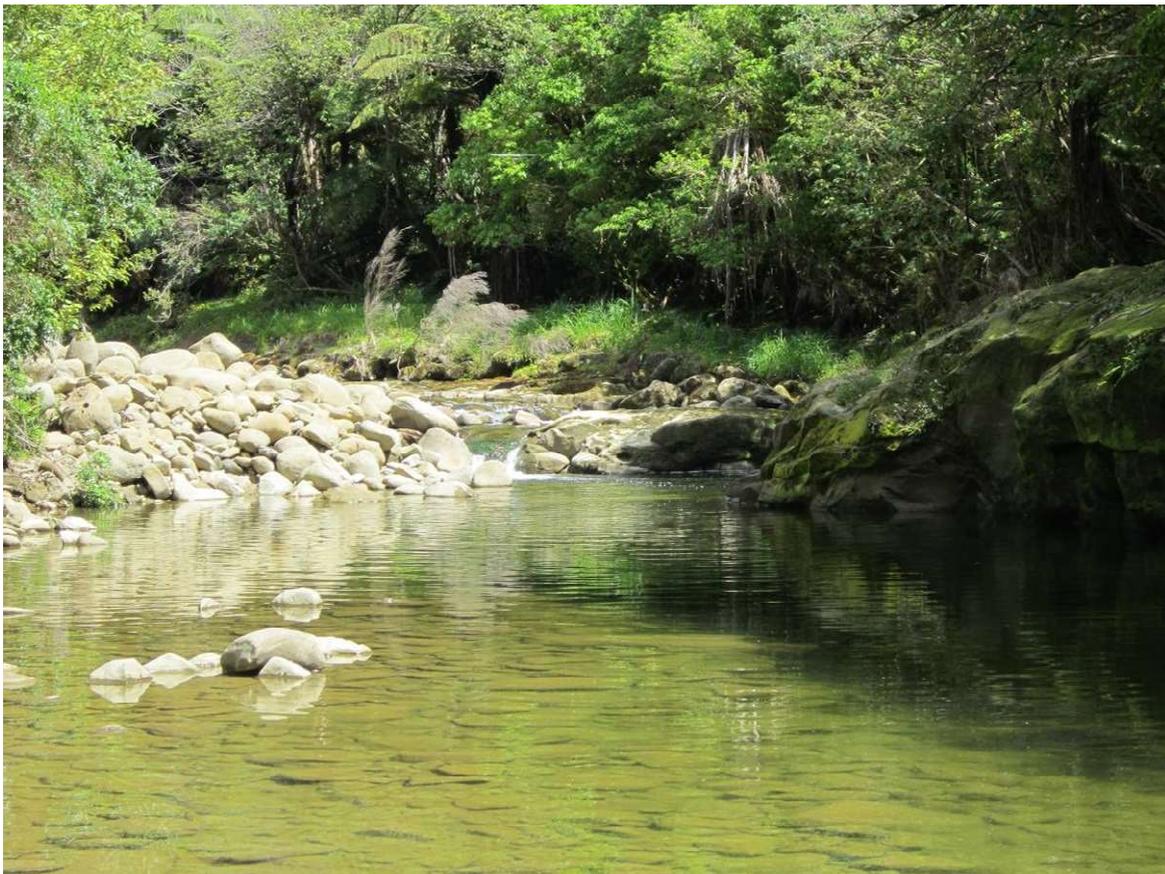




FO Standard

Forest Management Plan 2023

(Revised April'24)



Date: 03/05/2024	Doc No: JNL-90-010-FO-DOC-0005	Version: 003.1	Review by Date: 31/07/2024	Authorised by: Sean McBride
Printed Document, not viewed directly on JNL website, or past the Review by Date, are UNCONTROLLED				Page 1 of 56

HEAD OFFICE | Level 3 | AON Centre | 29 Customs Street W | Auckland 1010 | PO Box 1450 | Auckland 1140 | New Zealand





FO Standard – Forest Management Plan – 2023 (Revised)

1.	The Company	5
1.1	Mission Statement	7
1.2	Vision for the Future.....	7
1.3	FSC Commitment	7
1.4	Planning Overview	7
2	JNL Plantation and Non-Plantation Management Strategy.....	8
2.1	Definitions	8
2.2	Plantation Management Strategy.....	8
2.3	Non Plantation Forestry Management Strategy	9
2.4	Protection of Forest Areas	10
2.5	Environmental Monitoring	10
3	Company Policies and Objectives	10
3.1	Financial	10
3.2	Environmental Management	10
3.3	Corporate Citizenship	11
3.4	Land Management Policy	11
3.5	Silviculture	11
3.6	Resource Management and Monitoring	11
3.7	Harvesting.....	11
3.8	Marketing	12
3.9	Processing	12
3.10	Research and Development	12
3.11	Forest Protection.....	12
3.12	Health and Safety	12
3.13	Personnel Management.....	13
3.14	Contract Workforce management	13
3.15	Public Use Policy	13
3.16	Chemical Management Policy	13
3.17	Sodium Fluoracetate (1080 poison) Policy	13
3.18	Wilding Tree Incursion Policy.....	13
4	Monitoring Programmes	14
4.1	Monitoring Annual Reporting Dates	16
4.2	Management Review Process	16
5	Policy Documents	17
6	Resource Description	17



FO Standard – Forest Management Plan – 2023 (Revised)

6.1	Mapping the Resource: The Description Key.....	17
6.2	Managing Special Sites of Significance	17
6.3	East Coast Forest Locations.....	18
6.4	Table 4 – JNL Gisborne Resource Area Statement as at 31st March 2023 19	
6.5	Table 5 – Gisborne District Forests Non-Plantation Broad Description....	20
6.6	Table 6 – Gisborne District Non-Plantation Forest Area Description	20
6.7	Wairarapa Forest Locations.....	21
6.8	Table 7 – JNL Wairarapa Resource Area Statement as at 31 March 2023 22	
6.9	Table 8– Wairarapa District Forests Non-Plantation Broad Description... 22	
6.10	Table 9 – Wairarapa District Significant Non-Plantation Forest Area..... Description.....	23 23
6.11	Table 10: Forest District Physical Description Summary	23
7	JNL Radiata Pine areas by age – 2022	24
8	Non-Plantation Forest Areas Management Plan.....	25
8.1	Assessment and Establishment of Non-Plantation Forest Areas.....	25
8.2	The Forest Accord Criteria	26
8.3	When to do Assessments	27
8.4	How to do Assessments	27
8.5	Managing Completed Assessments.....	27
8.6	2013-2023 Interim Risk Management Plan for Ongoing Assessments of Significant Non-Plantation Forest.	28
8.7	References	30
9	JNL District’s High Conservation Value Forest Assessment.....	30
9.1	Background.....	30
9.2	Definition: High Conservation Forest Areas	30
9.3	Conclusion	31
10	Water Quality and Riparian Management.....	32
10.1	Decision Support System for the Identification and Classification of Waterways.....	32
10.2	Where and when will we monitor?	34
10.3	How will we monitor?	34
10.4	What do we monitor and record.....	34
10.5	Other Monitoring Activities	35
10.6	Riparian Management.....	35



FO Standard – Forest Management Plan – 2023 (Revised)

10.7	Operational Considerations	35
11	Rare, Threatened or Endangered Species Management	38
11.1	Review of Rare, Threatened and Endangered Species Management.	38
11.2	Process for Identification of Rare, Threatened and Endangered Species	40
11.3	Game Bird Management.....	40
12	Harvest Planning and Archaeological Sites Management	40
12.1	Risk Management Plan for Archaeological, Historic Sites and the Protection of Resource and Tenure Rights of Tangata Whenua.....	41
13	Stakeholder Management.....	42
13.1	Purpose	42
13.2	Definition.....	42
13.3	Methods of communicating with Stakeholders.....	42
13.4	What do we communicate to Stakeholders.....	42
13.5	When do we communicate to Stakeholders.....	42
13.6	Responsibilities/Authorities	42
14	Forest Health Management Plan	43
14.1	Introduction	43
14.2	Purpose	43
14.3	Commencement and Duration	44
14.4	Review of the Management Plan	44
14.5	Area of Jurisdiction	44
14.6	Forest Health Surveillance.....	44
14.7	Record Keeping of Operations.....	45



1. The Company

Juken New Zealand Limited (JNL) is a New Zealand registered company with its head office in Auckland New Zealand.

JNL's parent company is WOOD ONE Co Ltd, it is a leading Japanese building materials manufacturer and supplier with its head office in Hiroshima, Japan, that has been trading for over 70 years.

WOOD ONE Co. Ltd, and its subsidiary companies in New Zealand, China and the Philippines, has a strong commitment to environmental management in respect of land, manufacturing and sales. The group has gained ISO14001 Environmental Management System ISO9001 Quality Management System, and Forest Stewardship Council®, FSC® Chain of Custody certifications at the manufacturing operations, and FSC Forest Management (FSC®-C013648) in our Forests.

JNL was formed in 1990 following the successful acquisition of Crown Forest Licences under the then government's Crown Forest Asset Sale. The ownership status of the forest consists of, Crown Forest Leases, freehold land and assignment of leases which make up the Gisborne and Wairarapa forest estates of 41,382 hectares, of this 80% of the estate is plantation forest, comprising mostly of Pinus radiata and the balance being in non-commercial indigenous species held as reserves and or covenant areas.

JNL's primary objective is the sustained yield management of the Pinus radiata forest for the production of clearwood to be used in the manufacture of a wide range of products for the house, condominium and construction industry. This objective represents a move away from WOOD ONE Co. Ltd sourcing timber from South-East Asia and Pacific North-West.

JNL Gisborne and Masterton forest supply logs to their respective mills for the manufacture of Laminated Veneer Lumber (LVL); Plywood, and solid clearwood. Log products unable to be utilised by the JNL mills are supplied to the export market and other domestic sawmills. The company also owns and operates two processing plants in Kaitaia, producing Triboard, MDF, Strandboard and Veneer.

Products are exported from various ports in New Zealand to the WOOD ONE mills in Japan, Indonesia and the Philippines for further processing into finished products and worldwide distribution and approximately 50% is produced for domestic consumption in New Zealand.

