



SUMMIT FORESTS NEW ZEALAND LIMITED FOREST ESTATE MANAGEMENT PLAN

PREPARED BY: RIKI GREEN, KAREN LUCICH, CHAYNE ZINSLI

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1. EXECUTIVE SUMMARY

The Forest Management Plan is a summary of our forests, operations, corporate objectives, and company culture. Summit Forests (SFNZ) has prepared this document to provide a clear view of our forest management, including forest development and harvest planning. We give details of our safety and wellbeing programmes, the commercial and environmental side of our operations, and the social aspects of our forestry business. Readers will also find an overview of our company's history, the bio-physical setting of our forests, and how Forest Stewardship Council® (FSC®) (FSC-C112972) Certification influences the management of our estate. We have prepared the Forest Management Plan for FSC Certification auditors, local stakeholders, customers, and the public. The forest management plan and annual monitoring reports are available on SFNZ's [web site](#), and we welcome any enquiries about the material presented.

The commercial, social, and environmental objectives of SFNZ are contextualised by our ownership structure. SFNZ is a New Zealand registered subsidiary company of Sumitomo Corporation Japan. In 2013, SFNZ purchased the former Juken New Zealand Ltd Forest estate (36,000 ha) in Northland. All the existing local staff and contracts were transferred across to the new company. They brought with them more than 24 years of local experience in managing these forests, experience that is now supported by the Sumitomo Corporation's international network.

SFNZ went on to purchase four Whanganui District Council forestry blocks in 2018 (approximately 1,230 hectares) and, subsequently, SFNZ purchased the Ernslaw One estate situated in the Ruatoria area of the Gisborne Region (22,338 ha) along with the Whangapoa Forest (10,569 ha) in the Coromandel in 2021. The staff associated with the management of Ernslaw's Ruatoria forests remained with Ernslaw, however, as we did with the Juken Forest purchase, all existing staff and existing contractors for the Whangapoua operation were transferred to SFNZ.

The following table summarises SFNZ's forest ownership and management:

Table 1: Summary of SFNZ's forest ownership and management

Agreement Type	Area (hectares)	Percentage
Total area under management	48,788	100%
SFNZ Freehold	4,715	9%
Crown Forest Licence	36,351	75%
Maori owned land	5,802	12%
Other	1,920	4%

Sumitomo Corporation is a major listed Japanese entity, with a 100-year history of conducting business and a heritage spanning 400 years. Underpinning that history is the philosophy that the business must not only benefit Sumitomo, but also bring benefit to the country and society in which it operates. This philosophy bolsters SFNZ's continued support of community and environmental projects. It also reflects the value the company places in partnerships with local iwi and SFNZ is committed to protecting the resource and tenure rights of tangata whenua. SFNZ believes that open engagement with all stakeholders, embracing new technologies, cultivating local experience, and maintaining a team culture will enable us to manage our unique forest resource in a sustainable and economically successful manner.

2. SUMMIT FORESTS NEW ZEALAND LIMITED OVERVIEW

Our forest business strives to grow, harvest, and present wood resources to our customers in a sound and sustainable manner. In this plan we define the management structures and processes that enable us to reach our goals and manage the resource effectively.

As with any Forest Management Plan, this document covers a wide range of material. In particular, it covers those aspects required for Forest Stewardship Council (FSC) certification and was prepared with the FSC audit process in mind. However, we hope that this document will also provide the wider community with an insight into our business practices.

Below we introduce SFNZ as a business, including our organisational culture and the framework within which we operate.

2.1 OWNERSHIP HISTORY

Table 2 below summarises the history of Summit Forests New Zealand from the purchase of the Juken New Zealand Northland forests to the consolidation of the assets under Summit Forest New Zealand Limited.

Table 2: Summary of the company's ownership history

Incorporation Date	Company Name	Company Number	Details
26-Feb-10	Juken New Zealand Northern Plantations Limited	2409111	Holding company formed
8-Aug-12	Juken New Zealand Northern Plantations Limited to Summit Northern Plantations Limited	2409111	Name change
25-Mar-13	Summit Forest Management of NZ Limited	3938058	Company formed
31-Mar-15	Summit Northern Plantations Limited Summit Forest Management of NZ Limited Summit Forest Management of NZ Limited	240911 & 3938058 3938058	Amalgamation to form new company
31-Mar-15	Summit Forest Management of NZ Limited to Summit Forests New Zealand Limited	3938058	Name change

2.2 COMPANY OVERVIEW

Summit Forests New Zealand Limited (SFNZ) is a company incorporated in New Zealand under the Companies Act 1993 (company number 3938058).

SFNZ has developed a dedicated log exporting department that ensures the full value of the product is captured. This department links into the already well-established Sumitomo Corporation trading business that includes extensive international business networks. An international network allows SFNZ to realise the full value of the estate beyond the existing domestic supply.

Sumitomo is proud to call itself an “integrated trading company” that maintains trading networks and business interests in more than 65 countries. The Sumitomo Corporation Group consists of nearly 790 companies with

approximately 74,000 personnel. This large, diverse business reflects the company’s inception. The founder of Sumitomo was Masatomo Sumitomo (1585–1652) whose first business was trading medicinal remedies. However, it was not long before Masatomo joined forces with his brother-in-law, who had recently perfected a copper refining method (Nanban-buki). This technological breakthrough, combined with astute business practices, laid the foundations of the Sumitomo Corporation we see today.

Based on Masatomo’s ‘Founders Precepts’, Sumitomo’s philosophy is to achieve “benefit for self and others, private and public interests are one and the same”. This means that Sumitomo’s business must not only benefit Sumitomo, but also bring benefit to the country and society in which it operates. As a consequence, Sumitomo is committed to responsible forestry management and is currently certified under the Forest Stewardship Council certification programme for its New Zealand interests. This commitment to sustainability underpins our drive to achieve excellence within all our forest operations.

Visit <http://www.sumitomocorp.co.jp/english/> to find out more about Sumitomo Corporation.

2.3 MANAGEMENT OBJECTIVES

SFNZ aims to be a leading forest company in New Zealand, and one that creates value by growing people, products, partners and prosperity.

We will achieve this by working in an integrated manner towards our commercial, social and environmental objectives. These objectives are described in table 3 below.

Table 3: Commercial, social and environmental objectives

Health and Safety objectives
Manage the estate in compliance with the Health and Safety at Work Act 2015.
Provide a clear set of guidelines that enhance the efficiency of all our operations.
Develop a workplace culture where health and safety of all people is an overriding priority.
Promote collective and individual responsibility for health and safety.
Ensure that all staff and contractors are trained and competent and have the appropriate equipment to undertake their jobs safely.
Environmental objectives
Participate in external programmes that minimise the risk of fire, disease, and pests in or near plantations or other land that is either owned or managed by SFNZ.
Promote the sustainable nature of plantation forests.
Actively engage in the development and review of regulation that affects the Forest Industry
Undertake sustainable planting and replanting to secure the long-term viability of the company and the associated positive environmental and social outcomes.
Obtain and maintain internationally recognised environmental certification from the Forest Stewardship Council.
Social objectives
Develop and maintain a positive, proactive, and fit-for-purpose health, safety, and environmental culture.
Comply with employee health, safety, and welfare laws and regulations.
Train and educate all employees to a standard that meets all SFNZ’s objectives.
Actively develop the next generation of employees in a manner that will promote the sustainable development of society and contribute to local communities in all the areas we conduct business.

Commercial objectives

Maximise shareholder return within the parameters described in the company's mission statement. Please refer to www.summitforests.co.nz

Improve access to domestic and international markets.

Maintain commercial and environmental performance to the highest standards attainable in plantation management.

Operate as a good corporate citizen.

Widen the use of radiata pine in the manufactured goods markets.

Actively participate in the New Zealand and international forest and wood products industry.

2.4 ORGANISATIONAL STRUCTURE

SFNZ is led by a managing director based in the Auckland, New Zealand Office who reports to a Board of Directors in Tokyo, Japan. The Auckland Office has 19 staff responsible for the overall management of SFNZ. SFNZ has three regional offices: Northland, Coromandel, and Gisborne.

The Northland Office has 12 staff responsible for day-to-day forestry operations, including harvesting, roading, forest operations, information management systems, stakeholder engagement, and administration of 35,224 hectares in varying tenures. Contractors carry out harvesting operations, road construction and maintenance, silviculture, and land preparation activities.

The Gisborne Office currently has 6 staff, who are responsible for managing operations in Gisborne (19,886 hectares), and Whanganui (1,248 hectares freehold). The day-to-day operations for the Gisborne Forests are managed in house while the management of the Whanganui Estate is contracted to Forest Management New Zealand Limited (FMNZ). The Gisborne Region Manager is responsible for ensuring that all tasks contracted to FMNZ are completed in line with company processes. Ultimately, the management of all SFNZ forests will be brought inhouse determined by workload and staffing.

The Coromandel office consists of 2 staff who are responsible for managing the day-to-day operations within the estate. There is only one forest within the estate, Whangapoua Forest which has a total area of 10,567 hectares. Contractors carry out harvesting operations, road construction and maintenance, silviculture, and land preparation activities.

Table 4: Contractor and worker numbers by region

Region	Activity	Number of Contractors	Number of workers
Northland	Harvesting	4	45
	Silviculture	3	21
	Roading	3	18
	Cartage	3	49
	Other	3	10
Coromandel	Harvesting	0	0
	Silviculture	1	4
	Roading	2	3
	Cartage	0	0
	Other	1	1

Gisborne	Harvesting	4	29
	Silviculture	2	14
	Roading	3	12
	Cartage	3	16
	Other	2	2
Whanganui	Harvesting	0	0
	Silviculture	0	0
	Roading	0	0
	Other	1	1
Totals		35	225

2.5 LOCATION

The following table sets out the location of SFNZ's offices. SFNZ's Directors are based in Auckland (1), Sydney (1), and Tokyo (2).

Table 5: Summary of SFNZ premises

Location of SFNZ premises	
Northland Office 1533 Far North Road, RD4, Kaitaia 0481 Telephone: +64 9 406 7024	Northland Operations
Auckland Office Level 10, 57 Fort Street, Auckland PO Box 1749, Shortland Street, Auckland 1140 Telephone: +64 9 967 5555	Financial Administration
Coromandel Office 30 Te Rerenga-Kuaotunu Road, RD2, Coromandel 3582 Telephone: +64 027 509 1809	Coromandel Operations
Gisborne Office Victoria Plaza, Level 2, 40 Reads Quay, Gisborne, 4010 PO Box 68, Gisborne, 4010 Telephone: +64 21 457 958	Gisborne Operations

2.6 LEGISLATION AND LAND USE

SFNZ operates within the framework of the New Zealand legal and commercial system, and the following highlights some key elements of that framework that are relevant to our business. SFNZ meets all or exceeds relevant regulations, standards, and guidelines applicable to forestry in New Zealand. Appendix 1 lists some of the relevant legislation. All New Zealand legislation can be found at <http://www.legislation.govt.nz/>. Legislation is reviewed as part of both an ongoing and annual strategic review of management systems. SFNZ subscribes to the [Environment Essentials - HSE Legal compliance](#) service to assist us in keeping abreast of any legislative changes.

SFNZ also receives industry legislative updates through its associations with Forest Owners Association (FOA), the Wood Councils it belongs to, Forest Industry Contractors Association (FICA), Northland Forestry Environmental Working Group (NFEWG) and other groups and associations we engage with.

The key central government departments, agencies, and entities for SFNZ are:

- The Department of Conservation (DOC) who has significant areas within and surrounding SFNZ's plantation estate and administers two relevant acts—the Wild Animal Control Act and the Conservation Act.
- Land Information New Zealand who manages Crown land, river and lake beds, and Crown Forest licences.
- Ministry for Primary Industries is responsible for New Zealand's biosecurity system, managing forestry assets for the crown, enabling international markets for New Zealand's primary products, and representing New Zealand in international trade policy and standard-setting forums.
- Ministry for the Environment are the primary Government advisors on environmental matters including climate change and environmental protection. They administer, inter alia, the Resource Management Act, Climate Change Response Act, Environment Act, Hazardous Substances and New Organisms Act.
- Ministry of Business, Innovation, and Employment is the main business facing agency for the Government.
- WorkSafe who administers the Health and Safety at Work Act.
- Heritage New Zealand Pouhere Taonga administers the Historic Places Act which applies to areas of plantation which have sites of historical importance such as Maori Pa sites.

Local government organisations (District and Regional Councils and Unitary Authorities) manage land use and resource management at the local level under various legislation and regulation (Local Government Act, Resource Management Act, and National Environmental Standard for Plantation Forestry (NES-PF) to name three). The NES-PF is key in that it captures all forest operations; pruning and thinning to waste, afforestation, earthworks, river crossings, forestry quarrying, harvesting, mechanical land preparation, and replanting and ancillary activities.

SFNZ's estate falls under the following District and Regional Councils and Unitary Authorities:

- Northland Regional Council
 - Far North District Council
- Waikato Regional Council
 - Thames-Coromandel District Council
- Gisborne District Council (a Unitary Authority)
- Hawkes Bay Regional Council
 - Wairoa District Council
- Manawatu-Wanganui Regional Council
 - Wanganui District Council

2.7 DISPUTES PROCESS

In accordance with the FSC certification, SFNZ maintains a commitment to implement any legal directives from a dispute if it arises. Any disputes, including those involving tangata whenua, that arise will be resolved through fair and equitable means and in accordance with SFNZ's Disputes Policy or as specified in the relevant contract or lease.

SFNZ approaches the disputes process, in all cases, in good faith and with the intent of maintaining long term relationships with the owners of the land on which we operate.

2.8 EXTERNAL AGREEMENTS

As a member of the New Zealand Forest Owners Association, SFNZ is bound by the requirements of [the New Zealand Forest Accord \(1991\)](#) and the Principles for Commercial Plantation Forest Management in New Zealand (1995) [Principles for Commercial Plantation Forest Management in New Zealand \(1995\)](#) .

The Forest Accord protects remaining indigenous forest remnants within the plantation forest that meet minimum size and quality criteria from clearance and conversion to plantation forest. All native vegetation in the SFNZ managed estate is identified in the company Geographic Information System (GIS) and is protected in accordance with NZ Forest Accord.

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

2.9 NATIONAL ENVIRONMENTAL STANDARDS FOR PLANTATION FORESTRY (NES-PF)

National Environmental Standards for Plantation Forestry (NES-PF) are regulations made under the Resource Management Act 1991 (RMA) that set out technical standards, methods, or requirements relating to matters under the RMA. These standards provide consistent rules across the country by setting planning requirements for Earthworks, Harvesting, Stream Crossings, Planting, In-forest Quarries, Thinning and Pruning, and Mechanical Land Preparation.



Figure 1 Northland Regional Council and SFNZ staff compliance visit at Kohumaru Forest

The NES-PF prevails over district or regional planning rules except where the district or regional authority sets more stringent planning rules. The NES-PF ensures a consistent approach to operational standards across our

industry. The NES-PF reinforces a cautionary and proactive approach to controlling adverse impacts on the environment such as sedimentation, wilding pines, and barriers to fish passage. SFNZ staff and contractors use the NES-PF consenting and compliance guide for operational guidance on specific aspects of the NES-PF, such as compliance monitoring and management plans.

The relevant local authority will conduct NES-PF compliance visits (figure 1 shows such a visit) of consented and permitted operations.

The [guide](#) to the NES-PF was developed by Ministry for Primary Industries (MPI) and the forestry industry.

2.10 FOREST STEWARDSHIP COUNCIL ® (FSC®) CERTIFICATION

SFNZ has maintained Forest Stewardship Council ® (FSC ®) (FSC-C112972) certification since JNL’s original assessment in 2008 in Northland. The Whangapoua Forest (Coromandel) was previously FSC certified under Ernslaw Ones certification since the early 2000’s while the Whanganui Estate was FSC certified under SFNZ management in 2020. Whangapoua was brought into SFNZ’s certification in 2022.

FSC is an independent not for profit organisation headquartered in Germany, founded to promote the responsible management of the world’s forests. FSC certification is a means by which our investors, customers and other stakeholders can be confident that we are conducting our business legally responsibly and sustainably. The requirements for certification are outlined in Table 6 below.

SFNZ is committed to the FSC standards of good forest management that are built into the internationally recognised certification. These standards include ecological, social, and economic parameters. Maintaining certification demonstrates that our resource management is in line with the FSC principles and criteria which, while holding intrinsic value, also offer marketing and economic advantages for our forest products in New Zealand and abroad.

Table 6: Summary of FSC certification requirements

FSC Certification Requirements

Adhere to the guidelines and requirements set out by the 10 principles of FSC:

Principle 1: Compliance with Laws and FSC Principles

Principle 2: Tenure and Use Rights and Responsibilities

Principle 3: Indigenous Peoples’ Rights

Principle 5: Benefits from the Forest

Principle 7: Management Plan

Principle 8: Monitoring and Assessment

Principle 9: Maintenance of high conservation value

Principle 10: Plantations

Develop a sound policy base derived from the FSC principles, ensuring it is communicated to and followed in the workplace.

Develop open lines of communication that involve employees, stakeholders and local iwi in the promotion of economically sustainable management practices.

Use best practice guidelines in management regimes and implement sound, proven and economically viable environmental, financial and social practices that protect the future sustainability of resources.

Ensure there are no conflicts between NZ law and FSC compliance. If the company becomes aware of any instance, it will advise the certifying group SGS & FSC Cluster Group members.

FSC TRADEMARK

The FSC trademarks are the primary communication tools for FSC certificate holders to demonstrate that their products meet the standards set by FSC. SFNZ must seek approval in accordance with FSC Trademark Standard 50-001(V2-0) to use FSC trademarks on any publicly available documents. Compliance with this standard is mandatory for all FSC certificate holders making use of the FSC trademark.

MAINTENANCE OF FSC CERTIFICATION

The maintenance of certificate status is managed through:

- The development, use, and review of a Forest Management Plan and associated documents
- Engagement with the regulatory environment
- Development and maintenance of I.T. based support tools
- A process of internal and independent third-party external audits undertaken at least annually.

To confirm compliance with the requirements in

FSC commissions annual audits of certified companies. SFNZ is currently audited by SGS New Zealand Limited. For further information about FSC visit their website www.ic.fsc.org. Copies of the audit report for SFNZ's latest FSC audit are available on the FSC website.

2.11 RESPONSIBILITIES AND AUTHORITY

All SFNZ operational staff and any contracted Forest Managers are responsible for ensuring operations under their immediate control are planned and undertaken in a manner that meets company standards, legal requirements, the relevant requirements of the Approved Code of Practice for Safety and Health in Forest Operations, as well as any Resource Consent or Permitted Activity Conditions. Furthermore, SFNZ contractors carrying out these operations are fully aware that they must comply with these requirements. Any breach of a requirement is considered a risk to SFNZ and is managed accordingly.

3. HISTORY OF LAND USE

3.1 NEW ZEALAND

When Māori arrived in New Zealand over 1000 years ago the country was three-quarters covered in forest. Subsequently, about one-third was cleared by fire—either deliberately or accidentally. The arrival of European settlers in New Zealand, from the 1850s onwards, saw the rapid removal of about half of the remaining forest cover as part of land clearance for agriculture, logging, and settlement (Roche.2008).

By the 1870s, concerns about the future wood supply forced the Government to seek expert forestry opinion. The resulting report and the first Forests Act (1874) led to the State establishing three small plantation areas in the early 1900s. However, concern about dwindling indigenous forest resources continued and in 1913 a Royal Commission inquired into the state of NZ forestry and after World War I, a State Forest Service was established in 1919. This triggered planning for large exotic forests and planting began soon after. The high unemployment from a major economic depression in the 1930s meant that manpower for planting became available. This contributed to a boom in planting of exotic species up to 1935, by which time about 125,000 hectares of plantations had been established. Since then, three major planting booms have occurred; one in the 1970s,

again in the mid-1990s and into the 2020s with the Government's One Billion Trees Programme and the aim to increase tree planting across New Zealand. The goal of that programme was to double the current planting rate to reach one billion trees planted by 2028. The effect of the Emissions Trading Scheme and New Zealand's need to establish some 380,000 ha of new exotic forest by 2035 has been projected to see further growth in the plantation estate in New Zealand though current rates of establishment have yet to replace exotic forest area not replanted post 2002.

The total plantation forest area established through this history of planting is about 1.8 million hectares, which is 7% of New Zealand's total land area (26.771 million hectares). This resource is dominated by radiata pine (90%) with significant areas of Douglas fir (6%) (NEFD 2022¹).

In the early 1980s, approximately half the exotic plantation forests were owned by the State through the NZ Forest Service. However, in 1987, the Government abolished the NZ Forest Service and moved to sell long-term cutting rights to the state forests (Crown Forest Licences (CFL)). Now around 97% of the resource is privately owned with only small areas of plantation forest in government ownership. The ownership structure of New Zealand plantation forests is relatively diverse and includes major offshore ownership. At present, there are 21 large forest-owning companies, each managing over 25,000 hectares ([Facts and Figures 2021-22 \(nzfoa.org.nz\)](https://nzfoa.org.nz)).

Over the period that plantation forest areas have been expanding in New Zealand, the area of land permanently reserved under government control has also been gradually increasing. Currently around 25 to 33% of New Zealand's land area is held, under various tenures, as reserves or national parks for protection of their natural value while plantation forest make up just 7%. However, much of this area is steep or mountainous and there are significant deficiencies in the lowland protection (Roche, 2008).

3.2 NORTHLAND

Northland was one of the first areas of New Zealand to be settled by Europeans. European forest clearances and fires accelerated the clearances begun by Māori. The New Zealand Forest Service established exotic plantations in the region during the 1960's to address rural depopulation and regional wood supply issues. The majority of the land planted was not ideal for forestry due to its steep and challenging terrain and/or nutrient deficient soils. For both conservation and employment reasons, they also began to stabilise the large sand dune areas running along Ninety Mile Beach. Figure 2 below shows the raw sand planted in marram to try and stabilise it in preparation for pine trees. The dune stabilisation enabled farmland to be established to the east. The following provides a brief summary of the early history of plantation forest establishment in Northland sand areas, including those that are currently managed by SFNZ.

In 1951, the Government of the day transferred the administration and management of the country's sand dune areas from the Ministry of Works and Development in to joint management by the Department of Lands and Survey and the New Zealand Forest Service. This led to an exchange of lands between the New Zealand Forest Service and the Department of Lands and Survey, with the former acquiring 11,000 hectares of sand dune land on the Aupouri peninsula behind Ninety Mile Beach, which stretches from Motutangi in the south to Te Kao in the north. Around 1958, the NZ Forest Service, in conjunction with local iwi, commenced a marram grass and radiata pine planting effort to go with earlier plantings by the Ministry of Works and Development at Waipapakauri

¹ [National Exotic Forest Description 2022 \(mpi.govt.nz\)](https://mpi.govt.nz)



Figure 2 Marram grass planting - Aupouri Peninsula 1960's

The marram planting programme was small at first but accelerated over time. By the late 1960s, it had grown to a forest establishment rate of some 800 hectares per year. Almost all of the area that is now forested (95%) was previously sand dunes with iwi growing on the coastal flats and pockets of ti tree and lupins further inland.

