's and then again in the 1960's by the NZ Forest Service. The NZ Forest Service also managed large estates of natural forest associated with the plantation, of which most was placed under the management of the Department of Conservation when the Forest Service was disbanded in 1987. As a result the forest estate retained only small tracts of indigenous forest. This also created NZ Timberlands which managed the plantation area of the forest estate on behalf of the Government. The Government consequently transferred Timberlands NZ into a state owned enterprise and re-named it the Forestry Corporation of New Zealand. A useful reference on the history of Kaingaroa to this point in time is "Pumice and Pines" The Story of Kaingaroa by Joan Boyd.

In 1996 the estate (Forestry Corporation of New Zealand) was sold by the Government to the Central North Island Forest Partnership (CNIFP). CNIFP was a 50/50 partnership between Fletcher Challenge Forests and CITIC New Zealand Ltd. The partnership went into receivership in February 2001. Fletcher Challenge Forests managed the CNIFP estate up until 30th June 2003 when the receiver appointed the newly formed Timber Management Company (TMC) as managers.

The forest estate and other assets including TMC were sold to Kaingaroa Timberlands in December 2004. TMC were re-branded as Kaingaroa Timberlands Management Limited (Kaingaroa Timberlands) and retained as managers. In July 2006 Kaingaroa Timberlands was sold to a group of senior managers and were appointed as independent forest managers by Kaingaroa Timberlands. Kaingaroa Timberlands was renamed Timberlands Limited (Timberlands). In 2015 Kaingaroa Timberlands purchased Timberlands from the shareholding managers, which is the current situation:

- **Kaingaroa Timberlands own the forests and Timberlands Limited.**
- **Timberlands Limited are the forest managers.**

Most of the underlying land is subject to Crown Forests Licences (CFLs) and other forestry rights with less than 2,000 hectares of land owned by Kaingaroa Timberlands.

Commencing in 2008 the CFL's have transferred to (5) successful Treaty of Waitangi claimants and remain in place until the current crops are harvested. After harvesting Kaingaroa Timberlands enter into a new forestry right with the CNIIL landowners or carrying over a varied CFL with other iwi landowners. Kaingaroa Timberlands are also progressively re-establishing Tarawera Forest under a forestry right with the Tarawera Land Company as existing right holder Hancock Forest Management harvest their current crop.

Forest Layout

Viewed from the air, the forest estate is comprised of both large adjoining blocks of land and a number of small to mid-sized tracts. The majority of the estate is one large connected block. Kaingaroa Forest dominates this contiguous block, with Whirinaki Forest to the east and Tarawera Forest to the north. Other sizeable blocks include Horohoro, Rotoehu, Crater and Whakarewarewa Forests. Marotiri and Urutomo are three smaller more isolated forests. These forests can be seen on the Forest Location Map in Appendix I. The forest estate is subdivided into over 1,000 compartments and then, based on logical management units, into over 4,000 stands.

Please refer to the Kaingaroa Timberlands forest map found on the Timberlands website for further detail or Appendix 1 for a basic location map.

Kaingaroa Forest

Kaingaroa Forest is one of the oldest and largest softwood plantation forests in the world. The first plantings were at Waiotapu in 1901 and much of this 142,000ha forest is now growing its third crop of trees. Kaingaroa is recognised around the world as an intensively tended forest that produces high quality logs.

Kaingaroa is a large forest, relatively flat and even aged class forest, however whilst relatively homogenous there are many features that provide variability and in particular habitat. The following four pictures illustrate typical Kaingaroa landscapes.

Kaingaroa is located between Rotorua and Taupo on the Volcanic Plateau. It is well served by road and rail and the deep-water export port at Tauranga. The Kaingaroa Log Processing

Plant (KPP) is located in the center of the Kaingaroa Forest and converts whole-tree stems into logs, using sophisticated scanning and optimising technology.

For further information an insightful reference on the history of Kaingaroa is “Pumice and Pines” The Story of Kaingaroa by Joan Boyd.

Land

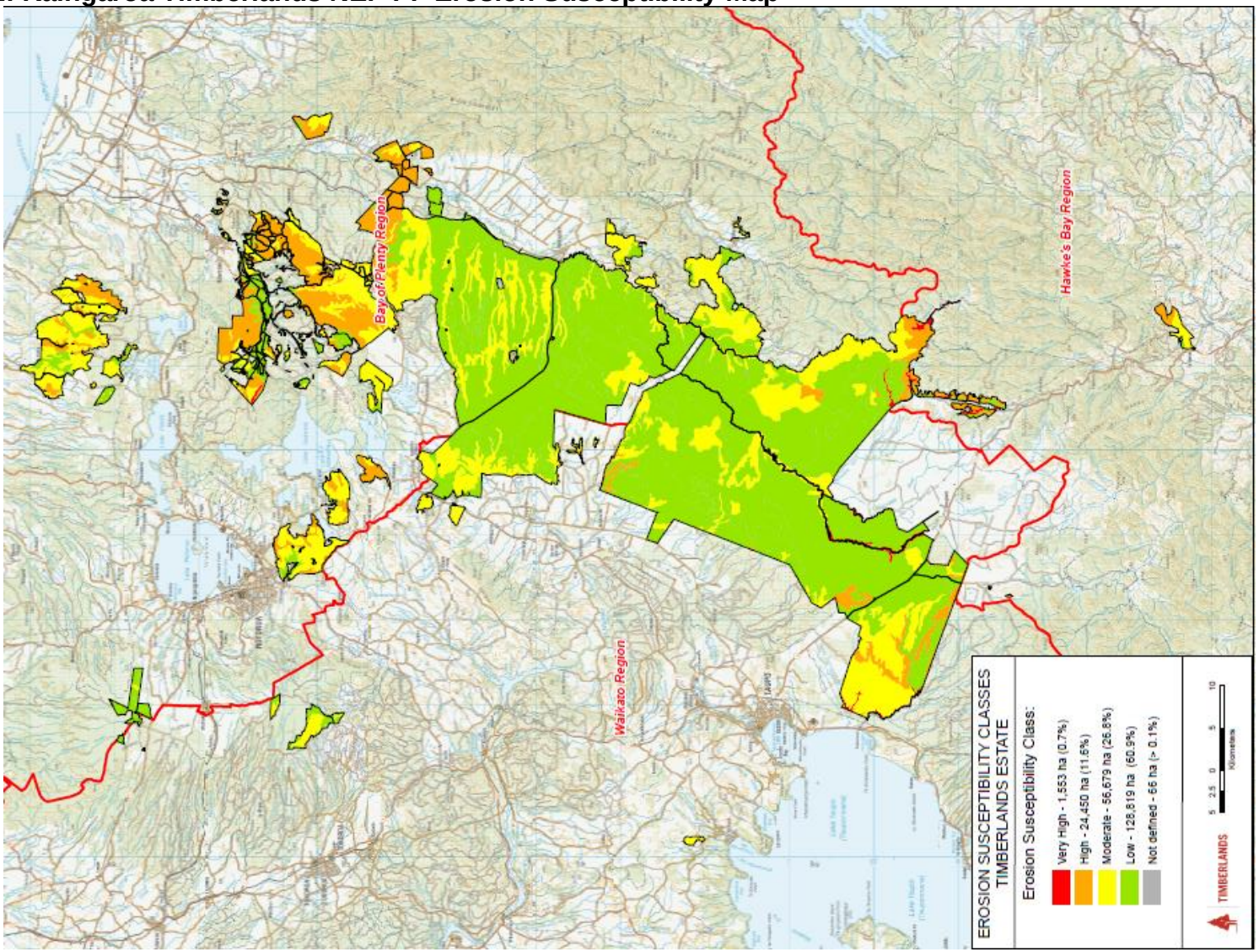
The majority of land is leased from iwi owned entities through either a Crown Forest Licence or Forestry Right. Of this the majority is held with the Central North Island Iwi Holding Limited and some significant areas are leased from Ngati Awa and the Tarawera Land Company. Only 1,390 ha is freehold. In total Kaingaroa Timberlands/Timberlands manage over 215,000 ha under the following general categorisations:

Productive: 191,193 Reserve: 17,343 Unplantable: 6,062

The majority of the land is considered low or moderate erosion risk under the NES-CF (i.e. general flat under 10^{o} slope) and suitable for all methods of forest operations, in particular ground based harvesting. Around 12% is high erosion risk (more erodible soils and steeper) where a higher degree of operational care is required. Less than 1% is very high erosion risk where strict operational controls are required. The table below provides area by erosion risk and Figure 2 shows the general layout of erosion susceptibility in accordance with the NES-CF.

Erosion Risk	Area (ha)	%
Low	128,819	61
Moderate	56,679	27
High	24,450	12
Very high	1,553	1
Water/other	66	0

Figure 2: Kaingaroa Timberlands NEF-PF Erosion Susceptibility Map



Species

The Kaingaroa Timberlands estate is primarily composed of radiata pine, with a significant but declining area of Douglas-fir. This has not always been the case and historically the forest contained a much wider mix of species with over 70 species trialed for commercial potential. However, the relative performance of radiata pine compared with these other species coupled with it being the primary feedstock for our key customers has seen a narrowing of the species base within the forest.

There are now 48 different species other than radiata pine and Douglas-fir that are currently growing in the Kaingaroa Timberlands estate, covering an area less than 2,500 ha. Many of these are historical legacies with the oldest stands dating back to the early 1900s. Since 2000 most of the area planted with species other than radiata pine has been established in Cypress species (mainly *Cupressus lusitanica* and *Cupressusocyparis ovensii*) and Eucalyptus (mainly *Eucalyptus regnans* and *Eucalyptus fastigata*). These have been a mixture of research trials and operational plantings. Timberlands has been actively engaged with this research through its membership of the Specialty Wood Products Partnership (SWPP) program and our own internal work.

While, Timberlands are actively involved in collaborative and in-house research and trials to find alternatives, radiata pine remains the only species planted on a commercial (non-trial) basis. Monitoring Indicator MI02b in the Appendix shows the forest composition by species.

Regime

Until recently Timberlands have operated a split regime across the estate where a little more than half the forest was a framing regime with either one or two waste or production thins predominaently in the higher growth northern portion and a pruning to 5.5m with similar thinning in the lower growth areas, which are generally in the south or higher altitudes. Previous managers generally pruned a high portion of the forest, which means the estate is less than 50% pruned. For a period pruning was halted, but was recently reinstated, with less than 1/3 of eligible ageclass currently being pruned.

Current Condition – Inventory

We undertake key inventory assessments to help determine the current condition of the forest. These are general following planting (QC and survival) and silviculture (thinning and pruning) and a forest health survey predominantly to determine *Dothistroma pini* infection levels. The latest result from these operations are as follows:

Establishment

6,480 hectares were establishing during the 2024 planting season. Monitoring Indicator MI01a in the Appendix provides a summary of area re-established since 2010.

Timberlands undertake rigorous quality control inventory to ensure a quality result. We set a target of less than 5% reworks and achieved this with a 2.59% result. The average stocking was measured at 1,022 stems per hectare.

Silviculture

The key silviculture operations currently undertaken by Timberlands are:

- first pruning
- second pruning,
- first waste thin
- second waste thin, and
- production thin.

Summarised results for these operations are provided as Monitoring Indicator MI05 in the Appendix.

Forest Health

The forests are in good health. However, with a series of wet and warm summers *Dothistrona pini* infection rates increased between 2017 and 2024. For example, in 2019, 40,613ha were identified for one (copper) spring treatment and a further 4,029 ha for a second late summer treatment. In comparison after a dry summer only 2,050 ha were treated in 2014. In 2024 following the wettest summer in our records over 70,000 hectares were treated.

Please refer to the Monitoring Indicator MI09 in the Appendix for further information.

LEGAL FRAMEWORK

Our management is subject to many legal requirements. Several, such as the National Environmental Standards – Commercial Forestry are specific to forestry, whilst many more, such as employment, tax and finance law, are applicable to all businesses.

We primarily address legal matters through an in-house lawyer, but also access contracted independent legal experts for more specific advice. Legal requirements are also included in operation policies and guidelines throughout the business. We have several polices that deal with legal requirements, including the key legislation listed below and other areas such as a commitment not to offer or receive bribes of any description. Our policies can be made freely available on request, depending on the nature and type of policy and reason for the request. For more information, please contact us on the as per the contacts section.

Whilst the legislation we work under are many and varied the most relevant to our forestry management are summarised below. Noting that other relevant legislation to our business can be found in the Annex sections of the NZ FSC Plantation National Standard.

Key Legislation for Forest Management

Health and Safety at Work Act 2015

Timberlands are serious about safety, demonstrating this through our strategic desire to be the “safest forest in the world”. This commitment is emphasised in our H&S Policy which is focussed on zero harm and eliminating critical or Sentinel risks. To achieve these commitments, we must first comply with legislation, in particular the Health and Safety at Work Act 2015 (HSWA).

HSWA is the principle legislation for the health and safety in the workplace in New Zealand with a purpose to ensure the health and safety of workers and workplaces by:

a. *protecting workers and other persons against harm to their health, safety, and welfare by eliminating or minimising risks arising from work or from prescribed high-risk plant; and*
b. *providing for fair and effective workplace representation, consultation, co-operation, and resolution of issues in relation to work health and safety; and*
c. *encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting PCBUs and workers to achieve a healthier and safer working environment; and*
d. *promoting the provision of advice, information, education, and training in relation to work health and safety; and*
e. *securing compliance with this Act through effective and appropriate compliance and enforcement measures; and*
f. *ensuring appropriate scrutiny and review of actions taken by persons performing functions or exercising powers under this Act; and*

g. *providing a framework for continuous improvement and progressively higher standards of work health and safety.*

Further to the above, *regard must be had to the principle that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from hazards and risks arising from work or from specified types of plant as is reasonably practicable.*

Of particular relevance to forestry is the Approved Code of Practice for Safety and Health in Forest Operations. Please refer to the health and safety section for further detail.

Resource Management Act 1991

Forest management is subject to the provisions of the Resource Management Act 1991 (RMA) which promotes the sustainable management of natural and physical resources. It is now the principal statute for the management of land, water, soil and other resources in New Zealand, which is defined by the Act to as follows;

"to manage the use, development and protection of natural and physical resources in a way or at a rate which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while:

a) *Sustaining the potential of natural and physical resource to meet reasonably foreseeable needs of future generations; and*

b) *Safeguarding the life supporting capacity of air, water, soil and ecosystems; and*

c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment."*

Essentially the RMA aims at sound resource management with a view to the needs of future generations. It is effects based and fosters accountability. If applied properly it should enable people to undertake any form of land use so long as adverse effects are avoided, remedied, or mitigated. Territorial (Regional, District or Unitary) Councils are responsible for applying the RMA at the local level. Our forests fall within the boundaries and are subject to 3 Regional and 5 District councils:

Regional Council (3)

- Bay of Plenty
- Hawkes Bay
- Waikato

District Council (5)

- Hastings District
- Rotorua Lakes
- Taupo District
- Western Bay of Plenty District

- Whakatane District

Please refer to the environment and social section for further detail on environmental compliance and management.

National Environmental Standard for Commercial Forestry (NES-CF)

Since 2018 most forestry activities have been subject to the National Environmental Standard for Plantation Forestry, updated to the National Environmental Stand for Commercial Forestry in 2023, which is an instrument of the RMA. The NES-CF is primarily based on erosion susceptibility with most of our forests categorised as low erosion susceptibility. Consequently, our forest operations are generally permitted. Timberlands has incorporated most relevant NES-CF requirements into our Best Environmental Practices, ensuring these become standard operation procedures. Where there are requirements not covered by our BEPS these are included in the specific prescription for each operation.

In the few cases where operations fall into controlled or discretionary activities Timberlands apply for resource consent with the relevant council.

The NES-CF requires that all replanting, harvesting, quarrying and earthworks operations require a management plan or sediment and erosion control plan. These operations also require advance notification to relevant regional and district councils. We have arranged to notify council on a quarterly rolling basis. Forest practice guides have been developed to provide more detailed guidance on specific activities regulated under the NES-CF. Timberlands have adopted these and apply them in our operational practices.

Resource Consents

Kaingaroa Timberlands currently holds thirty-eight resource consents with the Bay of Plenty, Waikato and Hawkes Bay regional councils for the following activities:

- Harvesting and replanting in NES-CPF red zones
- Earthworks
- Culverts and bridges
- Quarrying
- Stormwater discharge at our yards and nursery
- Discharge of Residue from our Murupara log yard
- Water take from a bore at our Nursery and Murupara log yard

Twenty-seven District Council consents/permits are currently held with Rotorua, Whakatane and Taupo District Councils and include:

- Harvesting around the Blue and Green Lakes
- Land use for KPP and MLY
- Building consents

Our Regional Council consents are subject to regular (usually annual) monitoring by the relevant council.

Monitoring Indicator MI09 in the Appendix provides summary on the number of consents held by Timberlands.

Heritage NZ Pouhere Act 2014

The Heritage NZ Pouhere Act 2014 (HNZP) provides protection for historical and cultural sites. Its purpose is to *promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand*. In particular the HNZP protects all sites or features constructed by humans prior to 1900. In our case this is predominantly Māori heritage sites such as urupā, pā, terracing, kumara pits and midden.

There are a number of cultural and heritage sites within the Timberlands estate, all of which are protected under HNZP. Timberlands have protocols in place to identify and manage these sites, including the application to modify should the sites be located within a planned operation.

Please refer to the environment and social section for further detail on historic and cultural site compliance and management.

Climate Change Response Act 2019 (CCR) - Emissions Trading Scheme (ETS)

The CCR and ETS requires forest and, in particular, landowners to avoid afforestation (without obtaining equivalent carbon credits) and to encourage afforestation as an offset to NZ's net emissions.
The purpose of the CCR is to:

a. *enable New Zealand to meet its international obligations under the Convention and the Protocol, including (but not limited to)—*
    i. *its obligation under Article 3.1 of the Protocol to retire Kyoto units equal to the number of tonnes of carbon dioxide equivalent of human-induced greenhouse gases emitted from the sources listed in Annex A of the Protocol in New Zealand in the first commitment period; and*
    ii. *its obligation to report to the Conference of the Parties via the Secretariat under Article 7 of the Protocol and Article 12 of the Convention:*
b. *provide for the implementation, operation, and administration of a greenhouse gas emissions trading scheme in New Zealand that supports and encourages global efforts to reduce the emission of greenhouse gases by—*
    i. *assisting New Zealand to meet its international obligations under the Convention and the Protocol; and*
    ii. *reducing New Zealand's net emissions of those gases to below business-as-usual levels; and*
c. *provide for the imposition, operation, and administration of a levy on specified synthetic greenhouse gases contained in motor vehicles and also another levy on*

other goods to support and encourage global efforts to reduce the emission of those gases by—

i. assisting New Zealand to meet its international obligations under the Convention and the Protocol; and

ii. reducing New Zealand's net emissions of those gases to below business-as-usual levels.

The ETS is the NZ Government's main tool for meeting international and domestic climate change targets under the Climate Change Response Act and provides the framework for forestry emissions management and deals with afforestation and deforestation.

Because the land on which our forests grow is mostly leased and pre-1990 we are not the liable entity under the ETS. Consequently, Timberlands cannot benefit or be liable for afforestation or deforestation on this land. However, to avoid any liability to the landowner, we ensure deforestation does not occur through effective re-planting and forest protection.

Kaingaroa Timberlands own 1,738 ha of freehold which is post 1990 forest. This has been registered the with the ETS, but to date no carbon credits have been traded.

Total carbon storage at 30 June 2021 was 89.7 million tonnes of CO2 Equivalent. This is 18.5 million tonnes more than existed in 1990 (the Kyoto benchmark date) and 22.6 million tonnes more than when Timberlands assumed management of the forest in 2003. The increase can mostly be attributed to improved management and genetics, which has increased productivity, and the raising of the harvest age from 22 to 28 by Timberlands. None of this additional stored carbon qualifies for trading under the ETS and has therefore not been accounted for in NZ's national carbon inventory. Nevertheless, the sequestration is a real reduction of atmospheric carbon.

The annual sequestration of 1.25 million tonnes per year since we commenced management is the equivalent to offsetting the annual emissions of over 300,000 typical passenger vehicles, or the annual CO2 emissions equivalent of over 600,000 dairy cows.

Monitoring Indicator MI13a in the Appendix provides a summary of the forest estates carbon storage.

Our emissions are predominantly (about 99%) from fossil fuel combustion, in forest operations, distribution (logging trucks) and from shipping, and other than our fleet vehicles is from third party contractors. Out total fossil fuel emissions have been between 117 and 122 thousand tonnes of CO2 equivalent per year. This is considerably less than the net sequestration. Our emissions are presented in MI13b in the Appendix.

FOREST MANAGEMENT & OPERATIONS

Introduction

Timberlands utilises resources in the Central North Island of New Zealand providing logs for our customers derived from fast growing, sustainable forestry plantations. The extent to which the business will prosper in the future depends greatly on the quality of the natural and physical resources that provide the foundation for the business. The company has a strong commitment to sustaining the natural resource base, not only for the future of the company, but also for the future of the communities in which Timberlands operates.

The forest estate is managed consistent with our Forest Management Approach to achieve our Ten Year Plan, in particular to ensure that the management of the forest is sustainable, from an environmental, social, cultural and economic perspective.

Timberlands aim to intensively manage the forest estate to supply a range of markets. Intensive management involves best practice nursery management, land preparation, planting of improved tree stocks, risk management, forest health and thinning.

Plantation Forestry

New Zealand production forestry is unique where exotic plantation species make up over 99% of wood products. Of this over 90% is radiata pine (*Pinus radiata*). Other exotic species frequently established in New Zealand include Douglas fir (*Psuedotsuga menzesii*), various Eucalyptus species (*Eucalyptus fastigata*, *E. nitens* and *E. regnans* are the more common), Mexican and Monterey Cypress (*Cupressus lusitanica* and *C. macrocarpa*) and Tasmanian blackwood (*Acacia melanoxylon*).

The success of these species, in particular radiata pine, is a result of over 100 years of use, trials, research and genetic development that has resulted in a plantation industry that can produce large volumes of sawlogs on relatively short rotations. Until further development on indigenous trees is advanced, exotic species remain the best economic choice for production forests in New Zealand. At Timberlands we recognise and utilise the many advantages of exotic plantations species, for example:

- The use of exotic plantation species has proven to be economically viable in New Zealand. Exotic species are economical in their use of land, labour and capital.
- Taking into account the increasing global demand for wood products, significantly more wood can be produced from one land unit of plantation species than for indigenous species in New Zealand (and tropical rainforests). Exotic plantation forests provide an alternative to prevent the depletion of these forests. For example, New Zealand's forest industry supplies 1.1% of global and 8.8% of Asia Pacific's forest products trade. All from just 0.05% of the world's forest resource and an annual harvest area equivalent to 0.0009% of global forest cover.

- This is emphasised by Timberlands' increasing sustained productivity shown by Monitoring Indicator MI03 on sustained yield and mean annual increment (MAI) in Monitoring Indicator MI34 of the Appendix.
- Our productivity results in a sustained annual cut that should the trees be laid end to end they would circle the world two and a half times.
- The focus of research and technology on only a few species results in greater advances for a given level of funding.
- Production from our plantation forests mean most of NZ's natural forests are managed for conservation/preservation and recreation purposes.
- Takes pressure of natural forests as a recreation resource.
- Well managed plantations provide a number of environmental services, including recreation, rare species habitat, water and soil protection and carbon sequestration. Monitoring Indicator MI13 in the Appendix provides a calculation on some of the environmental services in the Timberlands estate.

Kaingaroa's mosaic of age classes provides a sustained yield and several environmental services.

New Zealand's prominent environmental organisations (e.g. Royal NZ Forest and Bird Protection Society) and the forestry industry have established agreements on the use and importance of exotic species in plantation forestry. These are the NZ Forest Accord and Principles for Commercial Plantation Forest Management in NZ. Copies of these agreements are available on-line at www.nzfoa.org.nz. Timberlands aims to meet the spirit of these agreements.

Establishment and Silviculture

The following table outlines a typical establishment and silvicultural regime currently practised in by Timberlands. The regime varies depending on site (terrain, soil, elevation, weeds) and risk (environmental, community, safety) factors.

Year	Operation	Description
-1	Land preparation	On flat to rolling areas - line rake / wind row slash and cultivation to break up hard pan and compaction. Mounding to raise seedlings/cuttings above the frosting zone.
-1	Weed control	Prior to planting generally with a mix of metsulfuron and glyphosate by air.
0	Planting	1,000 stems per hectare on low growth sites. 800 stems per hectare on medium and high growth sites.
1	Fertilise	In low fertility sites manually with slow release tablets (NPK and trace elements) in spring. Approximately 2,000 ha per year.
1	1st Release	Undertaken to release crop trees from weed competition and to reduce frosting. Usually with a mix of hexazinone and terbuthylazine applied by aircraft. Other herbicides and application methods used are dependent on weed species and risks.
1	Regen pull	Only on areas with high regeneration. Undertaken by hand.
2	2nd Release	Only on high weed growth or high frost risk areas. Undertaken to release from weed competition and to reduce frosting. Usually with a mix of hexazinone and terbuthylazine applied by aircraft. Other herbicides and application methods used dependant on weed species and risks.
4	First prune	To 2.4 metres
6	1st thin to waste	Undertaken at 8m mean crop height.
	2d Prune	To 5.5 metres
9	2nd thin to waste	Undertaken at 14m mean crop height (when no production thin is scheduled) to a minimum of 500 stems per hectare.
11	Production thin	Only where conditions suit (i.e. flat terrain, stocking) at 18m mean crop height
3-20	Dothistroma treatment	Depending on infection rates which are assessed beforehand. A light application of copper applied by aircraft.
All	Possum control	Generally undertaken by licence for fur collection. However, where monitoring indicates higher numbers other techniques are used such as paid ground control, ground applied pindone and 1080 and in specific cases aerial 1080.
28	Harvesting	Dependant on stand characteristics. See harvesting for more detail.

Establishment

Nursery

Timberlands operates a tree breeding (clonal and cutting) and nursery (container and bare root) facility at Te Ngae in Rotorua. The facility produces over 7 million seedlings and cuttings each year, primarily for Kaingaroa Timberlands but also for other Timberlands clients and a small amount for sale. We do not test, develop, propagate or plant Genetically Modified Organisms (GMOs). The objective of the clonal facility and nursery are to support the establishment goal:

- Establish a consistent, healthy, fast growing crop of trees
- Full site utilisation
- Prudent silvicultural investment:
  - Strategic considerations
  - Economic rationale
  - Site x Silviculture x Genetics

Clonal Program

In 2008 Timberlands began deploying our own (Forest Genetics - FG) clonal material to the Kaingaroa Forest estate. Prior to that time a large volume of independently produced clones had been deployed to the estate with mixed success. However, the results coming through from various clonal trials, both FG and others, suggested that with prudent management and deployment of well selected and propagated material the genetic gains arising from clones could potentially be significant.

In 2008 we deployed approximately 120,000 clonal plants to the forest and progressively increased this to 1.5M/plants from 2015 onwards. We continue to be encouraged by the results from our trials and our operational plantings of clones.

Cross pollinated family seedlings and cuttings are selected for superior growth, form, wood quality and disease resistance and material taken from these to develop into clones. The diagram below shows the process from forest to cutting.

All our clonal work is undertaken at our nursery site. To ensure diversity and test traits clones are planted at various sites across the forest estate.

A young stand of consistent and fast growing radiata pine clones

Planting

The estate has been assessed and modelled by site and land type to identify and segregate into homogenous management units. A particular regime is assigned to each unit depending on its characteristics.

Each year Timberlands reviews the areas available for establishment to determine land preparation, which includes cultivation, raking, rolling, slashing, skid rehabilitation, and weed control, taking into account the needs of each site based on the characteristics of the homogenous management unit. Timberlands re-establishes around 7,000 hectares of radiata pine with some small trial areas of cypress, *Eucalyptus* and other species established at times throughout the estate.

Monitoring Indicator MI01 in the Appendix provides summary on the area re-established each year with associated planting quality control results.

Our establishment program aims to produce a high-quality forest through the following practices:

- High quality and healthy tree stock properly handled to the site
- Cultivation of the soil;
- Placing the tree roots in the soil in a position that encourages stability;
- Reducing competition from other vegetation in the first years of growth;
- Minimise frosting in frost prone regions.
- Addition of fertiliser at low fertility sites and at sites where significant growth will result without leaching.

Herbicides are used for weed control and are usually confined to the year of planting and the following year. Successful establishment means that herbicides are only required to be used up to three times every 25 to 30 years. Applications by helicopter before and after planting are limited to areas where weeds are likely to be a problem. Spot spraying after planting is typically only undertaken in sensitive areas.

Herbicides are selected based on their ability to desiccate and/or kill the target weed species at the same time as being safe to use (i.e. non-toxic to non-target species, such as animals and humans) and breaking down quickly in soil or water to a safe organic substance. Application plans include strategies to protect watercourses, wildlife habitats, areas of native forest, boundaries and other ecosystem services and values.

A well-established Kaingaroa stand with full site occupancy

Silviculture

The basic silviculture regime for radiata pine is thin to a minimum of 500 stems per hectare. Depending on the site this may be undertaken by one or two waste thin operations or through production thinning. In 2022 we decided to recommence pruning on around 1/3 of the relevant ageclass.

Thinning of stands is undertaken to provide the optimum growing space for the selected residual crop trees. The aim is to thin out the smaller or poorly formed trees, leaving the bigger, better formed trees to grow on. On flatter land we undertake production thinning where the thinned stems are extracted from the stand and sold as pulp logs. Non-commercial thinning operations, where production thinning is considered impractical or uneconomical, results in the thinned stems being left on the forest floor to decompose.

Pests and diseases

Dothistroma (*Dothistroma pini*) is currently the only disease regularly treated within the forest estate. Dothistroma is a fungus that attacks pine needles and can severely reduce tree growth, in some cases killing the trees. A copper-based fungicide with a low active ingredient rate is used to combat the fungus. We undertake annual aerial surveys to determine infection rates and determine treatment areas. The product is considered to have a low environmental impact (determined by independent analysis), and its application includes strategies to take into account factors such as protecting watercourses, wildlife habitats and tracts of native vegetation. As in the case of herbicides, Timberlands works to use the minimum amount of fungicide possible to achieve effective control. To avoid

excessive chemical application we minimise Dothistroma infection through establishing resistant treestocks and through silviculture practices, ensuring timely thinning operations, which increases air movement and lowers humidity levels.

Monitoring Indicator MI09 in the Appendix provides summary on the area treated for Dothistroma each year.

The main animal pest in the forest estate is the introduced possum, which can attack the growing tips of trees causing stem malformation and die-back. Possums are also a major pest to neighbours along the forest boundaries, as they pass on tuberculosis to cattle and deer. Furthermore, they eat native tree species and predate native wildlife in conservation reserves. Rabbits, wallabies and hares can also be a pest in the first two years after planting, when they eat the tops out of young trees. Timberlands engages professional pest control organisations to target introduced pests. These organisations use accepted strategies to prevent impacts on non-target species, and coordinate operations with other organisations such as the TB Free NZ and Department of Conservation whom have similar pest control targets.

Timberlands use a number of methods to control animal pests, including 1080. Monitoring Indicator MI09 in the Appendix provides summary the amount of area treated each year by 1080.

Harvesting

A comprehensive planning process determines how and when to harvest the tree resource. Long-term harvest profiles are developed and are then translated into annual harvest plans. Planning includes consideration of age, product estimates, terrain, safety, watercourses, protected areas neighbours and other values and risks.

Timing

Timberlands endeavour to harvest its forest resource as closely as possible to the optimum tree age for each stand rather than maintain a set yield. However, our forests have a relatively even age class distribution which means we sustain a long-term non-declining yield. However, as productivity gains are realised our sustained yield increases. At times other factors affect the yield, but generally for short periods, for example a drop in log price or demand can lead to a reduction in harvest levels.

Across the whole estate Radiata pine has a relatively even age class distribution, which means that harvest level projections can be relatively stable over time, for example:

- Age 1- 10 years 34% of the estate
- Age 11 – 20 years 36% of the estate
- Age above 20 years 30% of the estate

Extraction Techniques

Timberlands uses three basic criteria to ensure the right harvesting methods are employed:

1. *Health and Safety*: the method that is the most appropriate for the topography and nature of land with an aim to undertake mechanised felling wherever practical.

2. *Environmental*: the method, which creates the least impact on the environment.

3. *Economic*: the method, which is the most cost-effective for the area, taking safety and environmental considerations into account.

Our harvesting operations fall can be described by three categories:

1. Production thinning

Where cull trees are removed from the stand for sale. The annual production thinning program produces is over 150,000 m3 per year. Felling is mechanised and the preferred method of extraction is by forwarder.

2. Full Stem Harvesting

The predominant harvesting system employed within the Kaingaroa Timberlands forests is that of clearfelling where all the trees in a harvest area are harvested in one operation. Full stem harvesting is mostly undertaken by ground-based extraction which bring whole stems to a road edge or a landing. The whole tree stems are loaded onto a specialised stem truck (can carry 60T of stems) and transported to the Kaingaroa Processing Plant (KPP) where they undergo computer algorithm-based assessment for log-making. Whole-stem transportation is only possible where an extensive off-highway (non-public) roading network exists, which can cater for the additional length and weight of these transport units.

Stem truck being unloaded at the Kaingaroa Processing Plant

3. Conventional Harvesting

Also involving clearfelling, it is characterised by log making on local skid sites. It usually occurs where there are long transport distances or where the stand is not connected to the KPP by off-highway roads. Various methods are used in our forests, but are predominantly ground based extraction. Other extraction methods used include tethered, swing yarder and hauler tower on steeper areas where the selection of method depends primarily on the terrain.

Harvesting and Slope Decisions

For harvesting purposes our forests can be generalised into four terrain types to determine the appropriate machinery configurations. These are typically as follows:

1 & 2. *Flat* (FLT 0-10 degrees) and *Flat-rolling* (FRG 10-20 degrees). A mechanical harvester fells each tree and removes most of the branches, leaving the residues on the cutover land. Logs are removed with rubber-tired skidders fitted with mechanised grapples.

3. *Rolling, steep* (RST 20-32 degrees). This includes land with areas that are unable to be harvested easily with rubber-tired skidders, and therefore require tracked machines either to form tracks on which rubber-tired skidders can operate, or to actually extract the stems. In this type of extraction, traditionally manual (chainsaw) clearfelling was used, but has been replaced by self-levelling or tethered (by wire cable) harvesting machines. Excavators fitted with logging grapples are sometimes used to “shovel” full length stems to points are safer to extract.