To ensure our products are sourced and managed from sustainable forests the Company has an Environmental Management System, aligned to ISO 14001.

To further enhance that commitment, the Company embarked on a process toward Forest Stewardship Council Forest Management certification during 2006/07. The Wairarapa Forests were certified in March 2008 and the East Coast Forests in November 2008.

Adoption of the ISO14001 principles and the FSC Standards, ensure a focus on continual improvement within the JNL management framework, clearly defining our long-term legal and environmental objectives within our forest operations. The Health,

Safety and Environmental Management System (HSEMS) manual and appended documents define our system of ensuring compliance at all levels and continued improvement of our forest operations. All forest areas both production and non-production will be managed according to clearly defined Management Plans.

JNL makes a large and invaluable contributions to communities in which they are situated.

Table.1 Contribution to the community

	Wairarapa District	East Coast District
Employment (excluding direct JNL employees in Forests and Mills)	106	203
Wages, Salary and Contract payments contribution to Community	\$20 million	\$40 million
Annual Sponsorship, donations	\$10,000. Also non-product forest services are provided.	\$35,000

The annual sustainable harvest of Pinus radiata from JNL Forests is tabled below. In some years there are significantly higher volumes available due to the non-uniform planting programmes when the plantation was established.

Table 2. Sustainable Harvest Volume (Pinus radiata)

District	Annual Sustainable Harvest
Wairarapa	230,000 tonnes
Gisborne	400,000 tonnes

Table 3. Approximate harvesting target clearfell age.

District	Clearfell Age (Pruned)	Clearfell Age (Un-Pruned)	% of area logged by cable extraction	% of area logged by ground-based extraction
Wairarapa	32	28	75	25
East Coast	30	28	95	5



FO Standard – Forest Management Plan – 2023 (Revised)

1.1 Mission Statement

To produce high value wood product solutions from sustainable forest resources to maximise benefits to our communities.

1.2 Vision for the Future

To be New Zealand's preferred supplier of premium wood solution through the continuous improvement of our people, plant and processes.

1.3 FSC Commitment

1.3.1 Why certify?

Certification is seen as a key to the future of JNL. It allows for marketing and economic advantages for its forest products and more importantly, it will ensure that management of its resources is carried out under FSC principles.

1.3.2 Certification Requirements

FSC certification requires:

- Practicing the guidelines and requirements set out by the ten principles of FSC.
- Developing a sound policy base derived from the ten principles, ensuring they are communicated and followed in the workplace.
- Developing open lines of communication involving employees, stakeholders and indigenous peoples in the development of economically sustainable management practices.
- Using best practice guidelines in its management regimes. This includes the implementation and use of sound, proven and economically viable environmental, financial and social practices that protect the future sustainability of its resources.

1.4 Planning Overview

JNL manages its forests in accordance with the guiding principles of the company's philosophy and within the overarching strategic direction of the parent company, which has clear environmental and commercial philosophies

JNL reviews its strategic direction and performance based on the guiding principle and compliance with all laws, regulations and industry Best Practise Guidelines. The strategy must meet the self-imposed constraints articulated in the company's comprehensive policies and procedures relating to corporate citizenship, environmental management system, employment conditions, health and safety, monitoring and compliance procedures.

While JNL is committed to providing full public disclosure there are some things that must remain confidential for commercial reasons.



2 JNL Plantation and Non-Plantation Management Strategy

2.1 Definitions

Plantation forest areas are those areas planted in, or awaiting re-planting in, exotic species primarily for timber production purposes. Unplanted areas within the plantation forest and which are counted as part of the plantation, include un-stocked but plantable gaps, roadways, harvest landings, clearways under service utilities (e.g. electricity or telephone wires), water supplies managed for rural fire fighting.

Non-plantation (NP) Forest Areas are those areas where indigenous vegetation is the predominant species, and can be further classified as either Significant Non-Plantation (SNP) Forest Areas or Other Non-Plantation Forest Areas. Non-Plantation Forest Areas are considered as Significant Areas until they have been assessed otherwise.

- Significant Non-Plantation Forest Areas are determined as those areas meeting the following criteria:
 - Areas under Protective Covenant and listed in the Crown Forest Licence
 - Department of Conservation Recommended Areas for Protection (RAP)
 - Areas listed in Regional or District Council Plans as areas of significance (PMA's)
 - Areas which have been assessed by JNL or any other as meeting the requirements of the Forest Accord.
 - Riparian margins alongside Significant Waterways
- Other Non-Plantation Forest Areas

Areas not meeting the criteria for Significant Non-Plantation Forest Areas.

2.2 Plantation Management Strategy

2.2.1 Guiding Principle

JNL plantations will be sustainably managed for profit using current forest industries best practise, recognising high value end-use requirements for all of the merchantable produce grown.

2.2.2 Goals

To improve access to domestic and international markets; maintain commercial and environmental performance to the highest standards available in plantation management; maintain internationally recognised environmental management certification; achieve a commercial rate of return on investments that at least meet JNL's cost of capital; and operate as a good corporate citizen in the communities we operate in.

2.2.3 Performance targets

JNL plantation management will lead the New Zealand Industry whilst:

- Meeting Industry Best Practise operational standards;
- Complying and exceeding, with employee health, safety and welfare laws and regulations;
- Obtaining and maintaining internationally recognised environmental certification from Forest Stewardship Council;
- Demonstrating social responsibility by employing locally domiciled people and remunerating all employees at or above the living wage.
- Continuously improving the growth and profit potential of all plantations including the research and development of alternative species and provenances but using *Pinus radiata* replanting stock CP or other quality factors that have proven traits as its core business;
- Managing all *Pinus radiata* stands to maximise log quality through the implementation of specific regime standards for each district bearing in mind the particular circumstances in each site; In general tending of *Pinus radiata* requires pruning in three lifts to the desired height and then thinning the stands down in two or one operation to achieve the required final stems per hectare.
- Participating in external programmes that minimise the risk of fire, disease and pests in or near any plantations or other land owned or managed by JNL.
- Training and educating all employees to the standards necessary to meet all of JNL's goals and objectives.

2.3 Non Plantation Forestry Management Strategy

2.3.1 Goals

Significant Non-Plantation Forest Areas are to be managed so as to minimise damage during forest operations with the long term goal of establishing a representative network of reserve areas to assist the protection of biodiversity.

2.3.2 Management of Non-Plantation Forest Areas

A systematic timetable of surveys has been carried out in each vegetation type to determine the state of health of these areas.

- Other Non-Plantation Forest Areas may be converted to Plantation Forest during post-harvest re-forestation
- All Non-Plantation Forest Areas will be available for recreational visits (where it is safe to do so e.g. hunters etc.) unless they have been surveyed and found to house Rare, Threatened or Endangered Species (flora or fauna) requiring specific exclusion of non-essential visitors to preserve the population.



FO Standard – Forest Management Plan – 2023 (Revised)

2.4 Protection of Forest Areas

JNL is committed to the protection of its resource from threats including:

- Forest Fire
- Animal and Plant Pest
- Forest Health issues including disease, nutrient deficiencies and chemical or mechanical damage

2.4.1 High Conservation Value Forest (HCVF)

Juken New Zealand has designated 87ha with Totara Forest as high value conservation forest. Two Protected Management Areas lie within the Totara Production Forest area, Makahakaha Stream Bush, PMA ref -WR44, 57 ha and Totara Station Bush, PMA ref- WR41, 30 ha. Several additional high value non-production indigenous forest remnants are also located within the forest. This mosaic of mature forest remnants provides an extremely valuable and rare seed source for the upper Waimata Catchment as it contains a range of representative mature podocarp forest species, including, matai, kahikatea, pukatea, miro and beech not found elsewhere within this catchment. The Gisborne community is investing a considerable effort to protect and restore the Waimata Catchment at present. The protection of these forest assets and the biodiversity within them, i.e. long tailed bat, contributes in a significant way to the community effort already in place and supported by Gisborne District Council and the Department of Conservation.

Pest Management has been underway at this site since 2015 and since the HCVF designation in 2020 an updated pest management plan has been developed with an increase in pest control efforts.

2.5 Environmental Monitoring

A programme of monitoring and re-assessment is to be conducted to monitor stand health on an annual basis.

3 Company Policies and Objectives

3.1 Financial

JNL is committed to maximising Shareholder return for its owners within the parameters described in the company's Vision Statement.

3.2 Environmental Management

JNL works under the guiding principles formulated by its owner and is dedicated to being an environmentally responsible plantation owner and processor of solid wood and engineered wood products.

To meet these objectives JNL has implemented a comprehensive Health, Safety and Environmental Management System (HSEMS). Underpinning the HSEMS is a commitment to sustainable forest management, protection of cultural and historic sites and areas of significant indigenous vegetation and wildlife habitat. This commitment encompasses an overarching philosophy of continued improvement in environmental management. Part of the continuous improvement programme is to ensure JNL forests meet the standards described in Forest Stewardship Council Principles and



FO Standard – Forest Management Plan – 2023 (Revised)

Criteria. The Forest Environmental Policy can be found on page 30 of this Management Plan.

3.3 Corporate Citizenship

JNL is committed to being a responsible corporate citizen with particular focus on the communities in which it operates. While this is reflected in the company's policies and procedures, specifically JNL will:

- Participate in and support relevant community group initiatives.
- Promote educational, cultural and recreational use of the forest environment.
- Support pan-industry initiatives where they conform to the principles and criteria of FSC certification and are directly relevant to JNL's operations (JNL is a member of the New Zealand Forest Owners Association and regional Wood Councils).

3.4 Land Management Policy

In accepting responsibility as a significant rural land occupier JNL practices sustainable land management and will diligently endeavour to mitigate off-site effects of its operations. Sustainable management is central to the core operating ethics of JNL's management systems.

3.5 Silviculture

JNL uses progressive proven silviculture practices that meet objectives to maximise value in its resource while minimising risks to the growing crop and underlying land. JNL is dedicated to sustainably establishing radiata pine using clearwood regimes, except where environmental conditions provide other regimes or plantation species economic enhancement, or where there is a need to diversify risk.