To stabilise the sand and prevent it from moving, the programme started with the creation of a fore dune by building Manuka fences. These fences caught the moving sand from the beach which quickly built up against the fences because of the predominant westerly wind. The fences were also an anchor that protected the marram plantings on the lee side.

An employment creation scheme that was initiated in early 1984 saw a second wave of pine plantation in Northland. The Government bought marginal farmland that was regenerating into scrub because the terrain had been too difficult to farm and the scheme was to clear land and plant pine trees. The Workers were restricted to hand tools to help with job creation. They would fell scrub and remove fences prior to planting the area during the winter months.

Juken New Zealand Limited (JNL) purchased Crown Forestry Licences (CFLs) in 1990. SFNZ purchased JNL Northland CFLs on 19 March 2013 and retained most of the JNL forest operations staff.

3.3 COROMANDEL

Native forests in the Coromandel area were selectively logged for kauri from the early 1800s until the 1930s, with felled logs transported from inaccessible catchments down-stream, using trip dams to carry the floating logs on a rapidly released flood wave (kauri dams). The lower slopes of the ranges were grazed at low stocking rates until the 1940s. In those early days, the majority of farming in this region involved Farmers burning off the rank grass to allow new grass to germinate thus giving the ranging stock better feeding. This practice of blanket burning off slowly degraded the soils making farming difficult and, in many cases, the land reverted to Manuka and scrub.

The establishment of Whangapoua forest commenced around 1949 as part of converting reverting farmland into exotic forestry. The very first plantings were on a very small scale and only approximately 5 acres per year was planted - concentrated around the Oritonui area. The Forest was established to address the large areas of reverted farmland and to create long term employment within the Coromandel area.

These small areas of planting continued until the early sixties when NZ Forest Service decided that forestry in the region was viable. They built four houses for the staff and a single man's camp for the labour force. The big plantings of Radiata commenced in 1963. Plantings continued each winter and slowly spread from Owhera Catchment over into the Awaroa and Oritonui catchments. By early 1975 the forest area was 3000 ha. Initially all land prep was with hand slashers with each gang having one power saw to fall the heavy scrub. All these felled areas were burned off in mid-summer

Mechanization of land prep in 1971 was first carried out with towed rollers crushing the scrub on the easier country and later with twin rope gravity rollers. This operation commenced in the Opitonui catchment and unfortunately coincided with an extreme weather event that caused massive flooding and in turn caused massive creek blockages with huge volumes of sediment movement. The downstream damage was major. This storm event caused several major claims for damages against the crown. This storm event caused a significant change to the Forest Service's approach to land preparation and lead to leaving substantial riparian margins which became a very successful tool in mitigating the soil / slash movement. The use of fire to clear areas of vegetation and debris was still the main tool.

These large planting areas continued until the mid-80's when all major catchments within the management of NZ forest Service had been planted.

The Labour Government decided to disband the N.Z Forest Service in 1987 at which point, the Timberlands State Owned Enterprise took over management until Ernslaw One Ltd purchased the Crown Forest License in 1990. Ernslaw One was responsible for establishing the modern forestry practices that are followed in Whangapoua Forest as well, establishing robust practices around:

- Indigenous biodiversity;
- Cultural and archaeological sites;
- Water quality;

These practices became codified in the resource consents that the Waikato Regional Council issued in 2004 and which remain largely in place.

Ernslaw One managed Whangapoua until 2021 when it sold the Crown Forest License to Summit Forest New Zealand Limited.

3.4 GISBORNE

Between 1880 and 1920 most of the region's forest was felled or burnt to clear the land. Consequently, large contiguous areas of indigenous forest only remain on the main ranges. In the rest of the region, original forest remnants tend to be small and scattered nearer the coast or inland where the cooler, wetter climate meant it was less easily cleared. Regrowth forests are more extensive. Kānuka is most widespread, while mānuka or broadleaved trees generally occur in wetter areas or poorer soils. The introduced radiata pine has been planted throughout the region and plantation forestry is now a major land use (129,402 ha²).

The region is well known for its soft rock soil erosion – on a scale and severity greater than any other part of New Zealand³. The natural erosion susceptibility was aggravated by the deforestation of native forests to make way for pastoral farming over the 19th and early 20th centuries. Efforts to re-establish vulnerable hill country areas in trees began in the 1950s and came together as the East Coast Project in 1970. That project set about planting exotic forests in the back country, small woodlots and strategically placed trees in the pastoral forelands.

Much of the forestry that is now being harvested across the region was planted as a result of erosion protection schemes, with the rate and amount of plantings accelerating after Cyclone Bola (1988). Cyclone Bola was a key event and caused some \$60 million of damage. Significant storms and Cyclones in 2018 and again in 2022 and 2023 continue to highlight the inherent risk of the tertiary mudstone geology underlying much of the region and the high potential for mass slumps and slips.

² [Agricultural and horticultural land use | Stats NZ](#)

³ Hicks, M, et al (2019). Updated sediment load estimator for New Zealand. NIWA Client Report 2018341CH

SFNZ's Gisborne forests were established by a range of parties largely funded by the East Coast Project and post-Cyclone Bola government funding. The majority of the land was planted in the 1970s and 1980s by the New Zealand Forest Service. Ernslaw One purchased the Crown Forest Licenses in 1990 and managed the forests until 2021 when it sold the Crown Forest Licenses to Summit Forest New Zealand Limited

The balance of the forests were established by a number of parties who then put the forestry right on the market. SFNZ purchased all of the Gisborne Forestry Right forests between 2017 and 2021.

3.5 WHANGANUI

The Whanganui Region is shaped by three major river catchments; the Whanganui, the Rangitikei and the Manawatu. The Whanganui River is the second-longest and has the second-largest catchment in the North Island, draining most of the inland region west of Lake Taupo (Horizons, accessed 2019). For Māori, water is the essence of all life, akin to the blood of Papatuanuuku (Earth mother) who supports all people, plants and wildlife (DOC, accessed 2019)

The Whanganui District is rugged, with canyon-like valleys and gorges carved out of the soft rock by rivers and ocean waves. Once predominately covered by native forest, with small areas of red tussock and scrub in the Moawhango River headwaters, south of Mt. Ruapehu. The forest was mostly conifers, particularly podocarps such as totara, matai and rimu, and broadleaf trees such as tawa and kamahi and beech trees in the ranges. One of the North Island's largest remaining tracts of intact conifer–broadleaf forest lies within Whanganui National Park, established in 1986 (Beaglehole, 2008).

By 1840, Māori had cleared the forests by fire in much of the high country between Karioi and the Kaweka Range, and along the coastal lowland. The lowland was subsequently covered with bracken, toetoe, flax and mānuka. Māori were major traders and several flourmills were built between the 1840s and 1860s to grind wheat grown in areas along the riverbanks. Early Māori used the Whanganui River and its tributaries to facilitate trade and communication. A regular riverboat service was established by 1891 carrying passengers, mail and freight to Māori and to European settlers between Whanganui and Taumarunui. This made Whanganui a top tourist destination (Beaglehole, 2008).

European settlement saw the coastal lowland progressively sown with pasture grasses and various crops. From the late 1870s, settlers began burning and felling hill-country forest to turn into grassland for farming. Over 50 sawmills operated in Whanganui in the mid-1920s. Erosion has been a constant problem on cleared hills. After the Second World War land has been rehabilitated through aerial topdressing and better pasture and stock management. During the 20th century the plains were mostly utilised for sheep and cattle farming, market gardening, and some dairying. Pine forests started being planted in some steeper areas. Karioi was the site for the region's first pine forest planting in 1927, with extensive pine plantations established since then (Beaglehole, 2008).

The Manawatu-Whanganui district now has around 140,000 hectares of plantation forestry with sheep and beef still the predominant land use. Forestry has enabled marginal land to be managed economically as well as delivering environmental benefits including erosion control and carbon dioxide absorption. It enjoys a temperate climate, with slightly above the national average sunshine (2100 hours per annum), and about 900 mm of annual rainfall. Several light frosts are normally experienced in winter. Whanganui has a history of repeated flooding in low lying areas, particularly adjacent to the Whanganui, Whangaehu and Mangawhero Rivers and neighbouring streams (Horizons, accessed 2019). The most significant flood event on record for Whanganui was in June 2015, this event was considered a 1-in-100-year flood Climate change modelling tells us that heavier and more frequent downpours will cause localised or large-scale flooding in this area of the country (Civil Defence, accessed 2019).

The forests SFNZ have in Whanganui were originally established by the Whanganui District council in the late 80's and early 90's. In 2018 Summit purchased the Whanganui estate from the District Council who put the forests on the market as they needed funds available to develop their wastewater treatment facilities.

4. ESTATE OVERVIEW

4.1.1 BIO-PHYSICAL SETTING - NORTHLAND

The Summit Forests New Zealand Ltd, Northern Forest Estate consists of 63 forestry blocks located within 120 km driving distance from the Northland Office. The main sand forest which runs adjacent to Te-Oneroa-a-Tōhē / Ninety Mile Beach has some of the highest density timber in New Zealand. The surrounding clay-based forests are on moderate productivity sites. Table 7 summarises key bio-physical elements of the Northern Estate.

Table 7: Northland Bio-physical summary

Geography

Northland plantation forests are typically either sand dune stabilisation forests or have been established on the heavy podsolised clay soils that were cleared of their original forest cover by early Māori or European settlers.

The climate is temperate, but rainfall may be low in some years. Some areas experience hot summers and occasional summer drought.

Ecology

Plantation forest areas were broadly established on two types of sites. First, the Aupouri dune forests were established for the stabilisation of sand dunes to stop encroachment onto farmland. The second type is the hill country that was originally cleared of forest for farmland. However, small remnants of original or regenerating native forest are scattered though the plantation blocks, particularly in riparian areas. The original forest or regenerating areas are generally confined to the steepest, most difficult sites. These include deeply incised gullies where the initial land clearing fires did not effectively clear the original vegetation.

Soils

Soil type varies, depending on locality. However, most can be classed into three categories: sand, non-marine conglomerates and sandy loams. Yellow-grey earths are present. In general, soils are moderately weathered and moderately leached. Erosion may be a hazard.

4.1.2 BIO-PHYSICAL SETTING - COROMANDEL

SFNZ's Whangapoua Forest consists of four blocks clustered around the Coromandel, Whangapoua, Otama, and Whitianga area – the furthest being around 21km from the Whangapoua Office. Table 8 summarises key bio-physical elements for Whangapoua Forest.

Table 8: Coromandel Bio-physical summary

Geography

Whangapoua forest is located on the Coromandel Peninsula, spanning both sides of the ranges between the Coromandel and Whitianga townships. The forest is on steep erodible country, and its topography is irregular and broken by numerous streams.

Though temperate, the climate at Whangapoua is known for its frequent, high-intensity localised storms, often of tropical origin, that frequently result in severe flooding. The average annual rainfall is 1729 mm, with a distinct March to June 'wet season.

Ecology⁴

The Coromandel Range supported conifer–broadleaf forests, including stands of kauri, before the widespread logging and burning brought by European settlement. In recent times forest protection has reversed some of this destruction. The canopy trees include rimu and rātā, with some miro, tōtara, kahikatea and mataī. Some large kauri have survived in steep, remote areas that loggers were unable to work. Regenerated native forest consists of rewarewa, kāmahī, kānuka and mānuka, with some pockets of small kauri.

The Coromandel Peninsula is home to some distinctive fauna. Archey’s frog, one of four native New Zealand frogs, is only found in the Coromandel and a part of the King Country. The Moehau stag beetle is found only in the northern part of the Coromandel Peninsula, in secluded, moist environments.

Soils⁵

The basement geology of the area consists of hydrothermally altered Whangapoua and Matarangi andesites of Miocene age (Skinner 1976). Soils are highly variable, with soil types being strongly related to parent materials, elevation and slope steepness. They have developed from deeply weathered andesite. Erosion and landslips are a hazard.

4.1.3 BIO-PHYSICAL SETTING – GISBORNE

SFNZ’s Gisborne Estate consists of 24 Forest stretch from Okare, inland from Wairoa, to Mullanys, south east of Hicks Bay with the majority in the Ruatoria hinterland. The Gisborne office is situated in the Gisborne township, some 129km south of Ruatoria and 97km north of Wairoa. Table 9 summarises key bio-physical elements for the Gisborne Region.

Table 9: Gisborne Bio-physical summary

Geography

The Ruatoria forests are located in the Gisborne region, approximately between 85 and 110 km north-northeast of Gisborne and between 10 and 40 km inland from the coast (in straight-line distances). There are twelve forest blocks, comprising Mullanys, Manu, Littleworths, Whakaangiāngi, Mackeys, Mangaoporo, Rauponga, Hills, Rip, Stevensons, Matahiia and Taitai. The majority of the land was first planted in the 1970s and 1980s by the New Zealand Forest Service. Previous tenure was under CFL with the lands being “handed back” to the Ngāti Porou Iwi through the Treaty of Waitangi settlement.

Warm summers and mild winters characterise the climate in the region. In summer daytime temperatures average 24°C. The 24-hour average at Gisborne in January, the hottest month, is 19.2°C, and in July, the coldest month, it is 9.7°C. In winter snow sometimes falls in the back country. Rainfall averages 1,050mm per annum with rainfalls in the ranges of 2,500mm. The region is characterised by summer cyclones which bring significant episodic high rainfalls. Cyclone Bola brought some 900mm of rain in 72 hours. Drought is uncommon.

⁴ [Climate, plants and animals – Te Ara Encyclopedia of New Zealand](#)

⁵ Marden, M and Rowan, D (2015). *The effect of land use on slope failure and sediment generation in the Coromandel region of New Zealand following a major storm in 1995*. New Zealand Journal of Forestry Science (2015) 45:10. DOI 10.1186/s40490-015-0036-9

Ecology

Noteworthy native species in the region are largely those that thrive in wetlands, estuaries or on the margin of scrubland. However, North Island Brown Kiwi and North Island Robin, NZ Falcon, Kaka, Weka, and Yellow-crowned Parakeet, and Kokako (very rare) are present along the ranges and extending into the forested hill country.

Hochstetter's frog, 10 species of native fish (including two threatened species) and long-tailed bats. Introduced animals include red deer, goats (domestic and feral), farm stock, pigs, possums and mustelids (ferrets, stoats and weasels) are also found.

Indigenous freshwater fish (eels, bullies and galaxiids, including whitebait) are widespread but low in numbers and diversity due to poor habitat conditions.

Soils

By virtue of why the majority of the forests were established, they are mainly on steep to very steep erodible soils. The soils of where the majority of SFNZ's forest is dominated by Orthotic Recent soils (Oruataiaka Hill soils), with areas of Orthotic Brown (Whakawai Hill Soils) and Allophanic Brown. As well as soils derived from the underlying greywacke and argillite, there are soils derived from volcanic ash throughout the region. Erosion and land slip and slump are a hazard.

4.1.4 BIO-PHYSICAL SETTING - WHANGANUI

The Whanganui Estate consists of four forestry blocks totalling approximately 1,230 hectares and situated approximately 25 kilometres north and north-east of Whanganui City in the erosion prone hinterland. Table 10 summarises key bio-physical elements for SFNZ's Whanganui Forests.

Table 10: Whanganui Bio-physical summary

Geography

Whanganui has one of the largest areas of hill country in New Zealand much of which is underlain by erosion-prone mud, silt or sandstone. Whanganui has round 22 per cent of New Zealand's highly erodible land, despite covering only 8 per cent of New Zealand.

Whanganui Basin is one of New Zealand's more remarkable geological phenomena as its rocks tell the story of glacial-interglacial climatic cycles for the past 5 million years. As sea level rise and fall leaving layers of shallow marine sandstone records of glaciation, when sea-level was lower.

The Whanganui Basin is a sedimentary mudstone basin containing layers up to five kilometres thick the centre of which is slowly migrating south at around 1 centimetre per year. This results in the stacked strata look of riverbanks and road cuttings and for the frequent shallow earthquakes felt in the region

Ecology

Plantation forestry was established on hill country originally cleared of native forest for pastoral farming. Forestry is a generally beneficial land use in its ability to facilitate the long-term stabilisation of land subject to an elevated risk of erosion, provided it is well managed. As well as erosion control, forestry provides habitat for many native species, stream and wetland protection and carbon storage.

Soils

Much of Whanganui has sandy soils, deposited as the shoreline advanced and retraced. On the more recent sands, nitrogen and phosphorus fertiliser may be needed for tree growth. The forests have a mix of Brown Soils. McNabs - Allophanic (BL), Te Ara to Waka - mix of Allophanic (BL) and Orthic Brown (BO), Sicelys - Orthic Brown (BO), Tauwhare - Sandy Brown (BS). Brown Soils occur in places where summer drought is uncommon,

and which are not waterlogged in winter. They are the most extensive soils covering 43% of New Zealand. (LandCare Research. Erosion is a potential hazard.

4.2 ESTATE DESCRIPTION

The estate has a fairly even age class distribution with a substantial area older than 35 years, mostly in Northland and to a lesser extent, Gisborne. Each region has a different age class distribution structure and therefore wood flow profile creating a unique set of challenges for each individual region.

There is a total of 93 forests across all regions that vary in site productivity and quality.

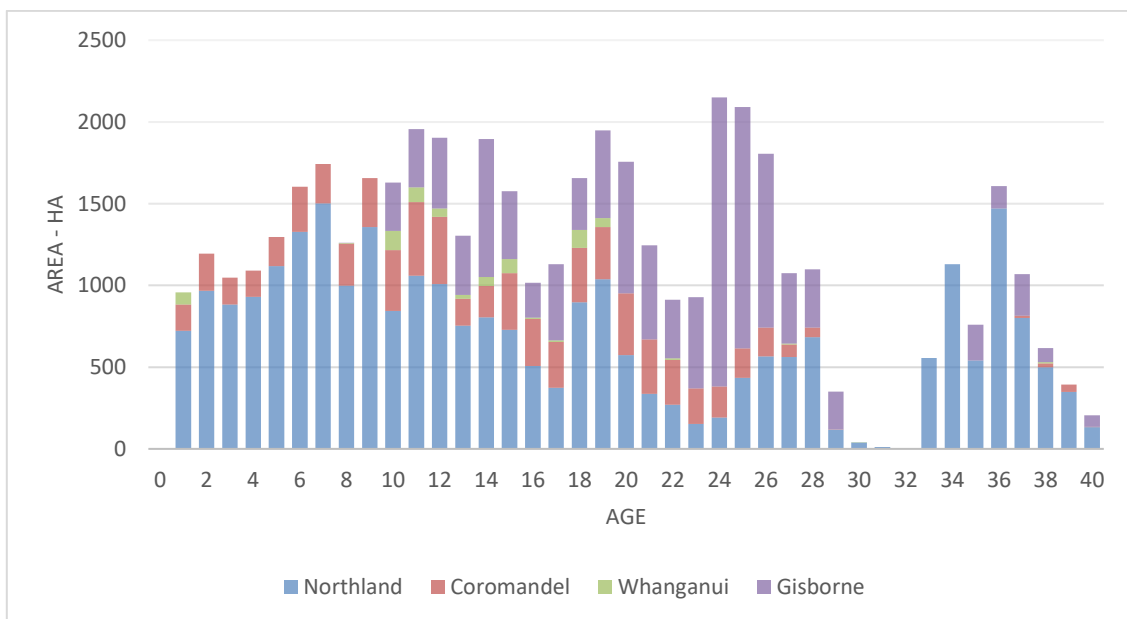


Figure 3 Area by age class distribution for total estate

4.2.1 ESTATE DESCRIPTION- NORTHLAND

The age class distribution of the Northland estate has a significant area greater than 33 years old. This will continue until harvest starts in the second rotation. It also has a decline in area between the ages of 15 and 25 years old. Part of the hole is filled by external management forests which are between the ages of 25 and 28. This will help stabilise the wood flow profile and provides continuity of log supply and work for our domestic customers and contract workforce.

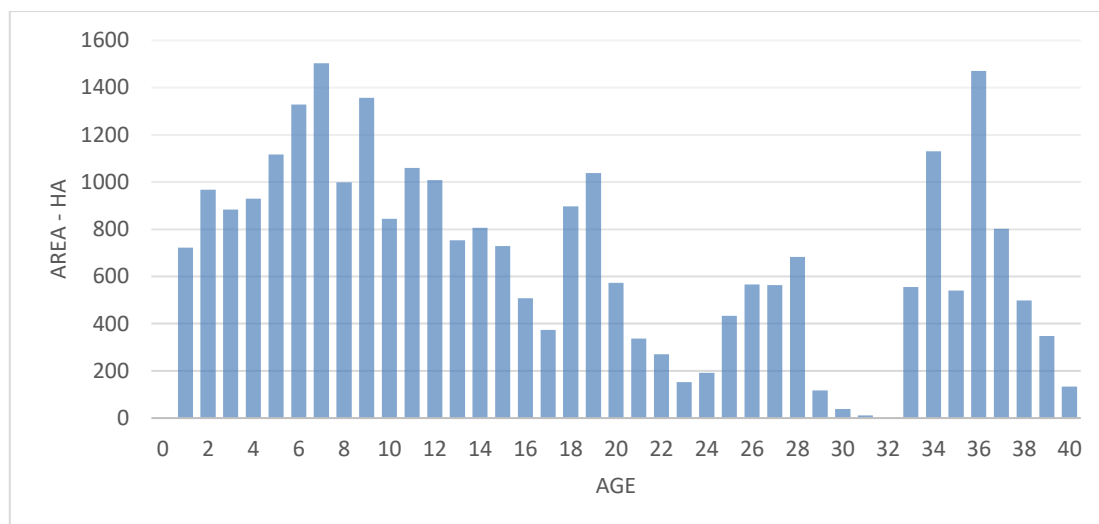


Figure 4 Northland area by age class distribution

4.2.2 ESTATE DESCRIPTION - COROMANDEL

The age class distribution of the Whangapoua forest is bimodal with peaks at 9 to 11 years old and 15 to 21 years old. There is just over 400ha in the 25 years and older age classes becoming available to harvest. There is a small drop in the age classes 13-14. This will need to be managed carefully to ensure there is consistent wood flows from the estate. This forest as a unique resource consent which has a harvesting catchment constraint where we are allowed to harvest no more than 30% of a single catchment in a rolling 5-year period.