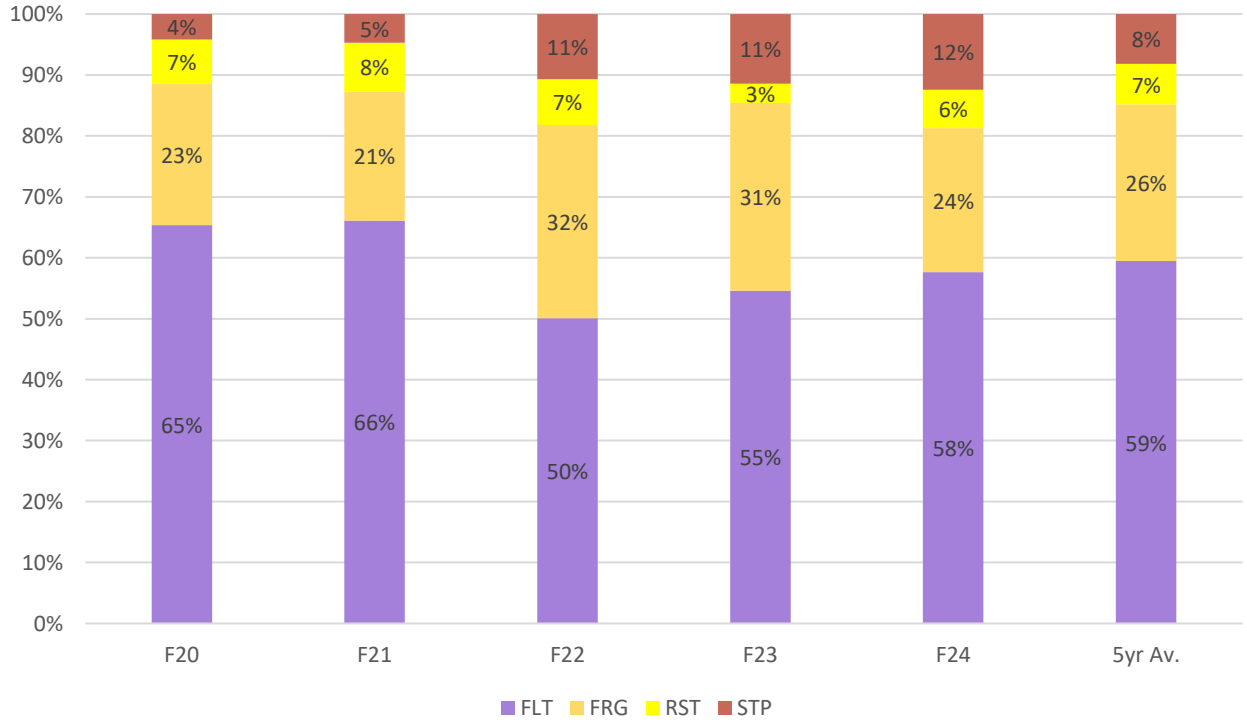
4. *Steep:*

Short (SST 32 degrees or more, but less than 500 metres haul distance). This country is too steep for skidders or tracked machines to work safely, and consequently haulers are used in this operation. The predominant hauler used is the "swing-yarder". This is a hauler with a short tower, and it has the ability to work close to the edge of the slope, swinging the stems to one side of the machine before they are moved to a skid site. The swing-yarder is flexible machine that can be moved and set up relatively easily, and can use a variety of harvesting techniques to suit any given situation or difficulty factor. Falling may be by tethered harvester or manual by chainsaw.

Long (32 degrees or more but greater than 500 metres haul distance). This country is also too steep for skidders or tracked machines and requires another type of hauler. Tall poles or towers to which the haul ropes are attached are used to provide lift, so that stems are hauled to the landing sites with minimal environmental impact. Falling is generally manual but tethered machines can sometimes be used.

Tethered harvesting machines are now utilised on slopes over 20 degrees as a safer means to undertake tree falling rather than manual use of a chainsaw. Timberlands has a health and safety driven mechanisation target of 90% production tree falling and log making. The target was achieved in 2016 and has been maintained since.

The figure below shows the area by flat (FLT), flat-rolling (FRG), rolling-steep (RST) and steep (STP) terrain classes harvested each year.



Products

Our plantation produces a variety of round or rough wood products through the harvest of different species. These are shown in the two table below by FSC and PEFC categories respectively.

Products by FSC species/category

Species	FSC Category
Pinus radiata	W1 Rough wood
Pinus radiata	W3.1 Wood chips
Pinus radiata	W3.2 Sawdust
Pinus radiata	N1 Barks
Pseudotsuga menziesii	W1 Rough wood
Sequoiadendron giganteum	W1 Rough wood
Thuja plicata	W1 Rough wood
Cupressus macrocarpa Hartw. ex Gord.	W1 Rough wood
Cupressus lusitanica Mill.	W1 Rough wood
Eucalyptus spp	W1 Rough wood
Larix decidua	W1 Rough wood
Populus spp.	W1 Rough wood
Pinus patula	W1 Rough wood
Pinus strobus	W1 Rough wood
Pinus contorta	W1 Rough wood

PEFC Product List

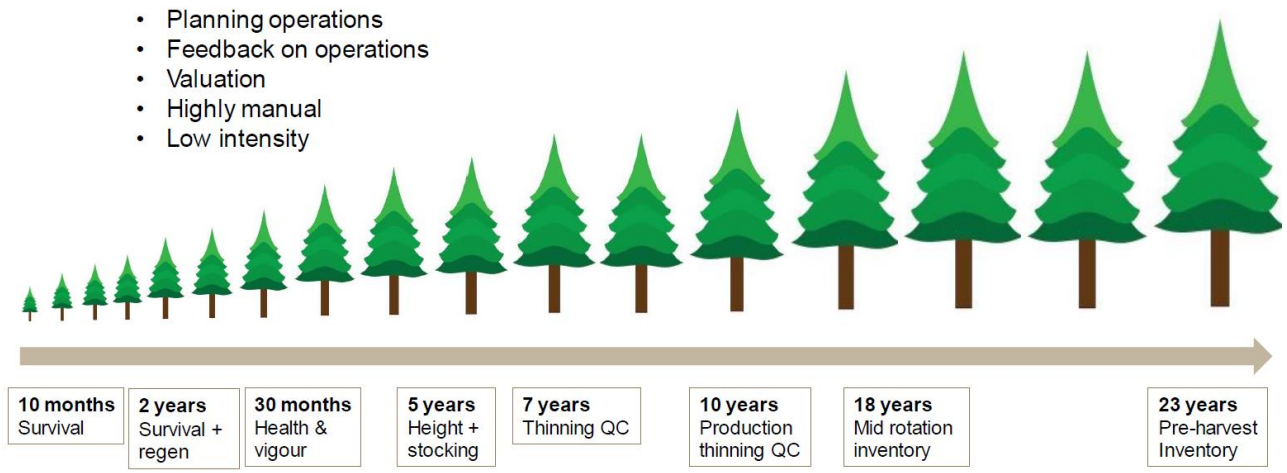
Level 1	Level 2
010000 - Roundwood	**010100 Sawlogs and Veneer Logs**
	010200 Pulpwood
	010300 Chips and particles
	010400 Wood resiues
	010500 Bark
	010600 Other roundwood
020000 – Fuelwood and energy	**020100 Fuelwood**

Resources, Inventory and Research

A critical component of management planning and continuous improvement is understanding the available resources through inventory, modeling and research. Timberlands employs several staff in a Technical department to undertake this task and utilise specifically designed forest industry models that describe our forest asset.

Inventory

We undertake a number on inventory assessment over the rotation. This enable us to understand growth and quality of the forest and plan siliviculture and harvesting as well as plan to sell forest products. The diagram below shows the various inventory assessment stages generally undertaken over a rotation.



The models are constantly validated or added to through an inventory regime applied at several stages of the forest development, including:

- As quality control following planting, pruning and thinning.
- Age 10 – where growth/height and form are assessed to validate models and predictions.
- Permanent sample plots (PSPs) and trials.
- LiDAR – we are developing technique for LiDAR inventory that can be used on any age from 3. LiDAR is also used for understanding terrain and other factors as a planning tool and also to detect archaeological sites.
- Soil and foliage sampling.
- Pre-harvest.
- Post harvest reconciliation.

In support of our inventory we also actively undertake or participates in and then incorporate into our management a wide range of research and trials across our business. This includes a formal R&D program that support ours 50 by 50 strategy. Key areas of our research involvement are:

- Genetics
- Fertility / site conditions, including cultivation, foliage,
- Alternate species
- Silviculture
- Health
- Land preparation

- Environmental
- Health and Safety
- Pest and weed management, including pesticide use.
- Wood properties
- Model validation and improvement
- Technology, such as UAVs, remote sensing/LiDAR

Industry Organisations and Co-operative Membership

We actively collaborate and partner with our industry colleagues ensuring we maintain best practice and continuous improvement. Some of the industry organisations and research co-operatives we are involved with include:

- Forest Industry Levy Board
- NZ Forest Owners Association and participate through representation on the following committees:
    - Executive
    - Environment
    - Fire
    - Forest Health & Dothistroma Committee
    - Transport
    - Promotions
    - Research (Chair)
- Radiata Pine Breeding Company
- Forest Stewardship Council
    - FSC International Member
    - NZ FSC Standard Development Group (previous Chair)
- NZ Forest Certification Association
- Log Transport Safety Council
- CNI Wood Council (Chair)
    - CNI Forest Operations Health and Safety Forum
- Whakrewarewa and Tokorangi Forests Recreational Management Group
- Rotorua Chamber of Commerce
- BOP Primary Sector Coordination Group

FOREST PROTECTION

Fire Management

Fire risk in our forests is managed through an integrated system, which provides a network of equipment and personnel to ensure a suitable level of fire protection is always in place. Our fire management also operates within the Fire and Emergency NZ (FENZ) framework via a fire management agreement. This allows Timberlands to manage fires within our forests, but also provides an additional network of shared resources from FENZ, neighboring forest estates, Department of Conservation and volunteer rural fire fighting services in the local region. The agreement includes a provision for Timberlands to assist FENZ with fires outside our forests.

The fire management program is driven by weather data, which is collected daily from a network of Remote Automatic Weather Stations (RAWS), and this information is relayed to Timberlands via our Radio Room and FENZ. The level of fire risk, calculated from this data, determines the level of fire protection required. These fire danger levels are shown on the fire danger grapefruit signs located around the community. Forest protection contractors, based at the Rotoehu, Waiotapu, Murupara and Waimihia fire depots, are then allocated daily lookout and standby duties.

Kaingaroa Timberlands' fleet of five dedicated fire appliances Located at each of the four fire depots. (two located at the main Waiotapu Depot).

In the event of a fire, there is a structured response (CIMS) initiated via the Timberlands Duty and First Response Officers. They will determine the size and scope of the event and allocate responsibilities and resources as required. The participation and involvement of all Timberlands staff in this process is critical to its success. A regional Fire Plan is issued through FENZ, which outlines the Reduction, Readiness, Response and Recovery mechanisms that are followed during the fire season.

There is a restricted fire season operated within the our region, which normally runs from 1 October until 30 April, but this is contingent on weather conditions. During the restricted fire season, all fires require a permit issued by FENZ or Timberlands.

Monitoring Indicator MI11 in the Appendix provides summary of annual fire conditions and fires attended by Timberlands resources.

Controlled Burns

Timberlands plan regular controlled burns as a fire training exercise and to reduce post harvest slash as a land preparation tool. Controlled burns require settled conditions with Low or Moderate fire dangers.

Deployments

We strongly believe that fighting wildfires is the best form of training and actively support our firefighters to both national and international deployments. The team usually consists of a mix of Timberlands staff and contractors and in some cases a fire fighter from another local agency, which helps to build collective skills and relationships.

Monitoring Indicator MI11 in the Appendix provides summary on the number deployment days each year.

Security

Timberlands contract First Security (First) to manage forest security, incidents of theft and vandalism, monitor access and behavior, issue recreational permits, manage in-forest events and provide road safety services. In-forest security is undertaken mostly through patrols which are targeted towards high-risk areas (i.e.: access points during elevated fire danger, contractors located near public areas, occupations, “boy racer” hot spots, rubbish dumping, etc). Another key activity is road check points where entry permits, safety (i.e.: truck compliance with critical rules), road user details, speed and other vehicle and access related issues are monitored and rules enforced. Investigations and enforcement action (i.e.: trespass warnings and notices, prosecutions, etc) are also undertaken by First.

Monitoring Indicator MI17 provides a summary of security incidents and trespass notices issues each year.

Reactive work also includes attending some emergency call-outs to secure and assist with investigating road traffic or serious harm incidents, or to assist in fire protection issues. First also respond to staff and some supplier security issues when requested.

Access, Permits and Events

Timberlands maintains tight control of access through a permitting system. All drivers (and their vehicles) must obtain access permits which are only approved when the following is provided:

1. Completing the on-line safety induction.
2. Valid reason for entry.
3. Valid full drivers licence.
4. Vehicle registration plate number, make and model.
5. Public liability (minimum $5 million), fire fighting (minimum $1 million) and vehicle liability insurance (minimum $5 million).

All business permits must be approved by the Sustainability Manager or Fire and Security Manager and the relevant Timberlands line manager. Business permits are only issued for a maximum of one year, or less if their contract or insurance expires earlier. Recreational permits are approved by First through the process explained below. Applicants must sign they have read and understood Timberlands' safety and behavior requirements before permits are issued.

Permitting enables Timberlands to determine if the applicant is appropriate to enter the forest (i.e.: checking drivers license, firearms license, previous history - trespass, etc) and to pass on behavioral information such as safety messages, road rules, closed areas (i.e.: no hunting adjacent to Kaingaroa Village), hazards etc.

Monitoring Indicator MI24 in the Appendix provides summary on the number recreational access registrations per year.

Policy

Recreational access is primarily managed through the Joint CNIIHL and Kaingaroa Timberlands Access Policy. The policy addresses both the (CFL) right for beneficial iwi land owners to use the land for hunting and cultural purposes and the right of the license holder (Kaingaroa Timberlands) to protect the forest and assets through access control.

The key features of the policy are:

- Provides for the public to hunt within the forest and access fishing rivers by vehicle, during daylight hours on weekends, when fire danger is low. This is usually the period from May to September when there is no restricted fire season in place.
- Some of the costs associated with recreational access are recovered through a registration fee of $50 per person per annum.
  - To be valid, the permit holder must sign and accept access and safety conditions.
  - Verified beneficial land owners are not charged the registration fee and can also collect food for special events during the fire season through a designated access process.
- Verified beneficial land owners found in the forest without a permit (for single and minor issues only) can apply through their Iwi for support to have the consequent trespass notice revoked. A second offence will result in a trespass notice that cannot be revoked.

Cultural Permits

A key aspect of the joint access policy was to provide for cultural and food gathering during the fire season. As such, the policy allows iwi groups to apply to Timberlands through their iwi for special permits to gather food for events such as significant birthdays, hui and tangi. The activity can take place after normal work hours, i.e.: in weekends or from 5pm to dusk during daylight savings hours. Permits are not issued for after dark or when the fire danger is considered too high. Timberlands weighs up the risks and is usually able to issue most permits.

Monitoring Indicator MI25 in the Appendix provides the number of special access permits issued.

Public Access Easements

A number of legal access easements provide for the public to drive through the forest estate to access features such as conservation land and rivers. Our website provides information on their location and their status (open or closed). Whilst we endeavor to keep these open they can be closed at times for safety or other reasons, for example during and after storms, for harvesting operations and extreme fire danger. Information on the status of easements and access in general is found here https://www.tll.co.nz/access_closures. https://www.herengaanuku.govt.nz/. Links to maps for each forest is also found here, including maps with easements.

Please note that many easements provide only for point to point driving access in daylight hours only. No stopping, hunting or other activities are permitted on these routes. Please respect these rules.

Further information on public access can also be found at Herenga a Nuku Aotearoa (Walking Access Commission) at. This site contains useful information on responsible behavior (https://www.herengaanuku.govt.nz/advice/responsible-behaviour), and an Outdoor Access Code. We encourage people to read and understand this code, and apply it when accessing our estate.

Forest Communications

Much of the forest estate does not receive cellular coverage and communication is through a VHF network (CNI Forest Radio Network). The network operates via a number of radio repeaters strategically placed around the region with different channels dedicated to general communication and cartage distribution.

An operator, based at our Radio HQ, is on duty operator during work hours and on weekends, usually between 7am and 6pm. However, these hours are extended when fire dangers increase and can continue to 9pm during Extreme fire danger periods.

The main role of the Radio Network is to provide communication for the following:

- Forest operation management i.e.: distribution
- Emergency response i.e.: to call up and assist in the case of an injury

- Fire management, including managing the weather data, setting standby triggers and fire emergencies
- Safety i.e.: crew site entry call ups and daily log/call in locations

The Forest Radio Network is jointly owned and governed by Timberlands and Tiaki (Manulife). Timberlands and Manulife oversee the Radio Network through a Governance Committee chaired by Timberlands, and the Network is managed by Communications Network Management Limited (CNML). Other forest companies can use the Network and pay for this service based on the number of repeaters (channels) they utilise.

Kaingaroa Road Network (KRN)

The Kaingaroa Forest Road Network Deed (KRN) provides for the movement of forest produce across CFL's (different land titles) on dedicated arterial roads. The deed does not provide for other access or shortcutting unless all signatories agree. To date agreement is in place for recreation through the joint CNIIC and Kaingaroa Timberlands Recreation Policy.

The KRN establishes Kaingaroa Timberlands as role Road Controller and is primarily responsible for ensuring:

- The conditions of the Kaingaroa Forest Road Network Deed are met
- Endorsement and management of qualifying (with reciprocal rights) secondary users
- Charges and fund allocations (including the state of the KRN) are accurate and appropriate
- That appropriate compliance and enforcement measures are in place
- The submission for review of the annual report to CNIIC

Monitoring Indicator MI12 provides a breakdown of volume carted on and off public roads and by rail.

The KRN which represents the main arterial road system is made up of sealed and unsealed roads.

HEALTH AND SAFETY

Timberlands operates a dedicated health and safety team and system which aims to achieve our vision:

"To become the safest production forest in the world"

Our health and safety policy can be found on our website.

Operationally our contractors are expected to manage their own safety, but Timberlands aims to partner through the relevant Timberlands Operations Manager and the H&S field Manager whom undertakes inspections and audits. Timberlands' system, which is designed to keep track of safety performance by contractors and staff, is administered by the Forest Safety Systems Manager who reports to the OHS Lead.

Timberlands operates a comprehensive electronic and document based health and safety system that has an active review process. Each department reviews the health and safety information that is relevant to their operations within the forest. Information is taken from these reviews by a health and safety representative to the safety representative's quarterly meetings. Where the information needs to be discussed at a higher level it is forwarded to the Health and Safety Committee for review. Any changes that are to be made are then discussed at the senior Managers meetings and sign off is conducted. This information is then passed back to employees via the same means.

Key documents of our H&S system are:

- Timberlands Health and Safety Manual
- Timberlands Critical Rules
- Timberlands Forest Road Safety Manual
- Timberlands Drug and Alcohol Policy
- Timberlands Emergency Plan
- Approved Code of Practice for Safety and Health in Forest Operations (Bush Code).
- Land Transport Safety Code
- FIT Best Practice Guidelines.

Incident Reporting

Our primary focus is Sentinel incidents, which are incidents that could result in a fatality or permanent disablement. Sentinel incidents receive a higher degree of scrutiny with the aim to eliminate these and hence their serious risk from our operations. This is similar to managing critical risk.

Timberlands has an active accident reporting and investigation procedure where employees and contractors are encouraged to report near misses, incidents and accidents, whether they have caused harm or not. Incident reports are reviewed by the revenant Timberlands

manager and the Health and Safety Committee to ensure the effectiveness of the company's risk management. All incidents are entered into a purpose designed system (SEAMS) which is administered by the dedicated H&S team with trend analysis conducted each month. Findings from this analysis are distributed to the management of the company, the contractors and to industry groups to help the industry as a whole manage the issues they are facing. From this information Timberlands then develops injury prevention initiatives applicable to our staff and contractors. These initiatives include but are not limited to, driver education, and specific task training, for example tree felling, due to the higher rate of Sentinel incidents in this area.

Monitoring Indicator MI20 provides a breackdown of incidents by type, including High Potential and MI22 shows injury trends over time.

Risk Management

Timberlands manage risk in a number of ways, in particular though applying the Sentinel principles, contractor and worker engagement, enforcement of rules and safety incentives.

High Potential

In 2012 Timberlands reviewed High Potential (previously Sentinel) incidents to identify key safety focus areas. Manual falling and vehicle driving were ranked as the highest priorities with waste thinning kick-backs and yards/KPP also identified as posing some risk. Consequently, Timberlands concentrated High Potential prevention strategies on the following four areas (in order of priority):

1. Replacing manual harvesting tasks with mechanised (people in protected cabs).
2. Safe driving.
3. Safe (through cabs/engineering) yards and KPP.
4. Waste thinning – focused on kickbacks.

Timberlands reviewed the High Potential process again in 2015 and 2018 which found that due to mechanisation and training the amount of falling incidents had reduced to a level that driving is now the single greatest safety risk. Our revised intervention program is now highly focussed on road safety.

Monitoring Indicator MI21 shows mechanisation progress and the consequent reduction is manual tree falling incidents.

98% of tree falling is mechanised

Contractor and Worker Engagement

Whilst most of our contractor and worker engagement is undertaken operationally by the relevant Timberlands line manager we also operate a number of initiatives to pass on safety message and engage with forest workers. This includes, but is not limited to; a regular principals forum, monthly safety champion (reps) meetings, safe starts, planting start up and an annual principals meeting.

Critical Rules

Timberlands use operation specific Critical Rules as a key method to enforce safe work practices. A Critical Rule is a rule that if breached, could result in a potentially serious or fatal incident (i.e.: High Potential event). To enforce compliance, Timberlands operates a punitive system where a Critical Rule breach found by Timberlands will result in a stand down of the crew and/or individual responsible, and the individual must be deemed competent by the contractor before returning to the task.

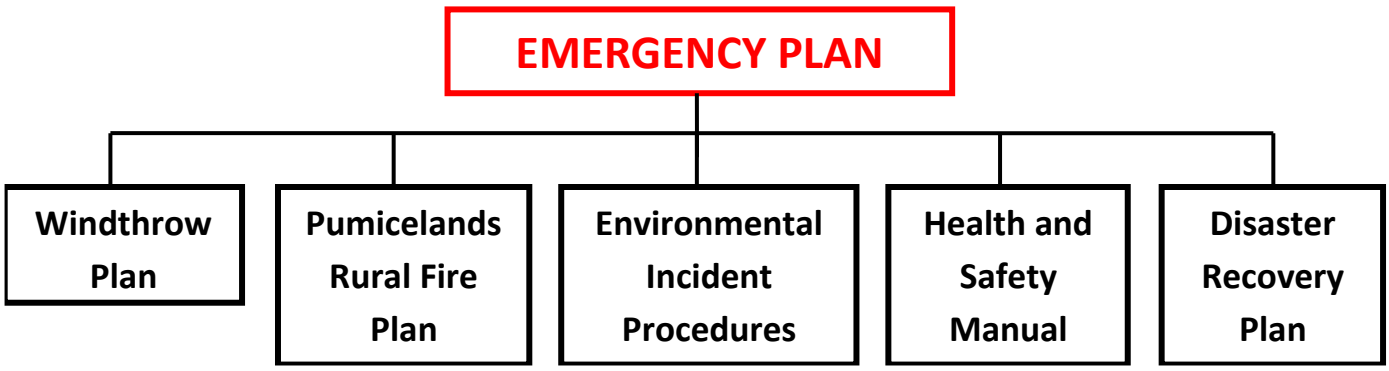
Incentives

Whilst enforcement of safety rules is a critical component of good safety management, so is encouragement and reward for good safety behaviour. Safety incentives include safety awards for nominated individuals, annual best contractor awards and quarterly shouts for the highest scores in quarterly safety review audits.

Emergency Management

Our Emergency Plan EM002 provides guidance for a wide range of potential emergencies. We also have five specific plans (see Figure 5 below) for emergencies that are either forestry related or catastrophic in nature.

Figure 5: Timberlands Emergency Structure



The Emergency Plan EM002 provides a simple CIMS based system where an Incident Controller is appointed with a structure of staff and contractors and can cover emergencies such as:

- H&S: Fatality / Vehicle accident / 111
- Fire
- Severe Weather Events (wind, rain, snow)
- Disease / pest outbreak
- Natural disasters (flood, earthquake, volcano)
- Environmental
- Hazardous substance
- Occupation
- Threats (bomb / white powder)
- Infrastructure damage
- Media / Reputational

Monitoring Indicator MI10 in the Appendix shows the number of emergency incidents where Timberlands appointed an Incident Controller and initiated CIMS.

ENVIRONMENTAL AND SOCIAL MANAGEMENT

Policy

We are committed to maintaining a high standard of environmental and social performance throughout our activities. This is guided by our Sustainability Policy which can be found on our website. We operate a comprehensive environmental management system that is primarily designed to comply with the Resource Management Act and our independent certification commitments. Our system consists of over 85 controlled documents linked to an Environmental Administration Manual that is managed by our dedicated Sustainability Team.

Our environmental management also includes the identification and management of important values such as rare, threatened and endangered species, protection of reserve areas and waterways, carbon management and the control of pests and weeds. The social perspective includes ensuring that contractors and their workers adhere to health and safety standards, and that meaningful engagement with neighbours and stakeholders (in particular recreation) in respect of operations on the forest is undertaken. From a cultural perspective we engage with iwi and ensure that cultural and historic sites and values are identified and protected. We balance these with an economic approach to selection of a species, management and harvesting regime, that provide an adequate return on investment while minimising the risks of this investment.

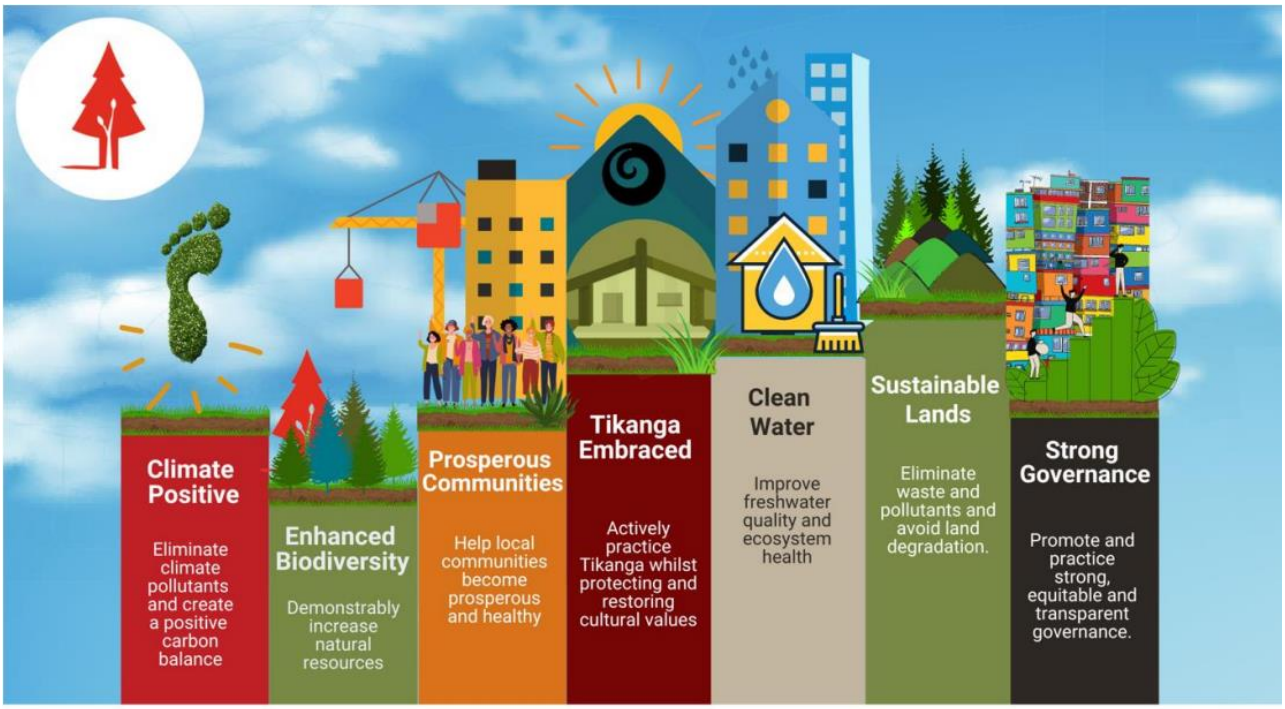
Restorative Development Goals

In 2022 Timberlands endorsed a set of Restorative Development Goals to establish how we will look in 2050 and a roadmap on how we progress towards our vision of a future state. We established several aspirational targets for each goal to bring the Timberlands Restorative Development Goals to life. These living targets are based on the UN SDGs and will evolve over time, but we believe they represent the best methods to reach our 2050 goals.

We focused our goals on Restoration rather than Sustainability to reflect our ambition to leave the ngahere (forest) and whenua (land) in a better state than when we assumed custody. And we intentionally set our aspirations high to ensure we make a real and meaningful difference.

All 35 targets are provided in further detail in Appendix 3.

Work has already commenced on most targets with some well advanced: For example, predator-free, eliminating wilding conifers and our Living Wage policy.



TIMBERLANDS RESTORATIVE DEVELOPMENT GOALS 2050

The Environment and Forestry Activities

Forestry activities encompassing silvicultural and harvesting operations can have both beneficial and adverse impacts on the environment, often depending on the quality of environmental and operational management. Well-managed forests can:

- enhance water quality
- stabilise and conserve soil
- provide a buffer against flood flows during storms,
- shade waterways for fish life
- contribute to biodiversity and wildlife habitats
- sequester and store carbon
- provide recreational, economic and social benefits to the community.

Monitoring Indicator MI13 (and other monitoring indicators) in the Appendix provides further detail on a number of environmental services from the Kaingaroa Forest Estate.

On the other hand, poorly managed forestry activities can have harmful impacts. We aim to identify potential adverse impacts our activities may have, and to institute environmental safeguards to prevent or to minimise the adverse impact from our operations.

In summary we approach environmental management through two inter-connected categories:

1. Compliance where we endeavour to meet rules and protect values from our activities.
2. Active management of environmental values, specifically:
    a. Biodiversity, including:
        i. Rare and threatened species management
        ii. HCV and SBV management
        iii. Management of other conservation areas
        iv. Integrated pest management
    b. Waterways and land
    c. Carbon
    d. Pesticide management
    e. Cultural and historical sites.

Compliance

Our compliance is focused on meeting the NES-CF, Regional and District Council rules, other regulations and best practice. Operational compliance is managed by the relevant Line Manager and contractor from planning through to post operation remediation. Compliance is then monitored by the Sustainability Team and on occasion independently by consultants or territorial authorities. The Sustainability Team provides an overview of operational environmental management and in particular audits high risk operations and council resource consent conditions.

We operate under a series of in-house Best Environmental Practices (BEPs) which cover day to day environmental management and take into account the NES-CF, council rules and industry best practice. Our current BEPs are:

1. Forestry Operations ES311
2. Mechanical Land Preparation ES312
3. Aerial Operations ES313
4. 1080 ES314
5. Harvesting and Production Thinning ES315
6. Earthworks and Roading ES316
7. Quarrying ES318
8. Culverts and Temporary Crossings ES319
9. Bridge Construction ES320
10. Te Ngae Nursery ES321

There are also several specialised BEPs including specific Kaingaroa Processing Plant (KPP) operations, the log yards, and managing falcon nests in land preparation operations.

In additional to the generic BEPs we also practice a system to identify site specific environmental risks such as streams, adjacent natural vegetation, archaeological sites and high risk soils. This is termed the Environmental and Social Risk Decision Process and requires the operation planner to identify environmental or social risks and then implement measures to minimise potential adverse effects (see Risk Management for further detail). Furthermore, there are safeguards should an environmental risk be discovered during the operation (i.e.: an archaeological site).

An example of the provisions in our BEPs is the minimum 10m planting setback (or greater dependent on slope or other features) from streams. The setbacks help protect in-stream values from future forest operations and help enhance stream habitat. The following photos show examples of these setbacks.

Monitoring Indicator MI24 of the Appendix provides a summary of environment and safety enforcement notices received by Timberlands.

Examples of effective riparian setbacks – well over 10m wide

Other examples of controls in our BEPs include:

- Using 1%AEP as our engineering design and debris flood risk standard. The NES-CF uses 5% AEP, which means our standard is more stringent and considerably less risky.
- Controlling soil erosion and preventing sedimentation of waterways through specific earthwork designs and water controls (cutouts and sediment traps).
- Operating with techniques and in conditions to prevent chemical drift to non-target vegetation or sensitive sites, particularly water bodies.

Risk Management When Planning and Undertaking Operations

At the beginning of the operational planning phase we determine what values may be at risk from the activity. This is undertaken through our Environmental and Social Risk

Decision Process where the operation planner considers if the following values may be affected and if so, how management can take these into account:

- Is high risk under the RMA National Environmental Standard – Commercial Forests (NES-CF). This include all red areas and will include some orange or yellow areas depending on the operation. Planners should refer to the NES-CF and the Erosion Susceptibility Classification Zones which are included as a layer in Geo-Master.
- Resource consent required.
- There is a site or high likelihood of a site in accordance with the Heritage New Zealand Pouhere Taonga Act 2014 or a Historic Places Trust Authority required.
- The operation is adjacent to (or within) HCV/SBV reserve (see provisions when Adjacent to Reserves) or Significant Natural Area (SNA).
- Rare species (i.e. bats) are present.
- The operation is adjacent to (within 10m – i.e. the Riparian Zone) a perennial stream[1], river, lake or wetland.
- Harvesting sites with potential of slash mobilisation, in particular 1 in 100 year (1%AEP) weather events.
- There are adjacent land owners.
- There are public utilities such as powerlines, public roads, etc. (noting monthly environmental report not required for these)
- Registered easements or covenants, including those within CFLs.
- There are Maori or cultural values.
- People are likely to be adversely affected by the proposed operation.
- There is a landscape sensitivity or other restriction indicated in the Geo-Master.

The consequent action will depend on the values and risks identified and may include engagement with affected stakeholders, a change of operation or approach, protection measures, monitoring or following one of our Best Management Practices.