3.6 Resource Management and Monitoring

Sustainable management is central to JNL's management philosophy with all plantation areas mapped and monitored through electronic mapping and careful forest mensuration surveys to build and maintain a detailed database of forest resources. The information is used to regulate yield, monitor forest growth, identify any endangered indigenous species and maintain protected areas while establishing and implementing long and short-term plans. All activities and elements are monitored and the database and plans are regularly updated to account for variations, improvements in data accuracy and to include new information that may come to hand from time to time.

3.7 Harvesting

JNL is committed to maximising value recovery from its harvesting operations, minimising waste and excessive energy use, while being cost competitive with other producers and valuing the need to comply with its Environmental, Health and Safety and other responsibilities. JNL is also committed to a programme of continuous improvement introducing new and innovative technology to complement traditional harvesting techniques and improve worker health and safety, environmental and economic outcomes.



FO Standard – Forest Management Plan – 2023 (Revised)

Cable logging operations in Gisborne and Wairarapa forests represent on average 90% of all log extraction. The decision to use ground based log extraction, generally by skidder, tractor or excavator, is based on the topography and perceived environmental impact.

3.8 Marketing

While developing a reputation for being a consistent and reliable supplier in both the domestic and international markets, JNL is dedicated to producing high quality engineered wood products and log products, which can supplant unsustainably managed wood products from other sources.

3.9 Processing

JNL is committed to maximising local wood processing where it adds value to the environmental outcomes, increases local employment opportunities and makes economic sense.

3.10 Research and Development

JNL supports and participates in a range of cooperative and collective research and development programmes aimed to continuously improve its sustainable management outcomes.

3.11 Forest Protection

JNL is committed to the protection of its resource from threats including:

- Forest fire, breaches of forest security, animal and plant pest and forest health issues including disease, nutrient deficiencies and chemical or mechanical damage.
- JNL's Forest Health Management plans detail how pests and diseases can be identified and managed.
- JNL has a comprehensive Fire and Emergency plan which in association with FENZ manages the mitigation of the fire threat.
- The protection of native trees within JNL forest areas is in accordance with Government Regulations and is outlined in this document.

3.12 Health and Safety

JNL is committed to maintaining and improving health and safety outcomes for all of its employees, contractor workforce and visitors and others who may be affected by our activities. JNL maintains a rigorous and very active programme to monitor, provide guidance and, where necessary, maintain discipline to ensure health, safety and welfare is a fundamental business objective. To meet these objectives, JNL has a comprehensive HSEMS. The policy on Health and Safety can be found on page 29 of this management plan. Appropriate resources will be allocated to ensure that all legislation including health and safety legislative requirements are complied with. JNL will ensure that the appropriate health and safety and environmental management systems are established, maintained and regularly reviewed for continuous improvement.



FO Standard – Forest Management Plan – 2023 (Revised)

3.13 Personnel Management

JNL is committed to being a good employer, providing a safe and healthy working environment with equal opportunity for all employees. JNL proactively:

- Advocates equal employment opportunity
- Supports ongoing training and development for staff
- Maintain open communication with staff

3.14 Contract Workforce management

JNL forests are managed in a similar way to most other contracts incorporating all of its general philosophies and procedures and:

- Only uses contractors who comply with JNL policies on health, safety, welfare, environment and personnel management.
- Gives preference to local contractors who employ locally
- Maintains a long-term relationship with contractors to reduce risk

3.15 Public Use Policy

JNL's Crown Forest Licences allow the public to walk in the forests, providing it does not conflict with or compromise its core business activities and is safe for the public to do so. Access to lease forests is generally controlled in consultation with JNL by the Lessor for use by its own stakeholders. Recreational activities and educational programmes make use of the forests and include hunting, walking and flora and fauna research.

All access to all forest areas regardless of land tenure is controlled through a forest permit system regulating these forest access activities.

3.16 Chemical Management Policy

JNL promotes the reduction of chemical use in its forests and the chemical management policy can be located section 5 of this Management Plan.

3.17 Sodium Fluoracetate (1080 poison) Policy

JNL does not support the use of 1080 for animal pest control on any of their forest estates and this policy can be located at section 5 of this Management Plan.

3.18 Wilding Tree Incursion Policy

JNL is committed to preserving the integrity of indigenous areas within its legal boundaries by periodically surveying these areas for wilding pine invasion. Surveys are conducted both on the ground as part of routine forest operation monitoring activities and also aerially from helicopters as part of routine forest fly overs. JNL will also comply with any regional pest management strategy where this pertains to wilding species.

The following Wilding Prevention Decision Support System mitigates any species choice deliberation for JNL with establishing and re-establishing new forest plantations of the current species choices currently used by the company, and negate any requirements for research as the species choices available to JNL have a long established, well understood behavioural history.



FO Standard – Forest Management Plan – 2023 (Revised)

3.18.1 Wilding Prevention Decision Support System.

Where wilding incursion occurs within the boundary of JNL's estate, JNL culls unwanted wildings on a regular basis either by felling, hand pulling or poisoning operations.

Where wilding incursion occurs outside the JNL estate, JNL's practice is to follow the decision model criteria as described in FSC-STD-NZL-02-2023 New Zealand plantations EN, and the Wilding Tree Risk Calculator / MPI.

4 Monitoring Programmes

Monitoring of operations, the environment, and aspects of its business performance can only improve JNL's overall performance as a manager of sustainable forest resources, as a significant contributor to sound environmental management and JNL's performance as a good corporate citizen and employer.

The objective of monitoring is to ensure JNL's environmental performance is regularly measured and key performance indicators are detailed in Forests' annual reports within the HSEMS. The purpose of environmental monitoring is to compare actual performance against legal requirements, company standards, and environmental objectives and targets, and identify non-compliance, complaints/grievances and initiate corrective or preventative action.

JNL has an environmental monitoring and reporting procedure that allocates responsibility between operational areas and highlights the specific monitoring parameters. Whilst some monitoring results are available to the public in the public summary document other results of monitoring may be made available upon request.

Current operations monitoring include:

- Operational activities – do they meet the required quality, environmental and best practice standards, compliance with Resource Consent conditions and the pre-operation planning notes and risk identification and controls put in place for the operation. 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 its associated level of environmental aspects that require managing. For high aspect operations this involves visits to the site at least once per week, by a JNL supervisor or nominated person.
- The number of action requests issued and their close out dates per operation is monitored, collated and reported on annually.
- Chemical use – rates per hectare are collated for reporting annually for the period ending 31st December of each year. (JNL Chemical Use Report 2022)
- The efficacy of feral animal control operations is monitored through kill returns and static observations both night and day, which are conducted on a quarterly basis. Plant pests are identified throughout the year through reports from forest users, neighbours, regional council and forest fly overs, and a control program is affected once per year.
- Presence of rare, threatened and endangered flora and fauna species are reported all year round by staff, contractors, contractor employees

and forest users and collated into the environmental database for annual reporting of sightings.

- Baseline flora and fauna and RTE reference point surveys were formally conducted over the whole estate during the period 2010-2012 and this survey has been continued in current years.
- Targeting the monitoring of RTE flora and fauna species and the composition and changes in health over time in already established RAP, Covenant (and any High conservation value forest areas identified) will be focussed on a 5 yearly reassessment cycle when a review of these areas is finalised with the assistance of the Department of Conservation and consultation with the relevant Iwi groups affected. The five year reassessment cycle will build on holistic estate surveys initially conducted during 2010-2012 period for any relevant RAP, Covenant and HCVF areas. From 2023 selected SNA's within the forest estate will be identified to maintain or enhance through pest control and monitoring.
- Subsequent to this review, targeting 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 affected. Where predation by forest pests cannot be practically controlled and where no noted RTE species have been found to exist in the estate survey conducted between 2010-2012, these areas will not be part of the 5 yearly assessments of flora and fauna changes in composition or frequency over time in this management plan (subject to new RTE discoveries in these excluded survey locations). DOC also will be concentrating their own monitoring, maintenance and restoration efforts in indigenous species around this criterion. This criterion at present is also subject to ongoing consultation with our Iwi stakeholders going forwards through into 2023.
- Annual monitoring of in-stream values in permanently flowing freshwater streams prior, during and subsequent to harvesting operations is conducted a minimum of once per year at fixed sampling points. Photos of point samples are also taken to monitor water quality visually over time and any aquatic life (presence or not) noted at point sample.
- The monitoring of Non-Plantation Forest Areas to assess and control the level of invasion by non-indigenous species e.g. wilding pines, Old Man's Beard etc. is an ongoing operational activity that is being allocated resources on an annual basis, with a formal survey every two 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 effected.
- Forest Yield reconciliations (predicted volumes versus actual recovery) are conducted annually.
- Forest operations completed are monitored against budgets and reported on monthly from our head office in Auckland.

FO Standard – Forest Management Plan – 2023 (Revised)

- Health and Safety monitoring of the workforce and environment including HSE systems, HSE operational monitoring, lost time injury rate, benchmarking HSE performance against the rest of the forest industry and District Alcohol and Drug Testing is also conducted and reported on both monthly and annually summarised.
- Operational HSE monitoring is conducted quarterly on all forest operators with a minimum pass mark of 85% required.
- Health and Safety statistics are reported monthly and collated into head office reports and IRIS, the national FOA database.
- Independent annual forest health surveys are conducted every year.
- Nursery suppliers provide a certificate that reports on the health of their nursery's prior to JNL receiving planting stock each year.
- Public use of the forest is monitored by 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 assisting the range of forest monitoring mechanisms.
- Public Feedback involving both complaints and complements (Stakeholder Interaction summary) and whether or not JNL actioned any of the stakeholder requests is also monitored and recorded in summary and reported on annually.

4.1 Monitoring Annual Reporting Dates

For reporting on the performance of the Forest Management Plan and dates for annual review, annual reporting covers the period from the 1st of January to the 31st of December in anyone year.

For the purpose of reporting Resource Descriptions and Plantation Forest harvest volumes, annual reporting covers the financial year period 1st April to the 31st March.

4.2 Management Review Process

The Forest Management Plan is a live document and shall be reviewed at least annually or whenever the need arises. The purpose is to make sure the management plan continues to be suitable, adaptive, adequate, and effective. This includes reviewing:

- Objectives, targets and performance.
- The effectiveness of the Forest Management Plan and its processes.
- Whether the environmental policy statement reflects changes in legislation, expectations or other requirements.
- Monitoring results.