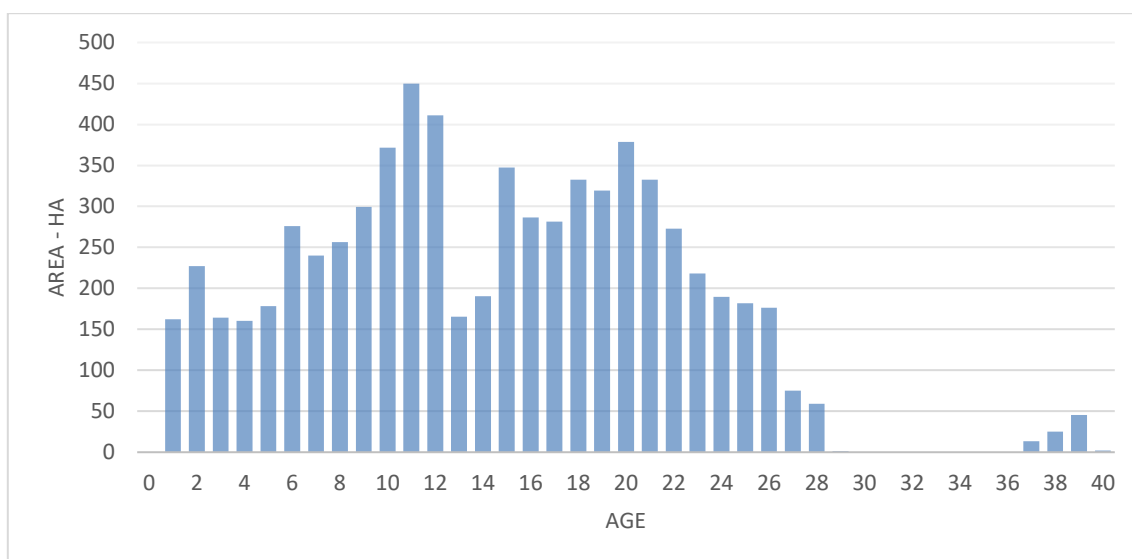


Figure 5: Coromandel area by age class distribution

4.2.3 ESTATE DESCRIPTION – GISBORNE

The age class of the Gisborne estate is skewed to the 24-to-26-year age classes with an area of just over 400ha older than 36 years. A large proportion of the forestry right forests are approaching clearfell age along with harvest ready area in the Ruatoria CFL older than 28 years available. This will create pressure for the operational team to manage end dates of Forestry Rights and contractor capacity. There is also the added pressure with unstable soils and available space at the port with limited domestic market options.

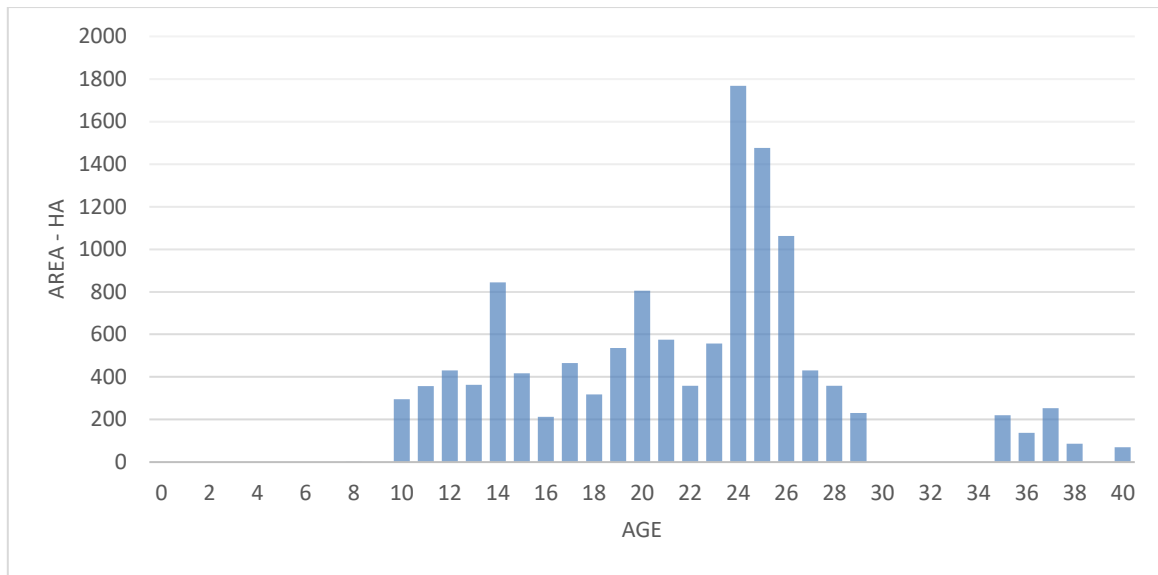


Figure 6: Gisborne area by age class distribution

4.2 ESTATE DESCRIPTION - WHANGANUI

The Whanganui estate has an uneven age class distribution (figure 8) with the area spread across a range of age classes. There are no stands available to be harvested and there is approximately six years before the next crop is ready to be harvested.

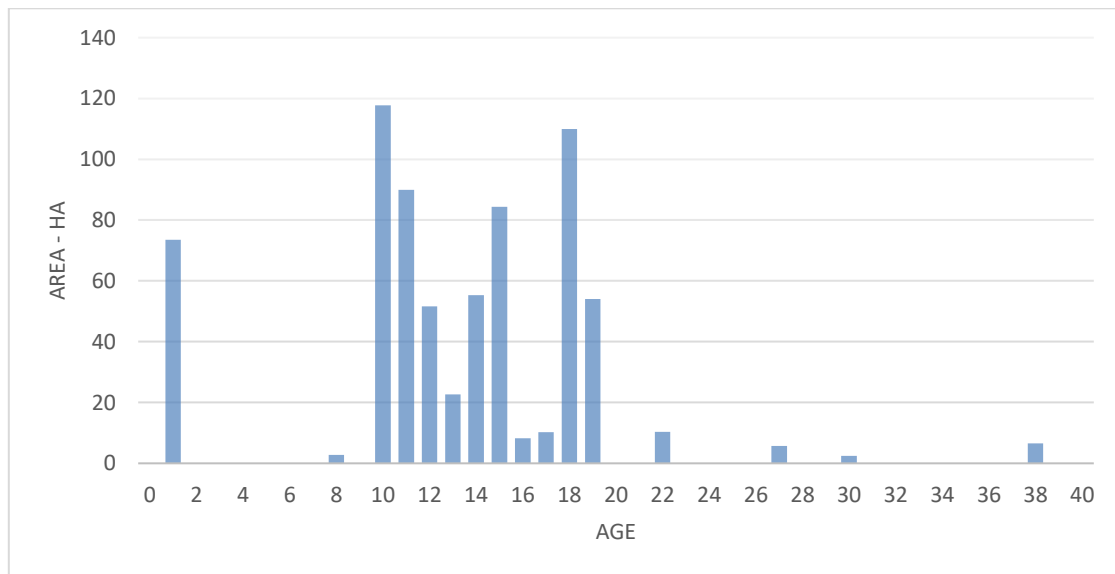


Figure 7: Whanganui area by age class distribution

4.3 MAPPING

In order to identify the different land use types and ensure the areas are accurately known, the forest area is mapped using the geospatial software ArcGIS. This is to ensure that we have up to date information that can assist operational staff with day-to-day decision making. Table 11 outlines when and the purpose of mapping updates during the life cycle of the forest.

Table 11: Current Mapping Process in the SFNZ Estate

Age	Description
0	Planted Boundaries identified and mapped
4-7	Area checked for gaps and mapping updated
9	Post thinning Remap
25-30	Pre-Harvest mapping check
Annually	Obtain satellite imagery
5 yearly	Lidar survey Northland and Coromandel

4.4 ASSET INSURANCES

Fire risk varies regionally and high public activity around the fringes of any forest increases that risk. There will always be the potential for fires. A major fire may cost many hundreds of thousands of dollars to extinguish and most of that will cover heavy machinery, helicopters, and manpower. The current extent of insurance cover for the crop value and re-establishment costs is based on a recognised crop valuation. This is reviewed on an annual basis. SFNZ maintains public liability and comprehensive vehicle cover to indemnify against unforeseen adverse activity both within the forest area and adjoining land tenure.

4.5 NON-FOREST ACTIVITIES

There are several non-forest activities undertaken in the forests SFNZ owns and manages, and our operations interact with and consider these land uses. Non-forest activities include:

- Recreational activities: running, mountain biking, dog walking and horse riding.
- Recreational hunting and fishing: possum, rabbit, deer, goat, pig, pheasant, and eel.
- Bee keeping.
- Collecting pinecones
- Seed collection.

5. ESTATE PLANNING

The estate model is developed using the modelling software Woodstock. This uses the information stored in our forest management system (LRM), operational costs and operational constraints to produce the expected sustainable wood flows from the estate. This is managed by our Resource Planning Manager and updated annually with support from each region.

5.1 STRATEGIC PLANNING

An estate model is developed with the purpose of forecasting long-term (30-year period) wood flows at the forest level.

The objectives of this model are to:

- Maximise net present value.
- Ensure sustainability of wood flow based on age class structure.
- Maintain production to meet wood supply agreements.
- Maintain optimum rotation age.

At this level the information tends to be generic, with the forecasts used to provide an estimate of the expected total volume by year. This model is reviewed annually.

5.2 TACTICAL PLANNING

Information from the strategic plan is used at the tactical planning level to prepare a ten-year harvest plan. At this stage, generic crop types become stand specific and information becomes more detailed at the compartment level. This provides a better understanding of what compartments are to be harvested and when. The tactical plan, therefore, provides the information SFNZ needs to make informed decisions around what markets it will be able to supply.

5.3 OPERATIONAL PLANNING

Operational planning is set within the framework provided by the tactical plan. The focus at this level is the 2–5-year view, where information becomes stand specific and highly detailed. Logical harvest units are created and identified, and will be planned for harvest, determining what infrastructure is required (roads and landings). These harvest units are then allocated to harvest crews based on terrain, crew configuration/capability, product type and piece size. The goal is to maintain a 12–18-month forward plan of built infrastructure ready to be harvested. This gives us flexibility if markets change, and security in case we are unable to move into a specific block.

In addition to the three sets of plans outlined above, there are a number of key documents and databases that underpin the SFNZ planning management process. These include:

- Financial and reporting systems.
- Woodstock
- Land Resource Manager (LRM).

5.4 ANNUAL BUDGET

The annual budget process is driven by and provides resolution to the planning described above. The annual budget identifies and costs projects for the following fiscal year. While providing a mechanism for estimating detailed business requirements, the annual budget also serves as a performance benchmark when compared to actual costs and revenue.

6. FOREST DEVELOPMENT

Forest operations refer to the establishment of a forest grown to produce wood products for the New Zealand market and abroad. Forest operations include all the various processes to get a tree to maturity and to protect the tree crop from threats, such as fire and disease.

All forest operations are planned to ensure that the crop achieves maximum growth and is of high quality. Below we summarise how SFNZ manages the forest resource from planting to harvest.

Most harvested areas are re-established post-harvest. However, some may be retired as historic sites, riparian setback, or through harvesting constraints. Recently logged sites are prepared for planting using a variety of techniques depending on the amount on logging debris or post-harvest weed infestation. This includes machine raking and piling of slash around skid sites. Skids and tracking are ripped where required. Aerial spraying to combat unwanted regeneration and vigorous shrub weeds is carried out to an extent that is dependent on the site and problem present. For this operation, a glyphosate-based mix of herbicide is commonly used.

SFNZ maintains an interest in current research through their involvement in industry-wide research cooperatives, including those involved with the examination of site management, plantation management, and forest health.

6.1 INTEGRATED PEST MANAGEMENT

The use of chemicals as a singular means to control pests is no longer viable or acceptable. SFNZ objective is to utilise integrated pest management and silviculture systems to avoid, or aim to eliminate, the use of chemical pesticides.

Integrated Pest Management (IPM) is a strategy used to manage insect pests in the landscape by using economically and environmentally sustainable practices. The goal of integrated pest management (IPM) is not to eliminate plant and insect pests, but to strengthen and stabilize the ecosystem so that conditions are more favourable for crop plants than they are for pests. This is achieved by employing a combination of practices to prevent or avoid anticipated pest problems rather than treating them once they occur.

By using quality seed that is grown well, transported, and planted correctly into well prepared soils at the right time of year and by using observation and monitoring practices, SFNZ can act in a timely manner to prevent significant problems. SFNZ uses the most environmentally friendly and cost-effective combination of mechanical, or biological and, when justified, chemical methods available to control pest populations. IPM practices are outlined in the following sections: Silviculture Regime, Species Selection, Land Preparation and Establishment, Planting, Releasing, Spraying, Pruning, Thinning, Disease Control, Plant and Animal Pest Control, Biocontrol, Foliage Sampling, Fertiliser, and Research Projects.

6.2 SILVICULTURE REGIME

SFNZ plants all forests at 1000 stems per hectare (sph). Planting takes place in the winter following the completion of harvesting and land preparation.

Currently areas are thinned between 8–10 years to 450 sph which is being managed on an unpruned structural log regime. There are some areas that have been planted and managed on a pruned regime that have been thinned down to 280-300 sph. The pruned height is variable from 4.5-6 metres.

We also have a small area in a post-wood regime in Te Hiku Forest in Northland. This is approximately 100ha per year. These stands are planted at 1500sph and are thinned then to 800 sph with a target clearfell age of 16-20yrs.

Detailed stand records exist for the whole of the resource. All operations are assessed pre- and post-operation and inventory results added to the Land Resource Manager (LRM) record system.

The target clearfell age of the estate is 24–28 years. However, there are some areas that will be harvested at an older age. This is due to the age distribution of the resource to maintain consistent wood flows and contractor available.

Table 12: Regime outline

Regime	Unpruned (structural)	Pruned	Post Wood
Plant	1000 sph	1000 sph	1500 sph
Prune		6-8 yrs (280-300 sph)	
Thin	7-10 yrs (450 sph)	8-10 yrs (280-300 sph)	6-8 yrs (800sph)
Harvest	24-28 yrs	28-32 yrs	16-20 yrs

6.3 SPECIES SELECTION

The SFNZ's overall estate is predominantly planted in *Pinus radiata*. There are small pockets and stands of alternative species which includes a range of minor species (which equates to between 1 and 3% of the net stocked area by region).

The NZ Forest Service trialled alternative harvesting species in the mid-1980's and pockets of alternative species can be found in forests that were established and managed by the NZ Forest Service. For example, within the Te Hiku (Northland), there are small pockets of *Eucalyptus Saligna* and *E. Botryoides*, as well as stands of *Lusitanica* and *Macrocarpa* was planted along the coastline because it has a greater tolerance to exposure from salt. Other species were also planted for protection and ornamental purposes.

Whangapoua Forest in Coromandel has some 38.5 hectares of alternative species, mainly *Eucalyptus spp.* dotted throughout the forest that were established by the Forest Service and have yet to be harvested and converted to *Pinus radiata*.

The Whanganui District Council trialled planting alternative species in the late-1980's, early 1990's. They established small pockets of *Eucalyptus* both as separate stands and inter-planted with *Radiata*. There are also two dedicated stands of *Macrocarpa*.

There were little of no alternative species established in the forests SFNZ manages in the Gisborne Region.

Pinus radiata is used for re-establishment as it has been proven to grow well in the climate and over a range of soil types. It produces a consistent crop for established markets with limited environmental impact from wildings.

6.4 LAND PREPARATION AND ESTABLISHMENT

Fit-for-purpose land preparation is critical to ensure the successful establishment of a forestry resource. The harvested areas are replanted during the winter. During the time between harvest and planting, the land preparation may include:

- Raking of remaining pine tree slash into rows to create space to plant trees between.
- Line cutting.
- Ripping to loosen compacted soil.
- Fertilising.
- Animal pest control.
- Aerial desiccation spraying.
- Aerial or spot releasing—removal of weeds that will compete with planted trees or are a threat to the environment.
- Aerial over-sowing.

Prior to any forest establishment, SFNZ conducts a review of the area to identify any risks to rare or threatened species of flora or fauna. SFNZ also considers riparian buffer zones and hard-to-harvest areas during this review. Retiring areas and logical boundaries within the local topology drives the decision making. Land preparation prescriptions follow the NES-PF.

SFNZ assesses the land condition post-harvest and takes appropriate action to maximise successful forest re-establishment while maintaining reserves, set backs, etc. The assessment covers four key areas—slash, ground compaction, weeds and soil fertility—as described below.

- Large amounts of slash left behind after harvesting inhibits tree establishment and makes it difficult to achieve good stocking with even coverage. In these cases, SFNZ considers slash raking—a process that involves a machine with a specialised rake to pull the slash into rows.
- When heavy clay areas have been compacted by machinery during logging operations, then SFNZ considers a ripping operation to improve soil properties—in particular on skids and some tracks. The size of the area impacted is taken into account when considering a ripping operation. Generally, the tougher terrains are logged using a hauler, so compaction is not an issue in those areas.
- Most areas will be aerial sprayed prior to planting to control weed growth and the regeneration of pine seedlings. Spraying is most effective when land lies fallow long enough for the weeds to germinate as this is when the growing weeds will take up the herbicide.
- For Te Hiku, exposed sand areas without a history of lupin, usually due to lupin blight, are now over-sown with a blight resistant lupin. This supplies the newly planted trees with protection from the wind and nitrogen to enhance growth. Blue lupin has, to date, been the best option for this.
- For Coromandel – as a condition of resource consent, harvested areas are aerial over sown with grass seed around June, prior to re-planting.

6.5 PLANTING

The New Zealand forest industry has invested significantly in the genetic improvement of *Pinus radiata* over many years. SFNZ re-establishes its forests using high quality seedlings purchased from reputable local forestry nurseries or by contracting such nurseries to grow seedlings from seed SFNZ purchases directly from [PROSEED](#). These seedlings are well adapted to the growing conditions associated with SFNZ's forests and the establishment we follow.

6.6 RELEASING

Newly planted trees are regularly checked for weed competition and a proactive releasing programme (removal of weeds to free the trees from competition) is initiated when problems are foreseen. Chemical releasing is the preferred option and it is applied either manually or aurally by helicopter. Once the crop trees outgrow the weed and understory species, they have a higher chance of survival. This occurs anywhere from one to three years after planting. By releasing at the right time, a much smaller amount of chemical is required.

When dealing with difficult-to-kill weeds or small areas, releasing is done manually.

6.7 SPRAYING

In line with SFNZ's environmental policies, IPM and silviculture system SFNZ aims to avoid or eliminate the use of chemical pesticides and minimise risk to human health and the environment while maintaining economically viable management. All herbicide spraying is carried out in accordance with New Zealand Standard NZS 8409:2021- The Management of Agrichemicals, HSNO regulations, applicable Regional and District Plan rules, and FSC obligations.

Herbicides are utilised for weed control to reduce competition and prevent crop mortality. They are applied prior to planting and in the first one to two years following planting. Once the crop trees outgrow the weed and understory species, they have a higher chance of survival. This occurs anywhere from one to three years after planting. In line with SFNZ's environmental policies, herbicides are also used to control noxious weeds in accordance with the requirements of Regional Pest Management Strategies that are prepared by Regional Councils.

Although herbicides are a key part of the forest cultivation process, they are used with care and in line with all relevant regulations. All herbicide spraying is carried out in accordance with New Zealand Standard NZS

8409:2004 The Management of Agrichemicals, HSNO regulations, applicable Regional and District Plan rules, and the obligations conferred by FSC. The New Zealand Standard ensures that, where agrichemicals are handled or used, the practices followed are safe, responsible, and effective. This includes tracking and recording the usage of all agrochemicals. The New Zealand Standard also stipulates that herbicide usage should have minimal adverse impact on human and environmental health.

The New Zealand Standard governing the use of agrochemicals includes a commitment to use herbicides only where there is an identified need, and only after considering all other practicable alternatives. Similarly, FSC has a commitment to managing and minimising the application of chemicals, including the use of alternatives where available. FSC recommends:

- All chemical usage is tracked and recorded by active ingredient and application area to enable reporting and monitoring of trends.
- Forest owners should undertake research into chemical reduction options, efficacy and safety issues relating to chemical use.
- Chemicals which are classified by FSC as 'highly hazardous' should not be used without completing an environmental and social risk assessment.

When planning herbicide operations, SFNZ identifies areas which are to be protected from herbicide over-spraying, for example; significant native riparian vegetation, wetlands, watercourses, important indigenous habitat and neighbours' boundaries.



Figure 8: GPS herbicide application to control plant pests, will leave buffers around streams and indigenous vegetation

SFNZ undertakes education and training sessions on the safe use of herbicides for its staff and contractors.

It would be desirable to eliminate herbicide use but some usage is currently unavoidable for practical and economic reasons. SFNZ strives to use the minimum amount of herbicide required to undertake its activities. We actively seek and trial methods to reduce herbicide use. Currently, this includes over-sowing and spot spraying, where practical, to remove the need for herbicide use over a large area.

6.8 PRUNING

Pruning adds value to the forest resource by removing knots and creating what the industry terms 'clear wood'. The value of pruning depends on the growth rates, tree form, and branching habits. Targeting these

areas would make the pruning lift (a series of pruning operations over a number of years) to reach the desired pruned height to get the most effective return in terms of clearwood recovery.

Most forestry companies have moved away from pruning as the premium paid for a pruned log no longer justifies the costs of pruning trees. This was because the market has moved towards engineered wood products and the need for clear veneers and timber has declined.

6.9 THINNING

Thinning is the selective removal of trees undertaken to improve the growth rate and health of the remaining trees reducing competition and maximising the selected crop tree growth. The degree of thinning depends on the wood market that is targeted. The basic regime for our forests is a saw log programme by which the stocking will be reduced from 1000 sph to 450 sph, with a mean crop height of 14–16 metres.

7. NATURAL HAZARDS

SFNZ recognises the risk of Natural Hazards to its Forests and has well established practices for managing and responding to such risks. These form part of SFNZ's Crisis Management and Business Continuity Planning and includes forest fires, Tsunami, and significant weather events. The following sets out a typical response to a significant Natural Hazard.

Before

- Create, test and practice emergency management plan
- Ensure suitable communication equipment is available to all staff and contractors
- Audit preparedness
- Ensure appropriate insurances in place

During

- Implement emergency management plan
- Ensure all affected parties are safe or receiving assistance as required
- Maintain regular communications with all stakeholders

After

- Conduct and report on impact of event and affected resource.
- Conduct analysis of loss/impact on business and report
- Share any lessons to be learnt from event within business/industry
- Investigate options for salvage/loss reduction
- Lodge insurance claim if appropriate

Each of our Offices has an Emergency Response Plan that is specific to each office and is tested every 6 months.

7.1 FIRE PROTECTION

Fire poses a significant risk to a forest resource and, consequently, SFNZ implements a number of fire protection practices. It actively engages with Fire and Emergency New Zealand (FENZ) and follows the regional fire plan, which is reviewed by the Forest Operations Manager each year. In the event of a fire, FENZ is the lead agency in control of fire suppression. This agency, which is responsible for all fires and emergencies in New Zealand, was formed on 1 July 2017 by combining the Regional Fire Authority's and Fire Service. FENZ covers the cost of fire suppression and SFNZ has insurance cover for the crop value and re-establishment costs on a recognised crop valuation.