An Operations Prescription is developed prior to the commencement of operations which details the work requirements and standards to operators. Any conditions for the activity, details about the site terrain, stand data, a description of the job, specific environmental, health and safety requirements, as well as any specific reporting requirements are incorporated into the prescription. Reference is also made, where necessary, to the company's Geographic Information System, Chemical Use Strategy, Biodiversity Management Plan or other key document or procedure. Environmental hazard identification is completed, and control measures are documented and communicated to the operator along with the Operations Prescription.

During operations, operators are required to follow the Operations Prescription. Where there is potential for soil loss or sediment discharge onto sensitive environmental sites, the operator is required to implement correct water control procedures.

Monitoring and Review

Timberlands also conducts internal audits and at times engages independent consultants to undertake environmental audits. Internal audits confirm compliance with regulatory and legal requirements, ensure that documented systems and procedures are being followed, and identify continuous improvement opportunities and environmental training needs. While independent audits cover the same issues as internal audits, the key benefit they bring is independent verification of environmental performance. Regional Councils also conduct regular resource consent compliance monitoring and reporting.

In addition, many of our neighbours and local communities will informally monitor our environmental performance. Should any of these groups (Department of Conservation staff, local iwi, environmental or recreational groups) submit reports on practices they view as unacceptable, the company carefully examines its operations and makes relevant changes. We also respond outlining the actions we have taken.

Biodiversity

As a significant land and forest manager, biodiversity management is a key component of our work. Since the arrival of humans in New Zealand over 800 years ago New Zealand's biodiversity has been in decline. Over sixty percent of land area has been converted into farms, settlements, exotic forests and roads. Although a third of the country is managed for conservation purposes, most of this upland areas and mountains. Lowlands, river margins, wetlands, dune lands and coastal areas have relatively few natural habitats for native species.

Plantation forests play an important role in helping protect biodiversity, through active management of rare and threatened species, management of associated conservation areas and through the provision of habitat within the plantation. Timberlands manages the protection of biodiversity within the exotic forest estate through our biodiversity commitment (below) and Biodiversity Manual.

Timberlands Biodiversity Commitment

Timberlands is committed to:

"Forest management that recognises the importance of biodiversity values and where appropriate provides for the protection and enhancement of biodiversity throughout forest management activities."

The Biodiversity Commitment is enabled through the following mechanisms:

- Identification and protect rare and threatened species and the habitats that support them.

- Protect and actively manage conservation areas in particular those that meet the definitions of the New Zealand Forest Accord.
- Identify, protect, and where practical enhance High Conservation Value as defined by the FSC and Significant Biodiversity Values under PEFC (see later section for detail).
- Identify and monitor exotic plantings and where significant retain representative areas for their genetic base or flora/fauna, cultural/historic or visual values.
- Manage the forest estate in a manner that protects and enhances significant wildlife, fisheries and related habitats.
- Encourage research on the forest estate by external agencies and build relationships with conservation, game bird and recreational fisheries managers.
- Understand and manage threats to biodiversity, and in particular establish integrated pest controls, including the management of wilding conifers and pest animals.

Monitoring Indicator MI13 of the Appendix provides a summary of rare species observed within the Timberlands forest estate.

High Conservation Value (HCV) and Significant Biodiversity Values (SBV)

Whilst we protect all our conservation areas we prioritise active management towards those with special or particular values. In particular, areas with values that meet FSC and PEFC definitions for HCV and/or SBV where specific management targets the identified or significant values. Timberlands has been FSC certified for over 17 years and consequently areas with HCV have been identified and subject to active management plans for this period.

The following sections provide definitions of HCV and SBV and how they are assessed and managed.

HCV

Principle 9 of the Forest Stewardship Council deals with High Conservation Values and places significance on the maintenance and protection of areas identified with these values.

We recognise the importance of High Conservation Value and are committed to identifying, protecting and where practical enhancing forest that is recognised as having high conservation value. High Conservation Value is identified using the FSC definition (below) through reviews of existing relevant assessments, consultation with stakeholders and undertaking assessments on forest areas that may contain high conservation values.

High Conservation Value (HCV) are areas that possess one or more of the following attributes:

- *HCV 1 – Species diversity. Concentrations of biological diversity* including endemic species, and rare*, threatened* or endangered species, that are significant* at global, regional or national levels.*

- *HCV 2 – Landscape*-level ecosystems* and mosaics. Intact forest landscapes and large landscape*-level ecosystems* and ecosystem* mosaics that are significant* at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.*
- *HCV 3 – Ecosystems* and habitats*. Rare*, threatened*, or endangered ecosystems*, habitats* or refugia*.*
- *HCV 4 – Critical* ecosystem services*. Basic ecosystem services* in critical* situations, including protection* of water catchments and control of erosion of vulnerable soils and slopes.*
- *HCV 5 – Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities* or indigenous peoples* (for livelihoods, health, nutrition, water, etc.), identified through engagement* with these communities or indigenous peoples*.*
- *HCV 6 – Cultural values. Sites, resources, habitats* and landscapes* of global or national cultural, archaeological or historical significance, and/or of critical* cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities* or indigenous peoples*, identified through engagement* with these local communities* or indigenous peoples*.*

SBV

The AS/NZS 4709: 2021 Sustainable Forest Management (for PEFC) standard describes SBV as any of the following natural values:

- *Known or likely occurrences of threatened or at risk species, populations and their known and potential habitat; and/or as listed on current schedules of relevant legislation;*
- *Threatened and at risk ecological communities or ecosystems and/or as listed on current schedules of legislation;*
- *Regionally or nationally significant concentrations of biodiversity;*
- *Disjunct or outlier populations, refugia and centres of endemism;*
- *Native vegetation associated with land environments, (defined by LENZ at level IV), that have 20% or less remaining in natural cover;*
- *Forest types of ecosystems and old-growth forest which are rare, depleted or under represented in the regional conservation reserve system;*
- *Habitat of migratory species listed under the relevant legislation; or Natural Heritage Places.*

SBV is also assessed in a similar manner to HCV.

Identification Process

1. Indigenous Biodiversity

The Timberlands Biodiversity Manual provides detail on the processes undertaken to identify and manage areas containing indigenous biodiversity. In practice we have engaged an independent ecologist to assess, identify and recommend management actions for

biodiversity related HCV or SBV. Active management of such areas is then detailed in the Timberlands Reserves Management Plan, which acts as the covering management plan. Some areas also have individual management plans. Identification of high biodiversity values are determined by analysis of the following criteria:

- They contain rare, endangered or threatened ecosystems.
- They contain biodiversity values that are globally, nationally or regionally significant as described by the NZ National Policy Statement on Biodiversity.
- The high biodiversity values are either viable populations or ecosystems.
- Are crucial to the survival of category one endangered species.

2. Significant Natural Resources

Significant natural resources within the forest estate are identified through the relevant regulatory authority plan as either a municipal water supply catchment or as critical for erosion control.

3. Community and Cultural Value

Areas of high community or cultural value are identified as having the either of the following characteristics:

- Having high archaeological significance that is of national or regional significance.
- Having community values or significance that is essential to the identity of the wider community in which it exists.

While HCV and SBV are determined through this process the identification and management of FSC HCV also requires stakeholder engagement.

Stakeholder Engagement

Should new areas be identified, or reviews of plans undertaken, we engage and where relevant inspect these areas with relevant stakeholders such as DOC, iwi and local experts. Discussion is initiated by Timberlands either through organising a joint meeting or by meeting with representatives from stakeholder organisations.

We then use the feedback to develop management and monitoring procedures for any areas that are agreed to have HCV or SBV.

Management

Our Reserve Management Plan acts as the general management plan for HCV/SBV and management and/or monitoring requirements are sometimes contained in specific plans. HCV/SBV management plans generally include:

- A description of the values of the HCV/SBV, including a map of the area.
- The management goals and priorities of the HCV/SBV.

- Identification of stakeholders and outside agencies to be consulted on the management of the HCV/SBV.
- Details of management requirements that are particular to the HCV/SBV.
- Timberlands staff responsibilities for the management of the HCV/SBV.
- Monitoring requirements.
- Budget allocation for the management of the area.

Monitoring

Monitoring of the defining vales of HCV/SBV is undertaken by Timberlands or at times by engaging an expert. The method of monitoring will depend on the high conservation values and the outcome of consultation with stakeholders. Monitoring is undertaken annually by visual inspection, in particular for degradation, pest damage, unauthorised activity and wilding pine presence. Some specific monitoring such as photo points is undertaken by independent experts.

Monitoring Indicator MI04 of the Appendix provides a summary HCV/SBV monitoring undertaken during the last year.

The following photos show HCV/SBV areas that are monitored, primarily for wilding conifer emergence following control.

Upper Rangitaiki monowai (Rare Ecosystem HCV/SBV) with completed wilding control. Further follow up treatments will be required.

Green Lake Riparian – Recreation HCV

Conservations Areas Identified with HCV/SBV

The following eighteen conservation areas with HCV/SBV have been identified within the forest estate:

Kaingaroa Forest

1. Otamatea Stream
2. Otangimoana Stream
3. Plot Road Wetland
4. Rangitaiki Wetlands
5. Upper Rangitaiki River
6. Waiotapu Geothermal Area.

Tarawera Forest

7. Maungawhakamana
8. Mt Tarawera
9. Northeast
10. Lake Tahuna Wetland
11. Waiaute Stream
12. Makatiti Dome Extension
13. Lake Tarawera Scenic Reserve Extension
14. Lake Pupuwharau
15. Manawheo Stream & Upper Waiwhakapa Stream
16. Upper Waiaute Valley
17. Mangate Stream Wetlands

Horohoro Forest

18. Capella Rd Wetland and Forest

Lochinver

19. Lake Pouaru Wetland
20. Otangimoana Stewardship Area
21. Rangitaiki Conservation Area
22. Lochinver Station North Fragments
23. Lochinver North Frost Flats
24. Ripia River Catchment

The primary management focus in these areas is *Pinus contorta* control by manual removal and possum control by vertebrate poisons. The Tarawera HCV/SBV areas are subject to a management plan compiled by Wildlands Consultants in 2015 and revised in 2020 where most work is the removal of noxious plants and possums.

Plantation Stands with HCV/SBV

Four areas have been identified as meeting HCV/SBV status within the plantation production areas. These are:

1. The area of Whakarewarewa between the Tokorangi Triangle and Pipeline Rd – recreation' landscape and amenity. Also known as the core mountain bike network. HCV only.
2. The Blue and Green Lakes Covenants – recreation' landscape and amenity.
3. Torepatutahi Soil Conservation Covenant – Soil and water conservation. HCV only.
4. Iwitahi Orchard Reserve – Biodiversity (rare species) values.

Iwitahi Orchid Reserve – Plantation Rare Species HCV/SBV

Except for the Iwitahi Orchard Reserve, production forestry can continue in each of the areas without compromising their values. However, this is carefully managed.

Significant Cultural Values for Māori

Rotoehu Forest

We have recently assessed a series of pa in Rotoehu forest as having Rotoehu Pa significant cultural value for Māori. We have worked with the relevant iwi and an archaeologist to produce management plans to ensure the values of the pa and associated sites (middens, kumara pits, trenches, etc) are protected and managed appropriately.

Other Conservation Reserve Areas

We also carefully conservation other areas with conservation values which is primarily guided by the Reserve Management Plan. The provides a description on how we meet an FSC certification requirement for a minimum 10% of the management unit to be set aside as conservation areas. Originally the percentage of Kaingaroa Timberlands estate was less than 6% and to make up the majority of the shortfall, we agreed to manage over 5,500 ha of reserve areas associated with Tarawera Forest (through the Tarawera Land co) and assisted Ngati Whare with regenerating native forest on handback areas near Minginui. We also added a further 2,600 hectare through a conservation management agreement with Lochinver Station.

The remainder of the FSC shortfall is made up through what is termed “ecological equivalent contribution”. This was a method included the NZ FSC National Standard where ecological projects (such as rare species management expenditure, i.e.: falcon) can be converted into reserve area.

With the addition of Tarawera Forest and Lochinver Station conservation areas and other rare species management we now meet the 10% FSC requirement.

In general reserve management is relatively simple where possum control and wilding removal produce the best biodiversity results. Possum control is mostly achieved as part of the possum control program, aimed at the tree crop or by the Animal Health Board, to control bovine TB. Wilding removal is shared between the Tree Crop (to comply with regional pest plans) and Sustainability (targeted towards HCV/SBV areas) teams. Wilding control has mostly been undertaken along the wetlands and frost flats of Rangitaiki River.

Tarawera Project

In 2015 Timberlands engaged Wildland Consultants to complete a 10-year management plan for the Tarawera Forest conservation areas. The plan initially focuses on assessing values and risks which then moves into active pest management. 2021 was the seventh year of implementation. Activities undertaken in 2021 included wilding pine control on Mt Tarawera, weed control in Lake Pupuwharau and monitoring photo-points. A review of the plan was also undertaken.

A survey was undertaken for bats, kokako and North Island brown kiwi at eight sites. Long-tailed bats were detected at all eight sites in habitats including mature and regenerating indigenous forest, scrub, riparian areas and road corridors through both young and mature *Pinus radiata* stands. No short-tailed bats were detected.

Wilding Pines on Mount Tarawera that have been targeted as part of the Tarawera management Plan

Successful wilding pine control on Mount Tarawera

Lochinver Station Project

In 2023 we added conservation areas on Lochinver statin to our management unit through and agreement with the station's owners. Similar to Tarawera these areas were assessed and a ten-year management plan developed and agreed. This added an additional 2,600 hectares to our conservation management as well as six new HCV areas.

Other Projects

Waipa bypass

Establishment of native shrubs in a highly visible area next to SH5. The purpose is to revegetate a harvested area that cannot be planted in productive trees as they pose a threat of falling onto the highway. Shrubs have been planted to minimise this risk. A contractor monitors the area and undertakes weed control as required.

Riki Road Quarry

A small area of overburden and Rangitaiki River is being established in native plants as part of the quarry resource consent. As with the Waipa Bypass a contractor monitors the area and undertakes weed control as required.

Waitahanui – Rotoehu

Timberlands are working with Ngati Makino to establish some key areas in the Waitahanui catchment in native plants. In particular around pa sites and riparians. Kanuka was planted in 2019 and 2020 and used as a cover crop to establish canopy species at a later date. A long-term plan / arrangement plan is currently in development.

The Waitahanui catchment is of particular importance to Ngati Makino.

Rare Species Management

Falcon

Wingspan

Falcon are a special bird for Timberlands and we work closely with the Wingspan Trust to ensure they thrive in our forests. Wingspan undertakes a tagging program on chicks during the breeding season, with the help of sighting reports by Timberlands staff, contractors and forest visitors. In particular, by land preparation contractors who regularly encounter nesting falcon. The monitoring indicates that falcon are prospering in Kaingaroa and spreading into other adjacent forests as they are harvested and suitable habitat becomes available. For example, there is now established populations in Rotoehu and Whakarewarewa forests, which is a recent occurrence. Kaingaroa continues to have the highest density of falcon in NZ, which is generally attributed to sizeable harvest cutover, a mosaic of age classes and pest control.

Wingspan is currently developing a new raptor center and we have committed $500,000 over 10 years towards the new center.

The NZ falcon or karearea overlooking favored habitat

Falcon Nests Can be Innocuous "Scrapes" Vulnerable to Land Prep Machinery and we have specific best practices guides to avoid any harm during nesting.

Contorta Pine and Other Wilding Control

Contorta pine and other wilding species poses a significant through to conservation areas we manage. Contorta is also designated a control invasive species in regional plans. Furthermore, our certification and commitment under the Principles for Commercial Plantation Forest Management in New Zealand means we proactively manage contorta and wilding pine.

Priorities for treatment are based on surveys of the distribution of wildings within the estate, criteria set by Timberlands, (based on recommendations by an environmental consulting organisation), and an overall Contorta pine control strategy determined by the stakeholder engagement.

Most control has been centred on the banks of the Rangitaiki River (HCV/SBV areas), some portions of the western boundary of the Kaingaroa Forest, (a suspected source of wind dispersed seed), on Mount Tarawera (through our agreement with TLC) and on some specific areas of high conservation value.

Control measures are dependent on the size of the trees involved, but generally involve a combination of chainsaw and slasher felling plus manual plant pulling. Control is expected to be an ongoing process and, subject to budgetary constraints, will be carried out in accordance with our Annual plan and Budget.

Other wilding species and pest plants (i.e. Darwin's barberry) are dealt when they occur in reserve areas or in accordance with Regional Pest Plans and with close cooperation with regional councils.

Waterways and Land

Our attention to waterways (including hydrological flows) is imbedded in our general practices, in particular our BEPs. These take into account NES-CF requirements which cover water quality and yield, erosion, compaction and other mechanisms to protect land and water values. Some key factors or process we use to protect land and water values include:

- Retaining a mosaic of well spread age classes that minimise any effect of forest operations.
- Through application of our BEPs that for example prescribes re-plant setbacks and water controls for earthworks that relate to stream size and flow.
- Operational planning where high risk situations are identified and taken into account as operations are planned.
- Operational audits that focus on soil and water values.
- Engagement with regional authorities to ensure compliance with rules and permitted standards and advise on appropriate activities in high risk areas.

To understand our effect on water quality and quantity we monitor several stream and soil sites through the forests and at our sites (KPP, MLY and nursery).

Climate (Carbon) Protocols

Forestry has the ability to help mitigate climate change through sequestering carbon as our forests grow and we are committed to managing the forest estate in a manner that maintains or enhances our contribution to carbon cycles. This is primarily achieved through:

1. *Increasing the productivity and consequently the carbon stocks within the forest estate creating a significant stored surplus.*
2. *Minimising Fossil Fuel Use by:*
    a. *Purchase and maintenance of modern and fuel efficient vehicles.*
    b. *Contracts that provide for investment in modern equipment which in turn provides for carbon efficiency.*
    c. *Planning for the shortest practical transport routes, in particular for log transport*
    d. *Utilising rail as alternative means of log transport.*
3. *Measurement of Carbon Storage by:*
    a. *Monitoring and predicting the total standing volume over time with the objective of a non-declining yield, and as a consequence non-declining in the total carbon storage.*
4. *Eliminating the use of port side methyl-bromide to stop the use of ozone depleting substances.*

A significant step in our commitment was the installation of a de-barker at our Murupara yard where logs destined for export will be debarked and consequently will not require on-wharf methyl-bromide treatment. This will remove all our on-wharf methyl-bromide treatment and equates to a 19% reduction in NZ's national methyl-bromide use.

Monitoring Indicator MI13 of the Appendix provides a summary of carbon sequestered in the forest and MI14 the amount of Methyl Bromide used at the Port of Tauranga on Kaingaroa Timberlands logs.

Integrated Pesticide Strategy

Pests pose a significant threat to the NZ environment, community (i.e TB) and to the economy. Whilst our preference is to use non-chemical methods there are many pests where chemicals are the only effective mean of control. In these cases Timberlands aims to use the minimum amount (preferably nil) of pesticides and use integrated pest management as our mechanism. This includes non-chemical approaches such as hand pulling weeds, mechanical land preparation, possum trapping and silvicultural practices (such as thinning) to minimise disease infection. We also actively seek ways to reduce the amount of chemical pesticides through thorough planning and understanding of our environment and conducting or participating in research. Above all else ensure adverse effects of pesticide use are avoided, minimised or mitigated. A summary of the company's

Integrated Pest and Weed Management Strategy (included in the Chemical Use Strategy) is available to interested stakeholders by contacting Timberlands.

Monitoring Indicator MI09 of the Appendix provides a summary Copper, 1080 and establishment pesticides used by Timberlands.

Transport, storage, handing, application and emergency response of pesticides must be in compliance with ILO document "Safety in the use of chemicals at work". These requirements are contained in the NZ codes of practice for Transport, storage, handing and application of agrichemicals. Compliance with the codes means compliance with the ILO requirements.

Culturally and Historically Significant Sites

Of special importance in the Central North Island are culturally significant Māori sites, which include: pa (fortified villages), urupa (cemeteries), caves (sometimes with art), pits (food storage sites), house sites, terraces (gardening sites), middens (refuse tips), waahi tapu (sacred sites or trees). There are also some areas or sites that are culturally important to the community in general. Known sites (specific and landscape level) are registered in our GIS system for recognition when planning is undertaken. We also have discovery protocols that require work to stop if a new site is uncovered. Our approach to cultural sites and values is to:

- Protect historic sites and features in accordance with the Heritage New Zealand Pouhere Taonga Act 2014.
- Educate employees and contractors to follow best practices to prevent damage (particularly by earthworks) to archaeological sites. Our best Environmental Practices ES310 contains instructions on how to manage known and newly discovered sites. District plans provide a useful resource for managing significant sites and we also have more specific guidance contained in our Historic and Archaeological Site Procedures ES361 and Landscape Sensitivity Procedures ES363.
- Consult with appropriate stakeholders, most critically iwi representatives and where necessary an archaeologist, to develop management options for the protection of significant archaeological sites before commencing operations.
- Delineate known sites in the forest by inserting painted marker posts on the site's perimeter and including in the forest wide GIS system. The system will flag the site to Timberlands staff when operations are being planned
- Train employees and contractors to identify and report newly discovered sites of significance.
- Recently we have worked with an archaeologist and iwi using LiDAR to identify potential sites. A field inspection is then undertaken to determine if and what the site is. This method has proven very effective at discovering unregistered sites and finding the correct location of already known sites.

SOCIAL RESPONSIBILITIES

The Community

We are part of our communities that we operate in and as a significant business and employer we contribute to the sustainable development of our communities. We have an important role in our community.

Timberlands is a medium sized company, and its operational areas are adjacent to several small communities in the central North Island with particular characteristics. The forest estate is located in areas of rural New Zealand where the ethnic mix of the population is strongly Maori. Small towns are geographically isolated, and many have a high level of dependence on one or two major forestry-related industries. The largest centre in the locality, Rotorua, also has a strong tourist base, which is enhanced by the plantation forests and their recreational opportunities. Some of the area has relatively high levels of unemployment, due partly to the limited range of jobs available in small communities.

Stakeholder Engagement

Our key approach to the community is through engagement, in particular to understand the effect of our management on the community (stakeholders), and ensure it has minimal adverse or a positive effect on people. With a database of over 1,000 we have an established and considerable network of stakeholders, including several that are critical partners to our management. Engagement and consultation with stakeholders is mandatory for resource consent applications and as part of FSC and PEFC certification. It is also useful to consult with stakeholders at other times to ensure that forest management activities do not adversely affect them. Effective engagement and consultation will build trust and partnership and we are also committed to demonstrating our consideration of stakeholder feedback through our resulting actions and continued engagement.

We endeavor to engage or consult when our management activities (operations) has the potential to affect people. This may be at the operational level or at a higher company level and include the planning and operational stage. Timberlands' stakeholder engagement is guided by our Stakeholder Engagement and Consolation Plan ES412 and the responsibility for engagement and consultation will general fall with the following:

1. Affected Stakeholders by operations – Relevant Operations Manager.
2. Affected Stakeholders – in general and Interested Stakeholder – Sustainability Manager.
3. Specific Affected and Interested Stakeholders – by a designated staff member.

Affected Stakeholders

Any person, group of persons, or entity, that is, or is likely to be, subject to the effects of the forest management activities can be considered a Timberlands stakeholder. Examples include, but are not restricted to (for example in the case of downstream landowners), persons, groups of persons or entities located in the neighbourhood of the forest estate. The following are examples of potential affected stakeholders:

- Iwi, through CNIIHL, landowner managers, delegated representatives and community work groups,
- Local communities
- Workers
- Neighbours
- Downstream landowners
- Local processors
- Local businesses
- Tenure and use rights holders, including landowners (CNIIHL)
- Organisations authorized or known to act on behalf of affected stakeholders, for example social, recreational and environmental NGOs, labour unions, etc.

Interested Stakeholders

The Sustainability Manager is generally responsible for consultation with interested stakeholders. However, this may be delegated to or undertaken by another person depending on the nature of the issue, i.e. the Land Manager. An interested stakeholder may be any person, group of persons, or entity that has shown an interest, or is known to have an interest, in the activities of Timberlands. As a guide most interested stakeholders will be regional, national or international organisations. Noting that some interested stakeholders may also be an affected stakeholder where they have local interests.

As an indicator on our stakeholder engagement MI19 provided a summary of complaints and disputes we receive.

Relationship with Iwi

We maintain a close relationship with iwi, in particular our landowners. This is generally through the designated iwi delegates from the following landowning organisations:

Central North Island Iwi Holdings Limited (CNIIHL - 8 iwi)
Tarawera Land Company
Ngati Makino
Te Rununga O Ngati Awa
Te Pumautanga O Te Arawa

Other iwi or Maori organisations can also be affected by our management and where this may occur we retain communication. This is generally undertaken by the Timberlands Land Manager and an up to date register of key contacts is maintained.

In particular, we maintain contact with mandated representatives regarding land issues which includes access to resources, hunting and fishing, cultural and spiritual site management and engagement on operations or management decisions that may affect iwi and the community in general.

Treaty of Waitangi

Timberlands aspires to meeting the spirit and in particular relevant legislation related to the Treaty of Waitangi. We aim to achieve this through legal compliance, but also building strong relationships with iwi landowners whom have taken possession of the underlying land through successful Treaty of Waitangi claims. This includes compliance with the conditions of these settlements through the relevant provisions in the Crown Forest Licences.

Employment

Timberlands employs over 140 permanent and contract staff in its operations, all in the central North Island. In addition, around 40 key contractors conduct forest operations, harvesting, and transport related activities, and employ at least a further 800 people.

Employees receive various levels of training on an on-going basis and are encouraged to continuously improve their performance through performance-based reward and remuneration systems. The company and staff adopt and develop techniques to continually improve our management, safety and environmental performance. Quality assessment procedures and monitoring are in place in all of our operations, to ensure that the high standards set by the company are met.

Employment at Timberlands is non-discriminatory and complies with the laws of New Zealand. Workers are encouraged to openly discuss issues with their supervisors and management. Employment in New Zealand is subject to the International Labour Organisation (ILO) mandate, to which New Zealand is a member. The mechanisms of the ILO requirements in New Zealand are addressed through the Employment Relations Act. All Timberlands staff and contractor workers are entitled to their legal rights under New Zealand legislation.

Recently we have committed to paying the living wage, for both our staff and through contractors to their employees.

Timberlands has a considerable influence on employment, but direct and indirect in the regions we operate. Monitoring Indicator MI26 of the Appendix provides a summary of businesses we have accounts with, MI 27 on our operating expenditure to these businesses and MI28 the number of people employed and the number of hours they work.

Recreation and Access

Our forests provide a number of recreational opportunities, which fall under the following general categories:

- Hunting and fishing access (see Access, Permits and Events in the Security chapter)
- Whakarewarewa (see below)
- Other, which is limited and generally events such as dog sledding in Kaingaroa (see Access, Permits and Events in the Security chapter

Whakarewarewa

Whakarewarewa Forest is recognised as one of the world's best mountain biking destinations and has well recognised opportunities for running, walking, horse riding and tourism. It is also a commercial plantation forest where we need to carefully balance recreational use and forestry activities. Access by cycle, foot or horse (provided for in the Corwn Forest Licence) does not require a permit unless for an organized event. Whakarewarewa experiences over 800,000 people visitations per year, which is supported by over 100km of mountain bike and 60km of walking and horse tracks.

Recreational tracks are managed through a system of adoptees administered, the Rotorua Trails Trust and for horse tracks by a group of horse riding enthusiasts. Timberlands manages general maintenance such as rubbish collection and unsafe tree removal and ensures the organisations, maintaining tracks, meet their obligations.

In 2017 a tripartite recreational agreement between Rotorua Lakes Council (RLC), CNIIHL and Timberlands was signed. The agreement recognises that RLC will administer day to day recreation in Whakarewarewa Forest and includes the management of commercial recreational activities and events where a fee is collected. The agreement retains Timberlands' ability to undertake commercial forest operations as the foremost forest activity whilst balancing public use. The agreement also provides clear health and safety responsibilities for recreational and commercial management that is primarily managed by RLC. Further information on recreational opportunities can be found on RLC's website.

Mountain biking in Whakarewarewa is popular with all ages and skills

Events

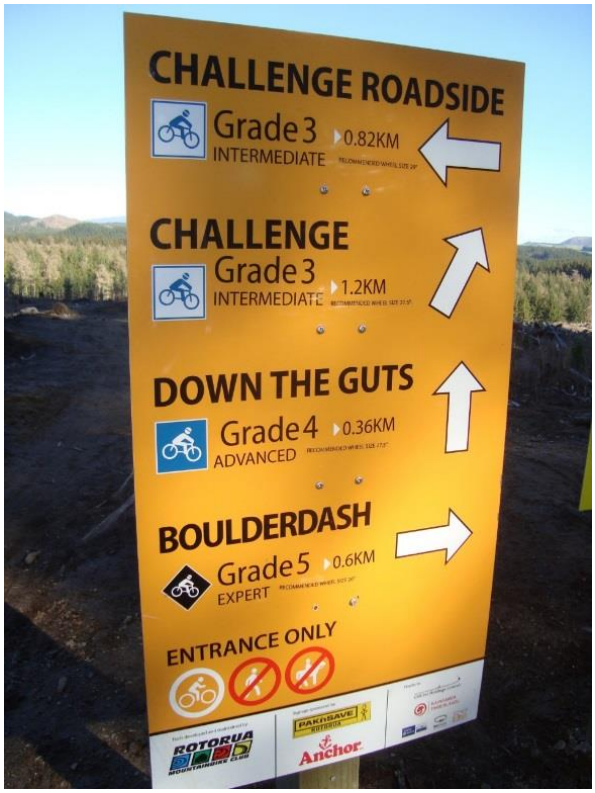
Over 70 recreational events are held within Whakarewarewa/Tokorangi Forest annually, including mountain biking, running, multisports and orienteering. Events are managed by Rotorua Lakes Council and are subject to charges to conditions and cover costs.

Monitoring Indicator MI24 of the Appendix provides a summary of hunting and fishing access registrations and MI33 the number of Whakarewarewa visits and recreational events each year.

Mountain Bike Track Safety Grading System

A grading system managed by the Rotorua Trails Trust is used to manage the enjoyment and safety of the mountain bike tracks. The system is based on international protocols, and grades mountain bike tracks from one to six, with one being easy (for families) and six being the hardest (for nutters!). Each track is clearly signposted with the track name, grade, length and other information including information for other forest users such as walkers or horse riding. Below are examples of Whakarewarewa mountain bike track signage.

Whakarewarewa mountain bike track signage



Whakarewarewa Harvest Plan

With high recreation use and many tracks harvesting is carefully planned and executed. Timberlands engages with the Rotorua Trails Trust and RLC when undertaking harvest planning and incorporates their feedback into our operations. There is also a joint approach to managing tracks and access when harvesting is undertaken. Our longer-term harvest planning also takes into account the popularity of different tree species, tracks and ensuring our harvest is spread out across the forest rather than concentrated.

Examples of other cooperation includes:

- Safety and publicity – track closures and information within the forest and on the Timberlands website. This included joint logo banners to close tracks during harvesting and reduce speed limits for vehicles.
- Timing – avoiding harvesting during peak times such as the school holidays, weekends and during major events.
- Re-instatement of tracks – allowing for some re-alignment of tracks after harvesting, to better fit the terrain.
- Ability to apply for and contrast new recreational tracks in knowledge these will damaged by harvesting in the future, but can be re-instated, and improved.

Reinstated and improved mountain bike track in Whakarewarewa Forest

Further information on access to Timberlands managed forests can be found on the Timberlands website www.tll.co.nz.

Periodic Social Impact Assessment

As our activities have potential to affect social values we undertake periodic social impact assessments (SIA), generally when certain events are planned or occur that could have large scale social effects. Our policy on undertaking social impact assessment is based on the following principals:

1. *Substantive change to established practices will be managed with as little social impact as practical and in a timely and open manner.*
2. *A database or other record of stakeholders*
3. *Communication with affected stakeholders when planning forest operations*

4. *Recording and responding constructively to community or other stakeholder complaints that are not vexatious or frivolous or requests.*
5. *Undertaking formal social impact assessments when a community impact is anticipated.*

The level of social impact assessment should be appropriate to the scale of the operation and the number of people potentially follows:

1. Operations, where SIA is undertaken as part of the operation planning process.

2. Significant Business Decisions, where a formal and wide-ranging SIA is undertaken.

SIA for Significant Business Decisions

Where significant or large-scale changes are planned we determine the need for a social impact assessment by completing an SIA Appraisal Assessment, which considers impacts on:

- Local communities
- Cultural values
- Provisions of the Crown Forest Licences
- Staffing and contractor levels
- Other social aspects

As a guide, significant business decisions may include:

- Changing from key suppliers to a variety of supplies, or vice versa.
- Sale of forest assets to an organisation with vastly different management philosophy.
- Major changes to forest management.
- Decisions that create significant impact on vulnerable local communities.
- Termination of significant contracts before end of term, or evergreen contracts brought to an end prematurely where the decision is not due to a breach.

We did not undertake any SIA for significant business decisions in the previous year and Monitoring Indicator MI31 provides a list of SIA undertaken in the past.

MONITORING AND REVIEW

Monitoring

We are constantly monitoring how our activities affect environmental, social and economic values. Our monitoring is a significant contributor to the development of strategies that ensure the company continues to manage its activities in a sustainable way and meets our continual improvement aspirations and is consistent with our commitments to FSC and PEFC. Examples of our monitoring include:

- Log production
- Markets
- Growth rates
- Age class and distribution
- The state and health of indigenous reserves and HCV/SBV
- Rare species such as the NZ falcon.
- Environmental incidents
- High risk operations
- Resource consents
- Stream quality
- Complaints and disputes
- Illegal activities
- Recreation and forest use
- Socio-economic values
- Financial performance
- Operational quality
- Forest health and pest control
- Nutrient levels
- Pesticide use
- Health and safety
- Weather and fire risk

The Appendix provides a summary of monitoring that Timberlands make available to the public.

Review

Timberlands are continually reviewing each component of our management plan including the results of monitoring and its effectiveness. Whilst some of the review and amendment to management planning is formal and at regular stated intervals, much of the review is constant and dynamic as information comes to hand, even on a daily basis. For example, the Cartin Plan and Distribution Uptake Plan change daily as contributing elements such as production, product mix, demand and shipping vary. Our primary plan is the Kaingaroa Timberlands Plan/Budget which is set annually and formally reforecast quarterly, but also influenced by other elements that are monitored and reviewed. Other key review processes and affected components of the management plan are shown in the following table.