5 Policy Documents

(Relevant Policy Documents are in the Appendices)

6 Resource Description

The JNL Management Plan covers 41,382 hectares of forest in the Gisborne and Wairarapa regions.

Some 32,397 hectares of this estate are stocked in plantation species and other land awaiting afforestation and/or re-afforestation. The remaining area is made up of indigenous vegetation enclaves and wetlands within the forest.

Radiata pine (*P. radiata*) comprises approximately 90% of the net stocked area. The remainder is made up of other species, predominantly Eucalyptus species, Corsican Pine and Douglas fir.

6.1 Mapping the Resource: The Description Key

The following are the land use layers in JNL as at 01.01.2023

Unknown, Unplanted, Stands, Cutover, Unstocked, Land banks and Non-Productive areas, Net Stocked areas. Covenant areas and SNP are recorded separately to the GIS layers.

These GIS layers are combined to compile area (hectares) statements in the resource description tables 1, 3, 4 and 6 of this management plan in the following ways.

6.2 Managing Special Sites of Significance

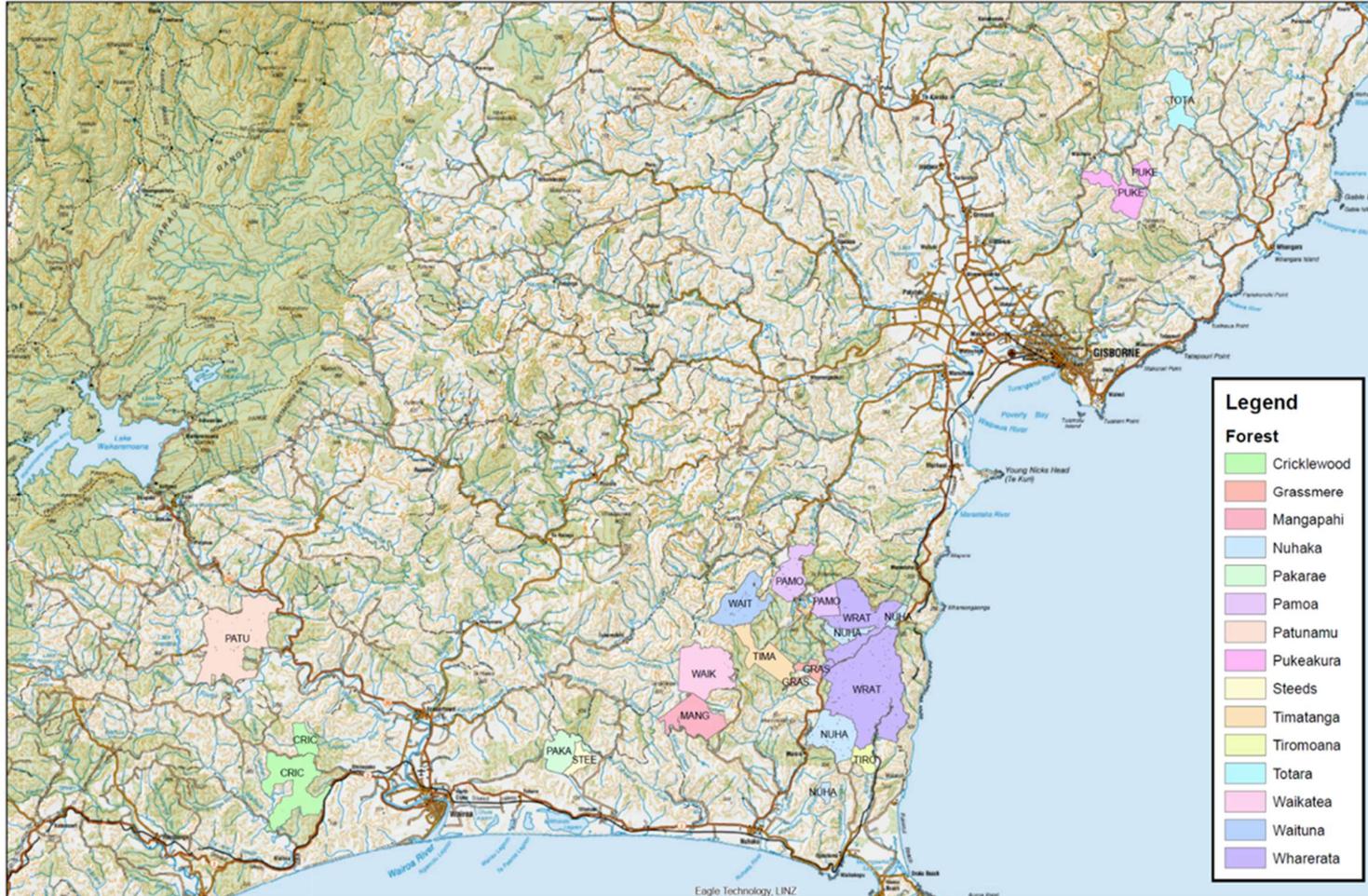
Mapping significant sites within the forest estate is managed by treating them as environmental hazards and as such has their own layers within the GIS mapping system. Sensitive sites are identified by symbols on maps and are accompanied by their own tabular description associated to this symbol within the GIS.

Examples of such sites include but not limited to:

- Historic, archaeological sites and sites significant to Maori relevant to the JNL estate
- Trial Sites
- Locations of site specific Health and Safety hazards
- Sensitive areas managed by other organisations/stakeholders.

These special site layers are continually being constructed and updated in an ongoing live environmental monitoring management process.

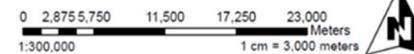
6.3 East Coast Forest Locations



Coordinate System: NZGD 2000 New Zealand Transverse Mercator
 Projection: Transverse Mercator
 Datum: NZGD 2000

JNL East Coast Forest Locations

As of June 2018





FO Standard – Forest Management Plan – 2023 (Revised)

6.4 Table 4 – JNL Gisborne Resource Area Statement as at 31st March 2023

District	Ownership	Forest	PPA (ha)	SNP (ha)	NP (ha)	Total Area (ha)
Wairoa	Freehold	Grassmere	248.9	12.3	35.1	284.0
Wairoa	Freehold	Mangapehi	770.4	279.0	493.2	1263.6
Wairoa/ Gisborne	Freehold	Nuhaka	1704.7	19.2	258.4	1963.1
Wairoa	CFL	Pakarae	781.2	4.4	73.2	854.4
Wairoa	CFL	Patunamu	2893.7	46.5	407.9	3301.5
Wairoa	Freehold	Steeds	321.8	0.00	8.7	330.5
Wairoa	Freehold	Tiromoana	356.0	13.8	43.9	399.9
Wairoa	Freehold	Waikatea	1546.0	117.4	297.7	1843.7
Wairoa	Freehold	Cricklewood	2286.0	25.7	307.21	2593.18
Gisborne	Joint Venture - GDC	Pamoa	1127.8	41.6	434.6	1562.4
Gisborne	Freehold	Pukeakura	1000.8	88.6	212.9	1213.7
Gisborne	Freehold	Totara	679.9	75.7	176.3	856.2
Gisborne/Wairoa	Timatanga	Timatanga	859.4	58.2	232.3	1091.7
Gisborne	IWI Lease	Waituna	1110.1	0	195.5	1305.6
Gisborne/Wairoa	IWI Lease	Wharerata	5611.2	276.5	1251.4	6862.6
Total			21297.9	1058.9	4428.31	25726.1

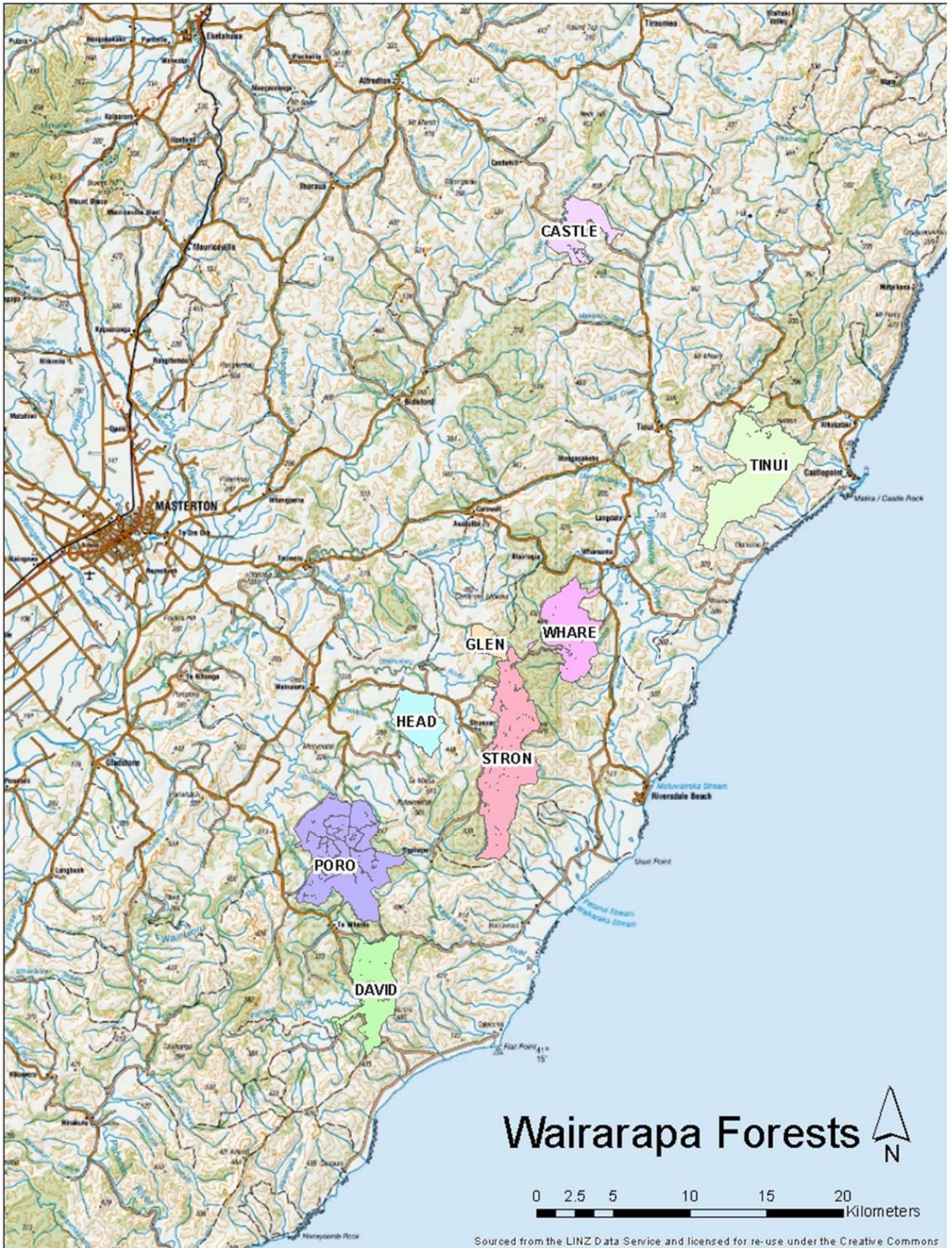
6.5 Table 5 – Gisborne District Forests Non-Plantation Broad Description