Figure 9: FENZ responding to forest fire

The threat of fire is minimised by the following actions:

- Have an effective fire plan that encompasses prevention, detection and control procedures.
- Use active prevention measures that include restrictions on access, fire prevention signage, publicity when fire danger is high, and maintaining access to water sources.
- Implement effective detection systems that include good communication systems, mapping, and fire plan alert procedures.
- Maintain a close link with the relevant fire authorities and an understanding of what equipment and trained manpower are available.
- Practise good forest management that recognises the influence of terrain, the road network, and accessibility on fire prevention and control measures.
- Ensure there is a suitable internal access system of roads and tracks and maintain fire breaks as the need arises.

7.2 TSUNAMI OR SIGNIFICANT WEATHER EVENT

SFNZ monitor weather forecasts and alerts from the National Emergency Management Agency (NEMA).

Should a forecast storm be categorised as yellow or above by the Met Service or NEMA, SFNZ will:

- Work with its contractors to ensure operational areas are prepared for the forecast event. This will include checking water controls, moving equipment to a sheltered/stable area, putting gear away, covering unconsolidated topsoil covered with slash etc, and ensuring all workers are out of the forest before the storm hits.
- Requiring Contractors, staff, and transport operators not to enter an SFNZ Forest until after dawn following a significant storm event. This is to ensure the safety of workers when traveling on potentially affected roads by allowing drivers to see any damage to the road.
- Shut down operations until the weather improves if weather conditions become unsafe during the workday.
- Check all water controls after any major storm event. This includes culverts, temp stream crossings, silt traps and cut offs. If any issues are noted, then a crew is mobilised as soon as practicable and within 2 days to remedy any issues.

Should a Tsunami Alert be issued by the NEMA that would affect our Forest(s) and/or the routes to and from our Forest(s), SFNZ will notify its staff, Contractors, and transport operators and ensure all those that work for us are aware of the warning and are taking appropriate action.

8. FOREST HEALTH

Maintaining forest health is central to delivering the resource through to harvest and ensuring its overall quality. SFNZ undertakes both informal and formal forest health surveillance. Disease, pests and weeds are monitored on forest visits, including operations supervision, and control programmes are implemented when required. These programmes include trapping and shooting pests, or spraying weeds, and preventing fungal attack from *dothistroma*.

All forests are visited annually by biosecurity personnel contracted by SFNZ. These personnel do on-the-ground surveys for forest health; which includes pests, disease and nutrition. Any samples taken are sent to SCION for analysis. SCION is a Crown research institute that specialises in research, science and technology development for the forestry industry. Findings are delivered as a report. The recommendations reviewed and, where necessary, are acted on to ensure the appropriate outcome for the resource and SFNZ's shareholders.

The forest health objectives are to:

- To reduce negative impacts on native biodiversity.
- To reduce the abundance and distribution of pests within the forest estate.
- To ensure impacts on neighbouring properties are promptly dealt with.
- To meet our statutory obligations under the Regional Pest Management Strategy (RPMS).

8.1 DISEASE CONTROL

Most forest pathogens will cause little damage in a well-managed forest and therefore do not require control. The exception is *Dothistroma pini*, a fungus which attacks pine needles and is associated with wet, warm conditions. *Dothistroma pini* is the most commonly occurring fungal disorder within New Zealand's pine plantations. This fungus can be effectively controlled using an aerially applied copper-based fungicide spray, but this is only implemented when the infection reaches a critical level. *Dothistroma pini* infection can also be controlled via silviculture by implementing timely thinning and pruning operations to increase air movement and lower humidity levels.

To date, there has been no need for *Dosthistroma* or any other fungal disorder control within the SFNZ forests. As is standard practice, any unusual mortality or foliage colouring discovered within the SFNZ estate will be reported to the Ministry of Forestry.

Kauri dieback is a major concern for New Zealand's Kauri forests. Kauri dieback can kill Kauri of all ages. It's a disease caused by a microscopic fungus-like organism, called *Phytophthora agathidicida* (PA). It lives in the soil and infects kauri roots, damaging the tissues that carry nutrients and water within the tree, effectively starving it to death. There's currently no proven cure or treatment and nearly all infected kauri die. The disease is easily spread through soil movements. SFNZ has no known cases of kauri dieback within the reserve areas within its Northland and Coromandel forests. However, SFNZ staff and contractors are trained in preventing the spread of PA by footwear and machine hygiene practices when working near kauri. Anyone seeking an access permit is informed of the risk and its control and kauri dieback signage is on applicable forest gates. A mountain bike wash down facility is being installed at Whitehills Forest. SFNZ follows MPI recommendation of the kauri dieback programme <https://www.kauridieback.co.nz/how-to-guides/>.

Seed from kauri in the reserve areas of Whangapoua Forest have been collected for use in research to breed PA resistant kauri. SFNZ is part of a Kauri Dieback working group looking at rules for Kauri Phytophthora Agathidicida National Pest Management Plan.

8.2 PLANT AND ANIMAL PEST CONTROL

Plant and animal pests are wide-spread and can be difficult and expensive to control. Many of the plants now considered environmental pest plants were imported as ornamental garden plants for their colour, scent, or beauty. Exotic tree species, including Radiata Pine, can also become a pest plant in the right conditions. These plants have escaped into the wild, and in favourable conditions they grow and spread rapidly. Pines in such cases are commonly referred to as “wildings” reflecting their ‘escape’ from a plantation⁶. There are over 20,000 introduced plants and animals in New Zealand. At least 10 per cent of these have formed self-sustaining and persistent populations, and of these, approximately 10 per cent become significant ecological or economic pests.

Pests can substantially reduce the productivity of the forest through browsing or competition for nutrients and sunlight. Forests provide habitat for unwanted pest animals and, in most cases, a refuge from which such pests can spread, so large numbers of pests in a forestry plantation can impact adjacent areas. SFNZ will identify the presence of pests and manage them within the relevant regional council pest management strategies. The most cost-effective long-term pest control is often achieved through cooperation with neighbours, regional authorities, and pest control agencies, along with encouraging hunting and trapping permits.

The main animal pests are the introduced Brushtail possum (*Trichosurus vulpecula*), goats (*Capra hircus*), *Mustelids* (Stoats, Ferrets, and Weasels), cats (*Felis catus*), rats (*Rattus sps*) and rabbits (*Oryctolagus cuniculus*). The Department of Conservation website provides good descriptions of each of these pests along with a history of their introduction to New Zealand ([Animal pests and threats A - Z: Threats and impacts \(doc.govt.nz\)](http://doc.govt.nz)).

Within the native ecosystems and over extended periods, the dietary habits of possums and goats will force a species composition shift as preferred species are repeatedly eaten out and less preferred species gain greater dominance. Within our pine plantations, possums attack the growing tips of plantation and native trees which causes stem malformation and dieback. Possums are also a threat to neighbouring farmers as they can carry and spread tuberculosis to domestic stock. Rabbits and hares can nip the top off newly planted trees. Mustelids and feral cats eat native birds, lizards and insects.

The main plant pest species within the SFNZ estate are various grasses including Pampas, gorse, broom, blackberry, wilding conifers, wattle, lantana, wild ginger and tobacco weed and wild ginger. Weeds, including wilding pines, threaten indigenous biodiversity where they can smother (out compete) native species. However, in some cases gorse can also act as a nurse crop for native regeneration as can radiata pine. Within the pine plantation, competition from colonising weeds will limit tree growth in their first few years after establishment but, as previously discussed, this can be effectively managed.

The forest manager coordinates pest control operations within the forest area (refer to 6.6 Spraying). Animal pests are controlled, as required, using ground control methods because this reduces the impact on non-target species. SFNZ records annual statistics on pest control and keeps relevant stakeholders informed of pest management operations.

⁶ The risk of wilding conifers is managed under section 11 of the NES-PF. SFNZ is not engaged in afforestation of land not previously in plantation forestry and is not planting species other than Radiata Pine which has a low risk of spread.

Under the Biosecurity Act, the relevant Regional Council produces and implements a Regional Pest Management Plan. The Plan is to prevent new incursions of pest plants and manage the impacts of those pest plants already established.

The most cost-effective long-term pest control is often achieved through cooperation with neighbours, regional authorities, and pest control agencies. SFNZ identifies the presence of pests and manage them within the relevant regional council pest management strategies. SFNZ also works with neighbours, land care groups, regional council, Fish and Game, tangata whenua, Kiwi Coast and Kiwi Recovery, and facilitates hunting and trapping to control pests. SFNZ is undertaking more intensive pest control operations in areas identified as habitat for threatened species like Australasian bittern and North Island and Coromandel brown kiwi. See section 11.4 Threatened species for more detail.

The overall objectives when managing pests are:

- To reduce direct impacts on both plantation and indigenous biodiversity
- To reduce the abundance and distribution of weeds within the forest estate
- To ensure impacts on neighbouring properties are promptly dealt with
- To meet our statutory obligations under the Regional Pest Management Strategy (RPMS).

For the financial year ending 31st March 2023, SFNZ spent \$164,441 on plant and animal pest management not including that required for its restoration and biodiversity projects.

8.3 BIOCONTROL

New Zealand has a ninety-year history of working with insect and pathogen (rusts/blights) biocontrol agents. So far, 59 biological control agents have been released against 22 target species. There have been no significant non-target attacks in New Zealand. Landcare Research are funded by the National Biocontrol Collective (which is made up of all regional authorities in New Zealand and the Department of Conservation) to investigate biocontrols on behalf of New Zealand.



Figure 10: Buddleia leaf weevil damage

After meticulous testing Landcare Research apply to the Environmental Protection Agency for approval to introduce a biocontrol into the New Zealand environment. Upon approval, the regional authorities and DOC can distribute the agent. After a year, the biocontrol agents are checked to see if they survived by Landcare Research, regional authorities or DOC. Agents may need to be released several times before they become established. Once agents are doing well at one site, some are collected and released at new sites to help speed up their spread. Landcare Research, regional authorities or DOC also commission any follow up studies to

measure the impact of the agent. They use this information to decide whether there is a need to import more biocontrol agents or do other things to help the agent be more effective.

Biocontrol are increasingly being recognised as an essential part of integrated pest management systems that contribute to sustainable pest control. Examples of biocontrol include the green thistle beetle (*Cassida rubiginosa*), the tutsan seed-eating moth (*Lathronympha strigana*), and broom gall mite (*Aceria genistae*). SFNZ is supporting studies into Wild Ginger (*Hedychium gardnerianum* and *H. flavescens*) biocontrol research (<http://www.stopwildginger.co.nz/our-plan>), the testing and introduction of the leaf and bud galling mite (*Aceria vitalbae*) to assist with the control of Old Man's Beard, and the release of lace bug (*Gargaphia decoris*) to control Woolly Nightshade (*Solanum mauritianum*).

SFNZ is not directly involved in the testing, release or distribution of biological control agents and will request monitoring information from the relevant local authority annually or as appropriate.

8.4 FOLIAGE SAMPLING

Where required, such as in Northland sand forests, pine tree needles are sampled once a year in February to assess deficiencies in available nutrients. Young stands that show nitrogen deficiency are fertilised close to the time of thinning. With the exception of Whangapoua, where phosphate deficiencies are identified, aerial fertilising operations are carried out in the spring. For Whangapoua, the acidic soils means that phosphate is not available for uptake by the trees and fertilising with phosphate will not change this.

8.5 FERTILISER

Nutrient management plans are developed for Forests we know will suffer from deficiencies as they grow. These plans are guided by the foliage sampling data. These foliage samples are analysed by Scion, specifically for each key trace element that is required for good growth. Based on this analysis, Scion recommends an optimum fertiliser application (composition and quantity) to improve the tree health in each area analysed. These recommendations are implemented by SFNZ in its fertilising programmes. The soils in the forests are marginal in respect of nutrient status for healthy tree growth. The most common nutrient deficiencies are:

- Nitrogen: The west coast sands in the North Island are generally significantly deficient in this element. Nitrogen has traditionally been supplied by natural inputs from nitrogen-fixing yellow lupin. After this species became vulnerable to attack from lupin blight (*Collettrichum gloeosporioide*), the more resistant blue lupin and other varieties of nitrogen-fixing plants such as vetch (*Vicia sativa*) have been used to fix nitrogen.
- Phosphate: Forests managed by SFNZ, especially those close to the coast, tend to have low phosphate and must be monitored. Phosphate is applied as necessary in the form of low solubility rock phosphate.
- Magnesium: The phenomenon known as mid crown yellowing, where the middle of the tree crowns turns a yellow colour, is associated with magnesium deficiency. Heavily pruned trees and some seed lots are more predisposed to the deficiency than others. However, magnesium deficiency is not normally a problem in those forests managed by SFNZ.
- Boron: Trees that are deficient in this element can suffer dieback from the terminal buds. This type of dieback is closely associated with moisture stress and drought. However, boron deficiency is not normally a problem in forests that are managed by SFNZ.
- Copper: Monitoring has revealed that there are some signs of copper deficiency in second rotation crops. SFNZ is monitoring this.

9. HARVESTING

In this section we provide details on harvest planning and the methods used for harvesting. Note that the harvest schedule occurs within the context described in Section 5.

In Northland the sustainable harvest from the estate is 400,000 t annually. This will fluctuate as we balance harvesting external managed sale forests in conjunction with the estate. With the addition of external managed forests, the annual harvest sits at 450,000 – 500,000t annually.

The Gisborne estate currently has four harvesting crews producing around 200,000 t annually. Over the next 2-3 years, and notwithstanding major storm events and disruption to the region' production will increase significantly to a peak of 500,000 t annually and will average 400,000 over a 20-year period. Most of the forests are on terminating CFLs or Forestry Rights which are handed back once harvesting is complete.

The Whanganui estate has no areas available to be harvested over the next 5 years. Due to the nature of the age class distribution of this resource harvesting happens in short bursts rather than consistent production.

In Coromandel harvesting stopped at the end of 2022 to increase the average age of the crop to allow us to supply volume into the domestic market. Harvesting is planned to start again in 2024, with a production target of 60,000-80,000 t annually. Production will increase within a 3–5-year period up to 100,000 t annually.

9.1 HARVEST PLANNING

A comprehensive planning process determines what infrastructure is required to harvest a particular forest. This process involves balancing a range of factors such as piece size, terrain, stakeholders, customer requirements (grade and volume), harvesting capacity, access, and any environmental constraints.

This phase of the forest life cycle is important as this is when operations have the biggest impact on the landscape. During the planning process you need to consider a range of variables and what the implications of your decisions maybe. SFNZ has developed a harvest planning matrix (figure 11) to assess physical terrain limitations, environmental risk, and safety of the plan. This tool is used by our harvest planners to support their decision making to produce the best outcome not only from a financial perspective but also from a safety and environmental perspective. SFNZ want to make sure that contractors are not put into situations where they will take unnecessary risks and leave the land protected and productive for future generations.

HARVEST PLANNING	ACCEPTABLE	CAUTION	UNACCEPTABLE
SAFETY BY DESIGN	Mechanisation possible. Logical harvest boundaries to allow safe access.	Additional infrastructure requirements to ensure logical access minimising obstacles to the harvesting contractor.	Large areas exceed 45° slope and will require manual falling. Options need to be reviewed. Extraction difficult requires manual breaking out. Are there alternative options?
ENVIRONMENTAL RISK	Low impact on the landscape. Moderate to low erosion prone land. Stable soils.	Unstable slopes consider alternative infrastructure options. Threatened environment / flora / fauna management required. Waterways / wetlands / coastal environment management plan required. Slash storage on the skid limited look at management options. Fish spawning areas limited harvest access during the year.	Highly erosion prone Land. Shallow soil depth. Slip prone land. Highly visual to the public. Risk to the water body from slash and soil disturbance. Down stream effects on the neighbours/council infrastructure.
PHYSICAL TERRAIN LIMITATIONS	Fit for purpose infrastructure in place to allow access.	Shovelling required or additional 2-stage extraction.	Blind Inaccessible.

RISK	DESCRIPTION OF RISK	ACTION	PRIORITY
ACCEPTABLE	No reviewed required. Harvest Planner/Forest Engineer can make judgement call.	Undertake the activity with current plan.	Low
CAUTION	Harvest Planner/Forest Engineer to review seek advice to look at alternative options.	Implement controls to ensure risk is managed	Moderate
UNACCEPTABLE	Review with Harvest Manager and contractor to look at alternative options.	Don't continue with this option if there is no way to manage the risk	High

Figure 11 Harvest Planning risk evaluation matrix

9.2 HARVESTING TECHNIQUES

SFNZ is committed to adopting harvesting techniques and technology that minimise the impact on the environment and reduce the risk of accidents and injuries.

Harvesting is undertaken by two key methodologies—ground-based harvesting and cable harvesting.

GROUND-BASED HARVESTING

Ground-based harvesting is carried out on easier terrain (generally < 25°). With this harvesting method, trees are felled and extracted by machine to a processing area. In ground-based terrain, all felling is carried out with mechanical harvesters to minimise the risk of injury during the felling operation. However, a very small proportion of ground-based terrain is manually felled because the area is practically inaccessible to machinery. The stems are typically transported to the processing area by pulling them with skidders or cutting them to length in the cutover and using forwarding machines to collect and take the logs to central skid. However, in some instances, shovel logging (using a grapple machine to move whole stems) is also used.

CABLE HARVESTING

Cable harvesting is carried out on steeper terrain (generally > 25 degrees°). In this method, felled stems are extracted using a hauler (either swing yarder or tower), where trees are stropped up by a breaker out or by using a grapple (to minimise risk by not having a breaker out) to a cable and then dragged to a processing area. In the past, falling on cable country was almost universally carried out manually by chainsaw. However, the advent of winch assist harvesting, by which the machines are attached to a steel cable on a winch system, has significantly extended the range of falling machines onto steeper terrain. SFNZ is encouraging its contractors to adopt this technology to reduce the need for manual felling. Figure 12 shows a cable harvesting operation in Asia Otangaroa Forest - Northland.



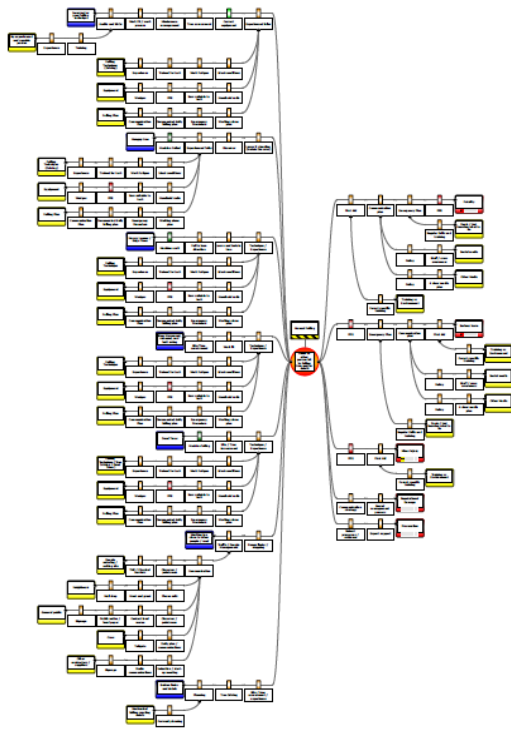
Figure 12: Cable harvesting – Asia Otangaroa Forest

10. HEALTH AND SAFETY

Health and safety (H&S) is an integral part of every operation that takes place in the forest. SFNZ maintains a H&S Policy Statement and associated management system. The Policy is signed by the Managing Director on behalf of the Board and has been communicated to all staff and contractors. Health and safety statistics and relevant information is reported monthly to the Leadership Team and quarterly to the Board of Directors. The SFNZ H&S Policy can be found on the company website, in our H&S system Mango, and is included in Appendix:4

SFNZ recognises the expertise of those that work for us and has a management system that establishes the outcomes we require and largely leaves how those outcomes are achieved to those doing the work. This is managed through the overarching Policy and 17 Standards which are reviewed every two years. There are two key regulatory drivers for improving safety practices and reducing workplace accidents across the industry: The Health and Safety at Work Act 2015 and associated regulations, and the Approved Code of Practice for Safety and Health in Forest Operations (and amendments). SFNZ conducts regular auditing and monitoring of its operations to ensure compliance with company requirements, codes of practice, and best

practice systems, and legal requirements. This includes periodic external reviews of our systems which provide a benchmark for our processes and drives continuous improvement.



SFNZ maintains a strong focus on identifying and managing risk through robust hazard identification and management processes. This includes using BowTie Analysis to breakdown and understand critical risk activity so that we can best identify the controls that need to be in place whenever these activities are undertaken. An example of a BowTie analysis is provided in Figure 13.

Accident and incident reporting and investigation and monitoring are employed to ensure that SFNZ and its contractors can learn from things that go wrong or could have gone wrong. Any learnings are captured and communicated across SFNZ and, where appropriate, to wider industry.

Figure 13: BowTie analysis of Manual Felling

10.1 PERSONNEL MANAGEMENT

SFNZ is committed to be a good employer, which includes providing a safe and healthy working environment with equal opportunity for all employees. To achieve this SFNZ maintains and implements a number of policies that underpin our culture. These include an equal employment opportunity (EEO Anti-Discrimination) policy, an alcohol and drug policy, and a workplace bullying policy. We also run an active wellbeing programme.

10.2 CONTRACT WORKFORCE MANAGEMENT

In a similar way to most other forest companies, SFNZ has a high proportion of operations undertaken by contracting companies. SFNZ's Contractor Management policy sets out how it manages its contractors from initial selection through operational management, and termination. Our contracts formalise our general philosophies and procedures. In placing these contracts, SFNZ also:

- Only uses primary contractors who comply with SFNZ policies on H&S, welfare and personnel management
- Gives preference to local / domiciled contractors who employ locally
- Endeavours to maintain long-term relationships with contractors to reduce business risk, build trust, and maintain effective communication
- Periodically tenders work to ensure the wider community has a chance to enter the SFNZ environment and to maintain market rates for the work completed.



Figure 14: Cartage contractor being loaded – McNab Forest

11. ENVIRONMENTAL

SFNZ is committed to conserving biological diversity and its associated values through sustainable forest management practices within its forest management units. We see this as part of ensuring long-term sustainability of the land and the “social licence” for our operations. The natural environments in which we work are interwoven with a range of values that include life supporting capacity, aesthetic appreciation, recreational opportunities, spiritual meaning, cultural significance, economic opportunities, and more.

Key environmental areas SFNZ focuses on include, but are not limited to:

- Soil and water management
- Riparian management
- Unique and fragile ecosystems management
- Native flora and fauna species management

SFNZ’s environmental strategy is designed to facilitate environmental stewardship and reflect our company philosophy of maintaining, protecting, and where possible, enhancing the natural environment, either directly or through collaboration. We do this through:

- Cultivating an awareness of environmental responsibilities in all those who work within the forest.
- Maintaining good working relationships with all local councils.
- Establishing, maintaining, promoting and encouraging collaborative relationships with iwi, neighbours, and other stakeholders.
- Undertaking and promoting sound environmental stewardship of the land and other natural resources that are on or adjacent to the forests we manage.
- Only using primary contractors who accept and comply with SFNZ environmental standards.

SFNZ’s Environmental policy is attached in Appendix 5.