Key Review Themes and Affected Components of the Management Plan

Team	Review Mechanism	Plan Components Most Affected	Review Frequency
Board(s)	Annual Plan/Budget review	Kaingaroa Timberlands & Timberlands Annual Plan/Budgets	Annual
	Board meetings with presentations & papers from senior managers – in accordance with the Property Management Agreement.	Kaingaroa Timberlands & Timberlands Annual Plan/Budgets Various depending on subject	Quarterly
	Statutory compliance	Various depending on nature	Quarterly
	Performance	Various depending on nature	Monthly
	OHS report	OHS Plan/Budget	Annual
CEO	SMT meetings – primarily by exception on items below.	Various depending on nature Forest Management Policy Monitoring Plan	Monthly
Health & Safety	H&S Incidents (SEAMS)	H&S Policy H&S Plan H&S Manual H&S Plan/Budget	Annual / Ongoing
	Road Safety Group established to review road safety incidents and risks.	Road Safety Manual and road safety projects H&S Plan/Budget	On-going
	Internal H&S Audits / inspections	H&S Policy H&S Plan H&S Manual H&S Plan/Budget	Annual
	Independent H&S Audits	H&S Policy H&S Manual H&S Plan H&S Plan/Budget	Biennial
Sustainability	Environmental Incidents (SEAMS)	Sustainability Policy	Annual

		Environmental Management System Sustainability Plan/Budget	
	Environmental Audits / inspections	Sustainability Policy Environmental Management System	Annual
	Social - stakeholder feedback, complaints & disputes	Environmental Management System Sustainability Plan/Budget	Annual
	Operational, security, fire, vehicles – Sustainability Annual Plan/Budget	Sustainability Plan/Budget	Fortnightly
	Environmental, social, certification – Annual Plan/Budget	Sustainability Plan/Budget	Annual
Finance	Kaingaroa Timberlands Plan/Budget	Kaingaroa Timberlands Plan/Budget	Annual
	Kaingaroa Timberlands Budget - reforecast	Kaingaroa Timberlands Plan/Budget	Quarterly
	Timberlands Plan/Budget	Timberlands Plan/Budget	Annual
	Timberlands Budget - reforecast	Timberlands Plan/Budget	Quarterly
	Finance review with operational teams	Kaingaroa Timberlands Budget Various operational plans	Monthly
	Independent Financial Audit	Delegated Authorities Manual Finance Desk Files	Biannual
	Finance related internal audits scheduled by Audit Committee	Various plans, but generally Finance Desk Files Delegated Authorities Manual	Quarterly
	Fixed Asset Review	Fixed Asset Register and Budget (capital purchases and depreciation)	Annual
Human Resources	Review of staff levels	Timberlands Plan/Budget	Annual
	Staff performance by performance reviews	Timberlands Plan/Budget	Annual
	Training – by performance reviews	Training Plan	Annual

	Salary review using Ernst and Young National Forestry Survey	Timberlands Plan/Budget	Annual
	Health assessments – trend report provided for staff who participate.	H&S Plan Training Plan Timberlands Plan/Budget	Annual
Harvesting	Annual Harvest Rate	H&M Plan/Budget Harvest Schedule Financial Forecasting Manual Contract types	Annual
	Rolling 3 year Harvest Rate	Harvest Schedule Contract types	Annual
	Product Mix	H&M Plan/Budget Harvest Schedule Financial Forecasting Manual Contract types	Quarterly
	Harvest Packages	H&M Plan/Budget Harvest Schedule Financial Forecasting Manual Contract types	Expiry of Contracts
	Export Markets – Tactical Plan	H&M Plan/Budget Harvest Schedule Cartin Plan RFH Cartage Plan Financial Forecasting Manual	Quarterly
	Domestic Markets – Sales & Operations Planning (SOP)	H&M Plan/Budget Customer Sales Plan Harvest Schedule RFH Cartage Plan Financial Forecasting Manual	Quarterly
	Domestic Markets – four largest customers	H&M Plan/Budget Customer Sales Plan RFH Cartage Plan	Annual

		Harvest Schedule Financial Forecasting Manual	
	Operational	H&M Plan/Budget Harvesting Manager Manual Financial Forecasting Manual Various operational plans, i.e. Supply Chain daily update RFH Cartage Plan	Weekly
Treecrop	Forest Health – whole forest	Forest Health Plan - Treecrop Plan/Budget	Annual
	Forest Health – Dothistroma whole forest	Forest Health Plan - Treecrop Plan/Budget	Annual
	Nutrition – age 3.5 and primarily to plan boron	Fertiliser Plan – Treecrop Plan/Budget	Annual
	Health and vigour at age 30 months to revise planting	Planting Plan – Treecrop Plan/Budget	Annual
	Pre and post plant review with contractors	Planting Plan – Treecrop Plan/Budget	Biannual
	Heighting age 5 or 6 to plan thinning and pruning	Sivilculture Plan – Treecrop Plan/Budget	Annual
	Forme survey of industry to validate rates	Treecrop Plan/Budget	Annual
	Operational	Various operational plans	Fortnightly
Technical	Regime analysis, through silvicultural and trial information and forest estate model	Forest estate model Sivilculture Plan – Treecrop Plan/Budget	Periodic
	10 Year Plan – Harvest Cut	Cut Level Timberlands Plan/Budget Valuation	Annual
	Croptyping through results from trials / PSPs	Forest estate model Valuation	Annual
	Reconciliation – predicted vs actual volume by log grade.	Cut level Valuation	Quarterly

	Carrying capacity – as trial results come to hand	Timberlands Plan/Budget Treecrop Plan/Budget – silvicultural plans Valuation	Periodic
	Area – review	Timberlands Plan/Budget Treecrop Plan/Budget – silvicultural plans Valuation	Quarterly
	Review of trials – based on forest growth, trial results, conference, other forest growers, researcher (i.e. Scion) information, international information / study tours, etc.	Trial plans Various strategic, technical and operational plans.	Ongoing
	Operational / general	Various strategic, technical and operational plans.	Monthly
IT	Technology, risk, usage, Business continuity, users	Timberlands Plan/Budget IT Plan	Ongoing
Legal	Review by Manager of expiring contracts, conditions and insurance.	Contracts	Monthly
	Parliamentary Alerts for changes in legislation	Contracts Various components of the management plan depending the nature	Daily
	Legal Compliance Update	Sent to the TL Board	Quarterly

CONTACTS

This a working document, and as such will be updated periodically as we continue to evaluate, develop and refine our forest management plans and objectives.

If you would like to make comments on the content of this document, or Timberlands' operations, please contact us:

Rotorua Office
Phone: +0064 7 343 1070
Fax: +0064 7 343 1071

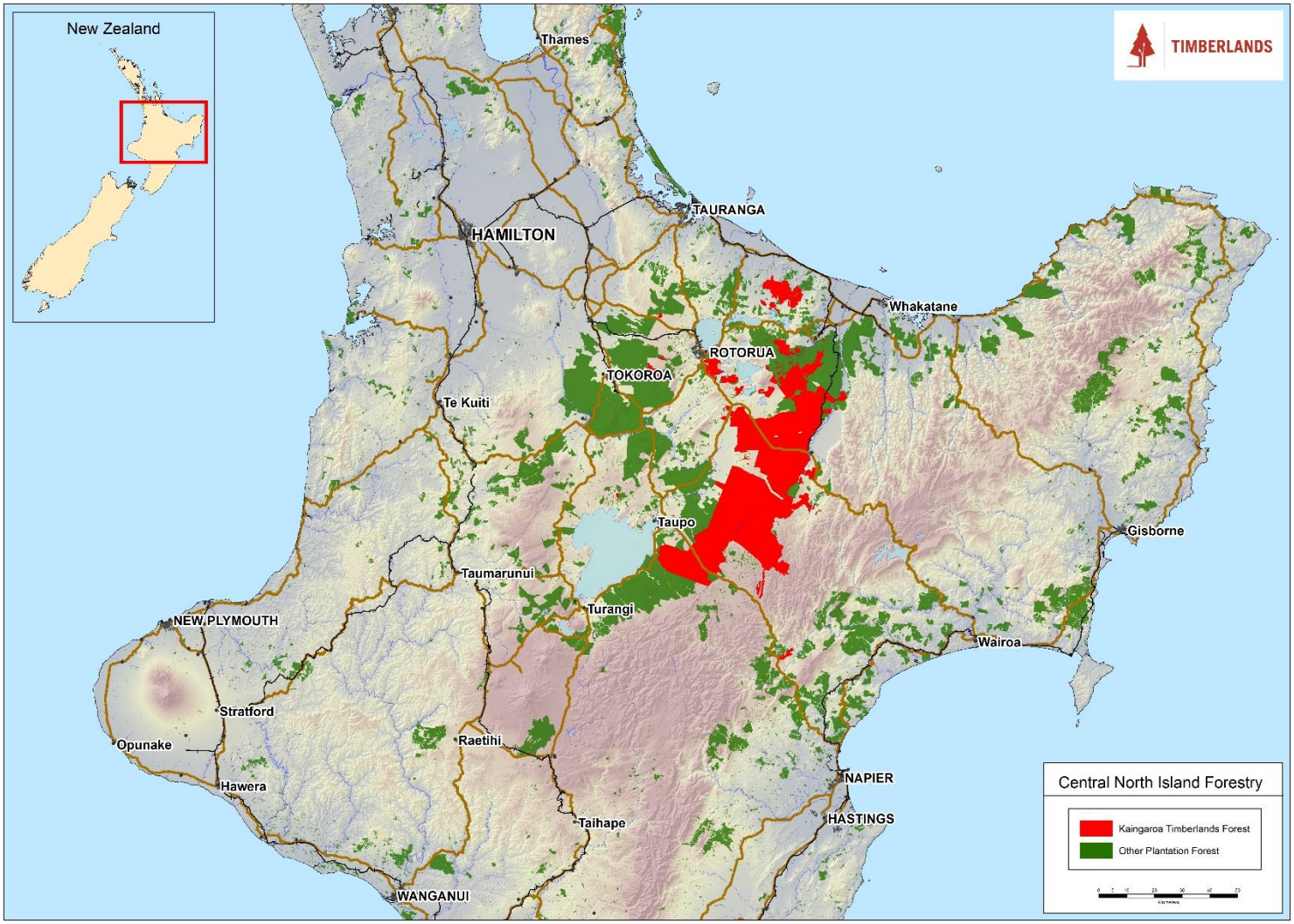
Email: info@tll.co.nz

Complaints and Disputes

Any complaints or compliments can be sent to Timberlands on the above e-mail address. On receipt we will endeavour to contact you to understand the issue with a view to a fair resolution.

We maintain a disputes resolution process that is available on request.

APPENDIX 1 – FOREST LOCATION MAP



APPENDIX 2 – PUBLIC MONITORING SUMMARY

A component of our certification commitments is to provide a summary of our monitoring. Whilst we endeavor to provide transparency we cannot always provide a summary of what we monitor. However, we consider the monitoring information in this document provides a useful indicator on our performance and how it may affect stakeholders. This monitoring summary provides a table of the elements we monitor for indexed against both FSC and Responsible Wood expectations. The table also indicates what information we have included as our public summary. This is indicated in the right-hand column, with the reference column (e.g. MI01) providing a link to the information found alter in the document.

We are also developing Key Indicators that are shown in red.

Environmental Impacts of Management Activities

FSC	PEFC	Element	Monitoring	Disclosed	Reference
i	0.1 4.5 4.6	The results of regeneration activities (Criterion* 10.1)	1. Planting quality control assessments 2. Annual survival survey	Y N	MI01 -
ii	3.2 3.7 3.8 4.5 4.6	The use of ecologically well-adapted species for regeneration (Criterion* 10.2)	3. Annual survival survey 4. Permanent sample plots 5. Aerial area mark-up surveys 6. Stocked area statement 7. Sustained yield - Annual harvest cut (& 10 year plan forecast) 8. Age 4 heighting survey 9. Mid-rotation inventory 10. Genetic diversity mapping across estate	N N N Y Y N N N	- - - MI02 MI03 - - -
iii	3.2 3.8 4.5 4.6	Invasiveness or other adverse impacts associated with any alien species* within and outside the Management Unit* (Criterion* 10.3);	11. HCVF visual assessments 12. Tarawera wilding project annual report	Y/OR OR	MI04 -
iv	3.8	The use of genetically modified organisms* to confirm that they are not being used. (Criterion* 10.4)	13. Nursery genetics record 14. Genetic diversity mapping across estate	OR N	- -
v	4.3 4.5 5.5	The results of silvicultural activities (Criterion* 10.5);	15. Operational quality control assessments	Y	MI05
vi	3.2 6.1 6.4	Adverse impacts to environmental values* from fertilizers* (Criterion* 10.6); List of fertilizers* and application rates kept ongoing Any damage from fertilizer* use documented including remedy as occurs	16. Health and vigour age 30 months 17. Foliar nutrient sampling age 3.5 18. Stand records for fertiliser 19. Timberlands stream monitoring program 20. Biuret trial monitoring 21. Nitrogen fertiliser lysimeter trials 22. Environmental incident reports	Y OR OR Y-KI N N Y/OR	MI06 - - MI07 - - MI08
vii	3.2 5.2 5.3 5.6 6.1 6.5	Adverse impacts from the use of pesticides* (Criterion* 10.7) Pesticides* used are checked against FSC prohibited list and NZ exempt list on introduction of new pesticide*	23. Timberlands stream monitoring program 24. Post operation inspections 25. Stand record database 26. Area treated by pesticides 27. Forest health surveys (*Dothistroma*, Timberlands general and FOA) 28. Health and vigour age 30 months	Y-KI N N Y OR Y OR	MI07 - - MI09 - MI06 -

		Checks are made to ensure environmental damage is avoided after spray releases	29. Possum monitoring – residual trap catch and health/damage survey 30. Environmental incident reports	Y/OR	MI08
viii	3.2 5.6	Adverse impacts from the use of biological control agents* (Criterion* 10.8); Any biological control agents* are documented by outside agency on release	31. Register of biocontrol agents 32. Environmental incident reports	N Y/OR	- MI08
ix	4.8 5.2 5.4 6.4	The impacts from natural hazards* (Criterion* 10.9);	33. Emergency incident (CIMS) register 34. Incident budget expenditure 35. Fire BUI, ignitions and loss of area	Y N Y/OR	MI10 - MI11
x	3.2 3.5 4.4 4.5 6.1 6.4	The impacts of infrastructural* development, transport activities and silviculture* to rare and threatened species*, habitats*, ecosystems*, landscape values* water and soils (Criterion* 10.10); Soil stabilisation including roading is monitored ongoing or until stability achieved.	36. Volume carted on highway, offhighway and rail. 37. High risk operations monitoring report 38. Timberlands stream monitoring program 39. Environmental Services Calculation a. Carbon b. Recreation c. Possums d. HCV area e. Rare species f. Fire protection 40. HCVF visual assessments 41. Wingspan annual falcon survey 42. KPP and MLY stormwater monitoring 43. Environmental incident reports 44. Methyl bromide used 45. High risk audits	Y-KI N Y-KI Y-KI Y/OR OR OR Y Y/OR OR	MI12 - MI07 MI13 MI04 - - MI08 MI14 -
xi	3.2 3.5 4.2 4.7 4.9 5.5 5.7 7.2	The impacts of harvesting and extraction of timber and non-timber forest* products*, environmental values*, merchantable wood waste and other products and services (Criterion* 10.11);	46. High risk monitoring report 47. High risk audits 48. Timberlands stream monitoring program 49. Environmental Services Calculation a. Carbon b. Recreation c. Possums d. HCV area e. Rare species f. Fire protection 50. HCVF visual assessments	N OR Y-KI Y-KI Y/OR	- - MI07 MI13 MI04

			51. Wagner waste assessments 52. KPP and MLY stormwater monitoring 53. Environmental incident reports	N OR Y/OR	- - MI08
xii	5.7 6.4	Environmentally appropriate disposal of waste materials* (Criterion* 10.12)	54. Strategic Plan Waste monitoring 55. Environmental incident reports	TBD Y/OR	MI15 MI08

Social Impacts of Management Activities

FSC	PEFC	FSC Element	Monitoring Undertaken	Disclosed	Reference
i	9.3 9.5	Evidence of illegal or unauthorized activities (Criterion* 1.4);	56. HS&E Enforcement Notices 57. Vehicle compliance monitoring 58. Critical Rule Breaches – SCRIM 59. Security breach reports 60. Environmental incident reports	Y-KI N N Y Y/OR	MI16 - - MI17 MI08
ii	8.4 9.3 9.5 9.6	Compliance with applicable laws*, local laws*, ratified* international conventions and obligatory codes of practice* (Criterion* 1.5);	61. HS&E Enforcement Notices 62. Quarterly Legal Disclosure 63. Environmental incident reports 64. Resource consent register 65. Parliamentary alerts	Y-KI N Y/OR OR N	MI16 - MI08 MI18 -
iii	2.2.1	Resolution of disputes* and grievances (Criterion* 1.6, Criterion* 2.6, Criterion* 4.6);	66. Register of Complaints and Disputes	Y	MI19
iv	9.6	Programs and activities regarding workers'* rights (Criterion* 2.1);	67. Register of workers disputes	N	-
v	9.6	Gender equality*, sexual harassment and gender discrimination (Criterion* 2.2);	68. Register of harassment complaints and personal grievances 69. Staff performance reviews 70. Timberlands Engagement Score	N N N	- - -
vi	9.5	Programmes and activities regarding occupational health and safety (Criterion* 2.3);	71. H&S reports – SCRIM 72. Mechanisation 73. Injury frequency 74. Annual Timberlands heath assessments	Y/OR Y-KI Y-KI N	MI20 MI21 MI22 -
vii	9.6	Payment of wages (Criterion* 2.4);	75. Timberlands salary payment – i-payroll 76. Timberlands Living Wage Index 77. Contracts paid 78. Ernst and Young salary review	N Y-KI N N	- MI23 - -
viii	9.4	Worker* training (Criterion* 2.5);	79. Timberlands training database / annual review 80. Quarterly audits of contracts 81. Monthly training contract disclosure	N N N	- - -

ix	9.5	Where pesticides* are used, the health of workers* exposed to pesticides* (Criterion* 2.5 and Criterion* 10.7)	82. Timberlands Health Annual Checks 83. Contract health check requirements	N N	- -
x	2.1 2.2 2.3 8.1 8.2 8.4	The identification of Indigenous Peoples* and local communities* and their legal* and customary rights* (Criterion* 3.1 and Criterion* 4.1);	84. Tangatawhenua Register 85. Forest Right Holders Register 86. Beneficial Iwi and community hunting/fishing registrations 87. Iwi Special access permits 88. Iwi relationship survey	N OR Y Y N	- - MI24 MI25 -
xi	2.2 2.3 2.4 8.1 8.2	Full implementation of the terms in binding agreements* (Criterion* 3.2 and Criterion* 4.2);	89. Beneficial Iwi and community hunting/fishing registrations 90. Iwi Special access permits 91. Iwi relationship survey	Y Y N	MI24 MI25 -
xii	2.1 2.2 2.3 2.4 8.1 8.2	Indigenous Peoples* and community relations (Criterion* 3.2, Criterion 3.3 and Criterion* 4.2);	92. Register of Complaints and Disputes 93. Beneficial Iwi and community hunting/fishing registrations 94. Iwi Special access permits 95. Iwi relationship survey	Y Y Y N	MI19 MI24 MI25 -
xiii	2.2 2.3 2.4 8.1 8.2 8.3	Protection* of sites of special cultural, ecological, economic, religious or spiritual significance to Indigenous Peoples* and local communities* (Criterion* 3.5 and Criterion* 4.7);	96. Register of archaeological sites 97. Rangitaiki River trout survey and Forest Pheasant count 98. Environmental incident reports 99. Area lost to fire	N OR Y/OR Y	- - MI08 MI11
xiv	2.2 2.3 8.1 8.2 8.4	The use of traditional knowledge* and intellectual property* (Criterion* 3.6 and Criterion* 4.8);	100. Tangatawhenua Register 101. Forest Right Holders Register	N OR	- -
xv	4.2 4.9 8.4 9.1	Local* economic and social development (Criterion* 4.2, Criterion* 4.3, Criterion* 4.4, Criterion* 4.5);	102. Number of local businesses used 103. Business operation expenditure 104. Number of workers employed 105. Register of Complaints and Disputes 106. Number of scholarships 107. Number of customers / FSC CoC customers 108. Domestic vs export Volume	Y-KI Y-KI Y Y N Y Y	MI25 MI27 MI28 MI19 - MI29 MI30

			109.	Social Impact Assessment	Y	MI31
			110.	Fire-fighting deployment	N	-
xvi	4.1 4.3 4.5 4.9 6.1 7.1 7.3 9.1	The production of diversified benefits and/or products (Criterion* 5.1);	111.	Number of log grades cut	Y	MI32
			112.	Environmental Services Calculation a. Carbon b. Recreation c. Possums d. HCV area e. Rare species f. Fire protection	Y-KI	MI13
			113.	Beneficial Iwi and community hunting registrations	Y	MI24
			114.	Iwi Special access permits	Y	MI25
			115.	Whakarewarewa visitor counts	Y	MI33a
			116.	Number of Whakarewarewa events by type	Y	MI33b
xvii	4.2 9.2	Actual compared to projected annual harvests of timber and non-timber forest* products* (Criterion* 5.2);	117.	Predicted versus actual by log grade reconciliations	N	-
			118.	Annual harvest cut (& 10 year plan forecast)	Y	MI03
xviii	4.2 9.1	The use of local* processing, local* services and local* value added manufacturing (Criterion* 5.4);	119.	Number of customers / FSC CoC customers	Y	MI29
			120.	Percentage volume domestic vs export	Y	MI31
			121.	Number of log grades cut	Y	MI32
			122.	Number of local businesses used	Y-KI	MI26
			123.	Business operation expenditure	Y-KI	MI27
xv	4.1 4.2 4.3 5.2 5.5 9.2	Long-term* economic viability* (Criterion* 5.5);	124.	Monitoring of Strategic Plan	Y	MI28
			125.	Annual harvest cut (& 10 year plan forecast)	Y	MI03
			126.	Age 5-6 heighting survey	OR	-
			127.	Mid-rotation inventory	OR	-
			128.	Annual accounts	N	-
xvi	2.2 2.3 2.4	High Conservation Values* 5 and 6 identified in Criterion* 9.1.	129.	HCVF visual assessments	Y/OR	MI04
			130.	Whakarewarewa visitor counts	Y	MI33a
			131.	Number of Whakarewarewa events by type	Y	MI33b

Changes in Environmental Conditions

FSC	PEFC	Element	Monitoring		Disclosed	Reference
i	3.1 3.2 3.3	Environmental values* and ecosystem functions* including	132.	Environmental Services Calculation a. Carbon b. Recreation	Y-KI	MI13

	3.4 3.5 5.1 7.1 7.2 7.3	carbon sequestration and storage (Criterion* 6.1);	c. Possums d. HCV area e. Rare species f. Fire protection 133. Timberlands stream monitoring program 134. Annual Wingspan falcon survey 135. Rare species sighting database 136. Rangitaiki River trout survey and Forest Pheasant count 137. Environmental incident reports	 Y-KI OR OR OR Y	 MI07 - - - MI08
ii	3.1 3.2 3.3 3.4 3.5	Rare and threatened species* (Criterion* 6.4); Rare and Threatened species* populations and habitat* monitored	138. Rare species sighting database 139. Annual Wingspan surveys	OR OR	- -
iii	3.2 3.3 3.4 3.5 5.5	Representative Sample Areas* (Criterion* 6.5); Large – representative areas health and restoration* programs are monitored	140. Tarawera photo points 141. Area statement of productive, conservation area network. 142. HCVF visual assessments	OR Y Y/OR	- MI02 MI04
iv	3.5 3.7	Naturally occurring native species* and biological diversity* (Criterion* 6.6); Maintenance is monitored	143. HCVF visual assessments 144. Tarawera photo points 145. Annual Wingspan falcon survey 146. Rare species sighting database	Y/OR OR OR OR	MI04 - - -
v	5.6 6.1 6.2 6.3 6.5	Water courses, water bodies* and water quality (Criterion* 6.7);	147. Timberlands stream monitoring program 148. Rangitaiki River trout survey	Y-KI OR	MI07 -
vi	3.2 4.1 5.2 6.1 6.2 6.3 6.4	Landscape values* (Criterion* 6.8); Large - Trials monitored	149. Permanent sample plots 150. Net stocked area by ageclass 151. Clearfell Area by Size Distribution 152. Annual Wingspan falcon survey 153. Forest health and *Dothistroma* surveys 154. Genetic diversity mapping across estate 155. Mean annual increment 156. Timberlands stream monitoring program	OR Y OR OR OR N Y Y-KI	- MI02 - - - - MI34 MI07
vii	3.9	Conversion of natural forest* to plantations* (Criterion* 6.9);	157. Area statement of productive, conservation area network	Y	MI02

viii	3.9	The status of plantations* established after 1994 (Criterion* 6.10);	158. Area statement of productive, conservation area network	Y	MI02
ix	3.1 3.2 3.3 3.4 3.5	High Conservation Values* 1 to 4 identified in Criterion* 9.1.	159. HCVF visual assessments	Y/OR	MI04

OR = On Request – may be declined depending on nature of request and detail requested.
KI = Summary Monitoring Report Key Indicator
SMP = Summary Management Plan
Y = Disclosed
N = Not Disclosed

Publicly Available Monitoring Summary Index

This table provides a reference to the publicly available monitoring summaries.

#	Code	Indicator	Description
1	**MI01a**	Area re-established	The forest area (ha) re-established each year by species
2	**MI01b**	Planting QC Assessments	Quality control results from planting inventory monitoring
3	**MI02a**	Productive and Unproductive Area	Stocked area, reserve areas and remaining un-stocked area.
4	**MI02b**	Net Stocked Area by Age class and Species	Nett Stocked Area by Age class and Species
5	**MI03**	Sustained Yield – Annual Harvest and Forecast	Annual harvest and forecast volumes by species.
6	**MI04**	HCV/SBV Visual Assessment	Summary of observations on state of High Conservation Value and Significant Biodiversity Value areas.
7	**MI05**	Operational Quality Control Measures	Annual quality control results for silvicultural operations
8	**MI06**	Health and Vigour Survey (30 Months)	Summary of assessment inventory of trees at age 30 months for health and vigour.
9	**MI07a**	Stream Temperature	Summary of stream temperatures measured on forest, farm and natural forest sites.
10	**MI07b**	Stream Suspended Solids	Summary of stream suspended solid concentrations measured on forest, farm and natural forest sites.
11	**MI07c**	Copper Concentration	Summary of stream copper concentrations (monitoring Dothistroma control copper) measured on forest, farm and natural forest sites.
12	**MI07d**	Stream Hexazinone Concentration	Summary of stream hexazinone (used as a herbicide) measured on forest, farm and natural forest sites.
13	**MI08**	Environmental Incident Reports	The number of maior and minor environmental incidents reported each year
14	**MI09a**	Dothistroma pini Treatment – Cuprous Oxide	The area of forest treated for Dothistrona infection, validated by fire danger levels in the previous season (shows effect of weather)
15	**MI09b**	1080 Use	The area treated by 1080 each year, by aerial or ground applied and by agency, TB Free, Regional Council and Timberlands.
16	**MI09c**	Establishment Weed Control	Establishment weed control methods, including highly Hazardous pesticide and validated by area established each year.
17	**MI10**	Emergency Incident Register	The number of emergency situations managed by a Coordinated Incident Management Systems (CIMS)
18	**MI11a**	Fire Build Up Index	Annual fire dangers expressed by Build Up Index (BUI)
19	**MI11b**	Fire Ignitions Attended by Timberlands	The number of fire ignitions attended by Timberlands inside and outside of the forest estate.
20	**MI11c**	Area Lost to Fire	The annual stocked area lost to fire
21	**MI11d**	Fire Deployment Days per Year	Number of days Timberlands staff and contractors are deployed to firs in NZ and abroad.
22	**MI12**	Volume Carted On-Highway, Off-Highway and Rail	The percentage of volume carted on public, private (Timberlands) and rail.
23	**MI13a**	Carbon Sequestration	The total forest carbon inventory by year – indicating the forest carbon sink.

24	**MI13b**	Annual Fossil Fuel Emissions	Emissions from our supply chain (nursery to processing plant) from fossil fuels – diesel and petrol.
25	**MI13c**	Annual Energy Balance	The amount of energy used to manage our business vs the amount of energy in products sold for energy generation in Giga-Joules.
26	**MI13e**	Rare Species Count	A cumulative tally of the number of rare species observed within the plantation forest.
27	**MI14**	Methyl Bromide Used	The amount of Methyl Bromide applied to export logs at the Port of Tauranga, including the amount re-captured.
28	**MI15**	Strategic Plan Waste Monitoring	To be determined
29	**MI16**	HS&E Enforcement Notices	The number of Worksafe and Council enforcement notices by type.
30	**MI17**	Security Breach Reports	The annual number of security breaches reported and number of trespass notices issued.
32	**MI18**	Resource Consent Register	The number of current and expired territorial authority consents held.
33	**MI19**	Complaints and Disputes	The number of public complaints received and the number that escalate to disputes.
34	**MI20**	H&S Reports	The number of health and safety incidents reported by type.
35	**MI21**	Mechanisation	The percentage of manual production falling and log making undertaken mechanically, validated against the number of related incidents.
36	**MI22**	Injury Frequency	Timberlands lost time and total injury frequency by million hours worked.
37	**MI23**	Living Wage Index	To be determined.
38	**MI24**	Beneficial iwi and Community Hunting / Fishing Registrations	The annual number of recreational hunting and fishing registrations by iwi and public.
39	**MI25**	Iwi Special Access Permits	Annual number of special access permits issued to iwi.
40	**MI26**	Number of Local Businesses Used	The number of businesses with open accounts by Rotorua and other.
41	**MI27**	Business Operation Expenditure	The operational expenditure to manage the forest estate.
42	**MI28a**	Number of Workers Employed	The number of full and part time people employed by business unit.
43	**MI28b**	Number of Workers Employed	The number of hours worked by business unit.
44	**MI29**	Number of Customers / FSC and PEFC CoC Customers	A breakdown of domestic certification customers and volume sold.
45	**MI30**	Domestic vs Export Volume	The amount of volume sold to local processing and to export.
46	**MI31**	Social Impact Assessment	A brief description of social impact assessment undertaken for significant business decisions.
48	**MI32**	Number of Log Grades Cut	The annual number of log grades cut.
49	**MI33a**	Whakarewarewa Access Counters	An automated count of people passing through Whakarewarewa access points at Waipa, Hill road and Nursery road.
50	**MI33b**	Whakarewarewa Events	The annual number of events held in Whakarewarewa and Tokorangi forests.

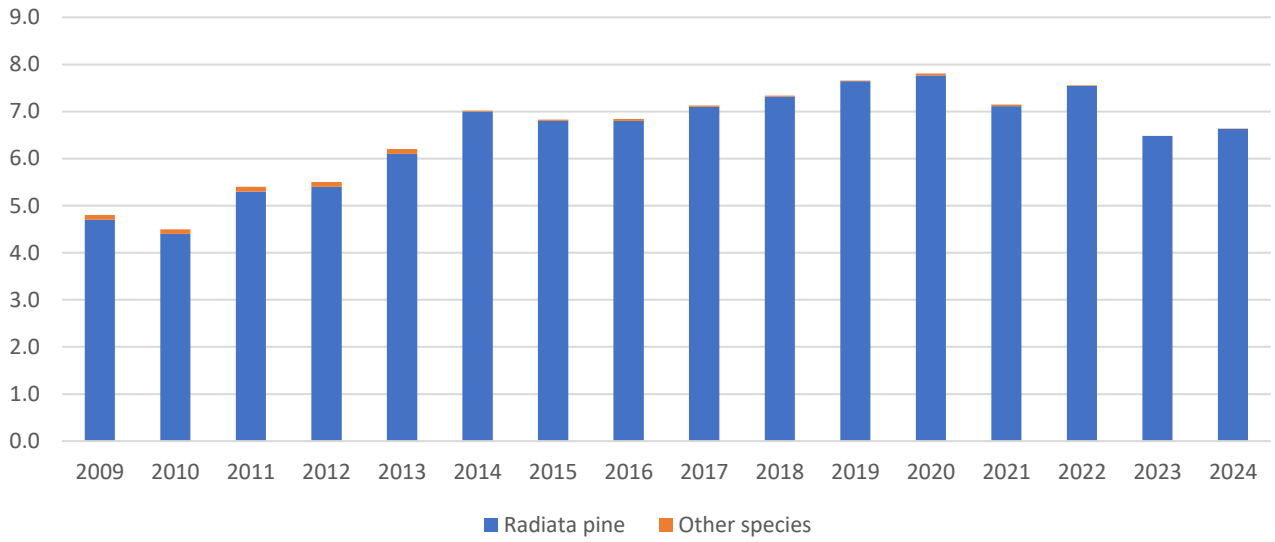
51	**MI34**	Mean Annual Increment	Forest productivity measured by the mean annual increment, being the average volume per hectare grown each year and validated by site index (the mean top height of the 100 tallest trees per hectare).

Timberlands PUBLIC MONITOIRING SUMMARY

Monitoring Indicator MI01: Planting Quality Control Assessments

Over 6,300 hectares were replanted in 2024, which is an average replant by Timberlands to date. The majority was in *Pinus radiata* with only 46 hectares in other species, which were all species trials.