FOREST	BROAD DESCRIPTION
Wharerata	Predominantly Tawa canopy with Pukatea. There is also a lot of Rimu, Totara, and Kahikatea. Rewarewa, Hinau, Puka and Nikau. Kohekohe and Mahoe and Coprosma dominate the sub canopy
Patunamu	Predominantly ex logged Tawa forest, Rimu is the dominant emergent along with Kahikatea and Matai
Pamoa	Predominantly Tawa canopy
Waikatea	Tawa dominated with Hinau, Toro and Miro present
Timatanga	Tawa dominated with Hinau, Toro and Miro present
Mangapahi	Tawa dominated with Hinau, Toro and Miro present
Tiromoana	Predominantly Tawa canopy with Pukatea. There is also a lot of Rimu, Totara, and Kahikatea. Rewarewa, Hinau, Puka and Nikau. Kohekohe and Mahoe dominate the sub canopy
Cricklewood	Patches of mixed species including Kohekohe, Titoki, Tawa Rewarewa, Kanuka ,Kahikatea
Pukeakura	Predominantly Tawa broadleaf canopy
Waimata	Predominantly Kanuka/Manuka mix
Totara	Predominantly Tawa broadleaf canopy
Grassmere	Predominantly Tawa canopy

6.6 Table 6 – Gisborne District Non-Plantation Forest Area Description

Ecological District	Ownership	Forest	RAP (ha)	Covenant (ha)	SNP area (ha) not covenant or RAP	Total Area (ha)
Tirotiro	Freehold	Grassmere	4.9	0.0	7.4	12.3
Tirotiro	Freehold	Mangapahi	223.1	0.0	55.9	279.0
Tirotiro	Freehold	Nuhaka	0.0	5.5	13.7	19.2
Waihua	CFL	Pakarae	0.0	0.0	4.4	4.4
Tirotiro	Joint Venture	Pamoa	0.0	0.0	41.6	41.6
Tirotiro/Waihua	CFL	Patunamu (inc Pikaungaehe)	20.0	13.2	13.3	46.5
Waiapu	Freehold	Pukeakura (inc Waimata)	0.0	0.0	88.6	88.6
Waihua	Freehold	Steeds	0.0	0.0	0.0	0.0
Tirotiro	Freehold	Timatanga	45.1	0.0	13.1	58.2
Tirotiro	Freehold	Tiromoana	0.0	0.0	13.8	13.8
Waiapu	Freehold	Totara	75.5	0.0	0.2	75.7
Tirotiro	Freehold	Waikatea	84.2	0.0	33.2	117.4
Tirotiro/Waihua	Freehold	Cricklewood (was Wairoa)	0.0	0.0	25.7	25.7
Tirotiro	CFL	Waituna	0.0	0.0	0.0	0.0
Tirotiro	CFL	Wharerata	139.8	18.1	118.6	276.5
		Total	592.6	36.8	429.5	1058.9

6.7 Wairarapa Forest Locations





FO Standard – Forest Management Plan – 2023 (Revised)

6.8 Table 7 – JNL Wairarapa Resource Area Statement as at 31 March 2023

Ecological District	Ownership	Forest	PPA	SNP	NP	Total area
Eastern Wairarapa	Rangitane	Castlehill	719.9	174.4	273.94	993.9
Eastern Wairarapa	CFL	Davidsons	1410.9	109.6	233.1	1644
Eastern Wairarapa	Freehold	Glenlean	303.3	70.9	90.1	393.5
Eastern Wairarapa	CFL	Headquarters	907.5	71.9	142.4	1049.93
Eastern Wairarapa	CFL	Poroporo	2627.9	694.3	1100	3727.9
Eastern Wairarapa	CFL	Stronvar	2405.7	583.6	621.1	3026.8
Eastern Wairarapa	Rangitane	Tinui	2101.1	831.4	1010.1	3111.2
Eastern Wairarapa	CFL/Rangitane	Whareama	1459.9	39.3	248.7	1708.6
Total			11936.2	2575	3719.4	15655.8

6.9 Table 8– Wairarapa District Forests Non-Plantation Broad Description

FOREST	BROAD DESCRIPTION
Castlehill	Beech and scrub hardwoods mix. Possible pockets of pure black beech
Tinui	Likely to be beech-scrub hardwoods-Kanuka
Whareama	Rimu-general hardwoods-beech. May be some areas of pure black beech. Hardwoods may include Tawa
Glenlean	General hardwoods, but areas of Tawa-Rimu-beech likely in the southern end of the forest
Stronvar	Podocarp-beech and beech-hardwood. Probably similar to Whareama. South of Reba Trig are areas of high country
Headquarters	General hardwoods-beech
Poroporo	General hardwoods-beech
Davidsons	Rimu-mate-hardwoods, general hardwoods

6.10 Table 9 – Wairarapa District Significant Non-Plantation Forest Area

Description

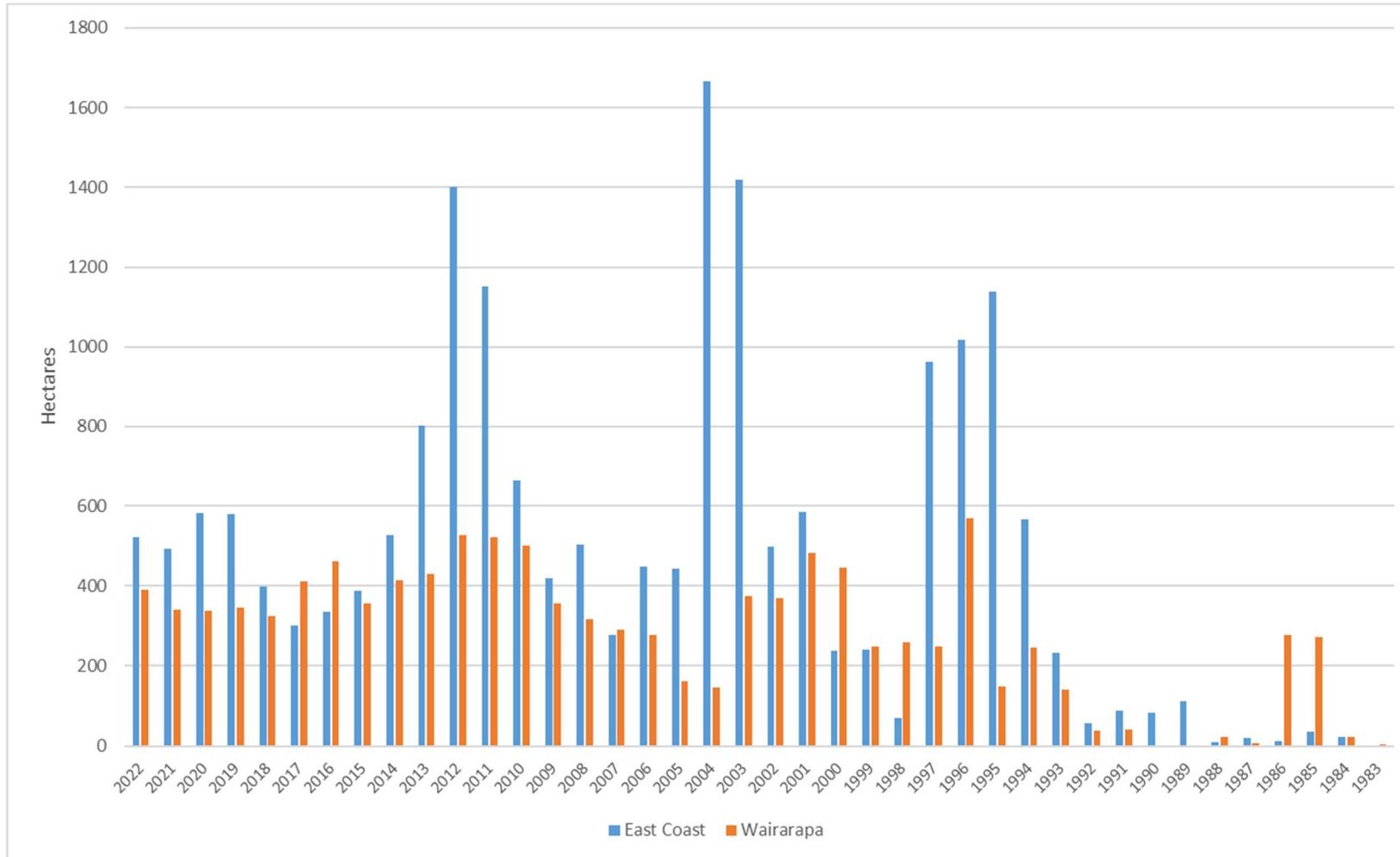
Ecological District	Ownership	Forest	RAP	Covenant	SNP area	Total Area
Eastern Wairarapa	Rangitane	Castlehill			174.4	174.4
Eastern Wairarapa	CFL	Davidsons			109.6	109.6
Eastern Wairarapa	Freehold	Glenlean			70.9	70.9
Eastern Wairarapa	CFL	Headquarters	11.5		60.4	71.9
Eastern Wairarapa	CFL	Poroporo	95.5	190.7	408.1	694.3
Eastern Wairarapa	CFL	Stronvar			583.6	583.6
Eastern Wairarapa	Rangitane	Tinui		449.5	381.9	831.4
Eastern Wairarapa	CFL/Rangitane	Whareama			39.3	39.3
Total			107	640	1828	2575