The key environmental issues facing New Zealand are surface water quality, unsustainable land use, threats to indigenous biodiversity, climate change and, in some areas, water supply issues. These are national issues related to land use and population growth. As a forestry company that occupies a very small area of New Zealand (4.1% of the 7% of New Zealand that is in plantation forest [Facts and Figures 2021-22 \(nzfoa.org.nz\)](#), SFNZ business operations will have little material impact on these issue alone. However, by doing its best, SFNZ contributes to a collective outcome that will make a material difference.

SFNZ invests in people and technology to ensure operations have as little negative impact as possible on the environment and that any incident can be communicated and resolved quickly. Over a rotation of a plantation forest, it is recognised that well managed operations have a net positive impact on the environment across all of the key environmental areas identified above.

11.1 OPERATIONS GUIDE

SFNZ has developed an Operations Guide. This guide references standard operating procedures (SOPs), documentation, training, policies, FSC principles, HSNO Act requirements, and environmental risk management, as well as regional guidelines and standards for forestry operations. It guides all operations and is regularly reviewed and updated.

The assessment of environmental risks is considered as part of the company's risk management process and managed via harvest planning and supervision. Pre-harvest checks (impact assessment), operational checks, and post-harvest checks are all carried out by the harvesting team.

Where site improvements are required, these will be dealt with depending on the nature of action required and timeframe needed. Examples include:

- post-harvest remediation (tidy tracking, pulling back slash, removing debris from waterway).
- plan changes (method of extraction, infrastructure required).
- contractor systems (risk assessment or equipment condition).

Operational teams, including both forest operations and harvesting, meet regularly to discuss all operations plans and any environmental constraints.

11.2 HAZARDOUS SUBSTANCES

The SFNZ Operations Guide covers the management of hazardous substances and clearly outlines our expectations for all staff, contractors and suppliers in relation to this risk. SFNZ is committed to reducing the use of hazardous substances and all aspects of chemical use are reported annually. SFNZ and contractors return empty containers and waste oil to suppliers for reuse, recycling or disposal.

FSC lists chemical pesticides that are considered to be highly hazardous and classifies them as prohibited, highly restricted or restricted (Highly Hazardous Pesticides (HHP) FSC-POL-30-001 V3-0 FSC). An alternative is sought, or an Environmental and Social Risk Assessment process is undertaken for these pesticides. Types of hazardous substances can include herbicides, pesticides, fuels, oil, fire retardants, surfactants, and paint.

All newly listed pesticides and pesticides not listed as highly hazardous: From 1 August 2020 an Environmental and Social Risk Assessment must be completed for all pesticides prior to their use in the forest, including those chemicals that have been added in the latest update to the FSC lists, and pesticides not currently listed.

11.3 ENVIRONMENTAL AND SOCIAL RISK ASSESSMENTS

Hazardous substances can include herbicides, pesticides, fuels, oil, fire retardants, surfactants, and paint. SFNZ has a duty under the [Health and Safety at Work \(Hazardous Substances\) Regulations 2017](#) to manage the risks

associated with the hazardous substances in our workplace. The following sets out how we meet that duty of care.

The New Zealand Standard for the Management of Agrichemicals (NZS 8409:2004) ensures that, where agrichemicals are handled or used, the practices followed are safe, responsible, and effective. This includes only using herbicides where there is an identified need, and only after considering all other practicable alternatives. There is also a need to track and record the use of all agrochemicals. The New Zealand Standard also stipulates that herbicide usage should have minimal adverse impact on human and environmental health.

FSC classifies Highly Hazardous Pesticides (HHP) as prohibited, highly restricted or restricted in policy FSC-POL-30-001 V3-0 FSC based on toxicity to humans and the environment and internationally recognised criteria. SFNZ shall not use any chemical prohibited by FSC (unless in an emergency situation or as directed by a government order).

SFNZ has undertaken comparative Environmental Social Risk Assessments (ESRA) to select control options that demonstrates least social and environmental damage, the greatest effectiveness, and equal or greater social and environmental benefits. SFNZ is committed to reducing the use of hazardous substances and is progressively completing company level ESRA's which are available to operations staff on the company server. Appendix 3 table lists ESRA undertaken so far. The Environment Planners are responsible for keeping up to date with any changes to the FSC Pesticides Policy or highly hazardous chemicals list affecting SFNZ operations and notifying the Operational team of any such changes.

FSC recognises that in certain circumstances and having considered other available pest management strategies and practices, the use of chemical pesticides may be the only feasible way of controlling a pest, weed, or disease problem.

All chemical usage is tracked and recorded by active ingredient and the area where it is applied to enable reporting and monitoring of trends. SFNZ keeps current safety data sheets and an inventory of substances in the WorkSafe hazardous substances tool. SFNZ monitors industry research into chemical reduction options, efficacy, and safety issues relating to chemical use.

11.4 THREATENED SPECIES

Local government has responsibilities under the Resource Management Act 1991 for maintaining indigenous biological diversity on private land, water bodies, the foreshore, and council reserves. Biodiversity on public conservation lands and waters (including marine reserves and mammals) is managed by the Department of Conservation (DOC). Most endogenous and native flora and fauna have been ranked in a threat classification system by DOC to help manage the risk to our flora and fauna. Risk to New Zealand's biodiversity is predominantly from habitat loss, invasive species, and predation.

The following summarise the threatened species found in SFNZ's four operational areas:

11.4.1 NORTHLAND

Common Name	Scientific Name	Threat Status	Species Group	Distribution	Forest Association
Matuku hūrepo Australasian bittern	Botaurus poiciloptilus	Threatened: Nationally Critical	Wetland birds	Throughout New Zealand	Northland - Could be in any larger wetlands (Te Hiku & Lake Ngatu, HCV, Donovan East).
Sun Orchard	Thelymitrua sanscilia	Threatened: Nationally Critical	Orchard	North Island	Northland (Te Hiku – Hukatere HCV)

Stalked adder's tongue fern	<i>Ophioglossum petiolatum</i>	Threatened: Nationally Critical	Fern	North Island	Northland (Matipia HCV)
Pekapeka, Long-tailed bat	<i>Chalinolobus tuberculatus</i>	Threatened: Nationally Critical	Bat	North & South Island	Possibly in Northland.
Sand Kanuka	<i>Kunzea linearis</i>	Threatened: Nationally Vulnerable	Shrub	North Island	Northland (Te Hiku - Hukatere HCV).
Pekapeka, Northern lesser short-tailed bat	<i>Mystacina tuberculata aupourica</i>	Threatened: Nationally Vulnerable	Bat	Northland, Auckland, Coromandel	Northland (Te Hapua, Pearse, Maungataniwha, Otangaroa, Puketi)
Kauri	<i>Agathis australis</i>	Threatened: Nationally Vulnerable	Tree	Naturally occurring in North Island from Te Pahi south to Te Puke	Northland native forest remnants
Kirk's daisy	<i>Brachyglottis kirkii</i> var. <i>kirkii</i>	Threatened: Nationally Vulnerable	Shrub	North Island	Northland (Whitehills).
North Island brown kiwi	<i>Apteryx mantelli</i>	At Risk: Declining NES-PF: protect nests	Forest bird	Widespread in the North Island north of the Manawatu Gorge	In numerous Northland forests south of Te Hiku.

11.4.2 COROMANDEL

Common Name	Scientific Name	Threat Status	Species Group	Distribution	Forest Association
Matuku hūrepo Australasian bittern	<i>Botaurus poiciloptilus</i>	Threatened: Nationally Critical	Wetland birds	Throughout New Zealand	Possibly return to Coromandel (Waingaro Wetland HCV)
Pekapeka, Long-tailed bat	<i>Chalinolobus tuberculatus</i>	Threatened: Nationally Critical	Bat	North & South Island	Coromandel.
Pekapeka, Northern lesser short-tailed bat	<i>Mystacina tuberculata aupourica</i>	Threatened: Nationally Vulnerable	Bat	Northland, Auckland, Coromandel	Possibly Coromandel.
Kauri	<i>Agathis australis</i>	Threatened: Nationally Vulnerable	Tree	Naturally occurring in North Island from Te Pahi south to Te Puke	Coromandel native forest remnants
Archey's Frog	<i>Leiopelma archeyi</i>	Threatened: Nationally Vulnerable	Frog	Coromandel Peninsula and western King Country	Coromandel

Hochstetter's Frog	<i>Leiopelma hochstetteri</i>	At Risk: Declining	Frog	Southern Northland to King Country, Coromandel, Bay of Plenty and East Cape	Coromandel
North Island brown kiwi	<i>Apteryx mantelli</i>	At Risk: Declining NES-PF: protect nests	Forest bird	Widespread in the North Island north of the Manawatu Gorge	Coromandel (captive rearing project to enhance chick survival).
Kārearea Bush falcon	<i>Falco novaeseelandiae ferox</i>	At Risk: Recovering NES-PF: protect nests	Bird	Found in the forests of the North Island and north-western South Island	Possible in Coromandel

11.4.3 GISBORNE

Common Name	Scientific Name	Threat Status	Species Group	Distribution	Forest Association
Matuku hūrepo Australasian bittern	<i>Botaurus poiciloptilus</i>	Threatened: Nationally Critical	Wetland birds	Throughout New Zealand	Possibly Gisborne
Pekapeka, Long-tailed bat	<i>Chalinolobus tuberculatus</i>	Threatened: Nationally Critical	Bat	North & South Island	Possibly Gisborne
Pekapeka, Northern lesser short-tailed bat	<i>Mystacina tuberculata aoupourica</i>	Threatened: Nationally Vulnerable	Bat	Northland, Auckland, Coromandel	Gisborne
Hochstetter's Frog	<i>Leiopelma hochstetteri</i>	At Risk: Declining	Frog	Southern Northland to King Country, Coromandel, Bay of Plenty and East Cape	Gisborne
Kārearea Bush falcon	<i>Falco novaeseelandiae ferox</i>	At Risk: Recovering NES-PF: protect nests	Bird	Found in the forests of the North Island and north-western South Island	Gisborne
North Island weka	<i>Gallirallus Australia gryi</i>	At Risk: Recovering NES-PF: protect nests	Forest bird	Isolated populations in Northland, Bay of Plenty high country, otherwise mostly offshore islands	Gisborne

11.4.4 WHANGANUI

Whanganui has large tracts of hill country bush that are protected in National Parks and Conservation Reserves. These contain several rare and unique species include the Blue Duck (Whio), Short Jawed Kokopu, North Island Kaka, Australasian Bittern, Wrybill, New Zealand Falcon and North Island Brown Kiwi. Threatened plant species located in the Whanganui District include *Pterostylis micromega*, *Mazus novaezealandiae* and *Pimelea* 'Turakina'. There is currently no record of RTE species within SFNZ Whanganui Forest Estate.

11.4.5 SFNZ'S MANAGEMENT OF RARE, THREATENED, OR ENDANGERED SPECIES

SFNZ is committed to the conservation, preservation and protection of the indigenous flora and fauna in the forests it manages and in support of our neighbours' efforts. The FSC standard defines rare, threatened or endangered species (RTE) as any species listed in either of the following two publications or their updates under the specified categories:

- IUCN Red List of threatened species - Critically Endangered, Endangered or Vulnerable.
- NZ Threat Classification System (NZ TCS) **Threatened** (Nationally Critical, Nationally Endangered or Nationally Vulnerable).

There is also an indigenous bird nesting clause in the NES-PF. Plantation forestry is a permitted activity provided procedures are in place and followed for nests of the following birds:

- All **Threatened** birds identified in the NZ TCS
- North Island brown kiwi (*Apteryx mantelli*)
- Eastern falcon (*Falco novaeseelandiae novaeseelandiae*)
- Bush falcon (*Falco novaeseelandiae ferox*)
- North Island weka (*Gallirallus australis greyi*).

The Operations Guide contains a table of RTE species found in SFNZ forests and discovery protocol. SFNZ maintains a list of RTE sightings which are documented in the Observation Survey in Survey123 and reported on annually.

SFNZ consults with stakeholder's including iwi, Department of Conservation, Fish and Game New Zealand, the previous landowners / managers, the relevant Regional Council, and the FOA rare species website <https://rarespecies.nzfoa.org.nz/> in the identification of potential RTE species. The FOA website provides a guide for monitoring and management of rare species in New Zealand plantation forests which SFNZ utilises.

Proactive company measures to monitored and managed RTEs include, but are not limited to:

- Routine operation monitoring of natural areas adjacent to forest operations
- Various pest control measures
- Kiwi call count population density surveys
- Stream clarity monitoring
- Fish passages surveys
- Assessment of the flora and fauna (five-yearly plot conservation plot monitoring)
- Any RTE sightings added to the GIS layer and reported to DOC
- Contractor training around RTE species and management.

11.4.6 CITES

The Convention on International Trade in Endangered Species (CITES) of wild fauna and flora is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their long-term survival in the wild. It was drafted because of a resolution adopted in 1963 at a meeting of members of the International Union for Conservation of Nature and came into force on 1 July 1975.

Over 38,000 species are covered by CITES, with trade in these managed through a system of permits and certificates. CITES is implemented in New Zealand through the Trade in Endangered Species Act 1989 (TIES Act). The administration of CITES is provided by the Department of Conservation. The New Zealand Customs Service and Ministry for Primary Industries are responsible for border controls.

Species are listed in three different 'Listings', depending on their conservation status and how much they are traded. Permit requirements are different for each group.

- Appendix I species are the most endangered, and trade is more restricted for those species.
- Appendix II species can withstand more trade.
- Appendix III species are those where individual countries have asked for help to protect those species.

Species can be checked to see if they are on the list at this web site <https://www.doc.govt.nz/endangered-species/>. The complete list of NZ CITES is in <https://summitforest.sharepoint.com/sites/EnvironmentalManagement>.

11.5 INDIGENOUS RESERVES

Management of the indigenous biodiversity that occurs in, or is associated with, exotic forests is an essential component of everyday forest management. Although exotic forests provide a level of biodiversity, the reserve areas are usually the source of most indigenous biodiversity and provide refuge areas and corridors during harvesting.

SFNZ manages approximately 12,904 hectares of indigenous forest remnants that are located within its estate boundaries. The majority of the indigenous forest remnants were in place and reserved when the plantation forests were established. The reserve area has expanded over time as those areas which are not suitable for productive use are identified and retired and/or riparian areas established. Reserve areas are identified in the company Land Resource Manager (LRM) mapping system and managed as significant non-plantation area (SNP) and protected under NES-PF and ecological covenant rules.

Indigenous reserves (SNP) are those areas meeting the following criteria:

- Areas under Protective Covenant and listed in the Crown Forest Licence
- High Conservation Value Forest Areas (Forest Stewardship Certification)
- Indigenous vegetation identified as National Priority 1 land
- Areas listed in regional or district council plans as areas of significance
- Areas that have been assessed by SFNZ as meeting the requirements of the Forest Accord
- Any site housing any rare, threatened or endangered species
- Riparian margins alongside significant waterways
- Areas deemed significant by SFNZ for other purposes (e.g. site of a radio transmitter, archaeological or historical site, wahi tapu).

SFNZ has undertaken an ecological assessment that is representative of each SNP and ecological district in the region. The LRM record includes summary information and a unique site number that can be used to access more detailed information, including the ecological assessment reports. Reserve areas are monitored for changes in conservation values every 5 years and is scheduled for this year (2023). The greatest threat to these areas is from invasive animal and plant pests. SFNZ will implement actions as required and monitor results and revise the management processes.

The assessments have used a wide range of information including:

- Mapping information and aerial photography that identify the location of reserves and site boundaries
- Any previous ecological reports for sites in the forest such as DOC Protected Natural Area Programme (PNAP) or threatened species reports
- Site surveys by suitably qualified staff or consultants to record vegetation, habitat types, and relevant observations of flora and fauna
- Permanent conservation plots that have been established to track through time species type, growth, threats, and flora and fauna. Methods to identify species include lizard pitfall traps, listening devices for bats, and bird call counts that confirm the presence of indigenous birds.

Survey reports are produced for each site and include:

- A description of flora and fauna present within the reserve which is based on previous reports and field visit observations and includes any threatened species observed or previously recorded
- Management recommendations for each site where applicable
- Information presented graphically so change over time can be detected.

11.6 ECOLOGICAL PROJECTS

SFNZ is actively involved in reserve maintenance and restoration projects. The ecological assessments described above form the basis for establishing maintenance and restoration priorities along with guidance from the Ministry for the Environment (MfE), regional councils and community stakeholders. For the year ending 31st March 2022, SFNZ spent \$120,385 on restoration projects.

The following summarises the various ecological projects by region:

11.6.1 NORTHLAND

SFNZ has partnered with the Regional Council, Bushlands Trust, DOC, Ngai Takoto, local schools and others in the community to undertake this restoration projects. Figure 15 shows SFNZ Lake Gem restoration project fully fenced with a complete kuta margin and other plantings. Annual arbour day planting has seen the lake transformed from a pugged and grazed kuta (*Eleocharis sphacelate*) dominated margin to pristine water quality and significant habitat for threatened species like Australasian bittern. Along with the ecological benefits, Lake Gem also provides an all-season walking track for public use from the dune lakes to the coast. Several local clubs and health initiatives utilise this access.



Figure 15 Lake Gem SFNZ dune lake restoration project, providing pristine habitat and public access

11.6.2 COROMANDEL

The Project Kiwi Trust (PKT) is contracted by Summit Forests New Zealand Limited (SFNZ) to manage two biodiversity projects in Whangapoa Forest – one focused on Coromandel Brown Kiwi in the ‘Biodiversity Block’ and one in Waingaro Wetland.

The ‘Biodiversity Block’ (the ‘block’) covers 1432 hectares. This block was selected in July 2007 for kiwi conservation programme designed by Dr. John McLennan. The block was selected on the basis that it was a suitable habitat for Coromandel brown kiwi. Specifically, it comprises of two catchments with two sizeable streams, the Otanguru and Owera, running into the Whangapoua Harbour. Tributaries to these streams run through native vegetation. There is also a mix of exotic (70%) and native forest (30%).

The project was revised in 2013 after a baseline kiwi call survey conducted by PKT indicated 8 - 12 kiwi pairs inhabited the block. The revised programme included a captive-rearing component alongside a increased trapping targeting ferrets, stoats, and cats that was aimed at protecting the adult kiwi population already inhabiting the block. This was seen as the most cost-effective way to increase the kiwi population.

The revised trapping programme commenced on 1 July 2013. From this date until 30 June 2021, 14.94% of the animals cleared from the trap network have been the target species of stoat and weasel (141), cat (81) and

WHANGAPOUA FOREST PEST AND PREDATORS TRAPPED							
Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	TOTAL	
Entity	EOL	EOL	EOL	EOL	SFNZ	CATCHES	
No. of Traps Serviced	122	139-153	153-176	176 - 193	193 - 222	2017-2022	
Trap Types							
No. of Trap Services	7	7	11*	12	12		
No. of Trap Checks	0	7	11*	12	12		
Animal Trapped							
	Stoat	8	11	25	23	24	91
Target Species	Ferret	0	0	0	0	0	0
	Cat	15	6	5	10	18	54
	Weasel	6	5	3	8	7	29
	Rat	94	126	155	215	189	779
	Mouse	0	0	0	0	5	5
	Hedgehog	50	67	59	44	51	271
	Bird	0	0	0	1	0	1
	Possum	14	48	43	63	36	204
	Rabbit	2	0	2	3	0	7
TOTAL BY YEAR		189	263	292	367	330	1441

ferret (1). The only recorded ferret catch during this time was in 2015. Trap numbers have increased year on year since 2014, installed on maintained roads within the block to provide more locations for target species to encounter a trap. As at the end of 2022, there were 222 traps. Traps are serviced 12 times a year and checked 12 times a year 5 – 7 days after service. The entire trap network continues to be audited annually. The following table provides the catch totals by year 2017 to 2022.

106 juvenile kiwi weighing above 1000 grams at their release have been released into the block since the programme was revised in 2013. The fourth kiwi call survey conducted in June 2021 incorporated the original six sites within the biodiversity block, but also included an additional two sites to measure dispersal and population growth/decline into neighbouring properties. The baseline kiwi call survey overall call rate for 2012 was 1.61 calls per listening hour. This was the total call rate over all six sites including mature radiata forest, harvested areas, manuka scrub and native forest. In 2016 the overall call rate was 1.71 calls per hour for the same six sites - in 2018 the overall call rate was 2.69 and in 2021 the overall call rate was 2.00. The call rate in 2022 was 1.69. While comparing the call rate over subsequent years is not a reliable indicator of population change, the call rate is an indication that the management programme currently in place is having a positive

effect on the population of Coromandel brown kiwi in the biodiversity block. The call monitoring has also shown that, despite harvesting occurring within the Biodiversity Block, Kiwi remain in these areas before, during, and after harvest⁷.

Kiwi call surveys will continue to be conducted to measure population change inside and outside the biodiversity block. Neighbouring conservation projects – the Manu Manu Trust in Whangapoua and the Rings Beach Wetland Reserve Group have synchronised listening on sites within their project areas with the SFNZ Kiwi Call Survey to allow comparing data as well as measuring dispersal into neighbouring projects.



Figure 16: Waingaro Wetland

SFNZ has continued to support the protection of endangered bird species inhabiting land managed by the company. As part of the Waikato Regional Council's (WRC) Waitekuri Focus Catchment Project showcasing soil conservation projects and wetland restoration, the Waingaro Wetland was highlighted as a significant habitat for the endangered North Island Fern Bird and the Reef Heron, among other bird species. SFNZ has continued to service its ground-based trapping network around the perimeter of this wetland. From July 2019 until 30 June 2021, 89.45% of the animals cleared from the trap network have been the target species of stoat and weasel (20), cat (5), ferret (0) and rat (204). There are a total of 50 traps around the wetland. Trap services are completed 12 times per year and checked 5-7 days after service. All traps are audited annually. As its part in the project, WRC committed to removing an infestation of invasive willow species within the wetland and this work has started. The next step of this project that is to engage with the local school and co-planning ongoing, regular student involvement in the care of this wetland.

11.6.3 GISBORNE

SFNZ has yet to identify any restoration projects for the Gisborne area but will work with landowners, Department of Conservation, the Gisborne District Council, and relevant trusts and interest groups should suitable projects be identified.

⁷ Annual Report, Biodiversity Projects, Whangapoua Forest and Waingaro Wetland (1 July 2021 – 30 June 2022) Project Kiwi Trust

11.6.4 WHANGANUI

SFNZ identified a 10 hectares area in Te Ara To Waka Forest to develop into an ecological reserve area. The site was chosen for its potential to regenerate into lowland Rimu-Tawa forest for recreational and ecological purposes. At the time of purchase the area was being grazed as can be seen in figure 17. Approximately 10,000 native seedlings have been planted. The seedlings are predominately manuka as primary colonizers with some wetland species. The plan is for the manuka to establish shelter and weed suppression to allow natural succession to podocarp/ broadleaf species from surrounding seed sources over time. The seedlings are establishing well.



11.7 HIGH CONSERVATION VALUES (HCV)

Figure 17 Te Ara To Waka re-vegetation project

Under the FSC Principles and Criteria, certified forestry companies must identify areas within their forest estate that meet the FSC definition of high conservation value (HCV). Then develop management plans to maintain or enhance the identified attribute. An HCV is a biological, ecological, social or cultural value of outstanding significance or critical importance.