MI01a: Area re-established each year (000ha)



MI01b: Planting QC Assessments

Timberlands assess over 1,800 planting quality control (QC) plots each season, which represents around one plot for every three hectares. Planting quality such as stocking, root orientation and depth are assessed against strict specifications. Quality has been consistently high with around 3% of plots and their surrounding area requiring reworks. This signifies the forest is being re-established at a high level of quality and is well within our target of 5%.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Area Planted (ha)	7116	6815	6830	6376	7316	7640	7768	7145	7555	6545	6342
Total Plots	2021	1914	1983	2001	2240	2290	2301	2060	2191	1910	1894
Total Plots Reworked	38	56	70	56	68	72	31	30	83	83	49
% Rework	1.90%	2.90%	3.50%	2.80%	3.00%	3.14%	1.35%	1.46%	3.78%	4.34%	2.59%
Total Area Reworked (ha)	114	168	241	197	222	195	103	95	286	293	171

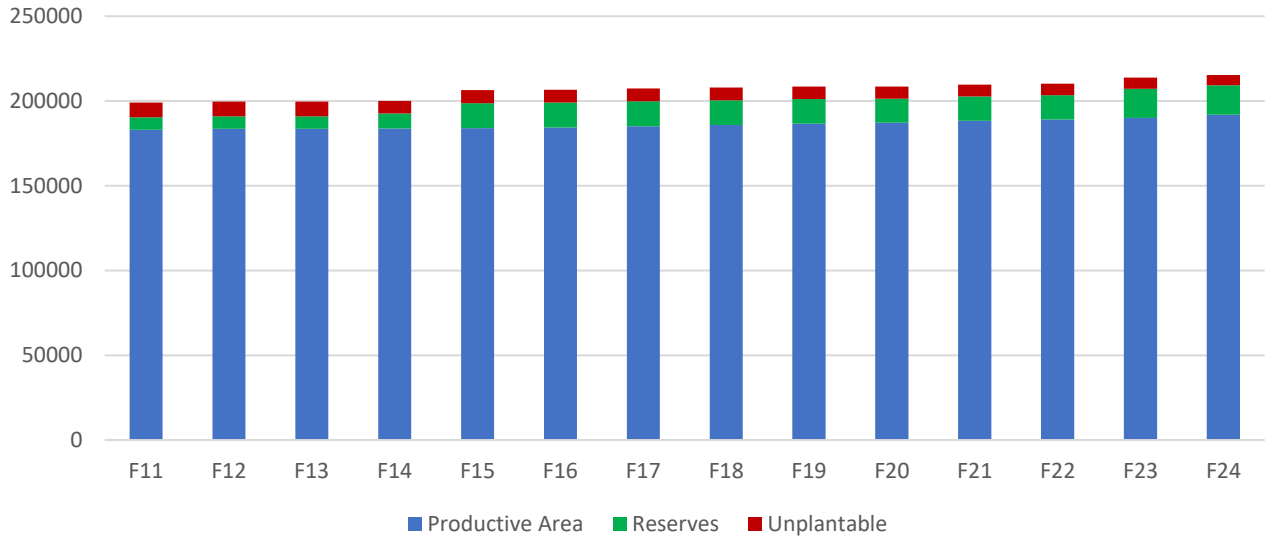
Monitoring Indicator MI02: Stocked Area Statements

MI02a Productive and Unproductive Area (ha)

The total area managed by Timberlands was 217,956ha at 30 June 2023. This consisted of 194,171 of productive area (planted and harvested areas), 17,634 ha of natural reserve areas and 6,148 unproductive which includes roads, powerline corridors and landings. An increase in area over time comes from the annual addition of area from Tarawera Forest. Area by forest managed is shown in the table below.

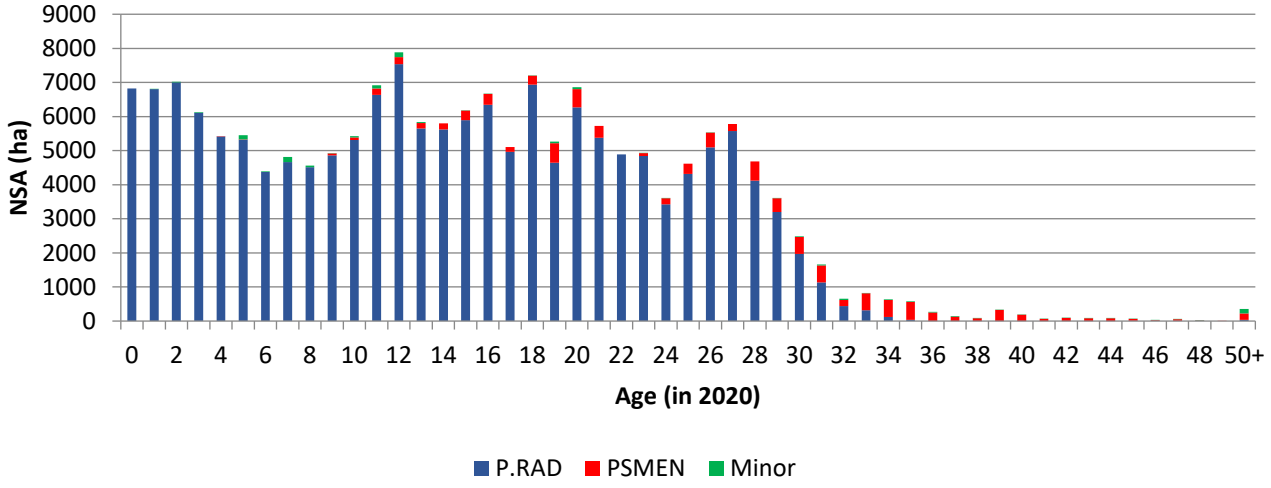
	KT	TMOT	MAMV	TL Overall
Production	191,913	1,441	817	194,171
Reserve	17,343	169	122	17,634
Unplantable	6,062	62	26	6,148
Total	**215,318**	**1,672**	**966**	**217,956**

The following graph shows KT forest area since F11.



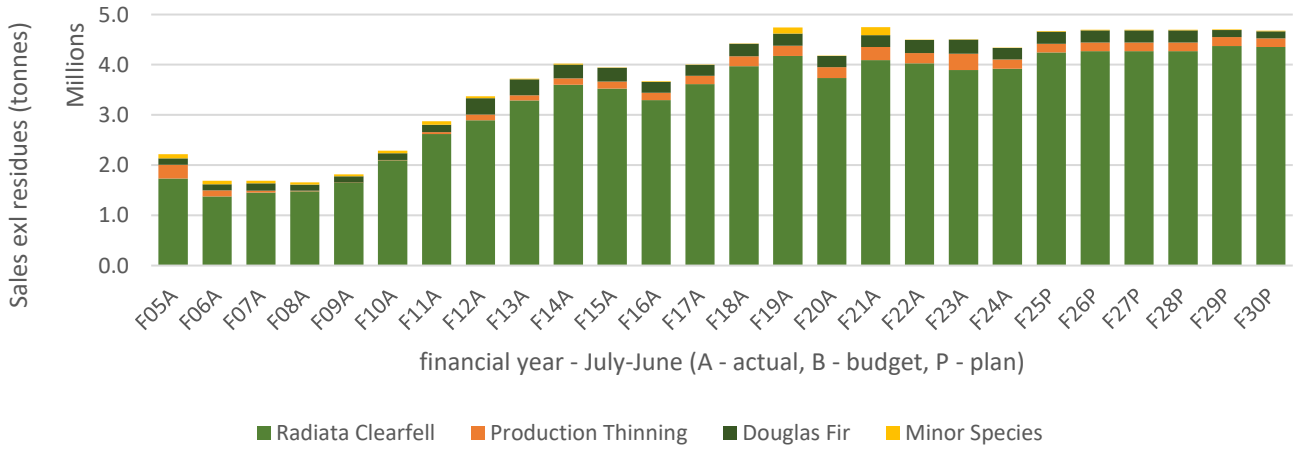
MI02b Nett Stocked Area by Ageclass and Species

Net stocked area is dominated by radiata pine which makes up over 95% of the forest estate. Douglas fir, which is no longer re-established makes up the majority of other species in the estate. This is typical of NZ plantation forests.



Monitoring Indicator MI03: Sustained Yield – Annual Harvest and Forecast

Timberlands aims to produce a sustained yield over time. The graph shows that harvest rates have increased since 2005 to a sustained level of over 4.2 million tonnes per year from 2021. The key reason for the increase since 2005 was a maturing of the forest where Timberlands increased the harvest age from around 22 years to 28. This meant holding off scheduled harvesting until the forest achieved an age where a sustained level of quality logs could be achieved. The projected sustained level is expected to increase over time as forest productivity is increased, for example in the 50 by 50 strategy explained in the Summary Management Plan. Note F20 volumes were down on plan due to the one month Covid-19 lockdown.



Monitoring Indicator MI04: HCV/SBV Visual Assessment

Timberlands manage 23 natural, 4 plantation and one cultural area that are considered High Conservation Value (HCV) under FSC. The natural reserves and one plantation area (Iwitahi orchid Reserve) are also considered Significant Biodiversity Areas (SBV) under Responsible Wood certification. 6 new areas in Lochinver were added in F24. Timberlands actively manage these areas to protect and enhance their values. For the natural reserves this is mostly wilding control, which is usually the removal of *Pinus contorta*. Most areas are checked annually with some under active management checked on a more frequent basis. The table below provides a summary of monitoring for each of the 28 HCV/SBV areas in F24.

HCVF #	Name	Forest	Mortality	Disease	Insect Outbreaks	Adverse Ecological Impact	Other
HCV01	**Otangimoana Stream**	KANG	Nil observed	Nil observed	Nil observed	Good removal of Wildings but requires another visit to remove regenenrating trees. Regional Council managing large area of wilding contorta next to this area. Field trip with council to discuss plan. Waiting for log prices to improve	
HCV02	**Plot Road Wetland**	KANG	Nil observed	Nil observed	Nil observed	Good removal of Wildings but requires another visit to remove regenenrating trees	Appeared healthy and good bird life. One Fern Bird heard
HCV03	**Otamatea Stream**	KANG	Nil observed	Nil observed	Nil observed	Area remains reasonably free of contorta. One poplar tree has fallen into river on north side of culvert.	Excellent bird life
HCV04	**Rangitaiki Wetlands**	KANG	Nil observed	Nil observed	Nil observed	Area remains reasonably free of contorta.	
HCV05	**Upper Rangitaiki River**	KANG	Nil observed	Nil observed	Nil observed	Some contorta emerging	

HCV06	**Waiotapu Geothermal Area**	KANG	Nil observed	Nil observed	Nil observed	Wildings and pest plants present - being worked on through joint iwi/DoC/TL plan.	Discoveed a new area of African Feather Grass - treated
HCV07	**Capella Rd Wetland and Forest**	HORO	Nil observed	Nil observed	Nil observed	Wildings, possum and deer sign observed	
HCV08	**Maungawhakamana**	TAWA	Nil observed	Nil observed	Nil observed	Successful control of pest plants is evident at some sites such as Mt Tarawera Northeast and Upper Waiaute Valley (wilding conifers), and Lake Pūpūwharau and Lake Tahuna (willows, wilding conifers, pampas (Cortaderia selloana), and other weeds). No infestations of old man's beard or royal fern were observed during the 2024 aerial survey. Aerial control will be the most efficient method to control wilding pines at some sites, including parts of Mt Tarawera Northeast, Maungawhakamana, Makatiti Dome Extension, and in the Mangawhio Stream and Upper Waiwhakapa Stream Catchments. The poor condition of pōhutukawa and northern rātā at many sites has highlighted the importance of possum (Trichosurus vulpecula) control in Tarawera Forest. This is similar to the findings made during ground-based assessments of pōhutukawa and northern rātā populations Poor health of indigenous broadleaved forest was also noted during the 2024 aerial survey, particularly in areas with abundant kāmahi (Pterophylla (Weinmannia) racemosa). Dieback of indigenous broadleaved tree species was distinctly evident in parts of Tarawera Scarp, Mangawhio Stream and Waiwhakapa Stream Catchments, and Puhipuhi Forest.	
HCV09	**Mt Tarawera Northeast**	TAWA	Nil observed	Nil observed	Nil observed		
HCV10	**Lake Tahuna Wetland**	TAWA	Nil observed	Nil observed	Nil observed		
HCV11	**Waiaute Stream**	TAWA	Nil observed	Nil observed	Nil observed		
HCV12	**Makatiti Dome Extension**	TAWA	Nil observed	Nil observed	Nil observed		
HCV13	**Lake Tarawera Scenic Reserve Extension**	TAWA	Nil observed	Nil observed	Nil observed		

HCV14	**Lake Pupuwharau**	TAWA	Nil observed	Nil observed	Nil observed		
HCV15	**Manawheo Stream & Upper Waiwhakapa Stream**	TAWA	Nil observed	Nil observed	Nil observed		
HCV16	**Upper Waiaute Valley**	TAWA	Nil observed	Nil observed	Nil observed		
HCV17	**Mangate Stream Wetlands**	TAWA	Nil observed	Nil observed	Nil observed		
HCVP01	**Whakarewarewa Core Network**	WAKA	Nil observed	Nil observed	Nil observed	Nil observed	Recreation remains very popular and resources in palce, with improvements being made - e.g Te Putake o Tawa. Liaison with stakeholders confirms this. Windthrow damage from Cyclone Gabrielle
HCVP02	**Blue and Green Lakes Covenants**	WAKA	Isolated areas of possum damage in Redwoods	Diplodia	Minor cicada damage	Minor incursion of p.rad and d.fir wildings - to be cleared.	Possum trapper sent to trap target areas
HCVP03	**Torepatutahi Soil Conservation Covenant**	KANG	Nil observed	Nil observed	Nil observed	Scattered wilding radiata observed - large with potenital bat habitat.	Inspection undertaken during environmental flight following adverse weather. No slips or other impact noted.

HCVP04	**Iwitahi Orchid Reserve**	KANG	Nil new and new seedlings looking healthy - but remain "dormant"	Nil observed - Dothistroma treatement	Nil observed	Some weeds observed.	No storm damage noted - recent storm
HCVTT01	**Rotoehu Archaeological sites**	ROEU	Nil observed	Nil observed	Nil observed	Some weeds and regen pine observed.	Sites are HCV for cultural reasons - Taonga Tuturu. Whilst they have some ecological value this is not their primary conservation purpose
LOCH 01	**Lake Pouaru Wetland**	LOCH	Nil observed	Nil observed	Nil observed	Weed species	Now well fenced with setbacks
LOCH 02	**Otangimoana Stewardship Area**	LOCH	Nil observed	Nil observed	Nil observed	Wilding pines	
LOCH 03	**Rangitaiki Conservation Area**	LOCH	Nil observed	Nil observed	Nil observed	Wilding pines	
LOCH 04	**Lochinver Station North Fragments**	LOCH	Nil observed	Nil observed	Nil observed	Wilding pines	
LOCH 05	**Lochinver North Frost Flats**	LOCH	Nil observed	Nil observed	Nil observed	Wilding pines	
LOCH 06	**Ripia River Catchment**	LOCH	Nil observed	Nil observed	Nil observed	Gorse	

Photo: Rangitaiki Wetlands (HCVF04) free of emergent contorta, but noticeably drier than normal

Photo: HCV05 with occasional emergent wilding to be schedule for retreatment

Photo HCV05 showing health and flowering koromiko

Photo HCV05 numerous bumble bees were observed - attracted to the flowering koromiko and indicating good ecosystem health.

Photo: Plot road Wetland (HCV02) in good health

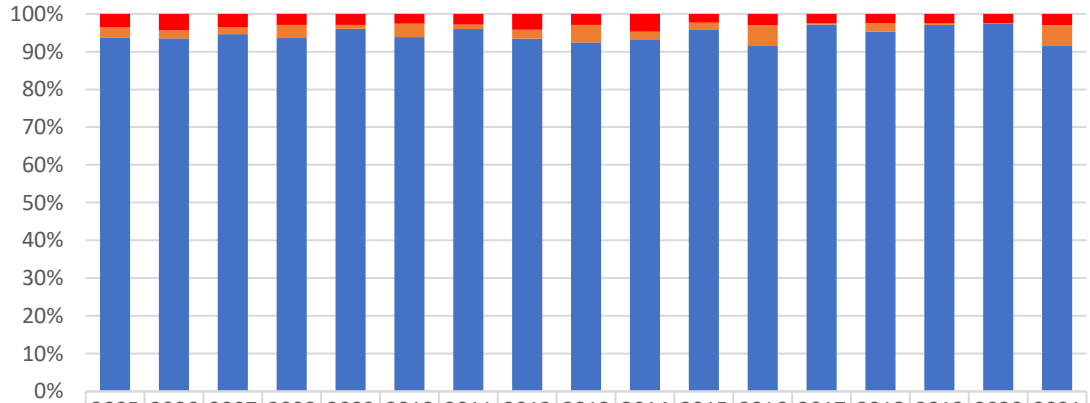
Monitoring Indicator MI05: Operational Quality Control Measures

Timberlands assess silviculture operational quality through quality control plots. The results for F24 are in the table below. In summary the quality has been of a high standard and met prescribed targets.

Quality Control Inventory results	1st Frame Thin	1st thin Clearwood	Final Frame Thin	Production Thin
Area treated (ha)	4638	431	1895	2099
Stocking (s/ha)	719	749	464	430
Mean Crop Height (m)	9.4	9.2	16.3	19.0

Monitoring Indicator MI06: Health and Vigour Survey (30 Months)

Timberlands undertake a health and vigour survey on stands at age 30. This is to determine if growth and survival expectations are being met and help plan future silviculture operations. The survey is undertaken across the estate and analysed by Homogenous Management Units (HMUs) to determine aggregated management and silvicultural strategies. The graph below shows results averaged across all sites and in general 95% of trees are healthy and vigorous. Note that the year shown is the year planted, thus 2021 represents trees planted in 2021 and measured in 2023.



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Dead, dying or not present	3.6%	4.4%	3.6%	2.9%	2.9%	2.6%	2.8%	4.2%	2.9%	4.7%	2.3%	3.0%	2.5%	2.4%	2.5%	2.4%	3.0%
Non-vigorous	2.6%	2.1%	1.8%	3.5%	1.0%	3.5%	1.2%	2.4%	4.7%	2.0%	2.0%	5.4%	0.3%	2.3%	0.4%	0.3%	5.4%
Healthy and vigorous growth	93.8%	93.5%	94.6%	93.6%	96.1%	93.9%	96.0%	93.4%	92.5%	93.3%	95.8%	91.5%	97.2%	95.3%	97.1%	97.3%	91.5%

Monitoring Indicator MI07: Stream Surface Water Monitoring

Timberlands undertakes twice yearly monitoring of key streams to validate best management practices and indicate if any adverse effects are occurring. Eleven Kaingaroa forest streams and control streams in natural forest (1) and farmland (2) are monitored by an independent expert. Stream quality indicators measured include flow, pH, turbidity, suspended solids, dissolved oxygen, percentage oxygen saturation, temperature and pesticides (primarily hexazinone, terbuthylazine and copper) concentrations. We have suspended the program whilst designing a new approach, which commenced in F24. In the meantime we have undertaken targeted monitoring at operational sites – with no adverse effects detected.

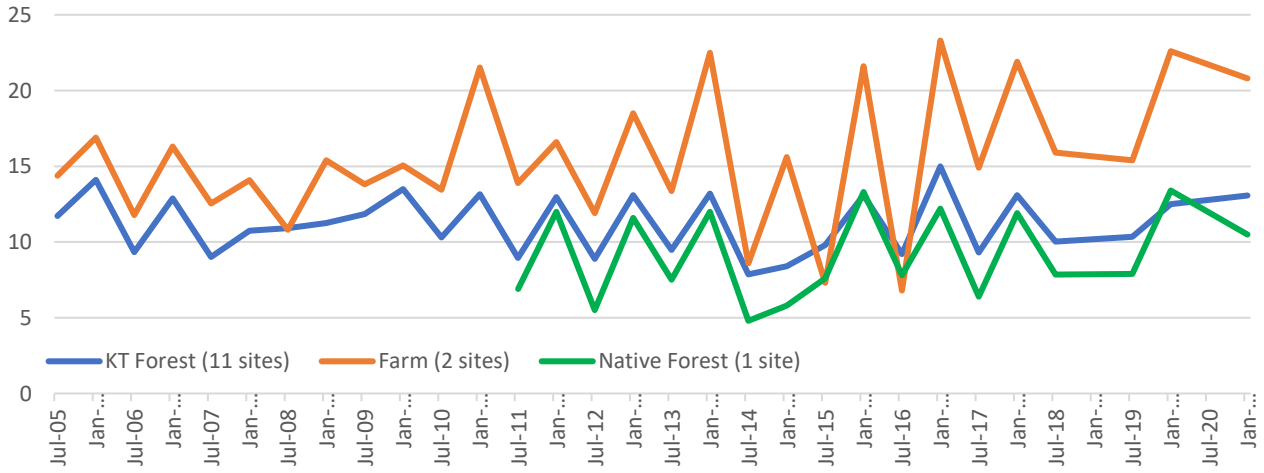
The results indicate that forest practices are not causing any long-term effect on these stream properties and forestry constitutes a better land use for stream properties than agriculture in the areas sampled. The results show that from a landscape perspective, forest streams remain in a relatively static state and show only expected seasonal variation. This is backed up by comments from the independent expert:

"This sampling episode of surface drainage proximal to the Kaingaroa Forest plantation continues to illustrate that the forest husbandry practices are having minimal impact on the surface waters of the forest."

The results for temperature, suspended solids and copper, and hexazinone concentrations are provided in this summary. The graphs show average results by plantation, natural forest and farm sites.

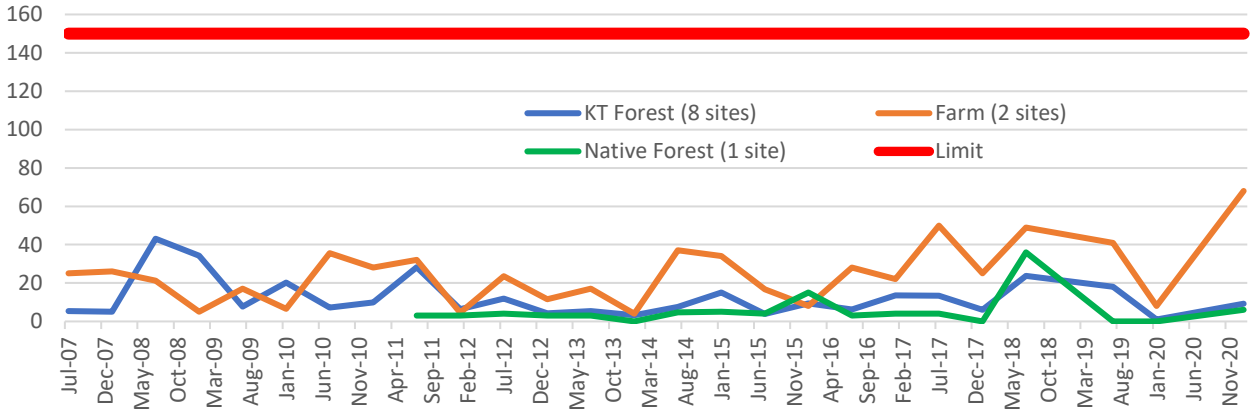
MI07a Stream Temperature

Forest temperatures are similar to those of the natural forest control area and show similar seasonal variations. This compares well with the farm sites which have a higher average temperature with much greater variation. Average temperatures are 9ºC for natural areas, 11ºC for forest areas and 15ºC for the farm sites. Noting that the temperature for the natural area is expected to be cooler due it's elevation.



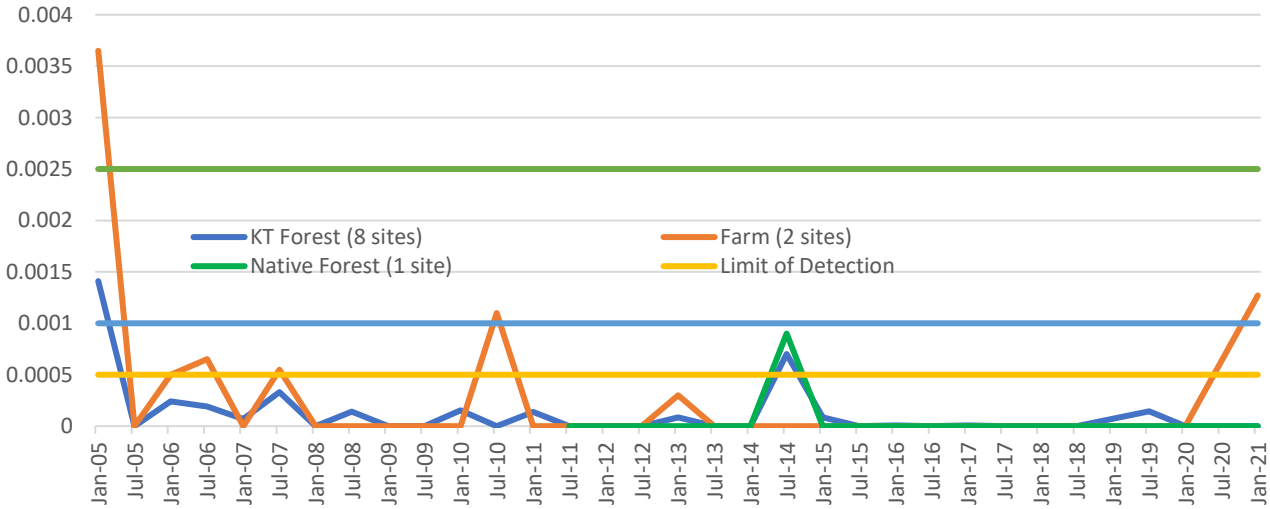
MI07b Stream Suspended Solids

Suspended solids provide a useful indicator of sediment entering and carried in streams. Average suspended solids have been 5.4g/m^3 in the natural area, 12.3g/m^3 in Kaingaroa and 24.8 g/m^3 on the farm sites. This indicates that sediment run-off from the plantation, whilst not as low as natural areas is better than from the nearby farms. An interesting trend is that plantation suspended solids have reduced closer to natural over time, indicating that management practices, such as increased riparian setbacks are having a positive effect. Also note that sediment levels are well below a national benchmark.



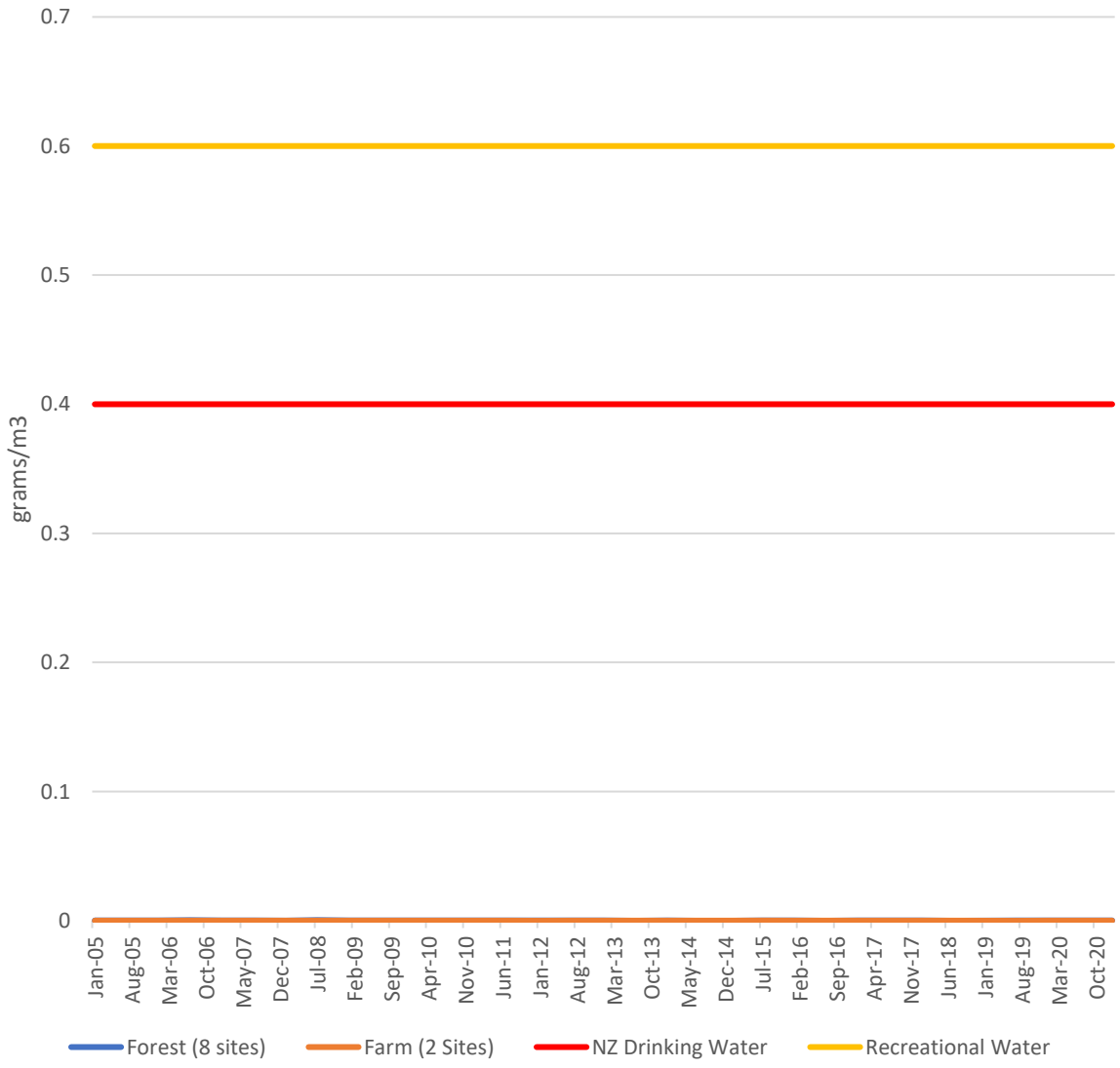
MI07c Copper Concentration

Copper is used to control a needle fungus *Dothistroma pini* in *Pinus radiata*. MI09 provides the annual area treated by copper and the graph below shows monitoring results for copper in streams. Copper concentrations have been low at all sites, which will include some natural copper, and is generally below the detection limit, and well below any national stream health limits. The levels are several orders below the limit for livestock at 0.5g/m^3.



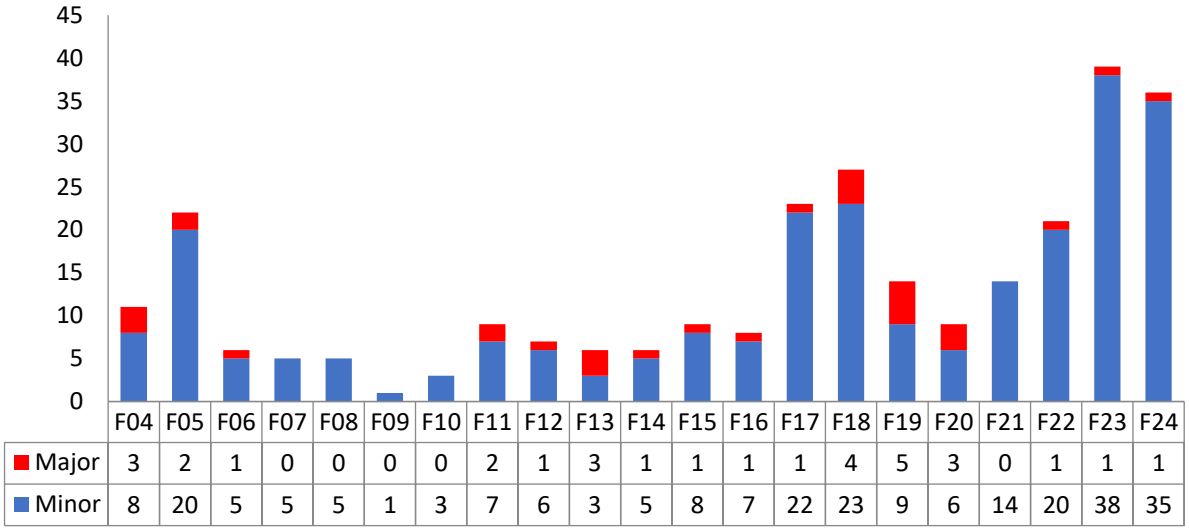
MI07d Stream Hexazinone Concentration

Hexazinone is a key herbicide used to control weeds at establishment. Timberlands pay close attention to hexazinone concentrations as an indicator to herbicide entering water. Hexazinone has been detected at very low concentrations, just at the detection level, but at several orders below any level that could cause any adverse effect. The graph below shows that the concentrations hardly register on the scale.



Monitoring Indicator MI08: Environmental Incident Reports

Timberlands operate a system to report and respond to environmental incidents. Most that we experience are weather related where heavy rain damages roading infrastructure. The graph below shows an increase in reported events, which is predominantly due to significantly wet weather conditions and two cyclone events.