6.11 Table 10: Forest District Physical Description Summary

Forest District	Location	Topography	Altitude (m.a.s.l.)	Geology / Soils	Rainfall (mm)
Wairarapa	Eastern Hill country of the lower North Island, east of the Tararua Ranges and extending from Castlehill in the north to Davidsons in the south	Rolling to steep hill country	120-500	Geology is predominantly papa (sand, silt, mudstones) Soils are mainly non-marine conglomerates	Avg = 1200
Gisborne	Located within the Gisborne Wairoa Districts extending from the upper reaches of the Waimata Valley north of Gisborne to the Cricklewood Road region to the south of the Wairoa Township.	Rolling to steep hill country	100-600	Complex hill country underlain by siltstones, sandstone and limestones. Soils are a complex of stepland soils and leached podsolised volcanic ash soils.	Avg = 2000



7 JNL Radiata Pine areas by age – 2022



8 Non-Plantation Forest Areas Management Plan

JNL Forests define Non-Plantation Forest Areas as those areas where indigenous vegetation is the predominant cover, or where no establishment of plantation cover is planned or possible, and includes areas classified as HCVF.

All Non-Plantation Forest Areas (Significant and/or Other) will be managed in accordance with the JNL Forest Management Plan. The JNL Forest Management Plan is reviewed at least annually to verify their continuing suitability for the successful management of Non-Plantation Forest Areas.

Management Plans will identify (referenced through the GIS mapping system) any specific sites such as Covenant Areas, Protected Management Areas (PMA's) regulated by Regional Councils, Protected Natural Areas PNA's (areas leased or owned by the Crown), Recommended Areas for Protection (same as PMA the term DoC used in the Ecological District Surveys), and areas of High Conservation Value Forest (HCVF), and identify any specific management requirements. Where specific and significant plantation forest management options need to be exercised by JNL within Non-Plantation Forest Areas (such as road construction for access), these will be assessed and documented in the normal manner through and including where appropriate Regional Council Resource Consent processes, LINZ where the activity may affect Covenant areas, Department of Conservation and Iwi consultation.

Where specific management plans already exist, e.g. for a DOC, RAP, Covenant etc. the JNL Forest Management plan may use these documents as a reference in consideration to the management needs of that particular area or areas within the JNL estate similar to the areas described in these management plans.

8.1 Assessment and Establishment of Non-Plantation Forest Areas

The first “coarse-level” survey was commenced in November 2008. This first survey was carried out utilising many different methods. The general process included:

- Discussions with DOC, Regional Councils, other expert advice, and relevant stakeholders to ensure our methodology is consistent with other agencies and to maintain professional integrity
- Mix of field surveys and capturing existing knowledge and information through discussions with experts and
- Utilising forest maps and aerial photo's
- Utilising existing staff to carry out the work or securing the services of relevant professionals where needed
- Consulting reference material ranging from books, maps, photographs, databases (including those from other agencies)

The information was collated and mapped, lodged in databases, and kept on file. Using this coarse level information, sites were deemed as either definitely not significant sites, or potentially significant sites. In the summers of 2008-09 and 2009-2010, more detailed surveys were carried out by a recognised authority in this subject in all the potentially significant sites. Each site had species of flora and fauna identified

FO Standard – Forest Management Plan - 2023

and recorded, plus information relating to possible threats to those sites. Some of these sites were then deemed to be non-significant, and were reclassified in the company GIS system as either plantable or unplatable areas. During the 2008-09 and 2009-10 summer surveys, sites were GPS-referenced so that we could return to the same sites in later years to monitor stand condition. The areas were re-assessed in 2017/18.

All Non-Plantation Forest Areas are considered as Significant Areas until they have been assessed otherwise. Through the course of time, Significant Non-Plantation Forest Areas may alter in size through operational constraints being realised (refer 8.5 of this management plan) or new discoveries being made or through on going work in reviewing these areas with DOC and ongoing consultation with relevant Iwi stakeholders. Where this occurs, supervisor notes on the operations monitoring form or a 'Non-Plantation field assessment sheet' showing the reasons for reassessment need to be filled out and these areas need to be re-mapped and areas updated for future management activities.

Significant Non-Plantation Forest Areas are determined as those areas meeting the following criteria:

- Areas under Protective Covenant and listed in the Crown Forest Licence; or
- Areas listed in the Department of Conservation' Protected Natural Area Programme and including both Protected Natural Areas and Recommended Areas for Protection.
- Areas listed in Regional or District Council Plans as areas of significance; or
- Areas that have been assessed by JNL as meeting the requirements of the Forest Accord; or
- Any site housing any Rare, Threatened or Endangered Species
- Riparian margins alongside Significant Waterways
- Areas deemed significant by JNL and relevant local Iwi stakeholders for other purposes, e.g. site of a radio transmitter, archaeological or historical site, waahi tapu etc.

8.2 The Forest Accord Criteria

Excludes from land clearing and disturbance all areas of naturally occurring indigenous vegetation with the following characteristics:

- Any area of five hectares or greater which has an actual or emerging predominance of naturally occurring indigenous tree species of any height.
- Any natural indigenous forest vegetation of between one and five hectares in area with an average canopy height of at least 6 metres which is practical to protect. This recognises that in some instances small pockets of native vegetation within a commercial forest cannot practically be protected from disturbance. However, viable stands will

FO Standard – Forest Management Plan - 2023

be excluded from disturbance and every reasonable effort made to ensure such areas are not damaged in subsequent forestry operations.

Areas of less than one hectare cannot be automatically classified as non-significant. These areas may be sites of Waahi Tapu, home of RTE etc. Consequently all sites must be assessed individually.

Other Non-Plantation Forest Areas are those areas not meeting the criteria for Significant Non-Plantation Forest Areas.

8.3 When to do Assessments

All new land purchases are to be assessed for areas meeting the criteria, and areas meeting significant status are to be mapped into JNL's GIS system.

Non-Plantation sites can be assessed during:

- Establishment and Silvicultural operations
- During pre-harvest planning operations
- Ad hoc assessments
- Organised, planned surveys

Significant areas that, sustain damage during operations, or as a result of an incident (e.g. wildfire, major slip etc.), are to be re-assessed with particular regard to the physical area of the site. Any changes to boundaries are to be re-mapped into the company's GIS system.

8.4 How to do Assessments

- All assessments of Non-Plantation sites are to be recorded on the form "Assessment of Non-Plantation Forest Sites" (attached).
- Each site is to be given a unique number identifying itself in the following format – 345/1 indicates site 1 in Compartment 345.
- Each site is rated as Significant or Not, and whether any Rare, Threatened or Endangered Species (bird, plant fish, bat etc.) is present.
- Species composition of these areas can be determined by one or more of the following methods:
 - From records of Covenants, DOC RAPs, Regional or District Council surveys, National Vegetation surveys, etc.
 - Visual determination during assessment visits, e.g. pre-harvest planning, during Silvicultural QC
 - All areas classified as significant, are to have the form Non-Plantation Forest Field Assessment Sheet completed.

8.5 Managing Completed Assessments

Completed assessment forms and relevant maps of the area(s) concerned are to be handed to the Risk Manager for recording, mapping and filing.

FO Standard – Forest Management Plan - 2023

The General Manager or a delegated representative has the sole authority to make final determination as to whether an area is significant or not and whether or not the area will form part of the network of reserve areas designed to protect natural diversity. Where there are conflicts with the protection of biodiversity with other forest management purposes and entity economic viability, these may be described by the General Manager or his/her delegated

- Representative as justification for declining the area to be designated as reserve or alternatively, adjusting existing reserve areas as required.
- All Assessment forms and maps must be approved by the General Manager or a delegated representative in writing before any area is defined and mapped as Significant.
- At regular intervals, the maps are to be sent to the GIS for updating.
- Information from the Non-Plantation Forest Field Assessment Sheet is to be entered into the GIS mapping system and/or Excel electronic format.
- The completed assessments set a base line level of assessment for which they are to be further compared to known ecological habitats already catalogued in the Forest District's region. These include District/Regional Councils /ecological surveys, and information updated from the local Department of Conservation advice on species of specific interest in the district.
- Where significant habitats are further identified through this higher level analysis these are then identified on the GIS mapping system marked with symbols alerting the user to a special area of interest.

8.6 2013-2023 Interim Risk Management Plan for Ongoing Assessments of Significant Non-Plantation Forest.

Introduction

The following is a summary of current progress being made that furthers the development of JNL's biodiversity management strategy. It is envisaged this summary will also provide an introduction to the relevant Iwi stakeholders for future consultation on this matter.

The topics required for consultation by the owners and future owners of past and present Crown Forest Land going forwards include but is not limited to;

- Covenants, Recommended Area Protection (RAP), significant plantation forest and any potential High Conservation Value Forest identified as per the FSC certification program.
- The extent of Biodiversity monitoring programs on their lands.

The indigenous area involved within JNL estates under Crown Forest License (and formerly under CFL) is some 2,832 hectares. Indigenous area involved on freehold land is 760.8 hectares and a further 41.6 hectares is on joint venture land with the Gisborne District Council.

FO Standard – Forest Management Plan - 2023

In all land parcel groups involving CFL, the relevant Iwi landowner representatives to be consulted with have yet to be finalised (this includes Wharerata Forest Limited who still have two Crown appointed representatives on the Board).

The approach being adopted by JNL is to provide a holistic and generic biodiversity monitoring and management program rather than progressing a piecemeal, ad-hoc and ill-informed system that would ensue if a proper consultation process was not undertaken. To this end, a target date of December 2014 has been set for the biodiversity monitoring and management program to be finalised (subject to sufficient opportunity to consult with stakeholders as they become identified).