The Common Guidance for the Identification of High Conservation Values (HCV resource network 2013) was utilised in this assessment which is fully endorsed by Forest Stewardship Council (FSC).

Table 13 outlines the six categories of HCVs.

Table 13 High conservation values attributes

HCV1 Species diversity

Concentrations of biological diversity including endemic species and rare, threatened or endangered species (RTE), that are significant at global, regional or national levels.

HCV2 Landscape-level ecosystems and mosaics

Large landscape-level 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.

HCV3 Ecosystems and habitats

Rate, threatened, or endangered ecosystems, habitats or refugia.

HCV4 Ecosystem services

Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

HCV5 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.

HCV6 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 for indigenous peoples, identified through engagement with these local communities or indigenous peoples.

HCV ASSESSMENT

The assessment of HCV areas across the SFNZ estate is ongoing as more information and understanding comes to light. The identified ecosystems and habitats will be monitored annually to ensure the effectiveness of maintenance or enhancement measures employed. SFNZ's estate is reviewed five yearly in consultation with relevant stakeholders.

The following summarises the presence or absences of HCV values within the four operational regions. Annual monitoring is undertaken, and individual management plans are prepared and available on request.

Table 14: HCV Presence in SFNZ Northland Estate

HCV Presence in SFNZ Estate		
HCV1	No	Some species within the SFNZ estates meet FSC - RTE threshold, but populations are not significant enough to meet HCV1 - Species diversity criteria.
HCV2	No	There are no landscape-level ecosystems and mosaics areas within SFNZ estates.
HCV3	Yes	HCV3 criteria have been met in Northland (Te Hiku, Lake Ngatu, Matapia, Shenstone Forests) and Coromandel (Whangapoua Forest). These include dune lakes, wetlands and remnant coastal vegetation.
HCV4	No	SFNZ estates is too small and fragmented to meet HCV4 criteria of providing basic ecosystems services in critical situations.
HCV5	No	SFNZ estates does not provide sites and resources fundamental for satisfying the basic necessities of local communities.
HCV6	No	There is a significant number of historic sites and waahi tapu as a result of early human occupation within the estate. SFNZ follows Historic Places Management Procedure when suspecting or managing an archaeological site. No operations that could potentially damage

or modify an archaeological site are undertaken without the necessary authority from Heritage NZ. There are no World Heritage Status sites within SFNZ estates.

11.7.1 NORTHLAND

Fifteen sites that collectively meet HCV3 (Rate, threatened, or endangered ecosystems, habitats or refugia) criteria have been identified in Northland Estate, they are detailed in table 15.

Table 15: Sites of High Conservation Values

SFNZ – Sites of High Conservation Value					
Map Reference	Site Name	Forest	Tenure	Owner	Area (ha)
1	Ninety Mile Beach	Matapia	Lease	Te Hiku Collective	147
2	Karatia Wetland	Shenstone	Lease	Muriwhenua	58
3	Whakatereohao Stream	Shenstone	Lease	Muriwhenua	17
4	Te Arai Wetland	Te Hiku	Lease	Te Hiku Collective	10
		Onepu	Forest Right	Ngati Kuri	8
5	Gap Pohutukawa	Te Hiku	Lease	Te Hiku Collective	33
6	Turk Lake	Te Hiku	Lease	Te Hiku Collective	22
7	Bacica Road Lake	Te Hiku	Lease	Te Hiku Collective	10
8	Selwyn Flat Wetland	Te Hiku	Lease	Te Hiku Collective	55
9	Waiparea Wetland	Te Hiku	Lease	Te Hiku Collective	60
10	Jones Lake	Te Hiku	Lease	Te Hiku Collective	2
11	Ninety Mile Wetlands	Te Hiku	Lease	Te Hiku Collective	6
12	Headquarters Lake	Te Hiku	Lease	Te Hiku Collective	8
13	Lake Gem	Lake Ngatu	Freehold	SFNZ	4
14	Hukatere Kanuka	Te Hiku	Lease	Te Hiku Collective	53
15	Te Raite Wetland	Te Hiku	Lease	Te Hiku Collective	63
Total Area					555

11.7.2 COROMANDEL

Table 16 identifies one site that meets HCV3 (Rate, threatened, or endangered ecosystems, habitats or refugia) has been recognised in Coromandel.

Table 16: Sites of High Conservation Values

SFNZ – Sites of High Conservation Value					
Map Reference	Site Name	Forest	Tenure	Owner	Area (ha)
16	Waingaroa Wetland	Whangapoua	Freehold	SFNZ	24

11.7.3 GISBORNE

No High Conservation Values have been identified in SFNZ Gisborne Estate

11.7.4 WHANGANUI

No High Conservation Values have been identified in SFNZ Whanganui Estate

11.8 HISTORIC SITES MANAGEMENT

Historic sites are vulnerable to damage when undertaking earthworks and harvesting. SFNZ works closely with local iwi and Historic Places Trust and commissions archaeological surveys prior to harvest. SFNZ has a Historic Places Management Procedure which outlines the actions that must be followed when working around archaeological sites that are either known or have been discovered during operations. All known sites are recorded in the company-managed GIS layer and SFNZ takes them into account when planning operations. No operations that could potentially damage or modify an archaeological site are undertaken without the necessary authority from the Historic Places Trust. Once authority is obtained, it becomes part of the Work Prescription of the operation to ensure compliance with the conditions of the Authority.

When a notable site is identified during an operation, the Historic Places Management Procedure requires all work within 30 metres of the site to cease. The site is then visited by an archaeologist and, in the case of Māori-related sites, local tangata whenua representatives. If the feature is confirmed as an archaeological site, an operational plan is developed with input from the archaeologist and iwi representatives. If necessary, an authority is also sought from the Historic Places Trust.

In areas of forest with a high likelihood of new sites being discovered, based on the current distribution of known sites, all staff and contractors are trained to identify archaeological sites and use procedures SFNZ has developed to protect them (see Operations Guide). As a result of this training and the systems we have in place, a considerable number of previously unknown sites have been identified and protected during routine forestry operations.

11.9 ENVIRONMENTAL INCIDENT MANAGEMENT

While SFNZ strives for excellence in the performance of its forestry activities, it is inevitable that incidents will occasionally occur. When the company becomes aware of an incident, it acts promptly to minimise and remedy any adverse impacts on the environment. All incidents must be reported in Mango and significant incidents are investigated to ensure that staff and contractors learn from the experience. If an incident occurs, management processes are reviewed and revised to minimise the risk of a repetition. Significant environmental incidents are reported to the relevant regulatory authority.

12 COMMUNITY

SFNZ manages large areas of forest and, consequently, is an integral part of the communities in which we operate. As a significant business and employer, SFNZ also contributes to the sustainable development of these communities. It follows that community relations are an important focus for the company. SFNZ's community relations are underpinned by a commitment to behave in an ethically and socially responsible manner.

12.1 SOCIAL IMPACT

A social impact assessment is completed as part of the planning stage for any new operation/forest area. The social impacts can be either positive or negative in nature and, depending on the situation, they may need

different approaches. Social impacts can include, but are not limited to, regional roading issues, employment opportunities, visual effects, access, recreational activities, water rights, bus routes, and archaeological site assessment.

In general, the Forest Industry is a significant employer, directly employing around 40,835 people (2021)⁸ and dominates many local rural economies⁹. Downturns in the economy and the commodity markets logs are traded in can have a significant impact on local employment. Where possible, SFNZ will manage its operations to minimise such impacts.

12.2 ASSOCIATIONS WITH TANGATA WHENUA, TENURE & RESOURCE RIGHTS

The intergenerational approach Māori take to resource management is compatible with the business philosophy of Sumitomo Corporation and SFNZ. SFNZ aims to manage its estate in a manner that benefits the local community and its people, while also developing opportunities to grow together for current and future generations. With this in mind, SFNZ works with local Māori to:

- Develop a business/partnership/capital solution to progress any joint venture idea.
- Provide development and training opportunities for local people.
- Assist shareholders' transition from landowners to forest owners and eventually (through employment of people) to forest managers.

One of the pillars of Sumitomo's philosophy is that its business must not only benefit the company, but also bring benefit to the society and country in which it operates. It follows that Sumitomo Corporation and SFNZ are committed to New Zealand and all its people.

SFNZ will protect the resource and tenure rights of tangata whenua.

12.3 STAKEHOLDER ENGAGEMENT

Any organisation will have multiple stakeholders including, but not limited to, customers, shareholders, employees, suppliers, neighbours and local iwi groups. SFNZ stakeholders are defined as those individuals, groups or organisations that may affect, or be affected by, company operations, those who purchase SFNZ products, and those who are contracted on a minimum of an annual basis. Specifically, this includes:

- SFNZ employees.
- SFNZ contractors.
- special interest groups such as district and regional councils, government departments including the Department of Conservation and iwi groups relevant to SFNZ land tenure.
- interested parties from the general public.

SFNZ strives to engage actively with stakeholders in the many communities in which it operates, with particular focus on those directly or indirectly affected by its operations. Prior to commencing harvesting in a new area, SFNZ engages with representatives of the local community so that they are informed of plans and can be involved in developing mitigation strategies for identified concerns. Typically, the groups include forest neighbours, residents on any rural access roads affected by logging traffic, and tangata whenua.

As is demonstrated below, SFNZ has worked to create a process that is both responsive to the communities and sufficiently systematic to identify key points. With this in mind, SFNZ maintains a database of those stakeholders who are material to the operation of the estate on the shared company server.

SFNZ interacts with stakeholders for a wide range of reasons that cover a diverse set of topics, including:

⁸ [NZFOA Facts and Figures 2021/22 \(nzfoa.org.nz\)](https://nzfoa.org.nz)

⁹ [Economic Impacts of Forestry \(mpi.govt.nz\)](https://mpi.govt.nz)

- To advise of and plan for activities/operations that may impact a stakeholder.
- To report monitoring results to affected stakeholders.
- To reply to queries and complaints, noting that the response must be in writing.
- To make submissions to affected parties as part of resource consent applications.
- To advise of opportunities, initiatives or projects SFNZ is undertaking.

Key documents within the stakeholder consultation process are:

- Forest Management Plan and Annual Monitoring Report which is available to the general public or interested parties on request at the forest office or via the SFNZ website <http://www.summitforests.co.nz>
- High Conservation Value Assessment consultation with affected stakeholders such as tangata whenua, Department of Conservation, Regional Council and community groups.

There are regular times when SFNZ will reach out to particular groups of stakeholders including:

- Staff meetings and additional safety alert documents circulated regularly.
- Affected stakeholders are contacted prior to resource consent application.
- Affected stakeholders are contacted during harvest planning and prior to commencement of operations.
- Annual general business communications.
- Letters are sent to relevant stakeholders before implementing or changing areas of operations that may affect them.
- Interested parties are advised when breaches of legal requirements or resource consents occur, and in the case of an environmental incident.

SFNZ's operational team, or where operational management is contracted out, the Forest Management Company, is responsible for:

- Maintaining records of internal and external stakeholder communications, including the date, method, and reason for contact. These data are stored on the confidential SFNZ servers.
- Recording complaints, comments and compliments that relate to significant environmental effects or impacts and, where appropriate, passing the details to the Regional Operation Manager who will determine the response.
- Forwarding information on preventive or corrective actions resulting from complaints or letters of concern to the Forest Manager for monitoring.

To ensure engagement with SFNZ is easy and available from a stakeholder's perspective, a wide range of methods are used to communicate with them including; mail and email, telephone, face-to-face meetings and our website.

Communication to staff and contractors about health and safety management issues, environmental issues, non-conformance, audits, and performance improvements is conducted through Mango (SFNZ HSE management tool) and various meetings.

As a responsible local business and forest owner with a vested interest in long-term sustainable relationships with its community, SFNZ works proactively wherever possible to resolve any disputes with stakeholders. However, if an issue cannot be resolved amicably, SFNZ will implement the appropriate legal directives for a dispute process as above in section 2.7.

The SFNZ team does not communicate with the media without prior approval from the Forest Manager.

12.4 NEIGHBOURS

Neighbours on the forest estate boundaries have a special interest in the management of the forest. Activities within the forest may positively or negatively impact upon their quality of life or businesses, while inappropriately managed operations could create adverse health, safety, and environmental risks.

Most neighbours are rural dwellers and are involved in a range of rural economic activities including farming, horticulture, agriculture, beekeeping, and other small businesses. Corporate neighbours are usually other forest owners. Neighbours may use the forests for recreational and hunting purposes and in some cases for water catchment for domestic and commercial purposes. Boundary issues, such as weed and pest control, access, fencing and boundary alignment issues, may also involve neighbours.

Neighbour contact details are maintained using the stakeholder databases described above. Some or all of these parties will be consulted when operations in forest areas adjacent to their boundaries are proposed.

13 SOCIO-ECONOMIC PROFILE

The following sections summarise the socio-economic profile to the regions in which we operate:

13.0.1 NORTHALND

The Far North (Cape Reinga to Whangarei) is an elongated and sparsely populated rural community with a land area of 7,324km² an estimated resident population of 68,500 resulting in a population density of 0.09 persons per hectare for 2019. The Far North in which the forests are located has three main town including Kaitiāia (4,887), Kerikeri (7,500) and Kaikohe (4,100).

13.0.2 COROMANDEL

Like the Far North, the Coromandel Peninsula is an elongated and, in the main, sparsely populated rural community of around 2,207 km² (a density of 0.14 persons per ha) with the majority of the resident and visitor population clustered in small but growing towns and communities – the largest of which are Thames and Whitianga. The population of these towns and communities is highly seasonal, with a big influx of visitors in summer and long weekends. The resident population was estimated at 29,895 in the 2018 census – this is estimated to swell to in excess of 120,000 over summer¹⁰ and inject a significant amount of money into the local economy.

13.0.3 GISBORNE

The Gisborne District (sometimes referred to as the Gisborne Region, *Te Tairāwhiti*, or the East Coast) is a local government area named after the largest settlement, the city of Gisborne. It is bounded by mountain ranges to the west, rugged country to the south, and faces east onto the Pacific Ocean and occupies some 8,355km². It is a sparsely inhabited and isolated region, with small settlements that mainly cling to small bays along the eastern shore, including Tokomaru Bay and Tolaga Bay. Its population was 47,517 in June 2018,¹¹ a population density of 0.06 people per hectare. The majority of the population, some 37,000 people, live in the city of Gisborne. No other settlements have a population of over 1000; the largest are the towns of Tolaga Bay and Ruatoria. The majority of SFNZ's forests are near to Ruatoria.

13.0.4 WHANGANUI

The Whanganui District covers 2337 km², the majority of which is hill country, with a narrow coastal strip of flat land and a major urban settlement on the lower banks of the Whanganui River. A large proportion of this is

¹⁰ [Coromandel Peninsula Profile.pdf \(tcdc.govt.nz\)](#)

¹¹ [Place Summaries | Gisborne Region | Stats NZ](#)

within the Whanganui National Park. Whanganui is 200 kilometres north of Wellington and 75 kilometres northwest of Palmerston North, at the junction of State Highways 3 and 4. Most of the city lies on the river's northwestern bank, due to the greater extent of flat land.

Much of Whanganui's economy relates directly to the fertile and prosperous farming hinterland near the town, with agriculture, horticulture, and forestry accounting for 13% of employment. The Whanganui Port was once the centre of industrial transport. Today the River and its surrounds are used for several recreational activities including kayaking, jet boating, tramping, cycling and camping. A national cycleway has recently opened, which takes cyclists from the 'mountains to the sea'.

13.1 EMPLOYMENT

SFNZ promotes a work culture with a focus on safety, professionalism, productivity, and real pride in achievements. SFNZ aims to have sustainable employment for locals for the betterment of their families and the community. SFNZ, and the forestry industry as a whole play, a huge part in local and downstream employment opportunities, with roles including forest management, forest development, harvesting, roading, engineering and machinery repairs and maintenance, wood processing, port and industry equipment supplies and other services such as fuel delivery. The tables below compare the regional employment statistics against the New Zealand average.

Table 17: Labour force by Region (2018 Census¹²)

Labour force status (%)	Northland	Thames-Coromandel District	Gisborne	Whanganui District	New Zealand %
Employed full-time	42.7	37.1	47.1	41.7	50.1
Employed part-time	14.9	17.2	15.0	14.9	14.7
Unemployed	5.2	2.5	5.2	5.1	4.0
Not in the labour force	37.1	43.3	32.7	38.3	31.3

Generally, fewer people were in full-time employment in the regions in which we operate compared with the New Zealand average for 2018. With the exception of the Thames-Coromandel District, unemployment in the Regions was also higher than the national average. The Thames-Coromandel District had fewer people unemployed but also noticeably more people not in the labour force. The district also had more part-time workers while part-time work in the other Regions was consistent with the national average.

Table 18: Main types of employment

Employment Types	Northland	Thames-Coromandel	Gisborne	Whanganui District	New Zealand
Managers	19.1	22.2	15.8	13.8	18.0
Professionals	18.6	16.0	18.7	19.7	23.0
Technicians and trade workers	12.7	13.8	10.8	12.6	12.1
Community and personal service workers	10.6	10.8	8.8	12.5	9.5
Clerical and administrative workers	9.7	9.7	10.2	10.2	10.9
Sales workers	8.3	9.8	6.9	8.8	9.2

¹² [2018 Census place summaries | Stats NZ](#)

Machinery operators and drivers	6.6	4.4	7.8	5.3	6.0
Labourers	14.4	13.4	21.0	17.0	11.3

Compared with the New Zealand average, there are typically more labourers and fewer professionals employed in the regions we operate. Of specific note is the significant percentage of labourers in the Gisborne region along with far fewer managers, sales workers, and technicians and trade workers. Similarly, Whanganui also has a high percentage of labourers, fewer machinery operators and drivers, more community and personal service workers, and fewer managers.

These regional differences can present challenges in resourcing both our staff and contract workforce.

13.2 COMMUNITY DEMOGRAPHICS

The community demographic structure is important to SFNZ as an employer and as a community member. The following summarises the demographics in the regions in which we operate:

Table 19: Percentage of age groups

Demographic	Northland	Thames-Coromandel District	Gisborne	Whanganui District	New Zealand
Number of people	179,076	29,895	47,517	45,309	4,699,755
% of NZ Population	3.8%	0.6%	1%	1%	100%
Median age	42.6	53.6	37.0	43.0	37.4
% Male	50%	49%	49%	48%	49%

The Regions in which we operate are sparsely populated with the majority of the population centred around one or more main centres. With the exception of Gisborne, the workforce in these regions is also older than the New Zealand average which is also aging. New Zealand's aging work force is presenting challenges for the Forest Industry especially in transport as we compete with other industries that rely on the transport sector. It also represents a risk in other areas of our operations as our skilled workforce retire.

13.3 ETHNICITY AND CULTURAL GROUPS

The following summarises the ethnic and cultural groups in the regions in which we operate:

Table 20 Ethnic groups (2018 Census)

Ethnic group (%)	Northland	Thames-Coromandel District	Gisborne	Whanganui District	New Zealand
European	73.1	87.9	58.1	79.2	70.2
Maori	36.0	18.3	52.9	26.3	16.5
Pacific peoples	4.2	2.1	4.5	3.6	8.1
Asian	3.9	3.4	2.8	4.1	15.1
Middle Eastern/Latin American/African	0.5	0.5	0.4	0.5	1.5
Other ethnicity	1.2	1.2	0.9	0.1	1.2

The ethnic mix of the regions in which we operate varies significantly. Gisborne, for example, has 52.9% of the population who have Māori ancestry compared with only 16.5% for the national average and 36% for

Northland and 26% for Whanganui. All of the Regions have fewer Asian, Pacific, and Middle Eastern/Latin American/African ethnicities when compared to the national average.

13.5 EDUCATION

The following summarises the levels of education in the regions in which we operate:

Table 21: Qualifications (2018 Census)

Qualification level (%)	Northland	Thames-Coromandel	Gisborne	Whanganui District	New Zealand
No qualification	23.1	24.9	23.8	24.9	18.2
School Qualification	39.7	38.0	39.1	39.0	38.3
Post school (excluding university)	21.4	22.0	21.0	20.9	18.7
Bachelor's Degree	9.6	9.3	10.6	9.4	14.6
Higher Qualification	6.2	6.0	5.5	5.8	10.2

Comparison of the qualifications of those regions in which we operate compared to the New Zealand average (from the 2018 Census) shows that in general there are fewer people holding university qualifications and a higher proportion of people with no qualifications. However, more people have post school qualifications like apprentices than the NZ average.

Interestingly, there are no marked differences in the qualification mix of the operating regions.

13.6 RECREATION AND PUBLIC USE

SFNZ allow the public to walk, mountain bike, ride horses, hunt and fish in its forests via an access permit system or as provided for under the applicable lease or licence - providing that any activity does not conflict with or compromise core business activities and that it is safe for the public to do so. Camping and fires are prohibited. Access to lease forests is generally controlled by the landowner. SFNZ's [web site](#) provides more detail and an online permit application process.

Summit pays special attention to any social issues associated with land acquisition for plantations, especially the protection of local rights of ownership, use, or access. The Overseas Investment Office governs and reviews conditions for procurement applications.

13.7 SPONSORSHIP

As a corporate member of the communities in which we operate, SFNZ actively supports community projects across a wide range of community groups and interests from supporting local marae and sports clubs, to supporting environmental initiatives in the community.

14. MONITORING

To ensure that the management objectives outlined in this plan are achieved, various monitoring schemes are applied outside normal operations management. Monitoring results are summarised and reported as part of the Annual Monitoring Report and in other forums as and when required. These results are also, where appropriate, made publicly available through the SFNZ website.

Monitoring health and safety, the environment, and aspects of its business performance can only improve SFNZ's overall performance as:

- A manager of sustainable forest resources.
- A significant contributor to sound environmental management.
- A good corporate citizen and employer.

SFNZ's environmental performance process has key indicators which are detailed in monthly operational reports to the senior management team. The purpose of monitoring is to compare actual performance against legal requirements, company and certification standards, objectives and targets. This will identify non-compliance, ensure complaints/grievances are dealt with, and initiate corrective or preventive action if required.

The programme is outlined in Tables 22 and 23 and a description of each activity is included in Appendix 7. Monitoring programmes are delegated by the Forest Manager as part of the job descriptions of individual staff. Most of the monitoring is scheduled as regular events in the online Mango HSE management tool. This allows responsibility and timeframes for the completion of monitoring to be set and monitored.