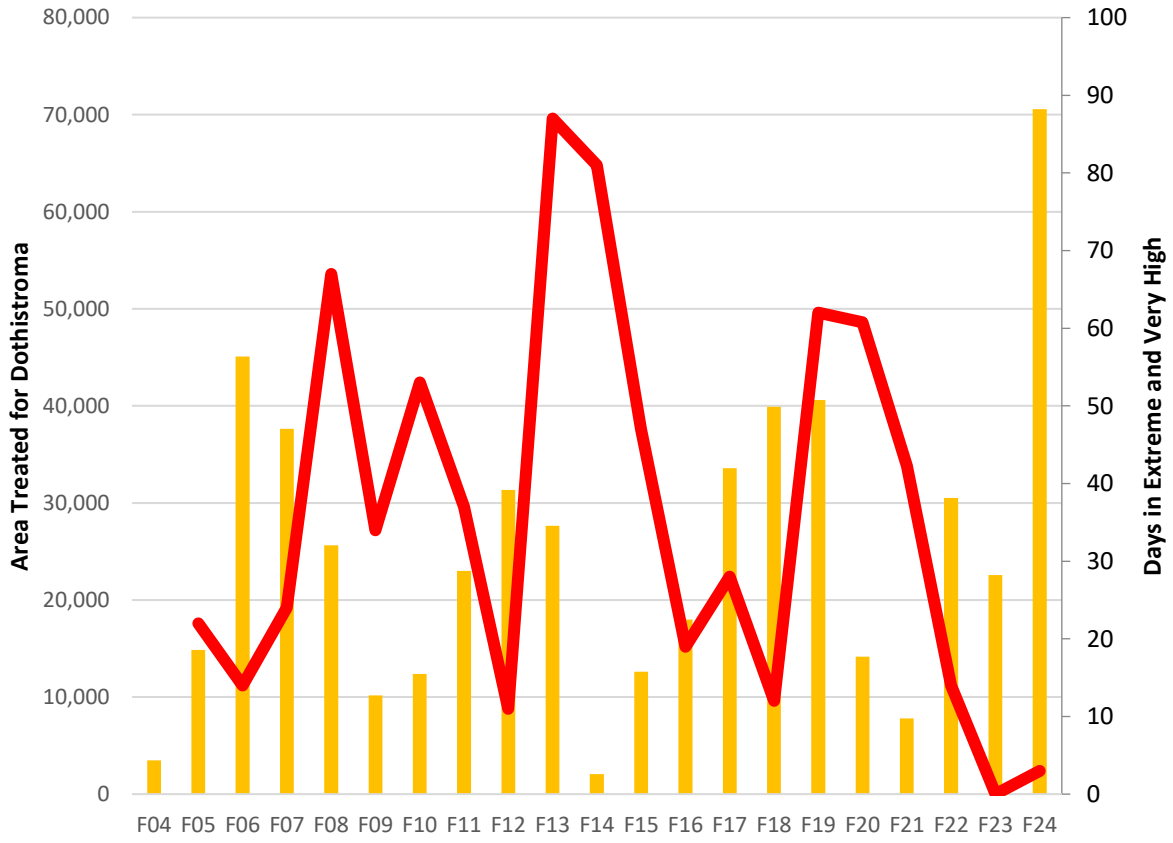


	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Major	3	2	1	0	0	0	0	2	1	3	1	1	1	1	4	5	3	0	1	1	1
Minor	8	20	5	5	5	1	3	7	6	3	5	8	7	22	23	9	6	14	20	38	35

Monitoring Indicator MI09: Area Treated by Pesticides

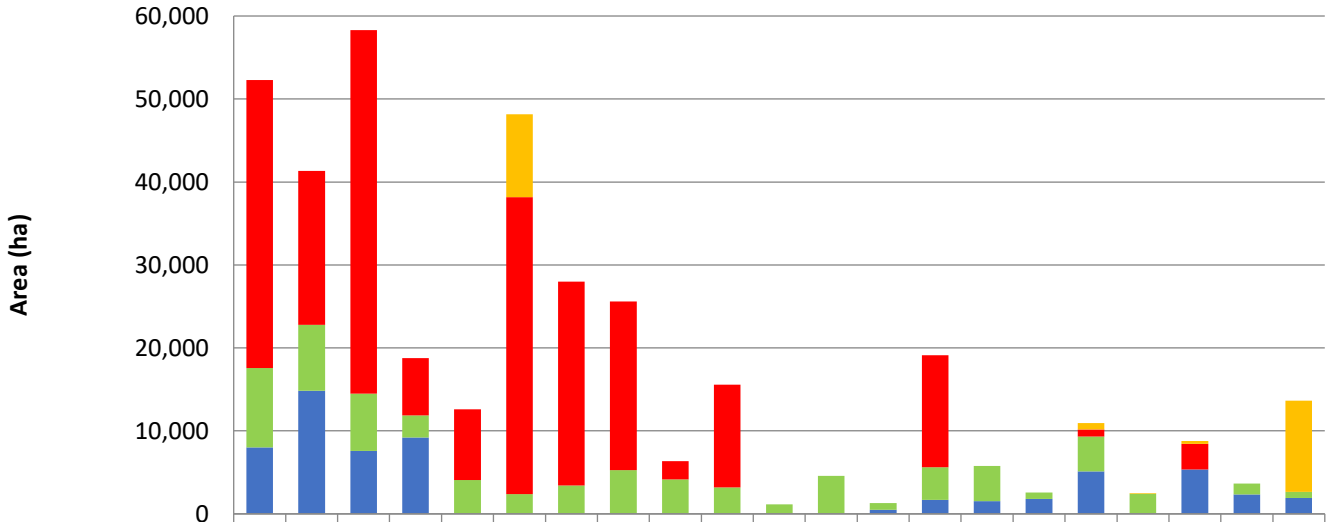
MI09a Dothistroma pini Treatment – Cuprous Oxide

Dothisroma pini is a fungus that affects radiata pine needles and causes needle cast. While it rarely kills trees, it severely affects growth and a monitoring and control program are in place. The monitoring which is generally an aerial observation uses a standard approach to determine infection levels. When these are exceeded control using copper is undertaken. The yellow bars in the graph show the area of control undertaken each year, which is an indicator for infection levels. Climate has major bearing on infection levels and this is demonstrated by lower applications in F09, F10 and F14 that when there were long dry summers. This is also explained by the red line in the graph which is the number of days in very high or extreme fire danger. Where this is high the following year's *Dothistroma pini* treatment is low. The seasonal increases are primarily due to wetter summers which are more conducive to *Dothistroma pini*. The small area treated in F14 and F21 represents a combination of a dry summer and the efforts of previous years reducing the available fungal spores. After a wet summer in F23 we are expected a significant increase and consequent record Dothristroma treatment in the F24 year.



MI09b 1080 Use

Possums, rabbits and wallabies are significant pests to the forest plantation as well as natural biodiversity. Timberlands generally control these pests at establishment and for possums where their numbers are high and causing damage. Whilst we aim to use non-pesticide methods, such as trapping, these methods are not always effective, particularly in areas with difficult access. Tb Free NZ also control possums in the estate at times to minimise the spread of bovine tuberculosis. Where there are significant pest animal problems or difficult access areas at establishment, 1080 is the most effective and safest tool. Research has demonstrated that 1080 treatment will control possum numbers to a low level, with a beneficial effect on natural biodiversity. However, 1080 is unpopular with some members of the public, in particular hunters as it can kill deer, pigs and hunting dogs. Timberlands only use 1080 where it is necessary and aim to reduce the amount of area treated. The graph shows a trend away from 1080 use to the current level where 1080 is now applied to less than 3% of the forest area each year by Timberlands.



	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
EBOP/DoC Aerial	0	0	0	0	0	9,99	0	0	0	0	0	0	0	0	0	0	761	50	348	0	11,0
TB Free Aerial	34,7	18,5	43,8	6,92	8,50	35,8	24,5	20,3	2,20	12,3	0	0	0	13,5	0	0	867	0	3,10	0	
TL Ground	9,59	7,96	6,90	2,63	4,09	2,37	3,43	5,27	4,15	3,18	1,16	4,59	822	3,95	4,25	781	4,19	2,43	0	1,32	725
TL Aerial	8,00	14,8	7,57	9,21	0	0	0	0	0	0	0	0	479	1,68	1,53	1,78	5,11	0	5,34	2,34	1,91

MI09c Establishment Weed Control

The majority of pesticides used by Timberlands are herbicides at establishment, either through pre-plant desiccation or release after planting. There are many weeds that affect establishment with gorse, blackberry, broom and grass having the greatest effect. Timberlands aim to minimise pesticide use, in particular those considered highly hazardous by FSC. The graph below shows the use of establishment herbicides by Timberlands.

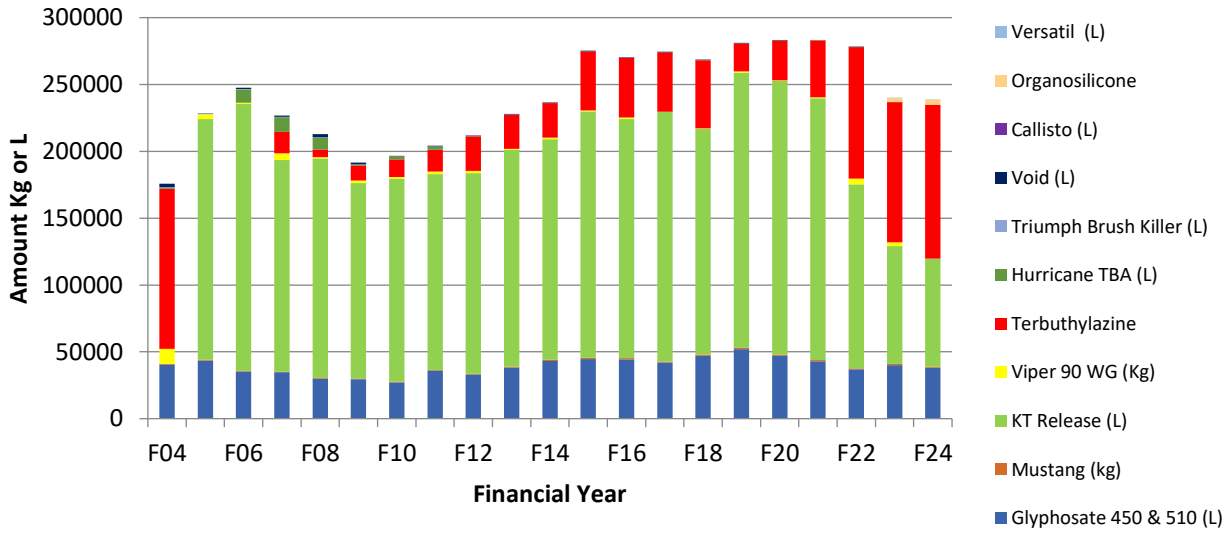
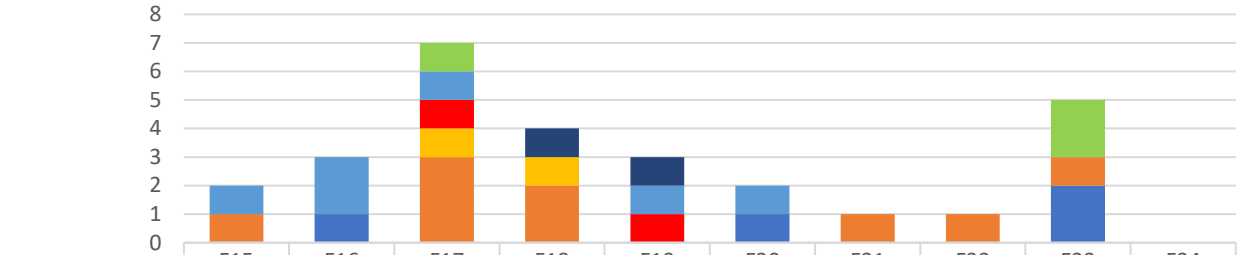


Photo: Precise aerial application is used to minimise drift at sensitive areas and ensure only what is required is applied.

Monitoring Indicator MI10: Emergency Incident Register

Timberlands manages emergencies through Coordinated Incident Management Systems (CIMS), which is only instigated when a management approach is required for an emergency. The graph below shows the number if emergencies by type where a CIMS structure was put in place and an incident controller appointed. F24 was the first year where no CIMS were instigated for an emergency.



	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Biosecurity				1	1					
Environmental			1						2	
Accident	1	2	1		1	1				
Fire			1		1					
Snow			1	1						
Rain/Wind	1		3	2			1	1	1	
Other		1				1			2	

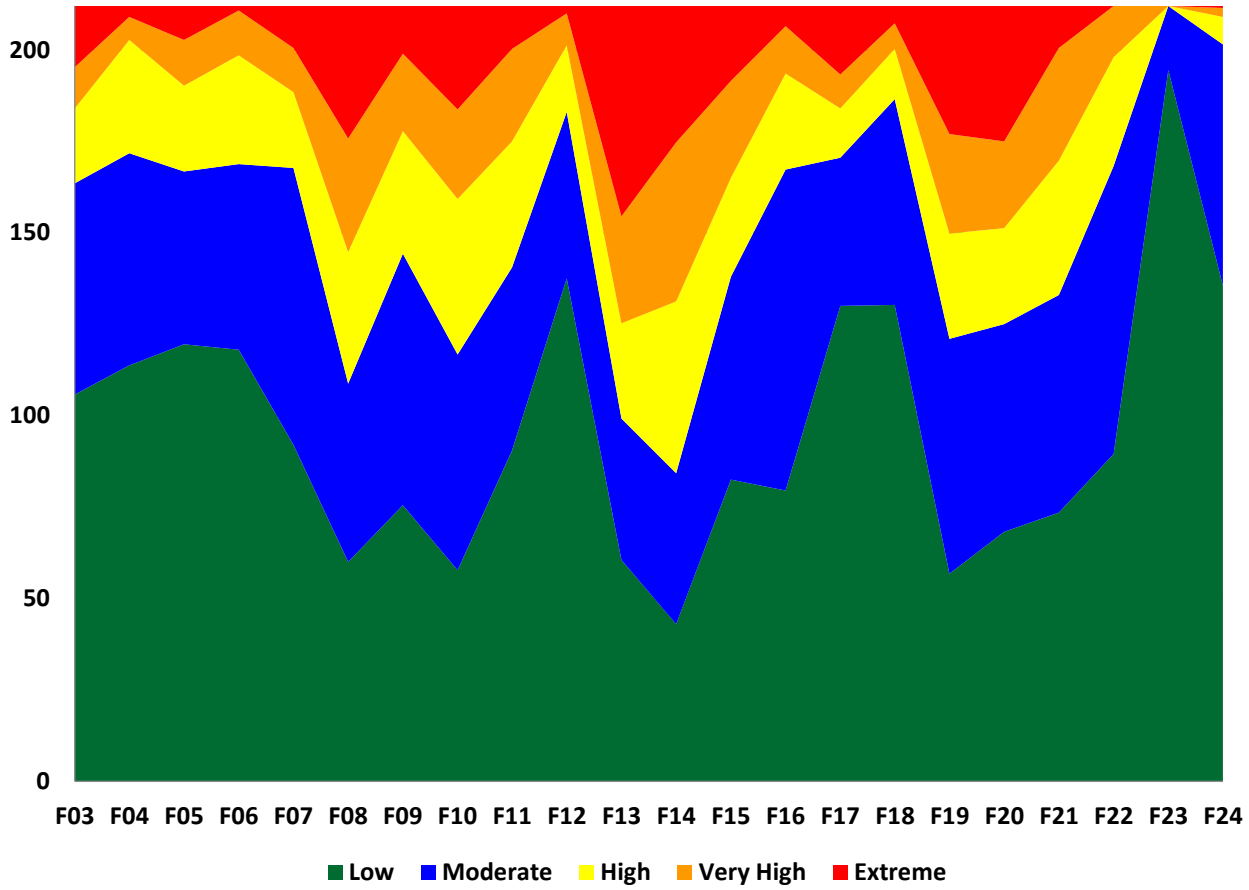
Photo: Timberlands operates a fleet of five fire appliances as part of our emergency response.

Monitoring Indicator MI11: Fire BUI, Ignitions, Loss of Area and Deployment days

Timberlands aim to be the industry leading forest fire fighting organisation in NZ. As part of our efforts to manage fire we monitor fire danger levels, the number of fires we attend, the area lost to fire and our contribution to deployments in NZ and abroad.

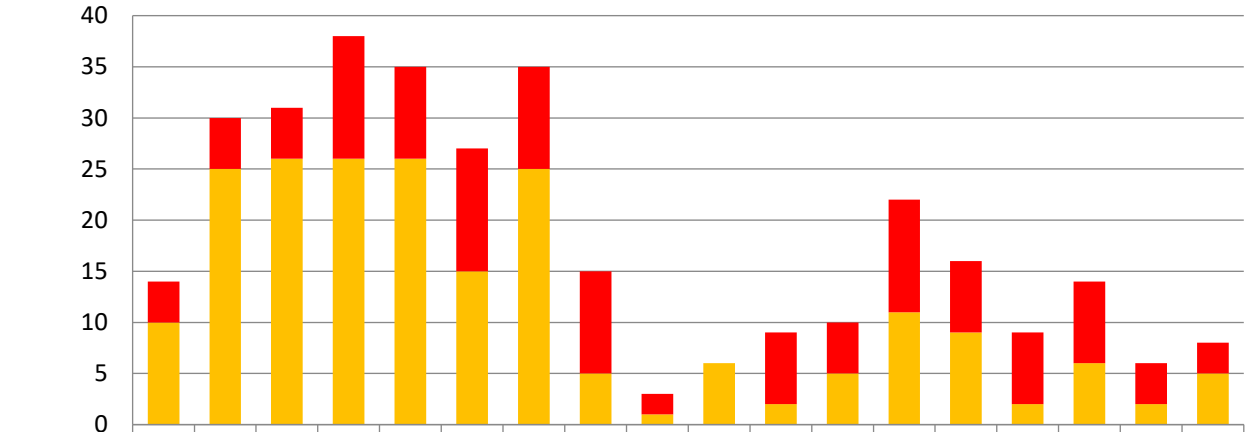
MI11a Fire Build Up Index

Timberlands uses Build Up Index (BUI) to understand fire risk and determine what resources should be on standby to respond to fire ingitions. This is most critical during the fire season, which is a 212 day period from from 1 October to 30 April each year. BUI is generally how dry condiitons are and is mostly affected by rain, or the lack of it. It can also indicate if dought conditions have been experienced. The graph below shows build up by fire danger categories where a considerable dry period occurred in F13 and F15, with a damper preiod until F21 where we experienced the least number of days in Low in our records. The F23 season was the wettest on record with only 18 days in moderate and none in High or above. F24 was also comparitvely wet.



MI11b Fire Ignitions Attended by Timberlands

In agreement with FENZ, Timberlands attend and manage fires both within and nearby the Kaingaroa Timberlands estate. Whilst our fire-fighting capacity is primarily for the forest, it also provides considerable public good and in general we manage more fires outside the forest than inside. The graph below shows how many fires we have attended each year. Of note is the decrease in fire ignitions since F14, due to wetter conditions, but also higher awareness resulting in less careless fires.

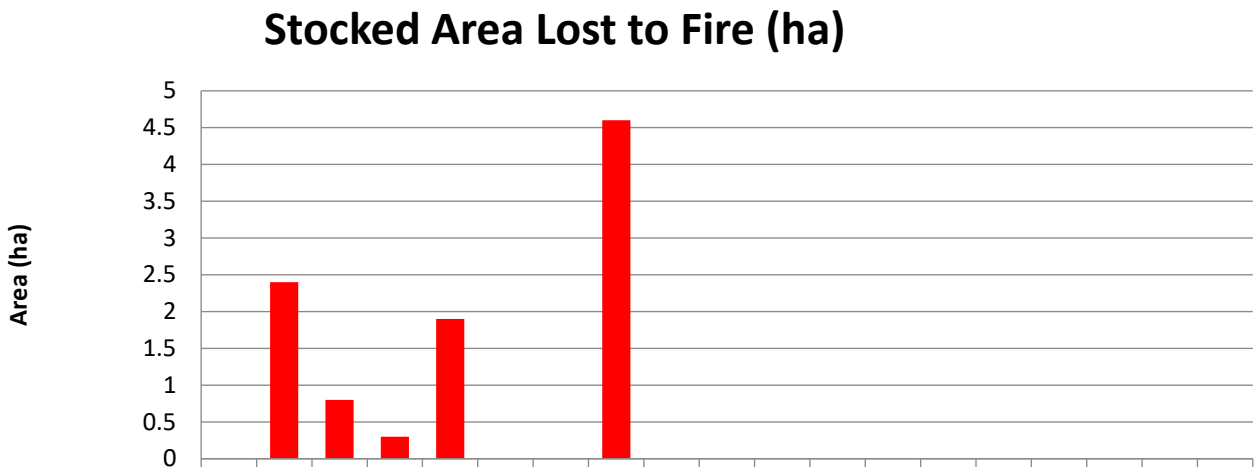


	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
In forest	4	5	5	12	9	12	10	10	2	0	7	5	11	7	7	8	4	3
Outside	10	25	26	26	26	15	25	5	1	6	2	5	11	9	2	6	2	5

Photo: Many fires inside the forest are machines that are quickly and professionally managed by our specialist fire-fighting contractors

MI11c Area Lost to Fire

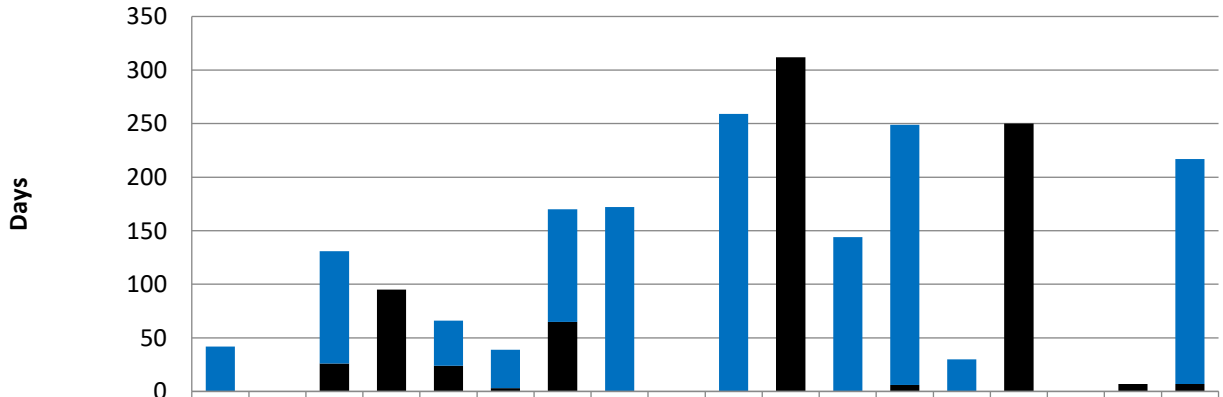
Timberlands' fire-fighting mantra is to hit fires hard and fast to supress them before they cause damage. A key indicator of this is the amount of stocked area lost to fires each year. The graph below shows this is small and no area has been lost over the past 9 years.



	F06	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Area Lost (ha)	0	2.4	0.8	0.3	1.9	0	0	4.6	0	0	0	0	0	0	0	0	0	0	0

MI11d Fire Deployment Days per Year

A key component of our fire-fighting capability is retaining trained and experienced fire fighters. As we have managed to minimise fire outbreaks in the Kaingaroa Timberlands estate the best way to gain experience is through deployment to other significant fires in NZ and overseas. We actively encourage our staff and contractor workers to participate in deployments and have gained great experience. It is also another way we can meaningfully contribute to the community. The graph below shows deployment days in NZ and internationally. In F24 we supported the Canadian fires with a Timberlands team.



	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
International	42	0	105	0	42	36	105	172	0	259	0	144	243	30	0	0	0	210
NZ	0	0	26	95	24	3	65	0	0	0	312	0	6	0	250	0	7	7

Monitoring Indicator MI12: Volume Carted On-Highway, Off-Highway and Rail

Kaingaroa Forest contains a significant off-highway network with over 300 km of key forest arterial roads. These link up to key customers such as Donelley in Reporoa and several processing plants in Kawerau. They also link to Timberland's rail head in Murupara. As a result, much of our log cartage does not enter onto public roads and when it does this in generally on State Highways rather than small district roads. In fact, we estimate only 3% of our volume is carted on district roads.

The grapth below shows that 50% of volume is transported to destinations that do not require public road tansport. The high use of rail also results in significant fuel reductions comapred to log trucks helping to minimise our carbon footprint.

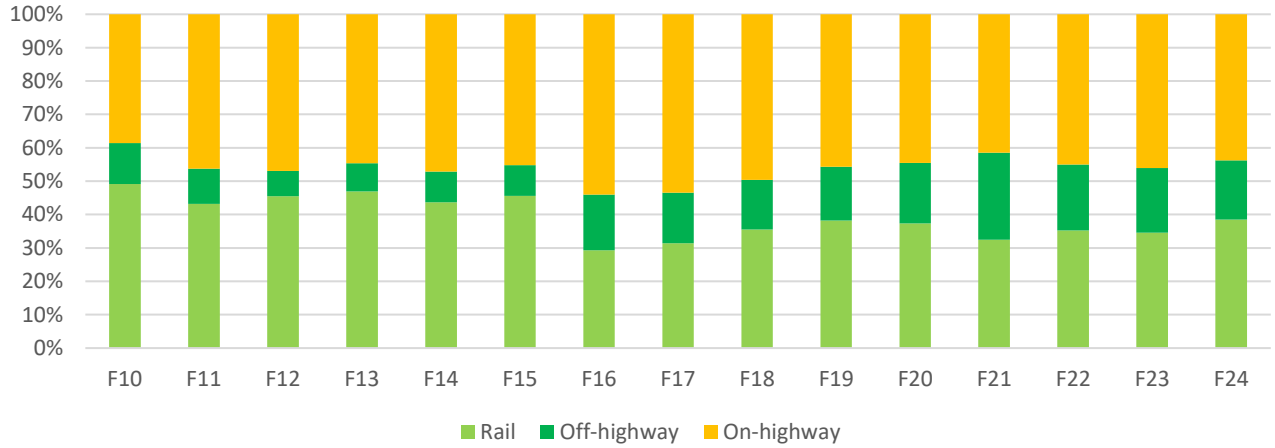


Photo: Timberlands contract a number of over-size, off highway trucks that make internal log transport efficient. Below is on example of a triple with a 150 tonne payload.

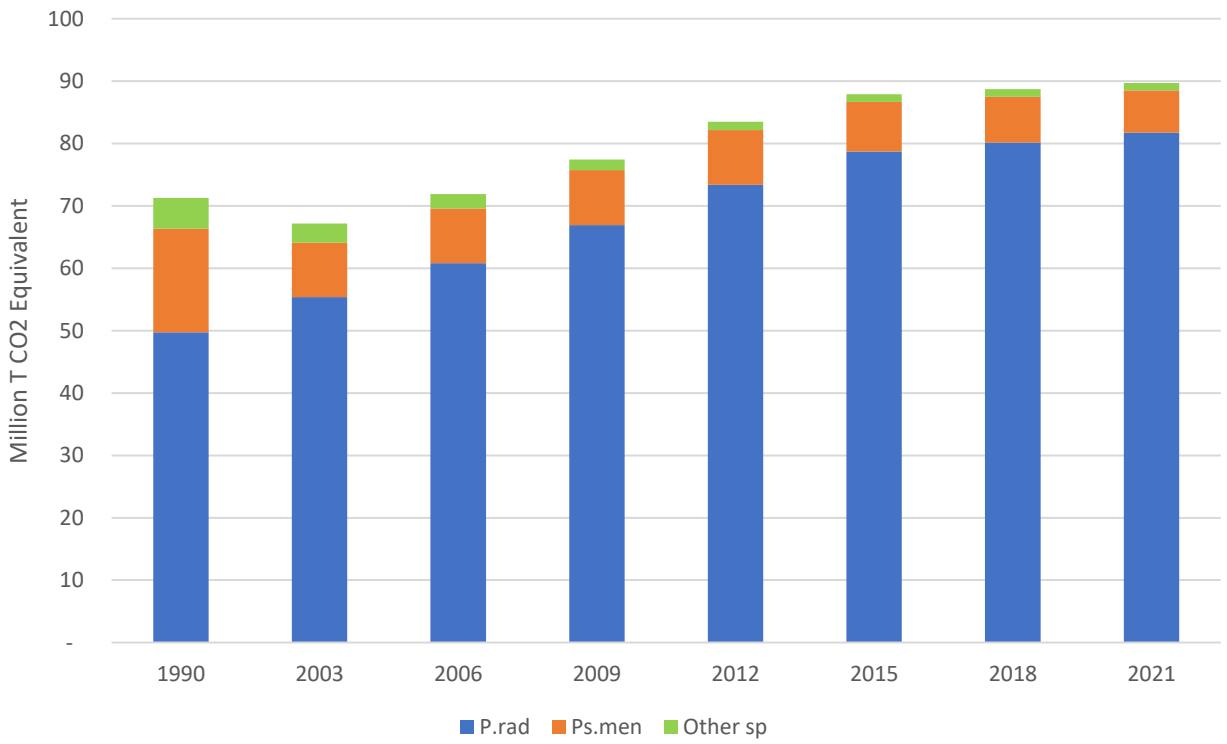
Monitoring Indicator MI13: Environmental Services

Timberlands are in the process of developing environmental service indicators. This is part of our draft strategic plan, yet to be finalised. Whilst we expect to include several indictors, two have been selected to date, carbon sequestration and rare species numbers.

MI13a Carbon Sequestration

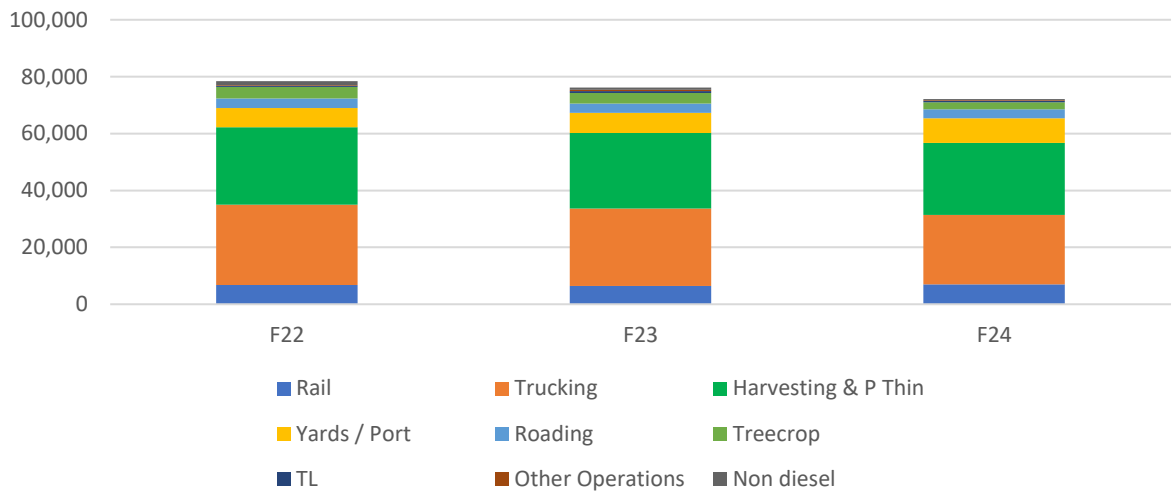
The graph below shows estimates of total carbon stored (CO2 Equivalent) by trees in the Kaingaroa Forest estate (except Tarawera) since 1990. Carbon storage at 30 June 2021 was 89.7 million tonnes. This is 18.4 million tonnes more that in 1990, the Kyoto benchmark date and 22.5 million tonnes more than when Timberlands assumed management of the forest in 2003. The key reasons for the increase are management decisions and genetics improving productivity and the raising of the harvest age from 22 to 28 by Timberlands. None of this additional stored carbon qualifies for trading under the ETS and has not been accounted for in NZ's national carbon inventory. Nevertheless, the sequestration represents a real reduction of atmospheric carbon. Note we have not offset this against emissions, for example fuel use, to manage the forest.

The annual sequestration of 1.25 million tonnes per year since Timberlands took over management offsets the equivalent annual emissions of 300,000 typical passenger vehicles, or the annual CO2 equivalent of approximately 600,000 dairy cows.



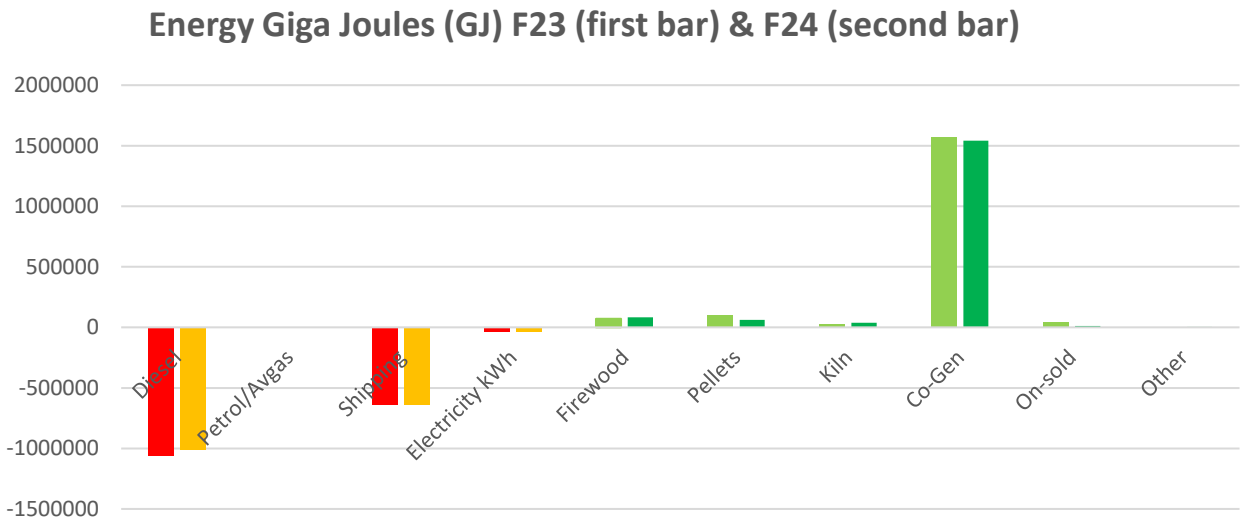
MI13b Supply Chain Fossil Fuel Emissions

Below show the last two years of fossil fuel emissions from predominantly diesel and petrol to manage the forest between the nursery and delivery of logs to processors and the port.



MI13c Energy Balance

The graph below shows the amount of energy consumed to undertake our business versus the amount of energy created by our products when used for energy, in Giga Joules. Our products were used to create 896,344 and 983,703 GJ more energy that we consumed in F23 and F24 respectively.



MI13e Rare Species Count

The Kaingaroa Timberlands estate generally provides good biodiversity habitat which supports several rare species that can be found either living in or utilising the forest. This provides a valuable contribution to protecting NZ's natural biodiversity and has persisted well with Timberlands' sustainable harvest (over 2-4 rotations) and mosaic of age classes. The graph below shows cumulative increasing rare species observations since F13 in the forest plantation areas and would increase significantly if natural reserves and streams were included. To date, 31 rare species have been reported within the plantations which includes; falcon, kokako, marsh crake, spotless crake, banded rail, kiwi, kaka, fern bird, whitehead, long tailed bat, 3 plants and 5 orchids. Several other species have been found in adjacent natural areas such as wetlands. This includes spotless crake, marsh crake, blue duck, prostrate kanuka and several fern species. In F22 weka and in F24 dabchick and an orchid *Gastrodia cooperae* were reported within the forest for the first time.