Position Statement

JNL has already conducted and invested in significant baseline surveys of its estate in indigenous reserves (and there is ongoing assessment in operational areas of plantation forestry) as steps towards appropriately classifying, managing and monitoring the biodiversity of the land under JNL's forest management. This extensive survey located no significant species but a smaller number of sightings of Kereru, Long tailed Cuckoo and NZ Falcon were sighted in other parts of the estate.

Consultation and review of RAP's and their boundaries within the estate with the Department of Conservation is well progressed however confirmation of a number of these requires final consultation with the relevant Iwi owners and those owners yet to be appointed awaiting Waitangi Tribunal outcomes. When this consultation has occurred, the RAP's, (if agreed upon) will be submitted to the respective councils for inclusion or modification in their respective District Plans.

A review of what areas of the Forest Estate fits the definition of HCVF is currently in progress with the Department of Conservation with the review initially targeting non-crown forest license areas. When Iwi representatives become known to JNL over time, then these CFL areas will also be reviewed for HCVF in consultation with the land owners and the Department of Conservation.

JNL Interim Decision Support System Model for Managing Biodiversity Timeline

2023	Identify key SNA's to maintain or enhance through monitoring and pest control
2018	Monitor applicable flora, fauna and any identified RTE sites for changes (repeat every five years) over time.
2014 Target	Framework of Biodiversity Management Program in place
2014 – Ongoing	DoC, JNL & Iwi review sites for possible HCVF status inside of CFL and
Forests.	Review RAP's, Covenants and Significant Non-Plantation

FO Standard – Forest Management Plan - 2023

2013 of CFL	DoC & JNL & GDC review sites for possible HCVF status outside
2012-2013	JNL & DoC review RAP boundaries
2012 sites 2017)	JNL Base Line Biodiversity Survey (next monitor on applicable
2011	Stakeholder Notification of HCVF letter
1995-1997	Ecological District Surveys conducted

8.7 References

1. New Zealand Forest Accord
2. Principles for Commercial Plantation Forestry in New Zealand
3. Relevant District and Regional Plans
4. Department of Conservation's Protected Natural Areas Programme
5. High Conservation Value Forest assessments for each Forest District.
6. JNL's Forest Management Plan
7. District Ecological Surveys
8. FSC-STD-NZL-02-2023 New Zealand Plantations EN
9. National Policy Statement for Plantation Forestry (NES-PF)

9 9 JNL District's High Conservation Value Forest Assessment

9.1 Background

JNL has evaluated and continues to evaluate their estates for HCVFs.

A HCVF is the area of forest that needs to be appropriately managed in order to maintain or enhance a high conservation value. An HCVF may be a small part of a larger forest, for example a riparian zone protecting a stream that is the sole supply of drinking water to a community or a small area of a rare ecosystem. In other cases, the HCVF may be the whole of a forest management unit, for example when the forest contains several threatened or endangered species that range throughout the forest.

9.2 Definition: High Conservation Forest Areas

Table 11 Definitions HCVF

Value	Description
HCV 1	Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia)
HCV 2	Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the

FO Standard – Forest Management Plan - 2023

	management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance
HCV 3	Forest areas that are in or contain rare, threatened or endangered ecosystems
HCV 4	Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)
HCV 5	Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health)
HCV 6	Forest areas critical to local communities' traditional cultural identity (e.g. areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities)

The following is an assessment of the Gisborne forest estate using the Pro Forest toolkit. For this assessment the whole forest estate has been viewed as one forest management unit. In July 2012 letters were also sent to relevant stakeholders inviting their comment as to whether or not JNL's forest estates contained any HCVF. This process is continuing in 2023.

Table 12 – JNL Districts High Value Conservation Forest Areas

District	HCV1	HCV2	HCV3	HCV4	HCV5	HCV6
Gisborne	Nil	Nil	87ha	Nil	Nil	Nil

9.3 Conclusion

The Protected Natural Areas as stipulated by the Department of Conservation and Covenants are the only areas that would meet the criteria for HCVF. These areas have their own management disciplines and legal constraints as defined by their respective administrative organisations to which this management plan will comply. A review is currently underway with the Department of Conservation covering new mapping of RAP's and Covenants. JNL are also reviewing Significant Non-Plantation forest within the JNL estate not already covered by management plans with the Department of Conservation to see if they hold areas of special ecological significance and or fit the classification of HCVF. Relevant Iwi stakeholder consultation is expected to be largely completed by the end of 2014 after which holistic monitoring, management and any restoration efforts, involving RTE species and indigenous areas of importance can be finalised and initiated into a five year monitoring program.

10 Water Quality and Riparian Management

JNL is committed to a programme of ensuring that the waterways in and flowing from forests under their stewardship are maintained in a state that has minimal effect on water quality or quantity.

10.1 Decision Support System for the Identification and Classification of Waterways

- All primary catchment areas within the forest are to be identified and mapped.
- All waterways are to be identified from forest maps, and classified as described in Table 13 below.
- Waterways are to be considered Significant until otherwise classified.
- Re-classification to Wetlands or Other is to be approved by the General Manager Forests or approved representative.
- All waterways are to be re-assessed during the pre-harvest planning phase to determine whether there are values that will require re-classification and from these planning notes riparian zones for replanting will be established and mapped taking into account any applicable Council resource consent conditions, Regional water plans and requirements of the Climate Change Response Act 2002

FO Standard – Forest Management Plan - 2023

Table 13 – Definitions of Waterways

SIGNIFICANT WATERWAYS	<ul style="list-style-type: none"> • Described in Regional Freshwater Plans • Described in District Plans. • Significant Iwi values. • High Recreational values. • Risk to downstream structures / values. • Water supply for downstream users. • History of previous erosion / flooding. • Presence of Rare, Threatened or Endangered Species. • Waterways where District or Regional Plans require removal of harvesting debris. • Permanently flowing streams.
WETLANDS	<ul style="list-style-type: none"> • Natural permanently wet areas that supports a natural ecosystem of plants and animals that are adapted to wet conditions peculiar in habitat and in need of protection where practical.
OTHER WATERWAYS	<ul style="list-style-type: none"> • Natural Waterways where water in its natural state during an average year, stops flowing on at least one occasion during the year.

Cut-off points for determining where individual waterways cease being significant may vary from waterway to waterway. Examples of points where the significance may stop include:

- Where the stream bed at fullest flow is less than 1 meter for a continuous 50 meter distance
- Where the waterway enters an area of Significant Non-Plantation Forest
- As defined in any Regional or District Plan

Within any stretch of waterway not considered as significant, there may still be points in that waterway which should be considered as significant. These points may include specific Iwi sites, a site where a Rare, Threatened or Endangered Species is present

FO Standard – Forest Management Plan - 2023

etc. In these cases, hazard ID markers are layered in GIS map layer to identify these areas for management (refer to ‘Managing Special Sites of Significance’ in Resource Description section of this Forestry Management Plan).

FSC Principle 8: Monitoring and Assessment also requires that we carry out monitoring operations – “appropriate to the scale and intensity of forest management” to assess the impact of operations on the environment.

Where practical, JNL will interact and cooperate with other research organisations on joint sites of interest – examples being District and Regional Councils, DOC, NIWA, Land Care Research, and Fish and Game.

10.2 Where and when will we monitor?

JNL’s monitoring programme will focus on Primary Catchments containing Significant Waterways where harvesting activities are scheduled to take place and in catchments where required to monitor the effect of plantation forestry.

Monitoring will be undertaken as a minimum annually in mid-summer at the same sites. Photo points will be established at each monitoring site also. Monitoring must be done as close as possible to the same time each year, although this may be affected by factors beyond JNL’s influence such as unseasonal flooding. NIWA’s SHMAK recommends that monitoring only be undertaken after 4 to 6 weeks of “normal” flow for the time of year and this is the period and timing JNL will adopt.

Operational monitoring will continue to provide information on compliance with District and Regional Plan requirements, the developing National Water Quality Standard as well as JNL’s own operational requirements (Best Practice Guidelines, Stream Slash Management Process etc.).

10.3 How will we monitor?

Monitoring activities will be done using the NIWA/Landcare sponsored SHMAK (Stream Health and Monitoring Assessment Kit). Trials have started using eDNA assessments of the estate waterways.

10.4 What do we monitor and record

- Date and time sample taken and location
- Water clarity/turbidity/water temp/flow rate
- Any fish / aquatic life – note, an indication that this is present is all that is required rather than any detailed species by species description or number count
- Photographs showing both upstream and downstream of the survey point and any upstream activity up to 500m away that may have an impact on water flow and quality.
- Monitoring results will be collated and reported on annually at the HSEMS Management review.

FO Standard – Forest Management Plan - 2023

10.5 Other Monitoring Activities

Local District Council and Regional Council water monitoring information and other local forest company and other agency (i.e. NIWA) water quality information publically available may also be used where applicable to benchmark local water quality behaviour in relation to our own sampling data obtained.

Where special circumstances exist, interagency cooperation and consultation may be engaged to use other water monitoring parameters as the need arises.

10.6 Riparian Management

Riparian areas occur next to the banks of streams, creeks and other waterways and include both the area subject to running water and the adjacent vegetation that exerts an influence on it. Streamside vegetation protects water quality and provides a zone of vegetation that can stabilize stream banks, regulate stream temperatures, and act as a filter for sediment and vegetation that would otherwise run into the stream. The proper management of these riparian zones may also reduce the risk of flood damage caused by logging debris being carried through the waterway. The main objective of riparian management is to protect water quality, and reduce the risk of debris being deposited downstream in the event of a flood event.

Riparian areas along Significant Waterways are classed as areas of Significant Non-Plantation, and should be managed taking into account those requirements of the Management Plan for Non-Plantation Forest Areas and the document “Identification and Classification of Non-Plantation Forest Areas”

10.6.1 Riparian Zones

The riparian area shall consist of two zones

1. A reserve zone: A zone in which indigenous vegetation shall be retained, or where it does not exist, may be encouraged upon assessment to establish by excluding plantation forest species.

Reference to local council parameters will also be considered in assessments.