14.1 HEALTH AND SAFETY MONITORING

H&S monitoring

Table 22 Summary of H&S Monitoring

Task	What	Who	Data Medium	Reporting Frequency	Responsibility
Systems Audit	Annual Safety Systems Audits on all Key Suppliers	Operations Manager	Mango Live	Annually	SFNZ/Manager
Contractors Review	Contractor Annual Reviews	Regional Manager / Operations Manager	MSTeams	Annually (April)	SFNZ/Manager
Hauler Audit	Cable Harvesting Contractors	Operations Manager	Mango Live	Annually	SFNZ/Manager
Operational Audit	Cartage Audits	Operations Manager	Mango Live	Quarterly	SFNZ/Manager
Operational Audit	Fire Suppression Audit	Operations Manager	Mango Live	Annually	SFNZ/Manager
Operational Audit	Loading Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager
Operational Audit	Manual Breaking Out and Tail hold Shift Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager
Operational Audit	Manual Tree Felling Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager
Operational Audit	Mechanised Felling and Cable Assist Audit	Operations Manager	Mango Live	Annually	SFNZ/Manager
Operational Audit	Mechanised Processing Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager
Operational Audit	Operational General Audit for Harvesting and Silviculture	Operations Manager	Mango Live	Annually	SFNZ/Manager
Operational Audit	Roading Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager

Operational Audit	Shovelling Audit	Operations Manager	Mango Live	6 months	SFNZ/Manager
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14.2 ENVIRONMENTAL AND SOCIAL MONITORING

Environmental and social monitoring

Table 23 Summary of Environmental & Social Monitoring

Task	What	Who	Data Medium	Reporting Frequency	Responsibility
FSC Membership	Observations / Corrective Actions	FSC	Mango	Annually	SFNZ
Estate Model	Predicted harvest volumes	Resource Planning Manager	Woodstock	Annually	SFNZ
Forest Growth	MRI, 5 yearly Lidar, PHI	Resource Planning Manager	LRM	Annually	FMNZ
Foliage Sampling	Nutrient assessment	SCION	LRM	Annually	SFNZ
Chemical Usage	Spraying Operations	Operations Supervisors	LRM	On demand / Annual	SFNZ
Forest Health	Forest Health Surveillance	(SPS) Biosecurity and Environmental Services	SharePoint	Annually	SFNZ
Animal Pests	Monitoring / Visual Assessment	Operations Manager	TrapNZ / Sharepoint / External	6 Monthly	SFNZ
Biological Controls	Agencies present	Regional Council	Annual Monitoring Report	Annually	SFNZ
Operational Findings	Improvements	HSE Manager /Regional Manager	Mango	Monthly	SFNZ
Resource Consents	Resource documents / monitoring	Harvest Planner	Map Documents / Event Mango	Annually	SFNZ
Log Production	Monthly Tonnages / Grades	Harvest Administrator	LIMs	Monthly	SFNZ / Manager
Health and Safety Statistics	Accident Trends / Lead Indicators	Operations Manager / H+S Manager	Mango	Monthly / Annually	SFNZ
Environmental Incidents	Category / Incident Number	Operations Supervisors / Contractors / Regional Council / District Council /	Mango	On demand / Annually	SFNZ / Manager

		Iwi / Stakeholders / Public			
Stream Monitoring	Clarity / Stream Life / RTE / Threats / Photo Point	Monitoring Staff	Survey 123 / Sharepoint (External Reports)	Annually	SFNZ / Manager / External
Rare Threatened and Endangered Flora and Fauna	Species and Conservation Status / Threats	Staff / Iwi / Contractors / DOC / Neighbours / Public	Survey123	As observed	SFNZ / Manager
Significant Non-Plantation Areas	Condition Trends / Photo Point Monitoring	Environmental Planner / DOC / Regional Council	Survey123	5 Yearly period	SFNZ
High Conservation Forests	Evaluation of HCV Value Criteria 1–6	Environmental Planner / DOC / Ecologists / Iwi / Stakeholders	LRM	Annually if value present	SFNZ
Stakeholder Communication	Activity notification	Regional Council / District Council / Iwi / Stakeholders / Neighbours / Public	LRM	Annually	SFNZ / Manager
Feedback Register	Complaints / Compliments / Comments	Regional Council / District Council / Iwi / Stakeholders / Neighbours / Public	Stakeholder Communication folder	Annually	FMNZ
Recreational & Non-timber	Permits Issued	Online Portal	Survey123	Annually	FMNZ
Staff Training	Where Relevant	All Staff	ELMO	Annually	SFNZ
Legislation	Any Relevant Legislative Changes	All staff	https://m.enviroessentials.com.au/	Monthly	SFNZ

14.3 FOREST GROWTH AND DYNAMICS

Forest growth is monitored through inventory measurements that are taken throughout the life cycle of the crop. With the industry now moving towards the use of Lidar for terrain modelling and inventory, this gives us the ability to monitor growth on a broader scale in a cost-effective manner. Key metrics can be derived from the Lidar data including mean tree height, basal area, site index and total recoverable volume. In both Northland and Coromandel Lidar is scheduled every 5 years due to their locality and scale.

The current inventory process is described by Table 24.

Table 24: Current inventory process in the SFNZ estate

Age	Description
0	Establish QC (Quality Control) plots
0.5	Survival counts

8	Thinning pre-assessment Thinning QC plots
20-22	Mid Rotation Inventory (MRI) low intensity 1 % sample
25-30	Pre-Harvest Inventory (PHI) 2-3 % sample
5 Yearly	Lidar completed in Northland and Coromandel

In conjunction with the inventory process the croptypes are updated to align with the planning horizons where information goes from being generic to more specific and detailed. The estate model is updated annually as croptype definitions and yield tables are updated as identified in table 26.

Table 25 Current wood flow modelling process in the SFNZ estate

Age	Description
0	Planted area given croptype based on future treatment
8	Growth monitoring plots used to assess the growth model (Basal area adjustment if required) Generic croptype used for estate model
20 - 22	Mid Rotation Inventory (MRI) data used to track growth and log grade outturn (Long term wood flow planning) After MRI specific croptype by stand created
25-30	Pre-Harvest Inventory (PHI) data used to update yield tables (Short term wood flow planning) Specific croptypes allocated year of harvest
Annually	Estate model updated

14.4 RESEARCH PROJECTS

SFNZ is activity contributing to research projects or trials to improve the forestry industry. Some SFNZ projects are:

- Progressive Catchment harvesting in Whangapoua Forest: NIWA has monitored catchments in the Whangapoua Forest, Coromandel over the past 30 years. They are analysing the impacts on stream visual clarity, temperature, habitat and invertebrates during progressive catchment harvesting. The results from this report will enable greater understanding of harvesting impacts on streams over a harvest cycle.
- PA research: Kauri are threatened by a soil-borne pathogen called *Phytophthora agathidicida* (PA for short). Seed from kauri in the reserve areas of Whangapoua Forest have been collected for use in research to breed PA resistant kauri. SFNZ is part of a Kauri Dieback working group looking at rules for Kauri Phytophthora Agathidicida National Pest Management Plan.
- Adaptive Management of Coastal Forestry Buffers: SFNZ supported Tana's Trees Trust pilot study exploring practical options to transition failing exotic buffers to resilient permanent indigenous coastal forest species in conjunction with Sustainable Farming Fund, Northland Regional Council and Natural Solutions. The project included a review of existing information, field surveys of upper North Island dunelands and the establishment of planting trials at Te Hiku Forest (Summit Forests Ltd - Far North), Kāwhia Forest (Tainui-Kāwhia Inc – Waikato west coast), and Opoutere (DOC – Coromandel east coast). Te Hiku planting days were supported by Kaitaia Intermediate School over the three-year trial.

The findings show that utilising the shelter of pine buffers, seed islands can be planted to increase local seed sources, which along with pest animal and selective weed control, are measures to encourage the natural transition of exotic buffers to natives at scale. Best results were achieved by planting good quality seedlings in sheltered dune hollows. The guidelines is now available on the Tāne's Tree Trust website – www.tanestrees.org.nz.

- Forest Flow Research programme: SCION and NIWA have a five-year research project focused on developing methods to predict and optimise water use and supply in planted forests. Trying to fill the knowledge gaps and how to turn biophysical science into information that is useful to landowners, forestry and councils. Forest Flows has 13 collaborators in New Zealand, Australia, Chile, the USA, and Portugal. The SCION and NIWA teams with support from iwi landowners and SFNZ have installed instruments in the Coal Creek catchment in Northland's Te Hiku Forest. The NZ-designed and built wireless datalogger network can collect sensor data from multiple locations in a catchment and transmit it back to the office. The challenge ahead is how to analysis all the data that is being collected.



Figure 18 Summit staff, Kaitaia Intermediate School, community groups, tangata whenua, Northland Regional Council and Tana's Tree Trust after planting trial plots – Te Hiku Forest

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APPENDIX 1: ADMINISTRATION, LEGISLATION AND GUIDELINES

The following table lists the key national legislation, regulations, guidelines and codes of best practice that are relevant to forestry in the commercial, environmental and social sectors.

NATIONAL LEGISLATION

Legal Rights to Harvest: • Land tenure and management rights • Concession licenses • Management and harvest planning

Treaty of Waitangi Act 1975

Resource Management Act 1991

Forests Act, 1949

Conservation Act 1987

Crown Forests Asset Act 1989

Forestry Encouragement Act 1962

Forestry Rights Registration Act 1983

Local Government Act 2002

Public Works Act 1981

Commerce Act 1986

Companies Act 1993

Trespass Act 1980

Cooperative Companies Act 1996

Crown Minerals Act 1991

Income Tax Act 2007

Overseas Investment Act 2005

Walking Access Act 2008

Te Turi Whenua Maori Act 1993

Fencing Act 1978

Historic Places Act 1993

Taxes and Fees

• Payment of royalties and harvesting fees • Value added and sales taxes • Income and profit taxes

Minimum Wage Act 1983

Workplace Relations Act 2000

Employment Relations Act 2000

Accident Compensation Act 2001

Holidays Act 2003

Treaty of Waitangi Act 1975

Overseas Investment Act 2005

Income Tax Act 2007

Cooperative Companies Act 1996

Companies Act 1993

Commerce Act 1986

Forestry Rights Registration Act 1983

Crown Forests Asset Act 1989

Forestry Encouragement Act 1962

Forestry Encouragement Loans Regulations 1967

Forests Act, 1949

Timber Harvesting Activities

• Timber harvesting regulations • Protected sites and species • Environmental requirements • Health and safety • Legal employment

Health and Safety at Work Act 2015

Hazardous Substances and New Organisms Act 1996

Health and Safety at Work (Hazardous Substances) Regulations 2017

Forest and Rural Fires Act 1977

Fire Service Act 1975 as Amended 1990

Wildlife Act 1953

Wild Animal Control Act 1977

Biosecurity Act 1993

Climate Change Response Act 2002

Misuse of Drugs Act 1975

Transport Act 1962

Forest and Rural Fires Regulations 2005

Forest Disease Control Regulations 1967

Climate Change (Forestry Sector) Regulations 2008

The New Zealand Forest Accord, 1991

New Zealand Forest Code of Practice, June 1993

Code of Practice for the Management of Agrichemicals, 2004. (NZS8409:2004)

Safety and Health in Forestry Operations: Code of Practice and Best Practice Guidelines

Principles for Commercial Plantation Forest Management in New Zealand, 1995

NZ Environmental Code of Practice for Plantation Forestry, 2007

N.Z. Threat Classification system (2005)

Ecological Regions and Districts of NZ

Treaty of Waitangi Act 1975

Holidays Act 2003

Accident Compensation Act 2001

Employment Relations Act 2000

Workplace Relations Act 2000

Minimum Wage Act 1983

Fencing Act 1978

Historic Places Act 1993

Walking Access Act 2008

Income Tax Act 2007

Forestry Rights Registration Act 1983

Forests Act, 1949

National Environmental Standard, 2018

National Environmental Standard- Plantations Forestry-2017

Resource Management Act 1991

Third Party Rights

• Customary rights • Free prior and informed consent (FPIC) • Rights of indigenous peoples

Treaty of Waitangi Act 1975

Fencing Act 1978

Historic Places Act 1993

Resource Management Act 1991

Walking Access Act 2008

Forestry Rights Registration Act 1983

Forests Act, 1949

Trespass Act 1980

Trade and Transport

• Classification of species, quantities, qualities • Trade and transport • Offshore trading and transfer pricing

The New Zealand Forest Accord, 1991

Forests Act, 1949

Transport Act 1962

Forest Produce Import & Export Regulations 1989

Custom regulations

The New Zealand Forest Accord, 1991

Forests Act, 1949

Biosecurity Act 1993

Customs and Excise Act 1996.

Forest Produce Import & Export Regulations 1989

CITES

Convention on the International Trade in Endangered Species (CITES)

REGULATIONS PERTINENT TO FORESTRY RELATED TO AND EMERGING FROM NATIONAL LEGISLATION AND OTHER LEGISLATIVE INSTITUTIONS

The New Zealand Forest Accord, 1991

New Zealand Forest Code of Practice, June 1993

Forest Produce Import & Export Regulations 1989

Ecological Regions and Districts of NZ

N.Z. Threat Classification system (2005)

NZ Environmental Code of Practice for Plantation Forestry, 2007

Principles for Commercial Plantation Forest Management in New Zealand, 1995

Code of Practice for the Management of Agrichemicals, 2004. (NZS8409:2004)

Safety and Health in Forestry Operations: Code of Practice and Best Practice Guidelines

Forests Act, 1949

Forestry Rights Registration Act 1983

Resource Management Act 199

Forestry Encouragement Loans Regulations 1967

Forest Disease Control Regulations 1967

Forest and Rural Fires Regulations 2005

Forest and Rural Fires Act 1977

National Environmental Standard- Plantation Forestry 2017.

INTERNATIONAL AGREEMENTS PERTINENT TO FORESTRY

Convention on Biological Diversity

Convention on the International Trade in Endangered Species (CITES)

IUCN Red List of threatened species

ICOMOS New Zealand Charter, 1993

Kyoto protocol

ITTA

International Labour Organisation (ILO) conventions:

• Forced Labour Convention, 1930.

• Freedom of Association and Protection of the Right to Organise Conventions, 1948.

- Migration for Employment (Revised) Convention, 1949.
- Right to Organise and Collective Bargaining Convention, 1949.
- Equal Remuneration Convention, 1951.
- Abolition of Forced Labour Convention, 1957.
- Discrimination (Occupation and Employment) Convention, 1958.
- Minimum Wage Fixing Convention, 1970.
- Minimum Age Convention, 1973.
- Rural Workers' Organizations Convention, 1975.
- Human Resources Development Convention, 1975.
- Migrant Workers (Supplementary Provisions) Convention. 1975
- Occupational Safety and Health Convention, 1981.
- Indigenous and Tribal Peoples Convention, 1989.
- Worst Forms of Child Labour Convention, 1999.
- Code of Practice on Safety and Health in Forestry Work (ILO 1998)
- Recommendation 135 Minimum Wage Fixing Recommendation, 1970.
- ILO Declaration on Fundamental Principles and Rights at Work, 1998

LOCAL STANDARDS AND BEST OPERATING PRACTICES

The New Zealand Forest Accord, 1991

New Zealand Forest Code of Practice, June 1993

Code of Practice for the Management of Agrichemicals, 2004. (NZS8409:2004)

Safety and Health in Forestry Operations: Code of Practice and Best Practice Guidelines

Principles for Commercial Plantation Forest Management in New Zealand, 1995

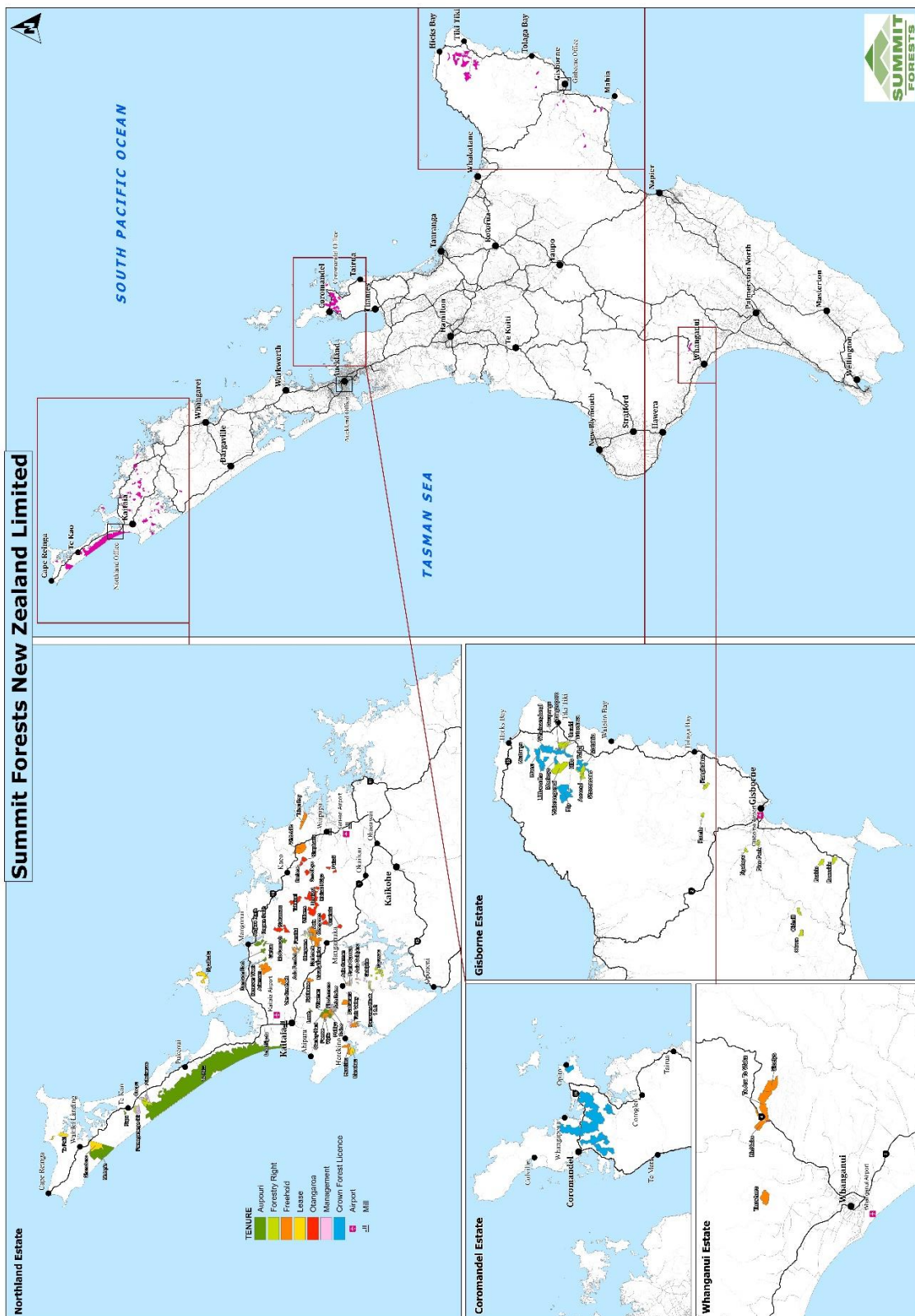
NZ Environmental Code of Practice for Plantation Forestry, 2007

N.Z. Threat Classification system (2005)

Ecological Regions and Districts of NZ

APPENDIX 2: SFNZ LOCALITY MAP, FOREST AREAS TABLE AND KEY

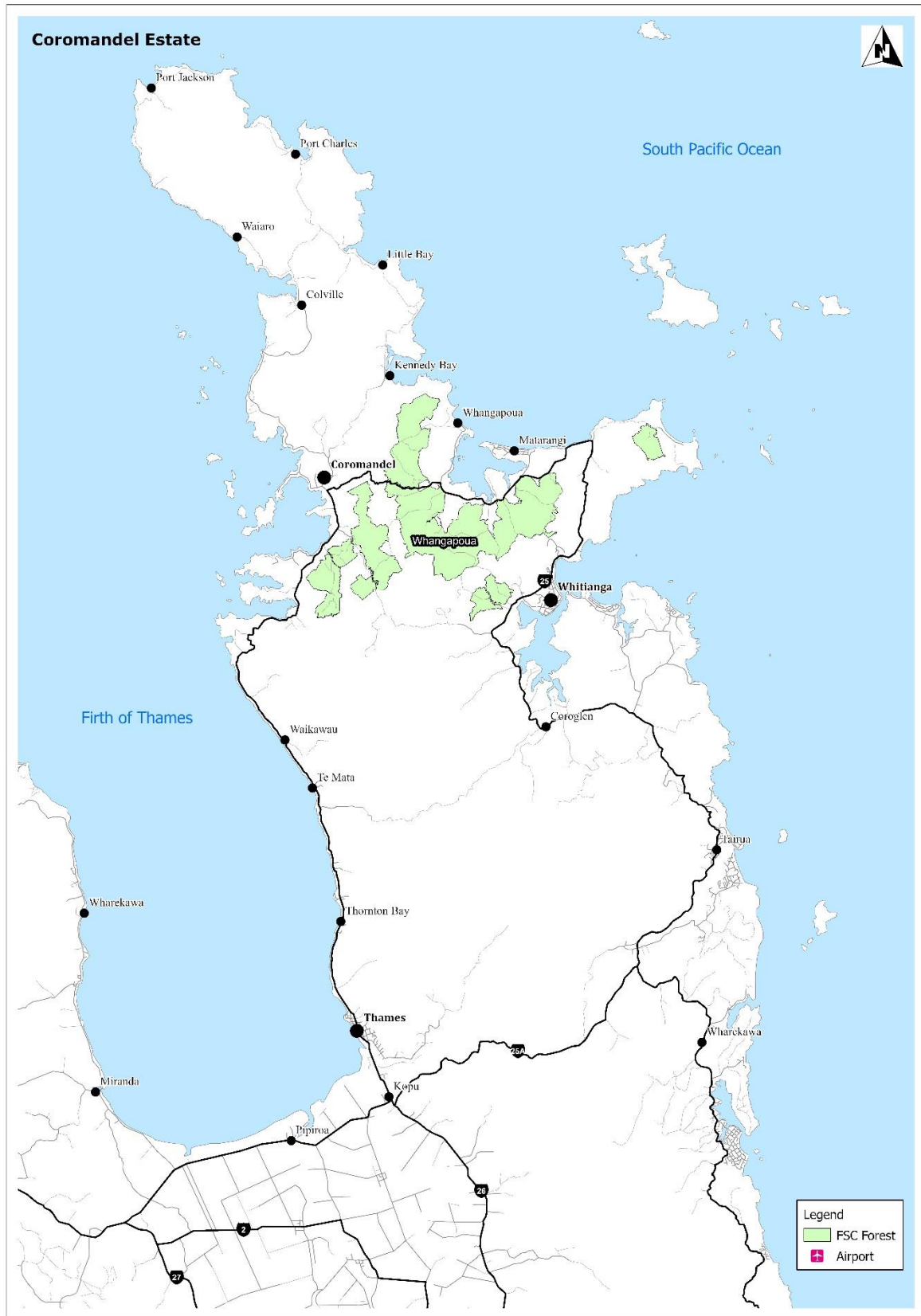
SFNZ LOCALITY MAP



Northland Estate								
Forest	Tenure	Ecological District	Net Stocked Area (ha)	Significant Non-Plant Area (ha)	Other	High Conservation Value (HCV)	% Significant non-Plantation	Total Area (ha)
Lake Ngatu	Freehold	Aupouri	8	7	4	3.7	37.8 %	19
Matapia	Aupouri (CFL)	Aupouri	1,602	282	96	147.0	14.2 %	1,980
Ngatikahu	Lease	Aupouri	390	45	13	0.0	10.0 %	447
Onepu	Forestry Right	Aupouri	421	46	47	7.9	9.0 %	515
Shenstone	Lease	Aupouri	698	124	45	73.3	14.3 %	867
Te Hiku	Aupouri (CFL)	Aupouri	15,851	2,738	509	321.4	14.3 %	19,098
Aupouri Ecological District		Total	18,969	3,243	714		14.1 %	22,925
Herekino	Freehold	Herekino	201	147	18		40.1 %	366
Manukau	Lease	Herekino	217	32	29		11.6 %	278
Herekino Ecological District		Total	418	179	47		27.8 %	644
Asia Baker	Freehold	Hokianga	6	2	0	0.0	25.0 %	8
Asia Carman	Freehold	Hokianga	18	1	1	0.0	4.7 %	20
Asia Goldpine	Freehold	Hokianga	19	6	2	0.0	23.3 %	27
Baker	Forestry Right	Hokianga	54	11	2	0.0	16.0 %	67
Baker	Freehold	Hokianga	60	7	3	0.0	9.4 %	69
Buchanans	Freehold	Hokianga	253	54	2	0.0	17.4 %	309
Fitzsimmons	Freehold	Hokianga	68	23	3	0.0	24.0 %	94
Pearse	Freehold	Hokianga	204	40	7	0.0	15.8 %	251
Phillips	Takahue (CFL)	Hokianga	104	8	5	0.0	6.5 %	117
Stanley-Hunt	Takahue (CFL)	Hokianga	100	21	3	0.0	16.7 %	124
Twin Valley	Freehold	Hokianga	264	11	9	0.0	3.8 %	283
Wiseman	Takahue (CFL)	Hokianga	118	61	18	0.0	31.0 %	197
Wylie	Takahue (CFL)	Hokianga	25	16	0	0.0	39.1 %	40
Hokianga Ecological District		Total	1,293	258	56		16.1 %	1,607
Takou Bay	Freehold	Kerikeri	377	93	9		19.4 %	480
Kerikeri Ecological District		Total	377	93	9		19.4 %	480
Adamson	Freehold	Maungataniwha	454	346	1		43.2 %	801
Asia Fernflat	Freehold	Maungataniwha	126	26	6		16.6 %	158
Asia Otangaroa	Freehold	Maungataniwha	428	32	30		6.5 %	490
Donovan East	Aupouri (CFL)	Maungataniwha	419	36	35		7.3 %	490
Donovan West	Aupouri (CFL)	Maungataniwha	117	44	8		26.1 %	170
Garton	Aupouri (CFL)	Maungataniwha	64	19	4		21.8 %	87
Hanbrook	Forestry Right	Maungataniwha	63	12	4		15.7 %	79