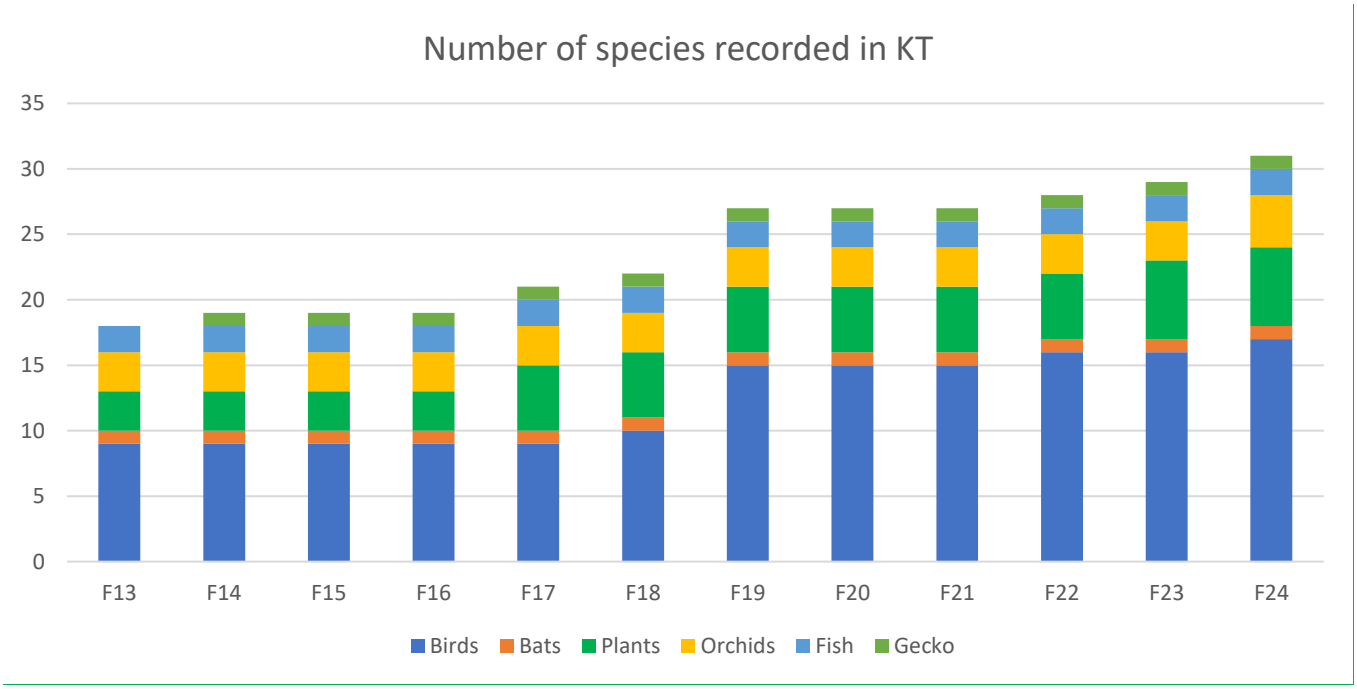
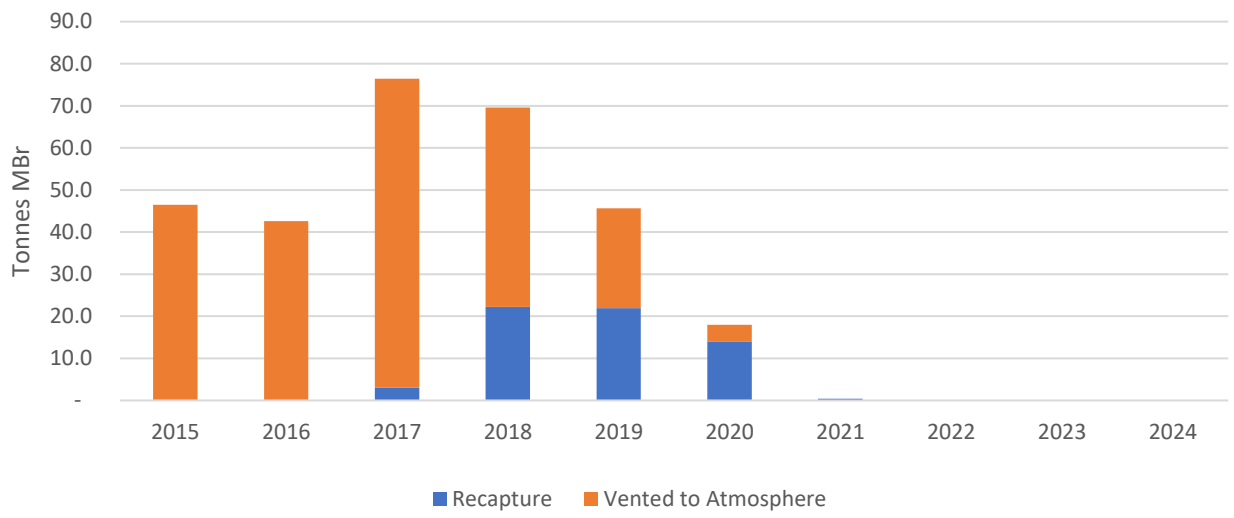


Photo: A bearded orchid found in Kaingaroa Forest

Monitoring Indicator MI14: Methyl Bromide Used

Methyl Bromide (MBr) is used to fumigate export logs at the Port of Tauranga. It is a colourless, odourless, non-flammable gas that can be toxic to humans and has been identified as an ozone depleting substance. NZ has signed up to international conventions that aim to eliminate MBr released into the atmosphere and have put in place national requirements to achieve this in 2020. Whilst, some technology is being developed and implemented to recapture, this is unlikely to achieve 100% re-capture by the target date, and potentially never. A non-chemical option is to debark logs and Timberlands have invested in a log de-barker at our Muruprara yard, with the aim of eliminating or recapturing all port applied MBr by October 2020. The graph below shows the total amount of MBr applied to Timberlands logs at the port, broken down into recaptured (with the application of the recapture technology) and vented to the atmosphere. By the end of 2022 Timberlands were not using Methyl bromide at the port.



Monitoring Indicator MI15: Strategic Plan Waste Monitoring

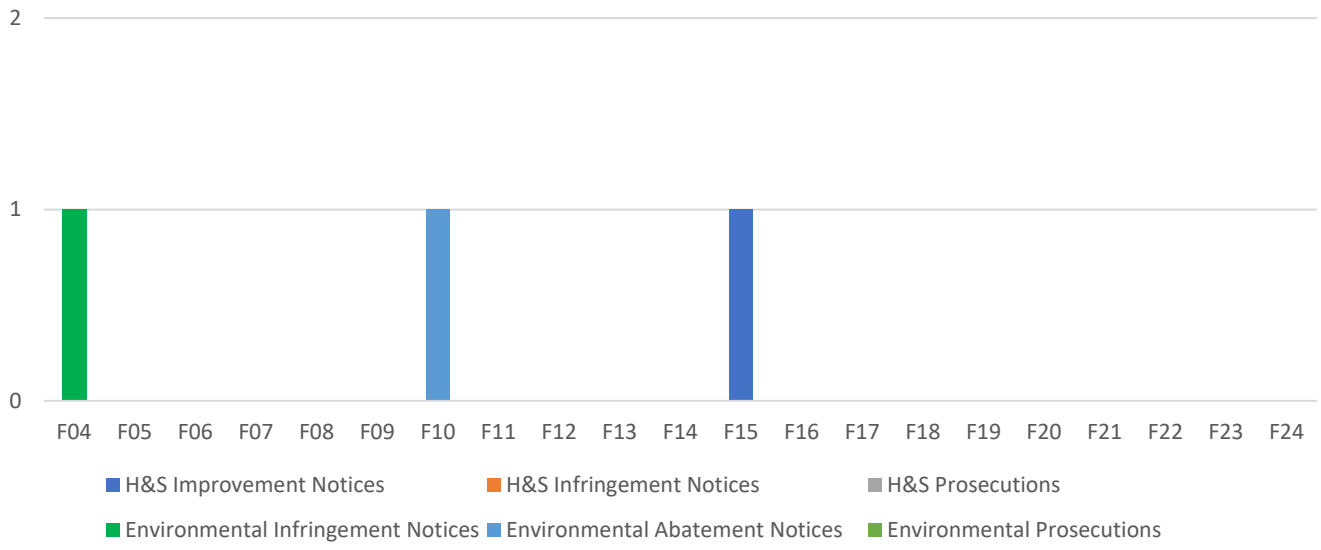
Timberlands' Strategic Plan waste management objective is being drafted and once endorsed we expect to develop a waste minimisation plan that will include waste indicators.

Monitoring Indicator MI16: HS&E Enforcement Notices

The number of enforcement notices is a useful, but lag, indicator of performance. Timberlands' performance since F04 is shown in the graph below, where we have received one infringement and one abatement notice from the BOP Regional Council and one safety improvement notice from Worksafe. All are low level of formal notice and were managed and closed at the time. We understand this is well below the industry norm.

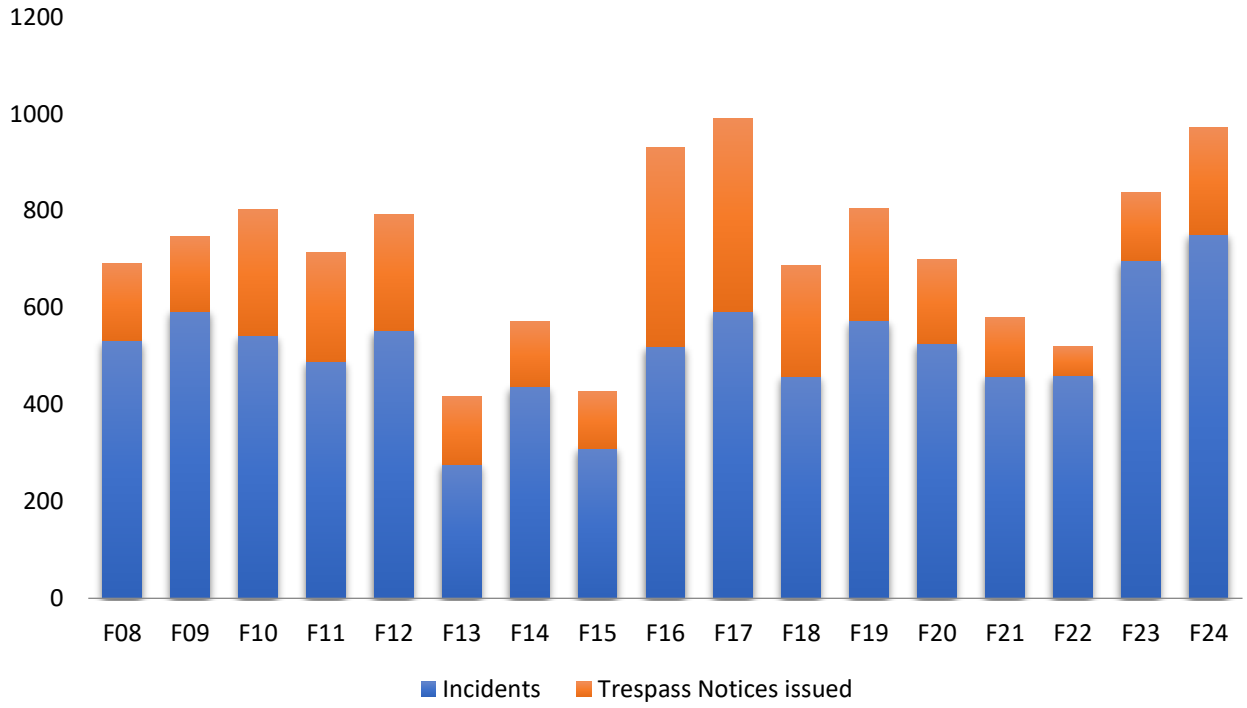
Both environmental infringements were earthworks operations, not sufficient to meet storm events in TMOT forest.

The safety improvement notice was from an incident when a contractor felled within two, but not one tree length from a public road.



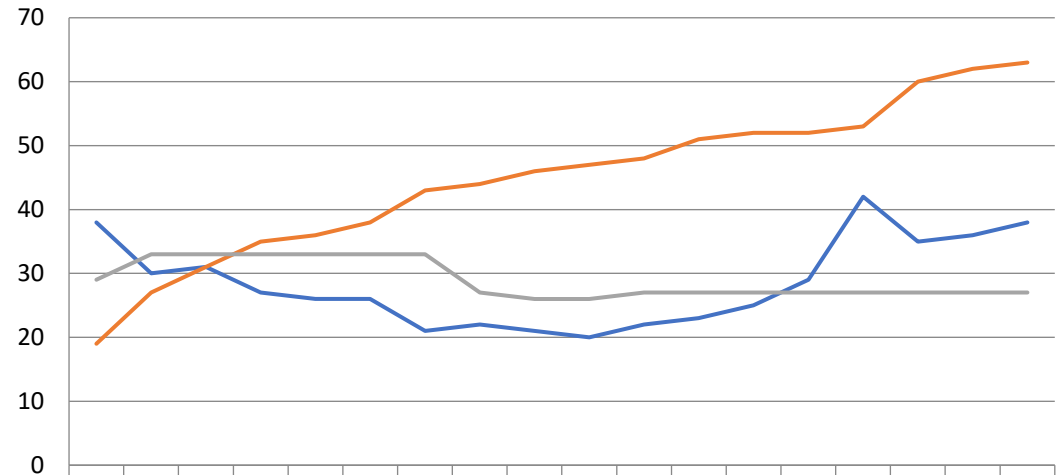
Monitoring Indicator MI17: Security Breach Reports

Forest security is important to help keep the forest safe and protect the forest asset and contractor equipment. Timberlands engage a full-time forest security contractor (FIRST) to manage security, undertake road safety monitoring and issue hunting and fishing permits. Where people are found in the forest without a valid permit they are likely to be issued with a trespass notice and if they fail to comply with the notice could face prosecution. The graph below shows security incidents and trespass notices issued. The notable increase from F16 is the result of a change of security contractor and re-focus on illegal access. The increase in F23 and F24 is likely due to more security patrolling.



Monitoring Indicator MI18: Resource Consent Register

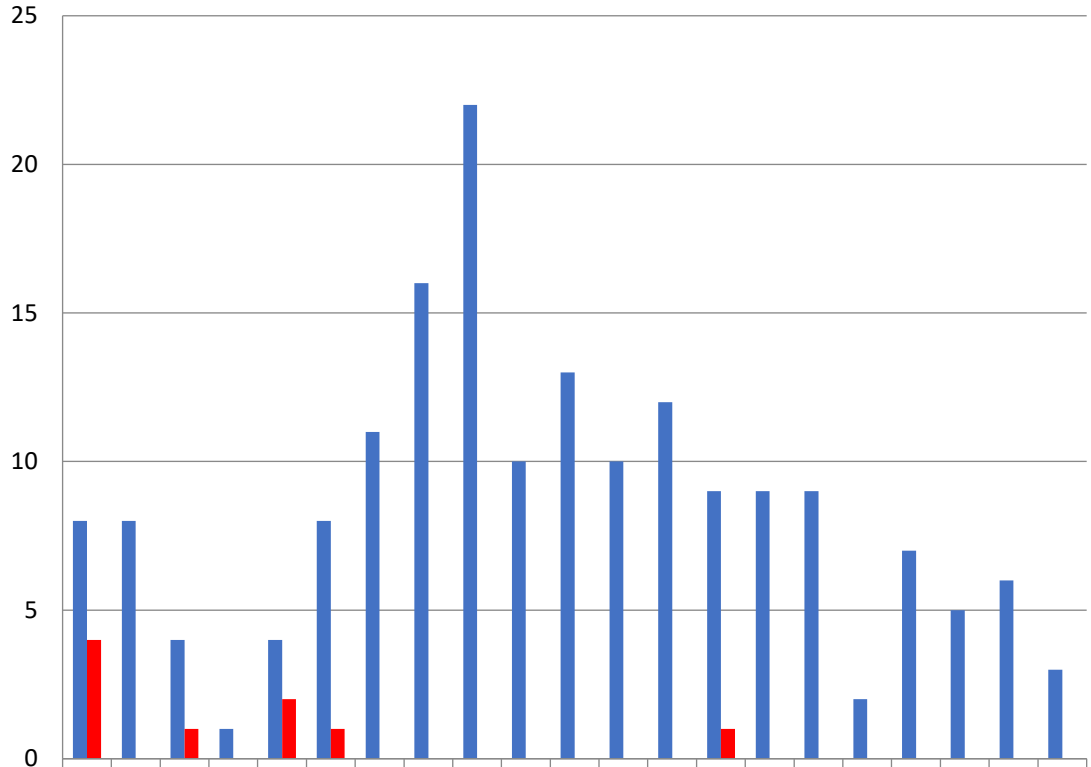
Timberlands operate in an environment and manner where resource consent is often required. The graph below shows the number of consents has decreased over time, primarily as regulation has recognised that the local operating conditions for Kaingaroa Forest is relatively benign.



	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Current Regional	38	30	31	27	26	26	21	22	21	20	22	23	25	29	42	35	36	38
Expired/Surrendered	19	27	31	35	36	38	43	44	46	47	48	51	52	52	53	60	62	63
Current District	29	33	33	33	33	33	33	27	26	26	27	27	27	27	27	27	27	27

Monitoring Indicator MI19: Complaints and Disputes

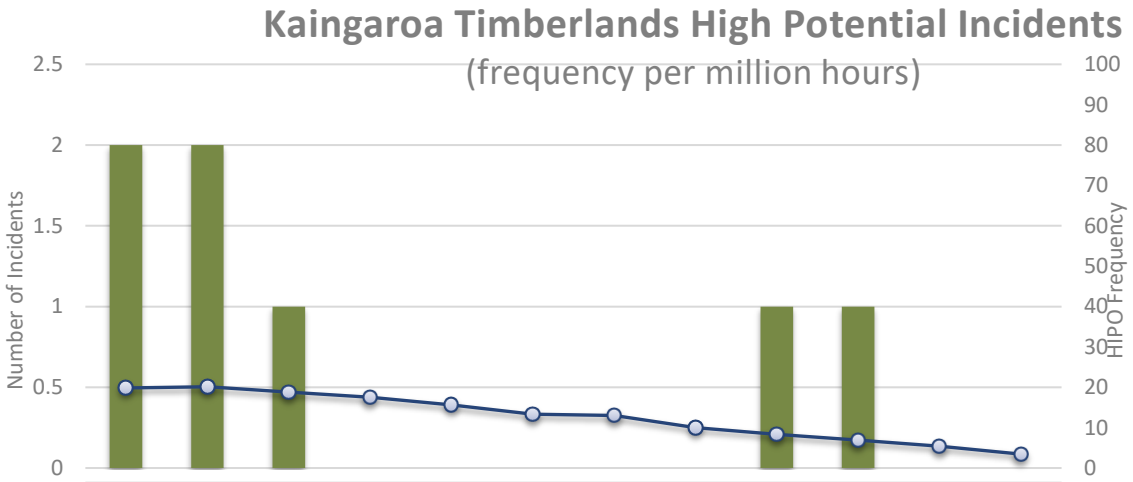
The number of formal complaints and disputes and our efforts to address these is a useful gauge on our community involvement. The graph below shows the number of complaints and disputes since F04 with a general reduction from F12 to a static level in the last 8 years. All complaints and disputes recorded in the graph have been resolved to our satisfaction.



	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Complaints	8	8	4	1	4	8	11	16	22	10	13	10	12	9	9	9	2	7	5	6	3
Disputes	4	0	1	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Monitoring Indicator MI20: H&S Reports – High Potential Incidents

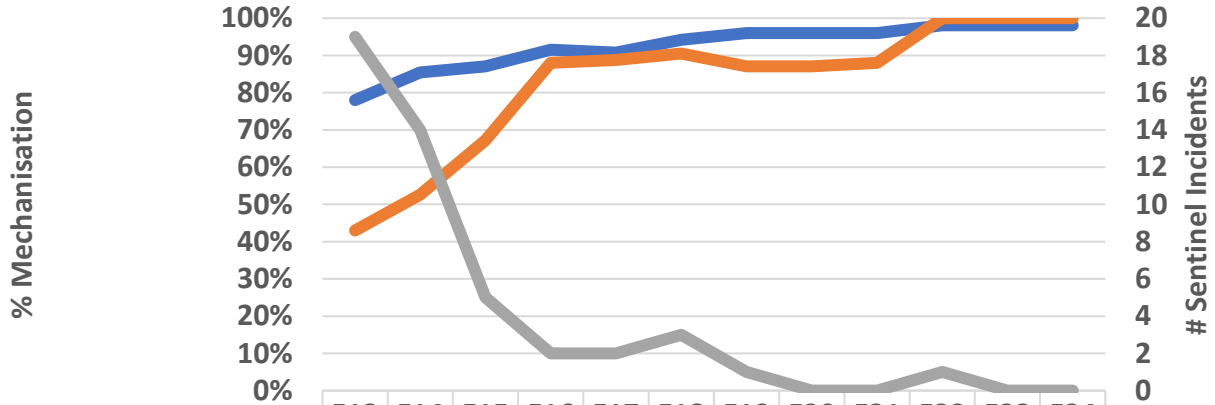
Timberlands consider incidents that have the potential to kill or seriously harm high potential, and we pay much higher attention to these through greater investigation and controls. High potential frequency is per million hours.



	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
HIPO	2	2	1	0	0	0	0	0	1	1	0	0
HIPOFR 12 month rolling	19.9	20.1	18.8	17.5	15.6	13.3	13.0	10.0	8.3	6.9	5.4	3.4

Monitoring Indicator MI21: Mechanisation

Manual tree felling and log processing pose a significant safety or sentinel risk and have led to several fatalities in the forest industry. Therefore, one of our key controls to address sentinel incidents is mechanisation of production falling and log processing, targeting 90% mechanisation. This provides a good lead safety indicator. The graph below shows a steady increase to 96% for production falling and 88% for processing. The graph also shows a corresponding decrease in sentinel incidents for harvesting, coinciding with the increase in mechanisation. As of F21 we longer measure mecahnisation. Primarily as we consider the initiative is now BAU. We will review and decide a new indicator.

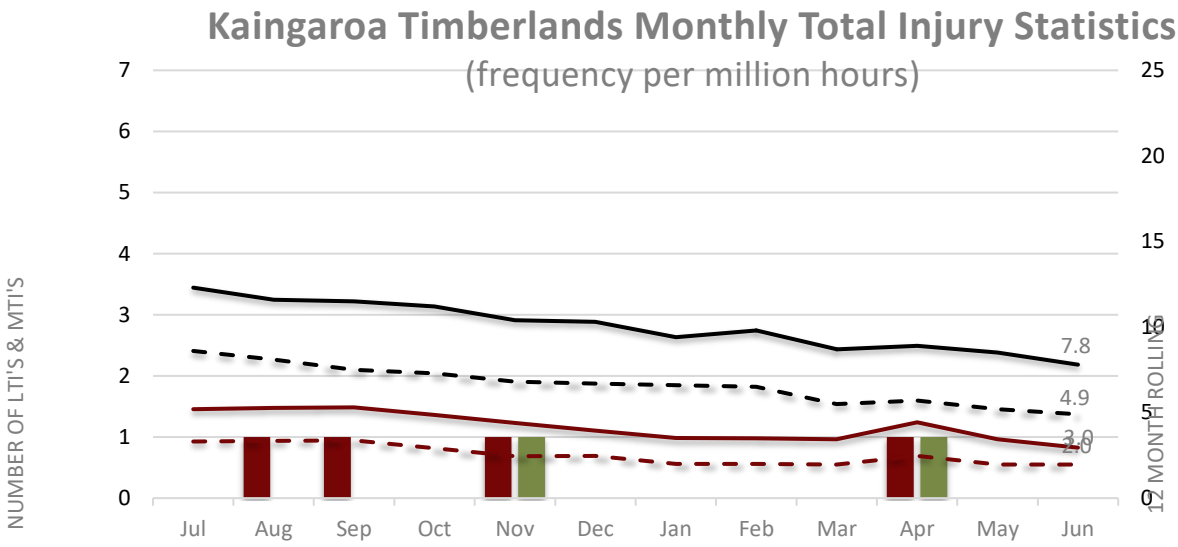


	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Falling	78%	85%	87%	92%	91%	94%	96%	96%	96%	98%	98%	98%
Log Processing	43%	53%	67%	88%	89%	91%	87%	87%	88%	100%	100%	100%
Sentinel Incidents	19	14	5	2	2	3	1	0	0	1	0	0

Photo: Tethered mechanised harvesting using a self-levelling machine

Monitoring Indicator MI22: Injury Frequency

Lost time injury frequency is a common lag indicator in safety management. Our performance is shown by each of our key business units and improves over time to levels now less than the industry average



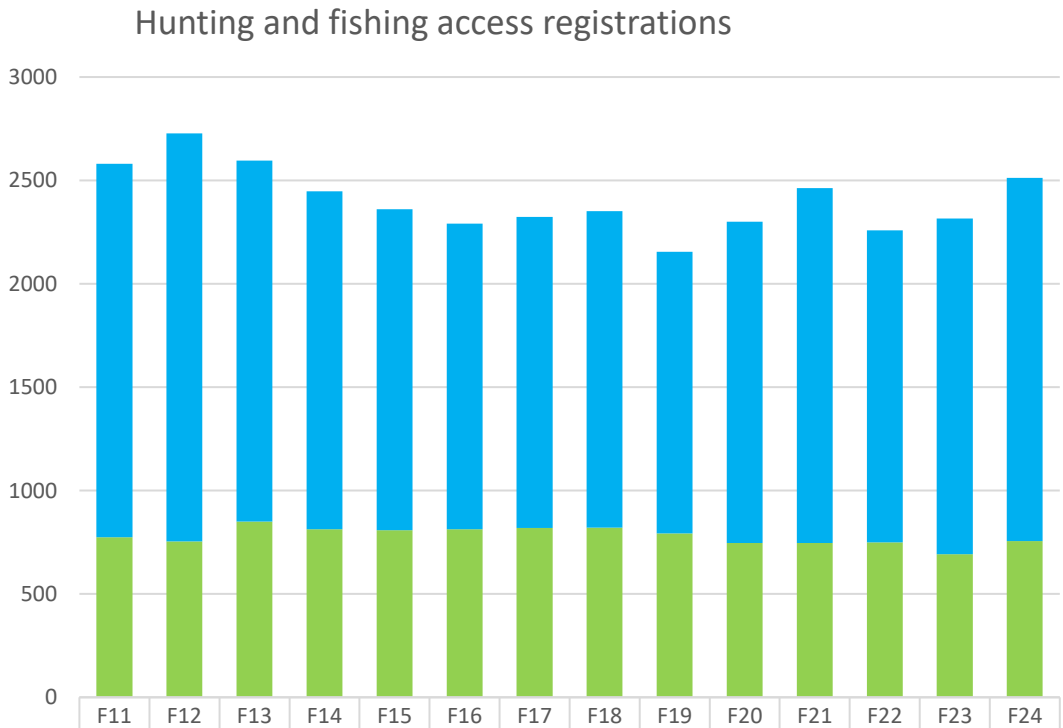
	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No of LTIs	0	1	1	0	1	0	0	0	0	1	0	0
No of MTIs	0	0	0	0	1	0	0	0	0	1	0	0
LTIFR	3.3	3.4	3.4	2.9	2.4	2.5	2.0	2.0	2.0	2.5	2.0	2.0
TIFR	5.2	5.3	5.3	4.9	4.4	3.9	3.5	3.5	3.4	4.4	3.4	3.0
Industry LTIFR	8.6	8.1	7.5	7.3	6.8	6.7	6.6	6.5	5.5	5.7	5.2	4.9
Industry TIFR	12.3	11.6	11.5	11.2	10.4	10.3	9.4	9.8	8.7	8.9	8.5	7.8

Monitoring Indicator MI23: Living Wage Index

Timberlands have committed to paying the living wage. We are now determining a living wage index for reporting.

Monitoring Indicator MI24: Beneficial iwi and Community Hunting / Fishing Registrations

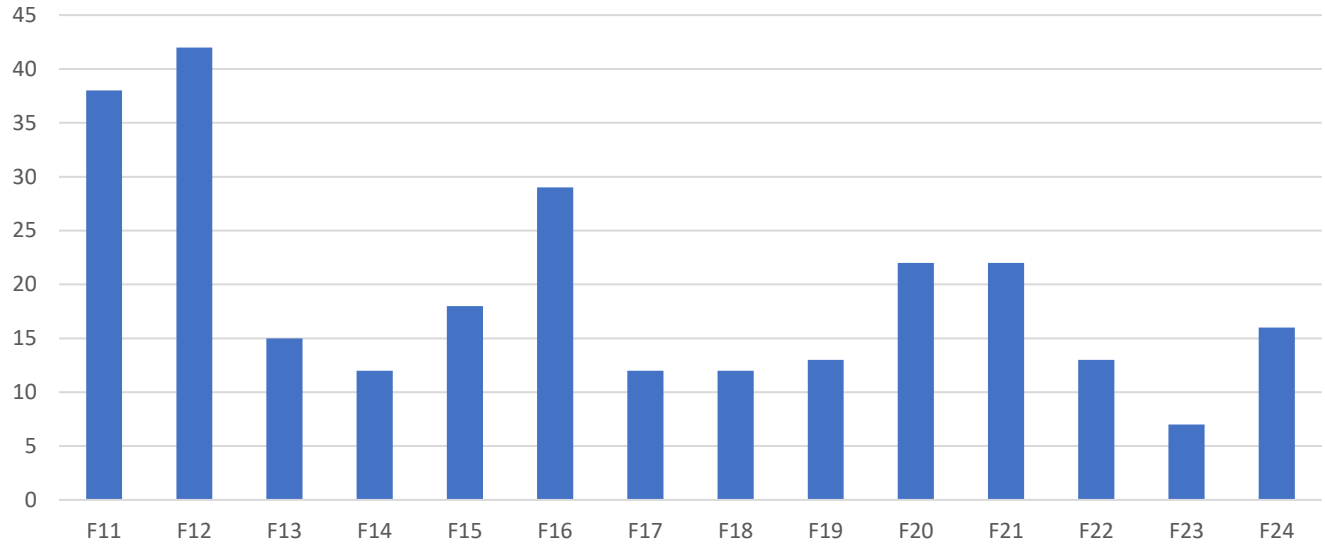
Access for hunting and fishing by permit is open from May to October each year in Kaingaroa, Rotoehu and Whirinaki Forests. This provides a significant public benefit where over 2,000 enjoy weekend access to the largest tract of private land for this purpose in New Zealand. Permit applicants are charged $50 each with access being relatively unencumbered. As part of the joint Kaingaroa Access Policy, beneficial landowners (iwi) are able to register for recreational access free of charge. Timberlands monitors how many beneficial land owners use the forest for recreation through the number of annual registrations.



	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Public	1806	1973	1746	1634	1551	1478	1504	1530	1362	1553	1716	1509	1624	1757
Benefical Land Owners	775	754	850	813	809	813	819	821	793	747	747	750	692	755

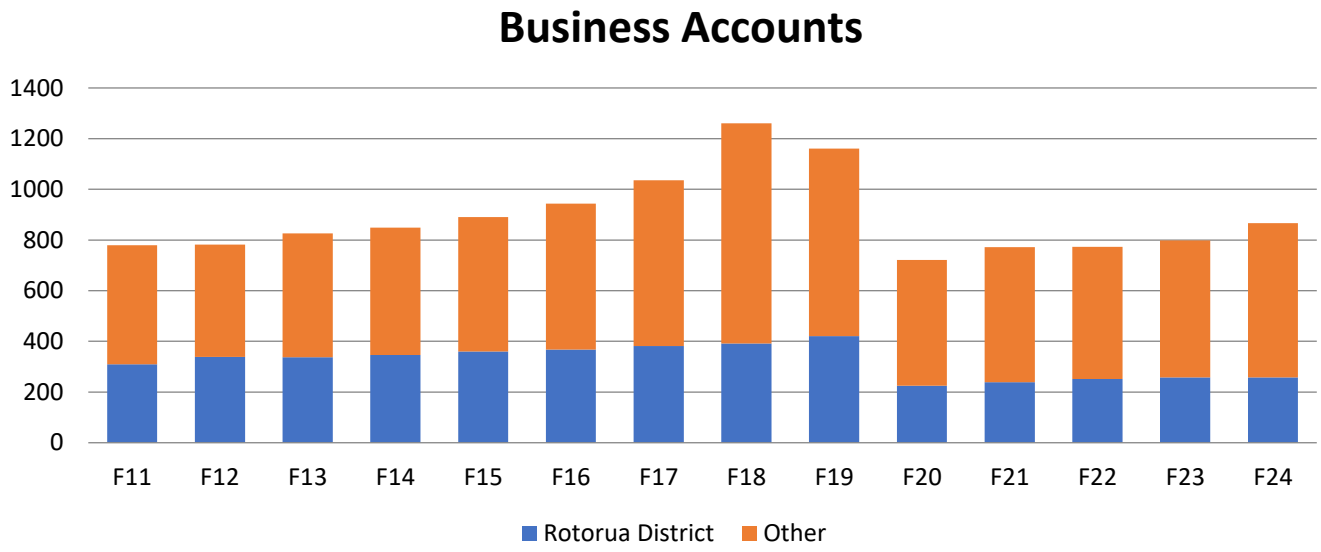
Monitoring Indicator MI25: Iwi Special Access Permits

A key aspect of the joint Kaingaroa Access Policy is the ability for iwi to gather food for special events (i.e. tangi or significant birthdays) outside the hunting season, including weekdays after 5pm in daylight savings. Access is closely managed to minimise risks and undertaken by joint approval with Timberlands and iwi. The access is well received but can at times be hindered by high fire danger or safety around forest operations. The graph below shows number of special access permits issued each year.



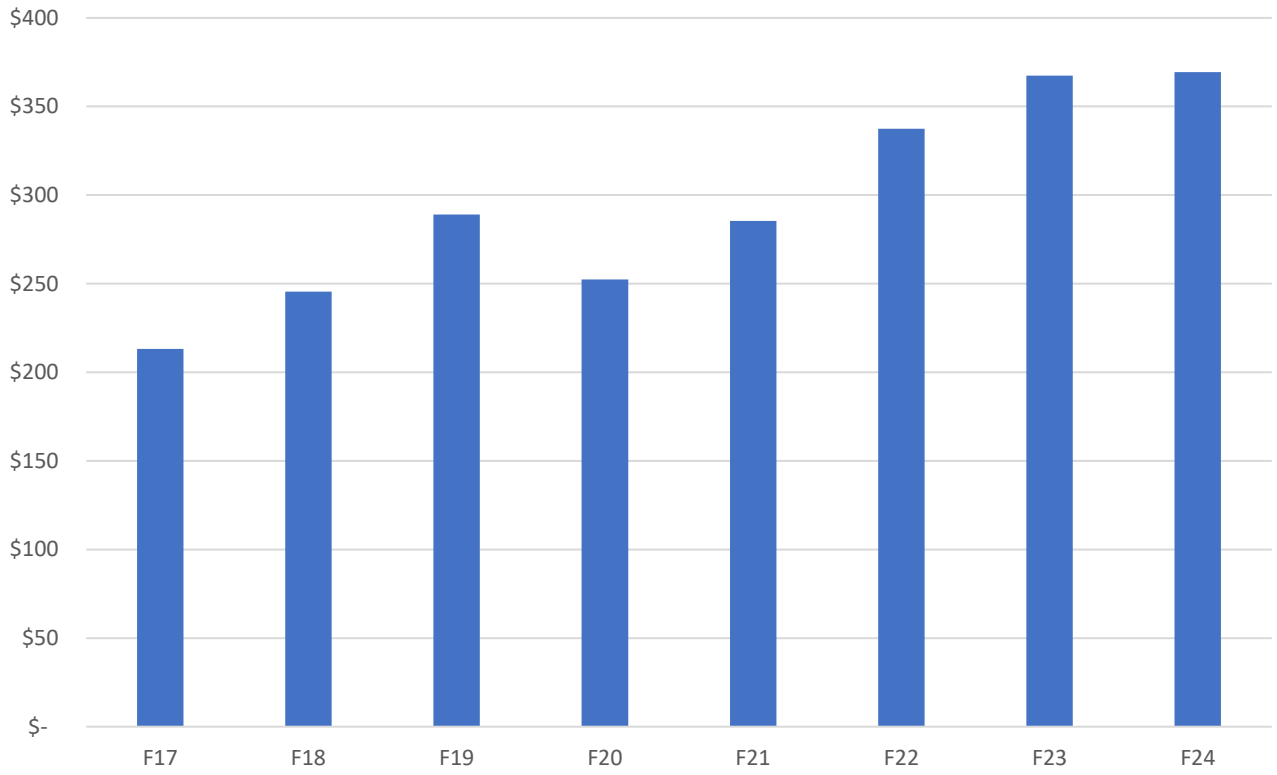
Monitoring Indicator MI26: Number of Local Businesses Used

Timberlands are a significant contributor to the local economy, primarily through our business expenditure. As an indicator we monitor the number of local businesses with open accounts. This represents large specialist forestry businesses with multi-million dollar contracts to small businesses where we sporadically purchase a product (i.e. Office Products). In F20 we changed our accounting system and reset our calculation of business accounts, dropping some that had been redundant.



Monitoring Indicator MI27: Business Operation Expenditure

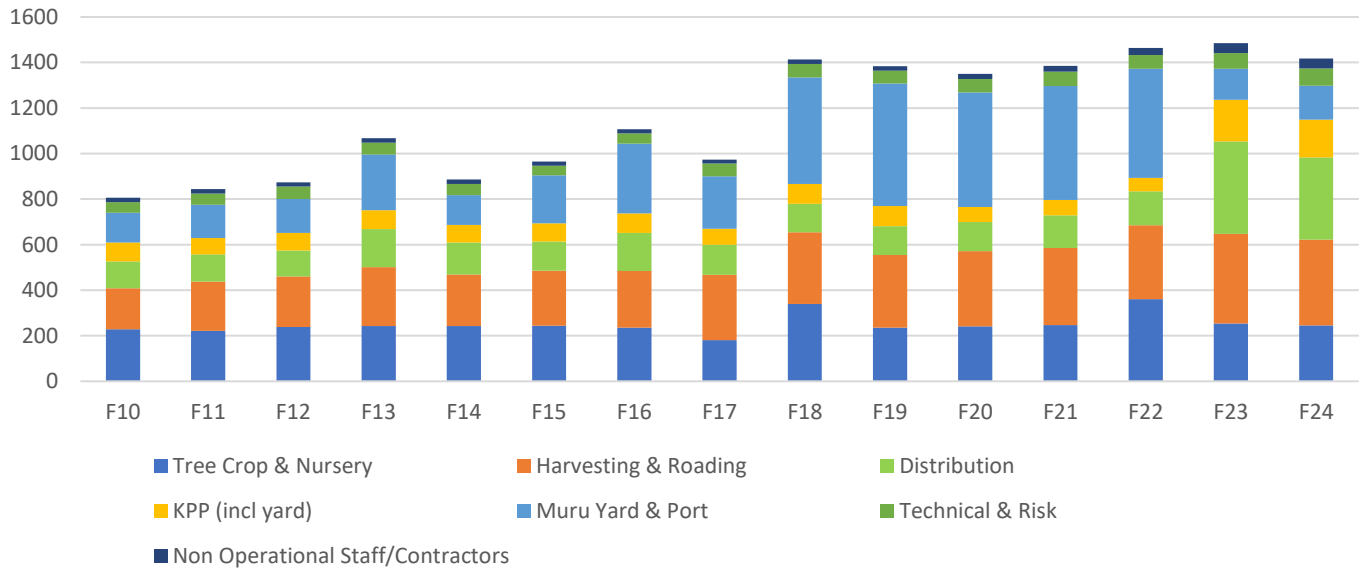
Another indicator on our community contribution is the amount we spend on operating our business. The graph below provides the total since F17.



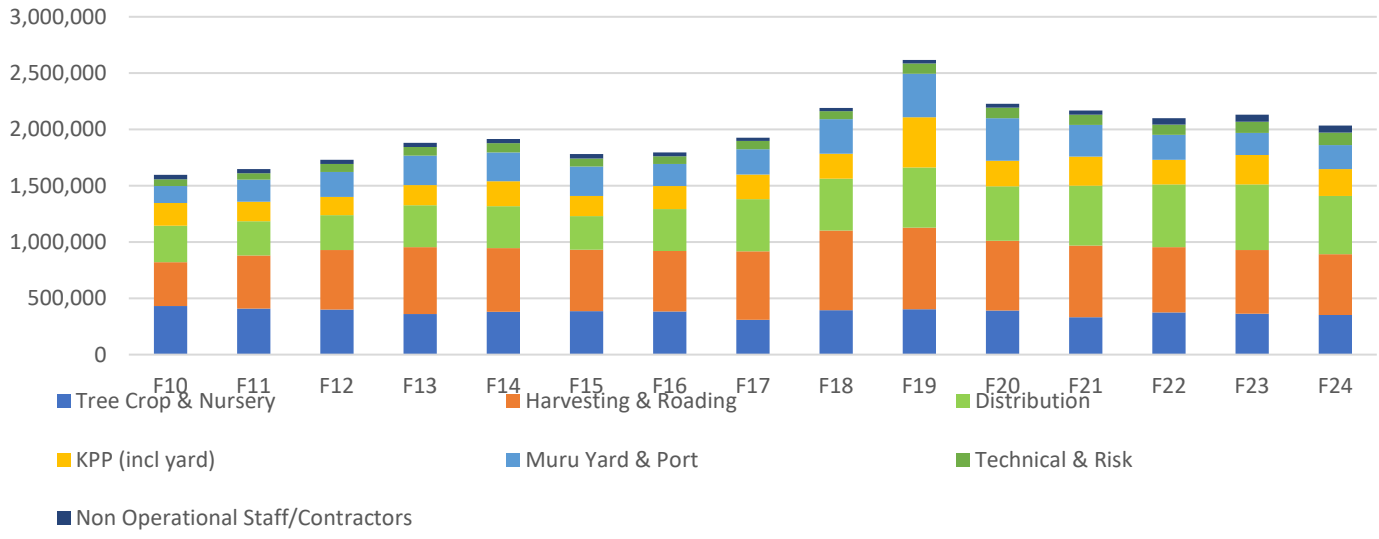
Monitoring Indicator MI28: Number of Workers Employed

Another useful indicator of Timberlands' community contribution is employment numbers and hours worked. The two graphs below show the number of people employed and hours worked annually by Timberlands staff and by contractors in each department. The trend helps demonstrate that the number of people employed has increased in conjunction with number of hours worked. Of note the number of people employed has increased which reflects port workers that work partially for Timberlands and partially for other companies. In F20 the Covid-19 lockdown had an effect on hours and people engaged.

MI28a Number of Workers Employed



MI28b Number of Hours Worked



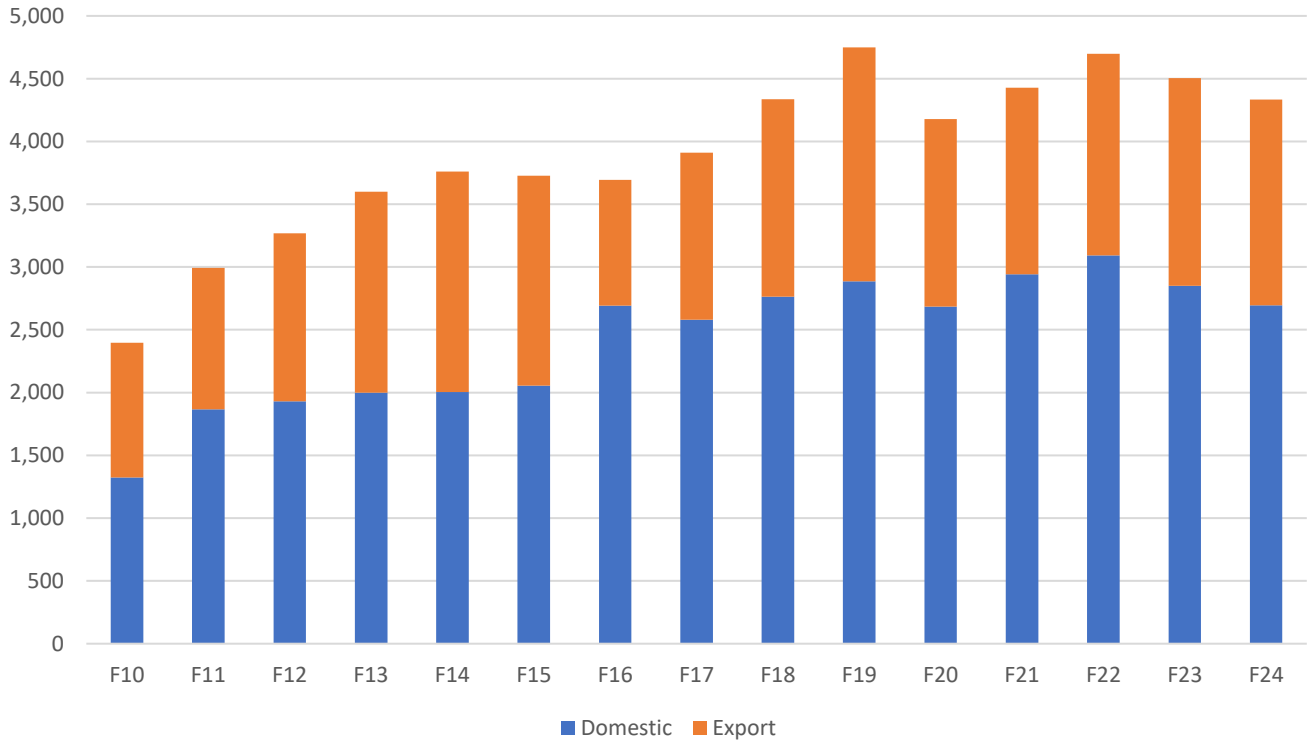
Monitoring Indicator MI29: Number of Customers / FSC and PEFC CoC Customers

To understand the demand for our certified logs Timberlands monitors the number of domestic customers and those with FSC and PEFC Chain of Custody (CoC). This helps determine how Timberlands contributes to the local economy and to the FSC supply chain. The number of domestic customers has decreased by volume of FSC logs sold domestically and the percentage of domestic customers with FSC has remained relatively static over time. To date no logs have been sold to customers under PEFC CoC.

Financial Year	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24
Number of Domestic Customers	31	34	38	35	31	31	30	33	33	41	39	33	33	32
Number with FSC CoC	22	25	25	22	17	19	19	24	21	24	24	24	22	22
Percentage with FSC CoC	71%	74%	66%	63%	55%	61%	63%	73%	64%	59%	62%	73%	67%	69%
Volume (000m3) sold to FSC CoC	1,462	1,689	2,156	2,011	1,925	2,539	2,600	2,782	2,616	2,511	2,961	2,861	2,638	2,539
Percentage volume sold to FSC CoC	54%	55%	60%	55%	52%	69%	63%	61%	55%	60%	63%	61%	59%	59%

Monitoring Indicator MI30: Domestic vs Export Volume

Timberlands aim to supply local processing first, where practical. The Bay of Plenty and Waikato have many sales options which allow Timberlands to sell around 62% to domestic markets. The remainder is exported. Export provides a useful market to sell volume fluctuations above those demanded locally and the graph shows increasing export volumes, but this decreases as a percentage of total harvest from 55% in F10 to 66% in F21. This is an increase of 1.3 to 2.9 million tonnes per year sold to domestic processing and represents a considerable contribution to increasing local processing capacity.



Monitoring Indicator MI31: Social Impact Assessment

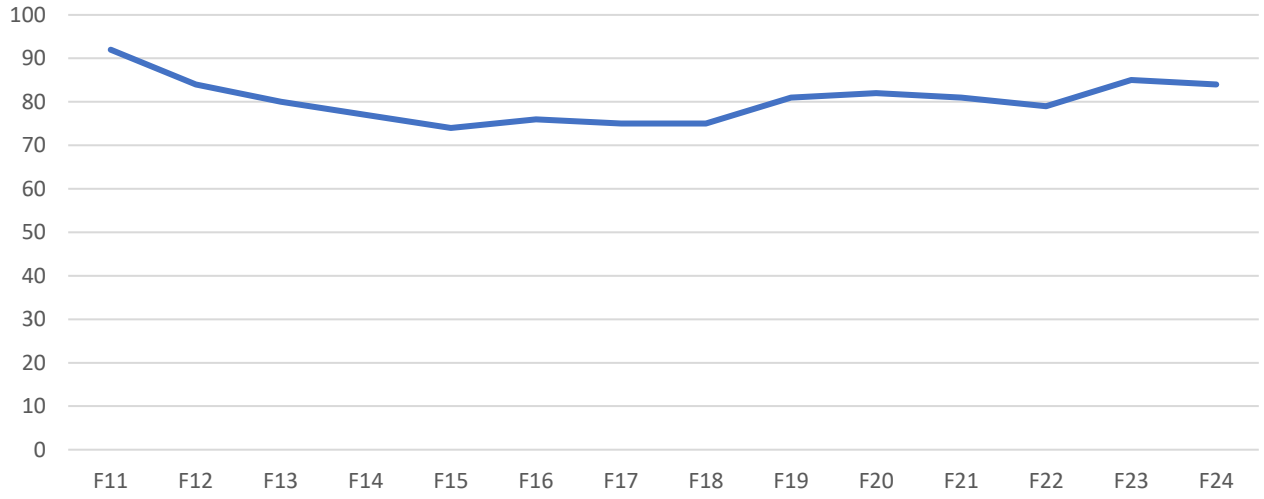
In accordance with our policies we undertake social impact assessments (SIA) when we undertake a significant business decision. Fortunately, these do not occur often. The table below shows SIA undertaken for significant business decisions.

Year	Social Impact Assessment for Significant Business Decisions	Summary
2005	Scaling down of harvest volume and harvesting contractor reduction.	• Forest inherited from FCF was being overcut. • Timberlands Plan to reduce cut and grow forest on to a high sustainable level. • Several harvesting contracts were not renewed, with most finding alternative works • Timberlands revised SIA procedures following review of process.
2104	Log marshalling contract tender	• Quality Marshalling contract expired and ISO won new contract in tender • Reviewed if a scale SIA required and did not meet significant business decision threshold, as was a tender following a contract expiry.
2015	ISO Log Scaling move from Murupara to Mount Maunganui.	• ISO proposed to move log scaling from Murupara to Tauranga, for efficiency and safety reasons. • People affected offered coverage of moving costs. • Did not meet significant business decision threshold.
2015	Harvesting log cartage contract tender	• FDL cartage contract was ending and Timberlands undertook a closed tender to local and scale providers. FDL contract extended for 1 year to allow process. • RFH won tender, FDL did not re-tender • Affected some truck drivers, but nature of industry, all were deemed to have opportunities elsewhere, however, some did not take this. • Lumbercube coming on line compounded the effect as this reduced the off-highway volume and

		some existing off-highway trucks no longer required. • Did not meet the significant business decision threshold, however, on review Timberlands decided to review the threshold for further SIA. • Complain and dispute from Tangata Whenua Wealth and Resources Authority claiming iwi mandate. On review and consultation with CNIIHL this group was found to have no mandate and were not a legal authority. The entity is a known activist group making false claims and issuing false permits, causing some safety issues. The dispute was not upheld by Timberlands.
2015	Cessation of pruning	• A review of pruning found that it was not financially viable. • Timberlands Decided to cease pruning and undertook a full SIA. • To minimise effect Timberlands phased pruning out, allowing a reduction in labour through natural attrition. Also found alternate work to keep people employed outside of planting season. • Processors raised concerns but have not agreed to pay pruned prices that would make pruning a worthwhile investment. • Pruning will cease in 2020 • Pruning re-commenced in F23

Monitoring Indicator MI32: Number of Log Grades Cut

The number of grades cut demonstrates the diversity of product that can be obtained from radiata pine and other species. Whilst the number of grades cut has decreased, this has generally been from consolidating products and has not decreased the diversity of product. It is also an indicator of log making mechanisation which is more efficient with less log grades.

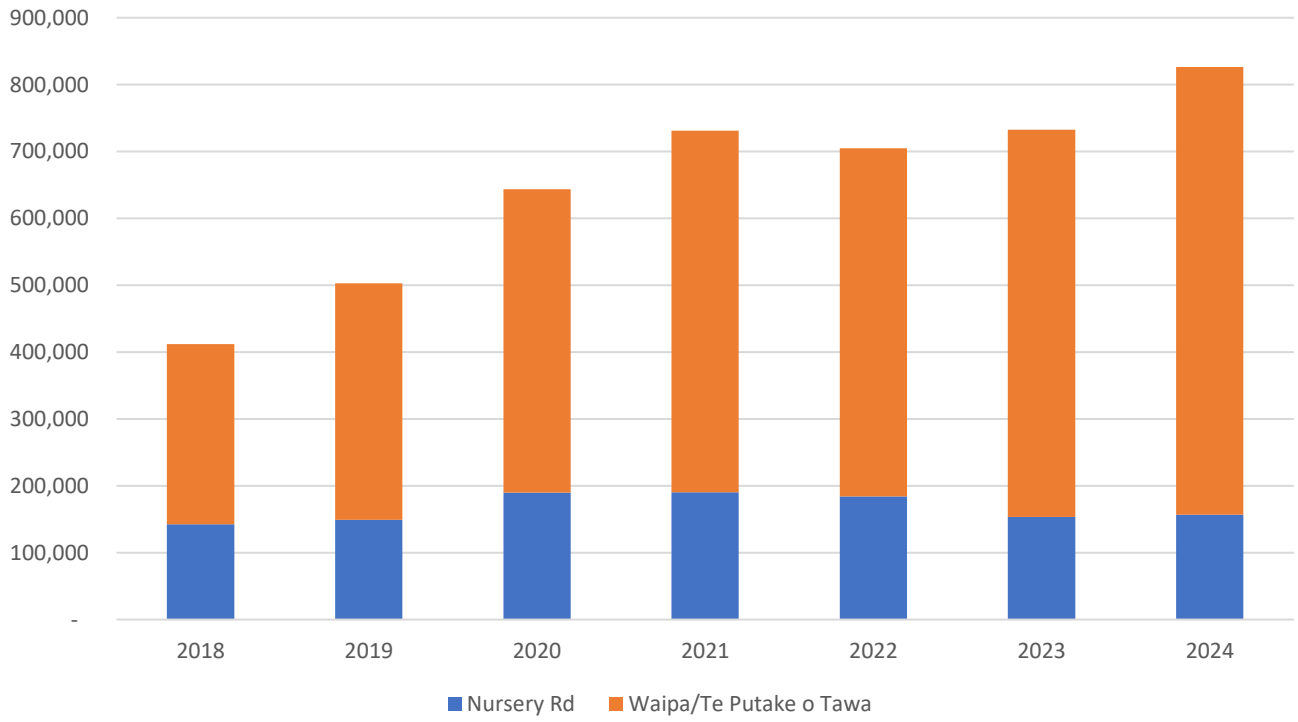


Monitoring Indicator MI33: Whakarewarewa Recreation Visits and Events

Whakrewarewa Forest represents the gem of our community recreation contribution. The forest is world renowned for mountain biking, but also offers walking, horse riding and event opportunities. Timberlands in conjunction with local iwi and the Rotorua Lakes Council (RLC) monitor the number of visits and events to ensure numbers increase and the experience is retained.

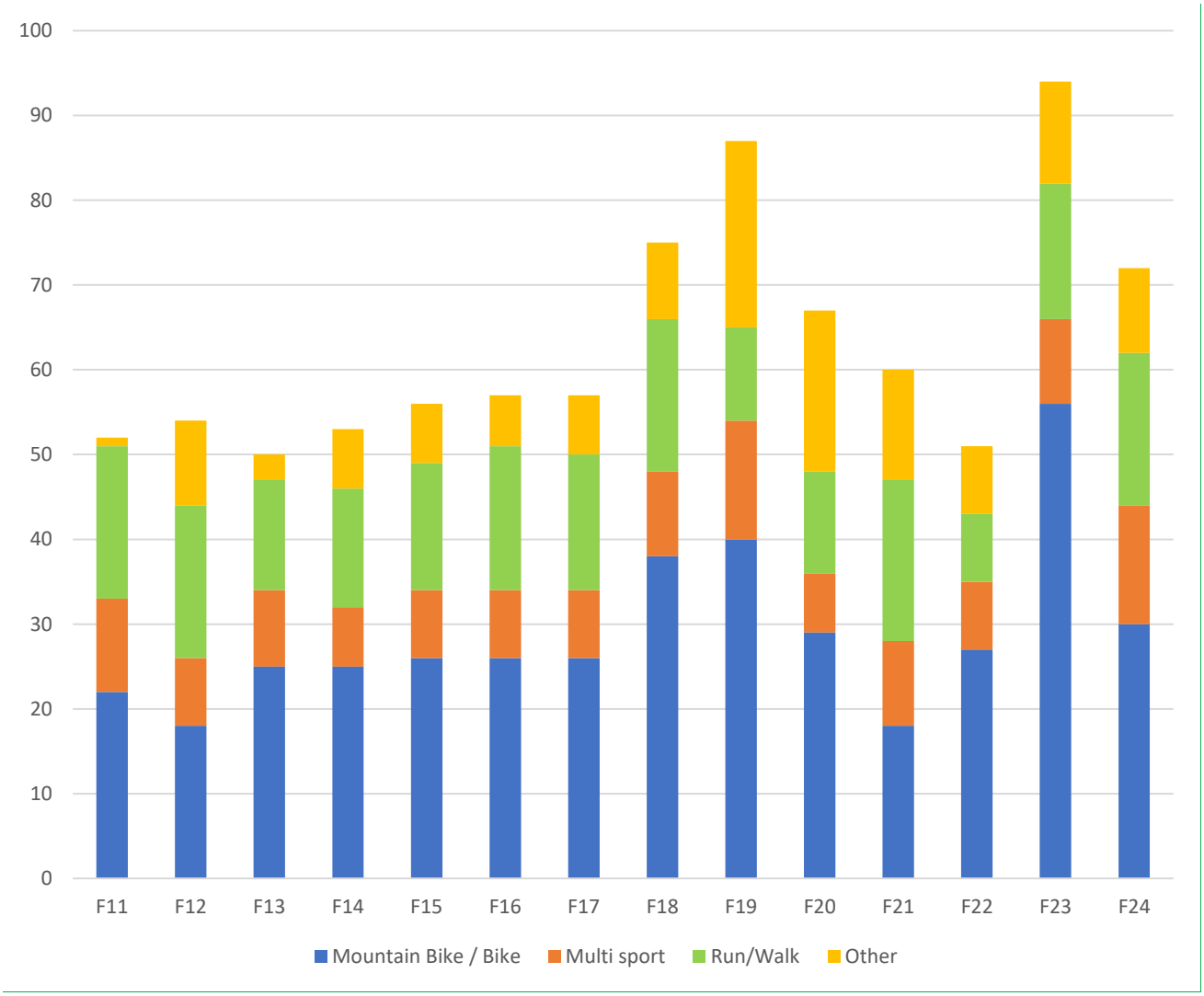
MI33a Whakarewarewa Access Counters

Whakarewarewa Forest contains a number of public access points and RLC have recently established counters at 2 key entry points: Nursery Road and the Waipa bridge. The counters measure the number of people on bikes and foot. that pass by. As these will mostly be return passes the actual number of people should be halved. The results show that over 500,000 passes or over 250,000 entries occur in a year. The 2020 results show an increase. Noting there are several other entry points that will significantly add to the number of visitors.



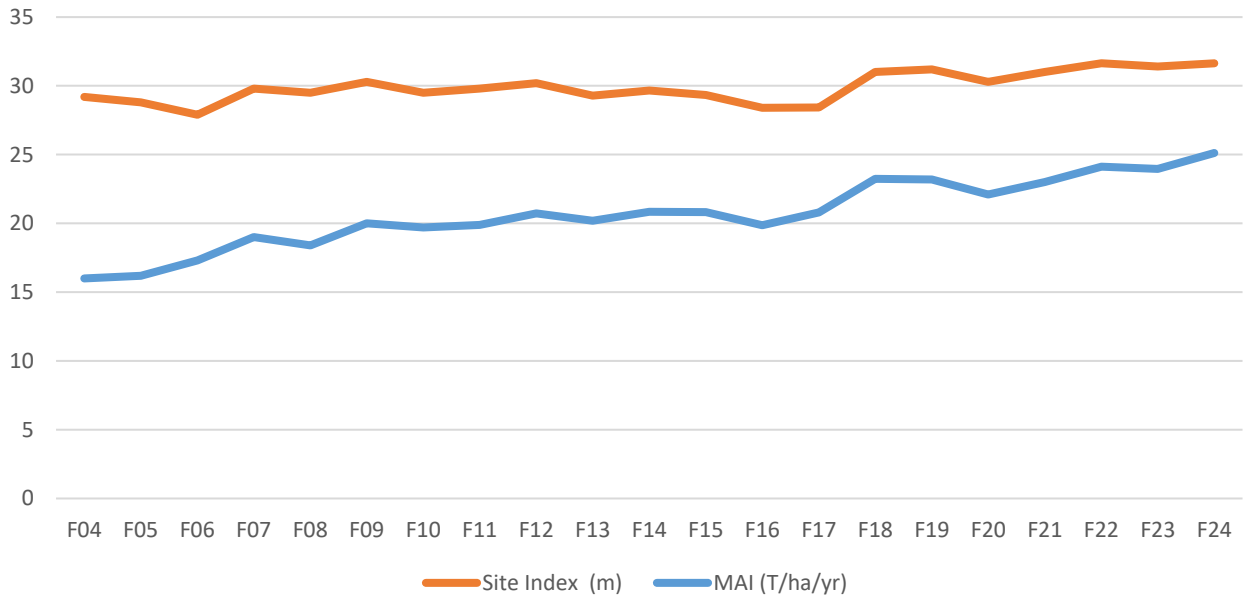
MI33b Whakarewarewa Events

Whakarewaerwa forest is a popular forest for events, in particular mountain biking and running events, which is another good indicator of the contribution the forest estate makes to the local community. The table below shows the number of events by type with 67 events in F19. The increase can be attributed to the inclusion of some Tokorangi events as they are now managed as one with Whakarewarewa for recreation.

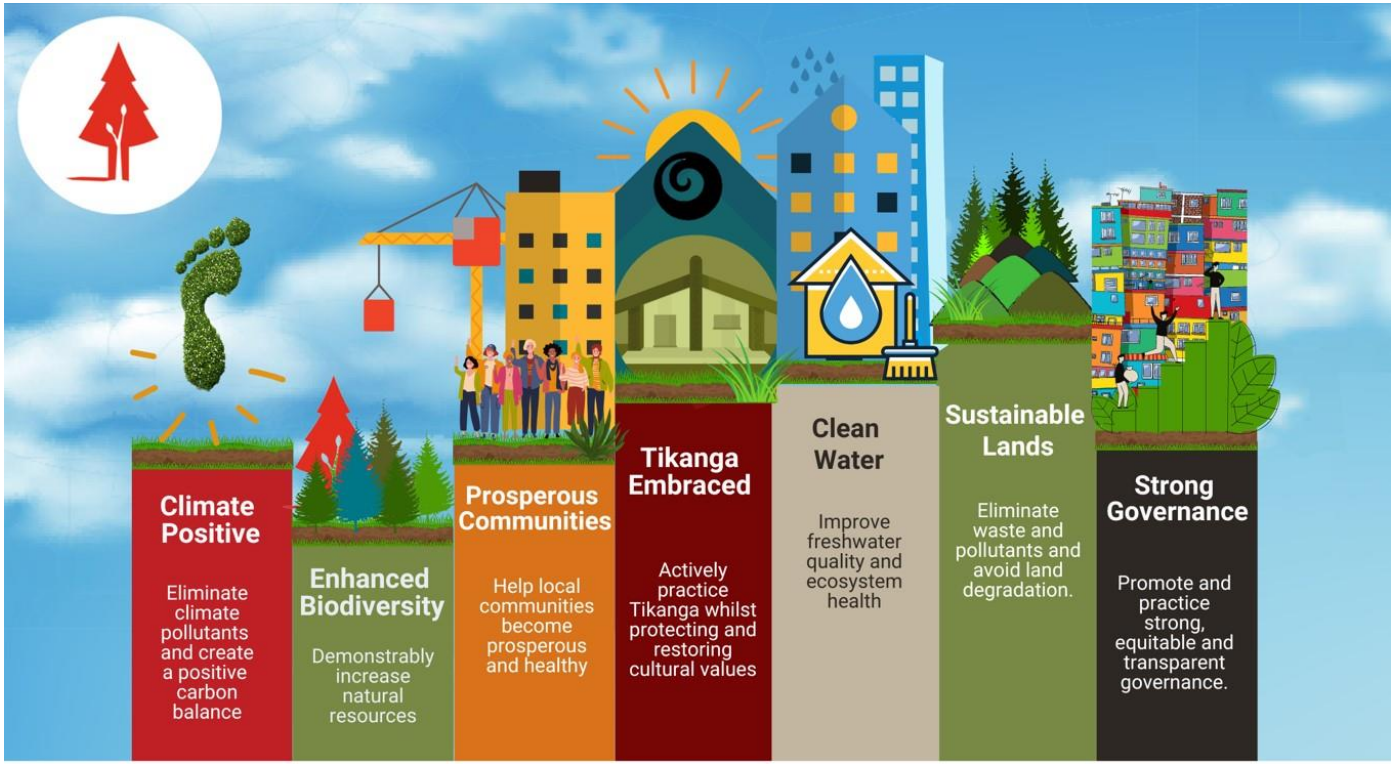


Monitoring Indicator MI34: Mean Annual Increment

Mean annual increment (MAI) represents a useful measure of productivity and an indicator of the progress towards the 50by50 target of 50 MAI. MAI is the mean volume grown annually on average across the forest in tonnes per hectare. In F04 this was measured at 16 m^3/ha and has increased to 25 m^3/ha representing a 38% improvement. We also track this against Site Index which is the mean top height in metres of the tallest 100 trees per hectare. This generally follows MAI as they are related measures.



APPENDIX 3: TIMBERLANDS RESORATIVE DEVELOPMENT GOALS



TIMBERLANDS RESTORATIVE DEVELOPMENT GOALS 2050

1 Climate Positive: Eliminate climate pollutants and create a positive carbon balance

by 2050 we will...	not be using fossil fuels.
by 2050 we will...	be energy positive where our products generate more energy than we use.
by 2050 we will...	be energy efficient.
by 2050 we will...	balance our net carbon sink with emissions reductions to be climate positive.

2 Enhanced Biodiversity: Demonstrably increase natural biodiversity

by 2050 we will...	actively manage a minimum of 10% of the land area primarily for conservation and/or cultural values under ar iwi endorsed plan.
by 2050 we will...	have measurable improvements in rare species populations and reintroduced at least two rare species.
by 2050 we will...	measurably increased a natural biodiversity score within our production environment.
by 2050 we will...	become predator free
by 2050 we will...	be free of identified significant pest plants.
by 2050 we will...	eliminate wilding conifers (by 2070).
by 2050 we will...	have restored wetlands over 1 ha in size.

3 Prosperous Communities : Help local communities become prosperous

by 2050 we will...	allocate a portion of our profit to be realised in community initiatives addressing local poverty and health.
by 2050 we will...	have an employment pathway where people from disadvantaged local communities become engaged in all facets of our workforce.
by 2050 we will...	pay workers in our supply chain at least the living wage, and determine a prosperous wage to pay full time, skilled and experienced workers
by 2050 we will...	be recognised as Aotearoa -New Zealand's best forest for recreational activity.
by 2050 we will...	non-timber products contribute 5% of EBITDA and provide a meaningful number of additional jobs.

4 Tikanga Embraced | Actively practice Tikanga while protecting& restoring cultural values.

by 2050 we will...	have tikanga imbedded in our management and environmental protocols and practice
by 2050 we will...	actively practice matauranga Māori.
by 2050 we will...	have active management plans that conserve and restore cultural and heritage sites.

5 Clean Water | Improve freshwater quality and ecosystem health

by 2050 we will…	ensure permanently flowing streams have a minimum 10 metre riparian setback.
by 2050 we will…	ensure instream characteristics show improvements in the mauri of the waterway.
by 2050 we will…	ensure instream characteristics reflect natural conditions including, but not limited to; suspended solids, temperature, nutrients and the absence of pesticides and other pollutants.
by 2050 we will…	ensure permanent stream crossings provide suitable fish passage.
by 2050 we will…	design and construct infrastructure to sustain a 1% AEP weather event.

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6 Sustainable Lands | Eliminate waste and pollutants and avoid land degradation

by 2050 we will...	not dispose of inorganic waste in forest and waste will be reused, recycled, composted or cleanly disposed offsite.
by 2050 we will...	only use non -polluting or biodegradable oils and fluids.
by 2050 we will...	map and understand soil and soil processes, to minimise soil disruption during. operations and in storm events.
by 2050 we will...	manage operations to sustain a 1% AEP weather event.
by 2050 we will...	not use highly hazardous pesticides.

COLIN MAUNDER

7 STRONG GOVERNANCE
Promote & practice strong, equitable & transparent governance.

by 2050 we will...	purchase from suppliers and supply customers who reflect our values and vision.
by 2050 we will...	transparently disclose progress towards our targets in a formal and publicly available ESG report.
by 2050 we will...	tell our story and promote our sustainability credentials.
by 2050 we will...	be actively researching, understanding and applying leading science-based environmental metrics and restoration practices.
by 2050 we will...	have undertaken a just transition and continue to ensure non-negotiables are met, with focus on; compliance with legal, voluntary and certification standards, avoiding degradation in quality, practicing equality and understanding and managing risk.
by 2050 we will...	continue a strong financial performance and growth that supports sustained investment in our Restorative Development Goals.