Kahikatea	Freehold	Maungataniwha	134	44	7		24.1 %	185
Kohumaru	Otangaroa (CFL)	Maungataniwha	362	170	21		30.7 %	553
Lamb	Aupouri (CFL)	Maungataniwha	34	16	0		32.7 %	50
Maungataniwha	Freehold	Maungataniwha	397	147	23		26.0 %	567
McCormack	Aupouri (CFL)	Maungataniwha	125	26	7		16.7 %	158
Rogers North	Aupouri (CFL)	Maungataniwha	138	61	9		29.3 %	207
Rogers South	Aupouri (CFL)	Maungataniwha	58	8	7		10.9 %	73
Takakuri	Otangaroa (CFL)	Maungataniwha	314	64	13		16.4 %	392
Van Crasbeek	Freehold	Maungataniwha	242	76	21		22.3 %	339
Maungataniwha Ecological District		Total	3,081	1,102	167		25.3 %	4,351
Mokau Ridge	Otangaroa (CFL)	Puketi	66	45	5		39.1 %	116
Omahuta	Otangaroa (CFL)	Puketi	386	166	18		29.2 %	570
Puketi	Otangaroa (CFL)	Puketi	97	59	1		37.7 %	157
Smedleys	Otangaroa (CFL)	Puketi	130	40	11		22.1 %	180
Umukiwi	Otangaroa (CFL)	Puketi	419	462	19		51.3 %	901
Williams	Otangaroa (CFL)	Puketi	475	181	22		26.7 %	679
Puketi Ecological District		Total	1,573	953	75		36.6 %	2,601
Kapa	Aupouri (CFL)	Te Paki	53	6	1		9.7 %	59
Te Paki	Lease	Te Paki	306	40	5		11.4 %	350
Te Paki Ecological District		Total	359	46	5		11.1 %	410
Burlace	Otangaroa (CFL)	Whangaroa	70	33	3		30.9 %	106
Shepherds	Otangaroa (CFL)	Whangaroa	102	82	8		42.8 %	192
Whitehills	Freehold	Whangaroa	482	405	28		44.3 %	915
Whangaroa Ecological District		Total	654	520	39		30.9 %	1,213
GRAND TOTAL			26,723	6,398	1,109		18.7 %	34,230

APPENDIX 2.2 COROMANDEL



Coromandel Estate								
Forest	Tenure	Ecological District	Net Stocked Area (ha)	Significant Non-Plant Area (ha)	Other	High Conservation Value (HCV)	% Significant non-Plantation	Total Area (ha)
Whangapoua	Whangapoua (CFL)	Colville District	7,570	2,445	552	25.9	23.1 %	10,567
Colville Ecological District		Total	7,570	2,445	552		23.1 %	10,567
GRAND TOTAL			7,570	2,445	552		23.1 %	10,567

APPENDIX 2.3 GISBORNE



Gisborne Estate								
Forest	Tenure	Ecological District	Net Stocked Area (ha)	Significant Non-Plant Area (ha)	Other	High Conservation Value (HCV)	% Significant non-Plantation	Total Area (ha)
Aorangi	Forestry Right	Motu	750	290	186		23.6 %	1,225
Littleworths	Ruatoria (CFL)	Motu	710	287	145		25.1 %	1,143
Mackeys	Ruatoria (CFL)	Motu	307	79	52		18.0 %	437
Matahiia	Ruatoria (CFL)	Motu	216	20	26		7.5 %	262
Rip	Ruatoria (CFL)	Motu	2,295	734	366		21.6 %	3,395
Stevensons	Ruatoria (CFL)	Motu	116	8	25		5.6 %	149
Taitai	Ruatoria (CFL)	Motu	682	44	237		4.6 %	963
Waiorongomai	Forestry Right	Motu	965	1,638	35		62.1 %	2,638
Motu Ecological District		Total	6,042	3,100	1,072		30.4 %	10,214
Manu	Ruatoria (CFL)	Motu/Pukeamaru	813	170	115	0.0	15.5 %	1,098
Motu/Pukeamaru Ecological District		Total	813	170	115		15.5 %	1,098
Mullanys	Ruatoria (CFL)	Pukeamaru	501	159	60		22.1 %	720
Rauponga	Ruatoria (CFL)	Pukeamaru	20	0	5		0.0 %	25
Whakaangi	Ruatoria (CFL)	Pukeamaru	1,388	254	210		13.7 %	1,853
Pukeamaru Ecological District		Total	1,910	413	275		15.9 %	2,598
Buddo	Forestry Right	Tiniroto	197	74	137		18.0 %	408
Okare	Forestry Right	Tiniroto	291	53	13		14.9 %	358
Tiniroto Ecological District		Total	489	127	151		16.6 %	766
Ngatapa	Forestry Right	Turanga	164	49	9		22.2 %	222
Pine Park	Forestry Right	Turanga	303	35	9		10.0 %	346
Turanga Ecological District		Total	467	84	17		14.8 %	568
Hills	Ruatoria (CFL)	Waiapa	291	24	131		5.4 %	447
Waiapa Ecological District		Total	291	24	131		5.4 %	447
Braeside	Forestry Right	Waihua	474	38	26		7.1 %	539
Mangaoporo	Ruatoria (CFL)	Waiapu	571	70	427		6.6 %	1,068
Rangikohua	Forestry Right	Waiapu	389	62	35		12.8 %	487
Romia	Forestry Right	Waiapu	63	41	165		15.2 %	269
Tutuokura	Forestry Right	Waiapu	229	190	6		44.7 %	425
Uruahi	Forestry Right	Waiapu	592	212	20		25.7 %	824
Waiapu Ecological District		Total	2,334	1,053	417		27.7 %	3,804
Oldmill	Forestry Right	Waihua	340	47	5		11.9 %	392
Waihua Ecological District		Total	340	47	5		11.9 %	392
GRAND TOTAL			12,685	5,027	2,175		25.3 %	19,886

APPENDIX 2.4 WHANGANUI



Whanganui Estate								
Forest	Tenure	Ecological District	Net Stocked Area (ha)	Significant Non Plant Area (ha)	Other	High Conservation Value (HCV)	% Significant Non-Plantation	Total Area (ha)
McNabs	Freehold	Matemateaonga	121	13	20	0.0	8.3 %	155
Tauwhare	Freehold	Matemateaonga	197	12	12	0.0	5.2 %	220
Te Ara To Waka	Freehold	Matemateaonga	431	88	41	0.0	15.8 %	560
Matemateaonga Ecological District		Total	749	113	73		12.1 %	935
Sicelys	Freehold	Rangitikei	234	55	23	0.0	17.6 %	313
Rangitikei Ecological District		Total	234	55	23		17.6 %	313
GRAND TOTAL			984	168	96		13.4 %	1,248

AREAS TABLE KEY

<p>Net Stocked Area includes; Net Stocked Area Cleared Awaiting Reforestation</p>
<p>Significant Non-Plant Area includes; Lake Protection Area and Coastal Margin (Te Hiku Forest) Riparian Corridor Riparian Margin Riparian Refuge River Retired from Production Scrub Significant Non Plant Wetland</p>
<p>Other includes; Building Dam Pasture / Grassland Quarry Service Easement Slip / Erosion Unstocked Gaps Unplanted Other / Non-Plantation Unplanted Roads / Skids</p>
<p>Total Forest Area Includes All Stand Information</p>
<p>HCV (High Conservation Area) Areas are indicative and derived from aerial imagery. Hectares are included in the SNP Area</p>
<p>Areas have been calculated on information available as at 30/05/2023. The areas are based on Potential Plantable Area derived from Net Stocked Area and Cleared Awaiting Reforestation. Areas are subject to change due to ongoing operations.</p>

APPENDIX 3: SFNZ ENVIRONMENTAL SOCIAL RISK ASSESSED CHEMICALS

Table 26 Chemicals that Summit has undertaken an Environmental Social Risk Assessment (ESRA)

Type	Commercial Name	Active Ingredient	High Hazardous Pesticide Category
Herbicides	Trichloram	Picloram	Restricted
		Triclopyr	Not restricted / Other
	Valzine 500	Terbuthylazine	Not restricted / Other
		Hexazinone	Not restricted / Other
	Terb 500	Terbuthylazine	Not restricted / Other
	Glyphosate 510 Glyphosate 360	Glyphosate	Restricted
	Velpar Granules	Metsulfuron	Not restricted / Other
		Hexazinone	Not restricted / Other
	Cloram	Picloram	Restricted
		Clopyralid	Not restricted / Other
	Gallant	Haloxypop	Not restricted / Other
	Hexol	Hexazinone	Not restricted / Other
Hexagram	Hexazinone	Not restricted / Other	
Penetrant	Organo	Organosilicone	Not restricted / Other
Fungicide	Dothi	Copper	Restricted

Table 27 Invertebrate toxins list

Type	Commercial Name		Active Ingredient	High Hazardous Pesticide Category
Invertebrate toxins	Connovation Cyanara 50 Paste	Possum	Potassium Cyanide	Not restricted / Other
	Connvation Feratox Pellets	Possum		
	Bell Laboratories RAMPAGE® RAT & MOUSE BAIT	Rodent	Cholecalciferol	Restricted
	Connovation Feracol (Cholecalciferol Paste)	Possum / Rodent		
	Kiwicare NO Possums Cholecalciferol Gel Bait	Possum		
	Orillion PESTOFF DECAL™ POSSUM BAIT	Possum		
	BASF SELONTRA® SOFT BAIT RODENTICIDE	Rodent		
	Connovations Ratabate Paste / D Block	Rodent	Diphacinone	Restricted
	Connovation DOUBLE TAP Pellet Bait	Possum / Rodent	Diphacinone / Cholecalciferol	Restricted
	Acta 1080 Concentrate	Wide Range	Sodium Monofluoroacetate	Restricted
	Pestoff! Possum and Rodent Pellets	Possum / Rodent	Brodifacoum	Highly Restricted
	Final Rodent Block	Rodent		
	Pestoff! Rabbit Control Pellets	Rabbit		

Health and Safety Policy



The Directors and Officers of Summit Forest New Zealand Ltd are committed to providing a safe and healthy work environment for all those involved with its activities. This includes workers, contractors, suppliers, and anyone else working in or visiting our places of work.

We will achieve this with an effective partnership between our management team, our employees, and all those who work for us. We will ensure, so far as reasonably practicable, the health and safety of all people associated with our operations by making this Policy an integral part of our business and taking the following actions:

- | | |
|--|---|
| <u>Compliance</u> | We will comply with all relevant legislation, regulations, codes of practice, and industry standards. |
| <u>Leadership</u> | We will ensure that our managers and employees commit to being responsible and accountable for the health, safety, and the wellbeing of themselves and others. Through their actions, we will show a visible level of commitment to health and safety. |
| <u>Engagement</u> | We will establish, encourage, and support consultation and participation between our managers and those who work for us and their representatives in all matters relating to health and safety. |
| <u>Risk Management</u> | We will ensure resources and processes are in place to effectively identify, manage, and monitor health and safety risks including the effective communication of risk management. |
| <u>Working with other PCBUs</u> | We will consult, cooperate, and coordinate with all persons conducting a business or undertaking that have health and safety duties which relate to or overlap with our duties. |
| <u>Training and Competence</u> | We will ensure all those that work for us are competent to carry out their work safely or are supervised by a competent person. Where required, we will ensure there is suitable and timely training so that that our workers are able to safely deal with situations that may happen at work or during the work they do. |
| <u>Continuous Improvement</u> | We will set up, review, and continuously improve the systems and procedures used to manage health and safety in our workplace. |

Safety by design

We will design our work, maintain and operate our assets, and ensure any plant, substance, or structure is, so far as reasonably practicable, without risk in order to provide a safe and healthy work environment.

Incident Management

We will report, record, and investigate work-related incidents to ensure we learn and continually improve the safety of our workplaces.

Fit for work

We will ensure the safety of those that work for us is not compromised by those under the influence of drugs, alcohol, or fatigue.

Health and Wellbeing

We will actively promote and lead wellbeing initiatives for all those that work for us to support a healthy and safe workplace and to encourage balanced lifestyle choices.

Through the above, SFNZ will encourage and create a positive culture of excellence in health and safety where everyone gets to go home safe from any work they do for us, every day.



Kenji Okawa - Managing Director – 28th June 2023
on behalf of the Summit Forests Board of Directors.



Environmental Management Policy

Summit Forest New Zealand Ltd (SFNZ) is committed to the responsible stewardship of the lands and forests we manage. It is our objective to deliver optimal value while protecting the future productivity of the land and ensuring that, over time, the environmental, cultural, and community values of the forests we manage are maintained or enhanced.

We will achieve this with an effective partnership between our management team, our employees, and all those who work for us and by making this Policy and the following actions an integral part of our business:

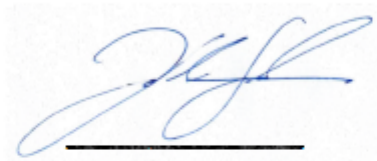
<u>Compliance</u>	We will comply with all relevant legislation, regulations, codes of practice, and industry standards.
<u>Leadership</u>	We will ensure all of our managers and employees commit to being responsible and accountable for the environmental performance of our operations. Through their actions, we will show a visible level of commitment to the environmental, cultural, and community values of our forests.
<u>Systems and Practices</u>	We will develop, resource, and implement best practice systems and management practices that ensure a systematic approach to sustainable forest management and the maintenance and enhancement of the soil, water, biodiversity, cultural, amenity, and community values of our forests.
<u>Training and Competence</u>	We will ensure all those that work for us have the knowledge and skills necessary to meet our environmental objectives and commitments.
<u>Incident Management</u>	We will report, record, and investigate all environmental incidents to ensure we learn and continually improve how we manage our forests.
<u>Third Party Certification</u>	We will maintain third party certification and conduct our operations in accordance with the requirements of the organisation and standards to which we are certified.
<u>Stakeholder Engagement</u>	We will proactively engage with all stakeholders and interested parties to ensure their views are taken into account in the management of our forests. We will also promote constructive community relationships and increase awareness and understanding of our operations and the benefits of plantation forestry for New Zealand's environment.

**Continuous
Improvement**

We will review and continuously improve the systems and procedures used to manage our forests. We will also actively engage in industry trials and research to further develop our knowledge of plantation forestry.

Through the above, SFNZ will achieve the responsible stewardship of the forests under our management.

The above Policy is based on and is consistent with the Sumitomo Corporation Group [Environmental Policy](#).



Takashi Sasaoka - Managing Director – 8th of April, 2022
on behalf of the Summit Forests Board of Directors.

APPENDIX 7: DESCRIPTION OF MONITORING ACTIVITIES

Monitoring Activity

Monitored Element	Description	Reporting Frequency
Chemical Usage	Rates per hectare are collated for the period ending 31st March of each year. Flight lines for spraying operations are kept on file. ESRA are completed for all FSC listed highly hazardous substances.	On demand/ Annual
Public Feedback	Public feedback involving complaints, communications and compliments and any actions are discussed at weekly staff meetings and reviewed annually.	Weekly/ Annually
Environmental Incidents	Incidents are discussed at weekly meetings and learning's reviewed annually.	On demand / Annually
Rare, Threatened and Endangered Flora and Fauna	Presence of RTE flora and fauna are reported to DOC as discovered, following guidance given by DOC. Sightings are collated into a database for annual reporting and included as a spatial record. These sightings continue to map out the existence and location of RTE species for future information to assist ongoing studies of any threatened flora and fauna.	Annually
Forest Growth	Inventory plots are established as per section 14.3 forest growth and dynamics.	Established annually Re-measured at first thin, mid rotation and pre-harvest
Forest Health	Independent annual forest and nursery health surveys are conducted by SPS (some as part of the National FOA forest survey initiative). SFNZ commissions annual forest health surveys of all its forests. Nursery suppliers provide a certificate that reports on the health of their nurseries prior to SFNZ receiving planting stock each year. Foliage samples determine fertiliser regime.	Annually
Health and Safety Statistics	Assessments of operations, risks/hazards, accidents, absences and random district alcohol and drug testing, contractor or visitor management and any lead indicators are conducted. Operational and system audits are conducted to identify any areas requiring improvement. Health and safety statistics are reported to management team.	Monthly / Annually
Improvements	The number of action requests/improvement notices issued to contractors and their close-out dates per operation are monitored, collated. Improvement notices are an important tool in determining any trends relating to non-conformance to best practices.	Annually / monthly
Log Production	Forest production information is sorted in PSlog. This is monitored monthly. Yield reconciliations are completed quarterly predicted vs actual to ensure accuracy of yield tables.	Weekly/ Monthly/ Quarterly

Operational Monitoring	SFNZ staff operation meets the required quality, environmental and best practice standards, compliance with the conditions of Resource Consents, the pre-operation planning notes and hazard identification and associated controls put in place for the job. The frequency of operational monitoring varies between sites and operations but is maintained at a level that is appropriate to the scale and intensity of the operation and the associated level of environmental impacts that require managing. For most operations, this involves visits to the site at least once per week by SFNZ supervisors and management staff. Supervisors and contractors are encouraged to do environmental monitoring as part of their daily business activity and complete environmental audit. Corrective actions/improvements are issued where any non-conformance is identified and signed off upon completion.	Monthly
Pests	The efficacy of pest control operations (plant and animal pests) is monitored with pest control numbers assessed through residual trap catch numbers. Each year in control areas that have been targeted to be managed. Plant pests are identified throughout the year through reports from Summit roadside spray contractors as well as forest users and forest fly overs, and a control programme is implemented once per year. There is visual assessment of all spray operations (aerial, post plant spot spray, roadside spray, specific management plan areas, known weed areas).	Annually
Reserve Areas (SNP)	Studies of significant non-plantation reference plots for each forest within each ecological district are formally conducted every five years for monitoring of any changes in species composition, presence, or health status. SFNZ prioritises areas of indigenous flora and fauna and RTE monitoring, and assessment will be based on those areas where effectual maintenance and/or enhancement of the environment can be achieved. This is DOC's view also, and they will be concentrating their monitoring, maintenance, and restoration efforts on indigenous species around this criterion. The monitoring of non-plantation forest areas and riparian margins to assess and control the level of invasion by non-indigenous species, e.g., wilding pines, is an ongoing operational activity with a formal survey every five years being conducted in conjunction with helicopter inspections to assess the level of incursions so that annual budgets and operational culling of these species can be best effected.	Annually if restoration initiated
High Conservation Forests	Monitoring of values resulting in HCV status. For further information see HCV Management Plans.	Annually if designated HCV
Recreational & Non-timber	Public use and communications are monitored via the forest access permit system throughout the year, random patrols of the forest, the fire season management plan requirements and neighbour and forest user notifications augmenting the range of forest monitoring mechanisms.	Annually
Resource Consents	Compliance with conditions of Resource Consents includes regular checks to ensure compliance with work prescriptions, best practices and any Resource Consents. Supervisors are informed of any environmental incidents. Improvement actions are issued (for Summit staff or contractors) for any non-compliance and completed by an agreed date. Annual checks are completed by the relevant regulatory officer for the regional council for all resource consents which are issued.	Annually

Stream Monitoring	Annual monitoring of in-stream values in permanently flowing freshwater streams prior, during and subsequent to harvesting operations is conducted once per year at fixed sampling points. The NIWA sampling turbidity measures are used for benchmarking any possible forestry operational impacts on water turbidity quality.	Annually (Monthly where relevant)
Staff Training	Training needs and supervision are identified at staff induction. Competency is monitored by supervisor/manager on the job. Training is discussed and implemented in the annual performance review with the manager. Training requirements are discussed at staff meetings.	Quarterly / Annually
Stakeholder Communication	Stakeholders are people and organisations with which the company has regular contact during the year. Communications/impact on stakeholders and neighbours is discussed at weekly staff meetings. Prior and during all operations consideration is given to impacts on stakeholders and proactive plans to mitigate issues are communicated. Stakeholders are also consulted for decisions on forest management and notified when new forest acquisitions are made in an area.	Weekly / Annually
Legislation	Any changes to legislation are monitored via our subscription to environment essentials well as through FOA membership and mailing lists etc.	Six monthly
Budgets	Forest operations completed are monitored against budgets and reported on monthly.	Monthly