2. A management zone: A zone in which operations are permitted providing they comply with management practices which place constraints on forest practices in order to minimise damage to the riparian area, and debris deposited in the waterway;

The minimum width of these zones is determined by the attributes of the waterway and the adjacent land characteristics and the class of the waterway and is itemised in the table below. The distance stated is a horizontal distance from the edge of the streambed on each side of the waterway, and so slope adjustment will be necessary. Where relevant District or Regional plans or other agency management plans are already in effect for the area require a greater setback distance than shown below, Council requirements after assessment may take precedence.

10.7 Operational Considerations

JNL is committed to the protection of Significant Waterways from the effects of inappropriate activity. The following table explains the operational considerations that

FO Standard – Forest Management Plan - 2023

JNL requires in each category. These considerations take into account the Best Environmental Practices in the NZ Environmental Code of Practice for Plantation Forestry, the National Environmental Standard for Plantation Forestry, and JNL’s own Best Practices regarding waterway management.

Before any operation commences near a waterway, the supervisor responsible for managing the operation shall check the classification of the affected waterway and confirm the classification or recommend change to these criteria so as to manage the protection of water quality and quantity in the most effective way. Once the classification is determined, confirmed or modified, then the appropriate rules and/or JNL and/or FOA best practices for the class of waterway identified may need to be incorporated into the job prescription for the particular operation. This so that the most practical, efficient and operationally safe outcome is achieved in relation to preserving and enhancing Significant Waterway management whilst also accommodating operational health and safety constraints.

10.7.1 Table 14 Operational Considerations for activities around waterways

Waterway Class	Reserve zone width (m)	Management zone width (m)	Total Riparian width (m)
Significant	10 m	5 m	15 m
Wetlands	10 m	5 m	15 m
Other	10 m	0 m	10 m

SIGNIFICANT WATERWAYS	<ul style="list-style-type: none"> • Maintain any existing indigenous reserve • If the reserve zone is currently under plantation forest, and the trees within the reserve zone will be prone to wind throw that will pose a threat to the waterway, those trees may be felled and extracted ensuring care is taken to minimise damage to the reserve zone • Restrict replanting of plantation species to areas that can be logged with minimal impacts, but no closer than 10m of the stream bank for designated significant waterways. • Obtain Resource Consent for operations where required • Avoid log extraction across waterway where practical
------------------------------	--

FO Standard – Forest Management Plan - 2023

	<ul style="list-style-type: none"> • Fell trees away from waterway • Extract all merchantable material before trimming • Removal and management of all logging slash and windthrow in accordance with the relevant District or Regional Council's Plans, NES, or otherwise where practical JNL and or NZFOA Best Practices can prevail. • Consult with stakeholders where required • No operations to be undertaken within 10m of the stream bank where practical and possible to do so. • Operations within 15m of the stream bank must follow Best Management Practices
WETLANDS	<ul style="list-style-type: none"> • Replant only where there is a good chance of plantation species surviving • Extract all merchantable material before trimming • No artificial lowering of level without Resource Consent • No earthworks within 5m of water level at time of operation without Resource Consent
OTHER WATERWAYS	<ul style="list-style-type: none"> • Extraction permitted. No requirement to remove slash. • Minimise soil disturbance in gully bottom • Where large debris dams occur in ephemeral waterways then consideration must be given to either manual extraction of the debris, or alternatively oversowing with grass seed in order to speed up the rate of decomposition of the woody material. Burning of material <i>in situ</i> is always another option to consider

11 Rare, Threatened or Endangered Species Management

JNL is committed to the conservation, preservation and protection of Rare, Threatened and Endangered (RTE) species in the forest areas under its stewardship. The management of RTE's in New Zealand is the responsibility of the Department of Conservation who administer the Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES). CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) (<http://www.cites.org/eng/disc/what.php>)

JNL has mapped, surveyed and catalogued its Significant Non-Plantation Forest Areas within its estate and has GPS sample points of these flora and fauna surveys. These surveyed areas will be monitored by:

- Five yearly reassessments of the flora and fauna content of GPS sample points in areas that form part of the targeted areas of conservation of indigenous species management currently being finalised with DoC and Iwi stakeholder groups. Currently SNA's have been identified from these assessments and management plans created to enhance or maintain the areas through monitoring and pest control.
- Routine operation monitoring of protected areas adjacent to forest operations
- RTE sightings made through the year by the forest workforce.
- As part of the fine level harvest planning considerations are given prior to harvesting operations commencing.
- Pre-operational planning considerations given to other operations covered by the HSEMS of an on-going nature.

Information on neighbouring RAP, Ecological surveys and Convent areas within each district can be referenced through copies of these held within the JNL libraries. In this way the presence of RTE's within the JNL estate has been and will continue to be well documented.

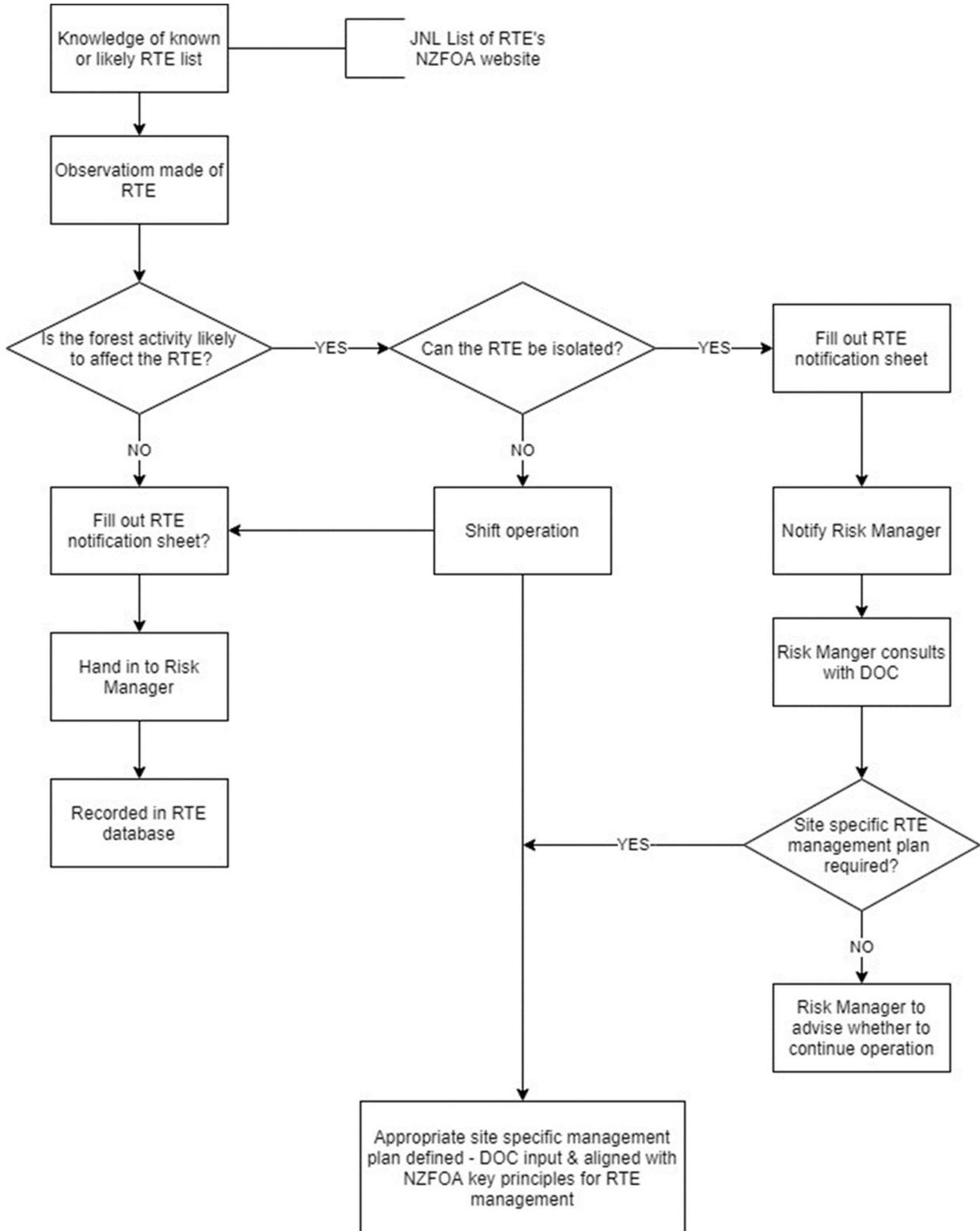
11.1 Review of Rare, Threatened and Endangered Species Management.

As part of the review of Significant Non-Plantation areas, RAP's, Covenants and the presence of High Conservation Value Forests, JNL is currently working with the local Department of Conservation (and consulting with Iwi stakeholder groups) reviewing and updating the RTE list pertinent to each of JNL's forest Districts.

The Rare, Threatened and Endangered Species management plan for all species is depicted in the following pages and is enacted by the Forest Owners Association [Key Principles for Management of Threatened Species](#) and the Department of Conservation Approved management plan flow chart described in the following pages.

FO Standard – Forest Management Plan - 2023

Rare Threatened and Endangered Species (RTE) Management Plan



FO Standard – Forest Management Plan - 2023

11.2 Process for Identification of Rare, Threatened and Endangered Species

Rare Threatened and Endangered Species Sightings, are recorded into the Integrum database.

11.3 Game Bird Management

This group of fauna is largely introduced, but have value as recreational species in New Zealand. The company has obligations under the RMA (Part 1, Section 7) to “protect the habitat of trout and salmon”.

Game birds are present in most JNL forests, although no surveys have been undertaken targeting them. California quail (*Callipepla californica*) are widespread and found in most blocks in moderate numbers. They are found in most habitats and benefit from newly revegetated cutover stands which provide good breeding habitat. Pheasants (*Phasianus colchicus*), although still widespread through all forests, are more localised and generally in low numbers. They tend to occur mostly in the younger age stands and the marginal areas. Permits to hunt pheasants and quail within JNL forests is managed in conjunction with Fish and Game New Zealand, Hunters are permitted access outside operational hours and are monitored. Waterfowl such as mallard ducks (*Anas platyrhynchos*) may at some time be found in or adjacent to the exotic forest, mainly inhabiting forest dams and some streams with bankside cover. Seasonal permits are issued to hunt waterfowl, are also covered by Fish and Game New Zealand.

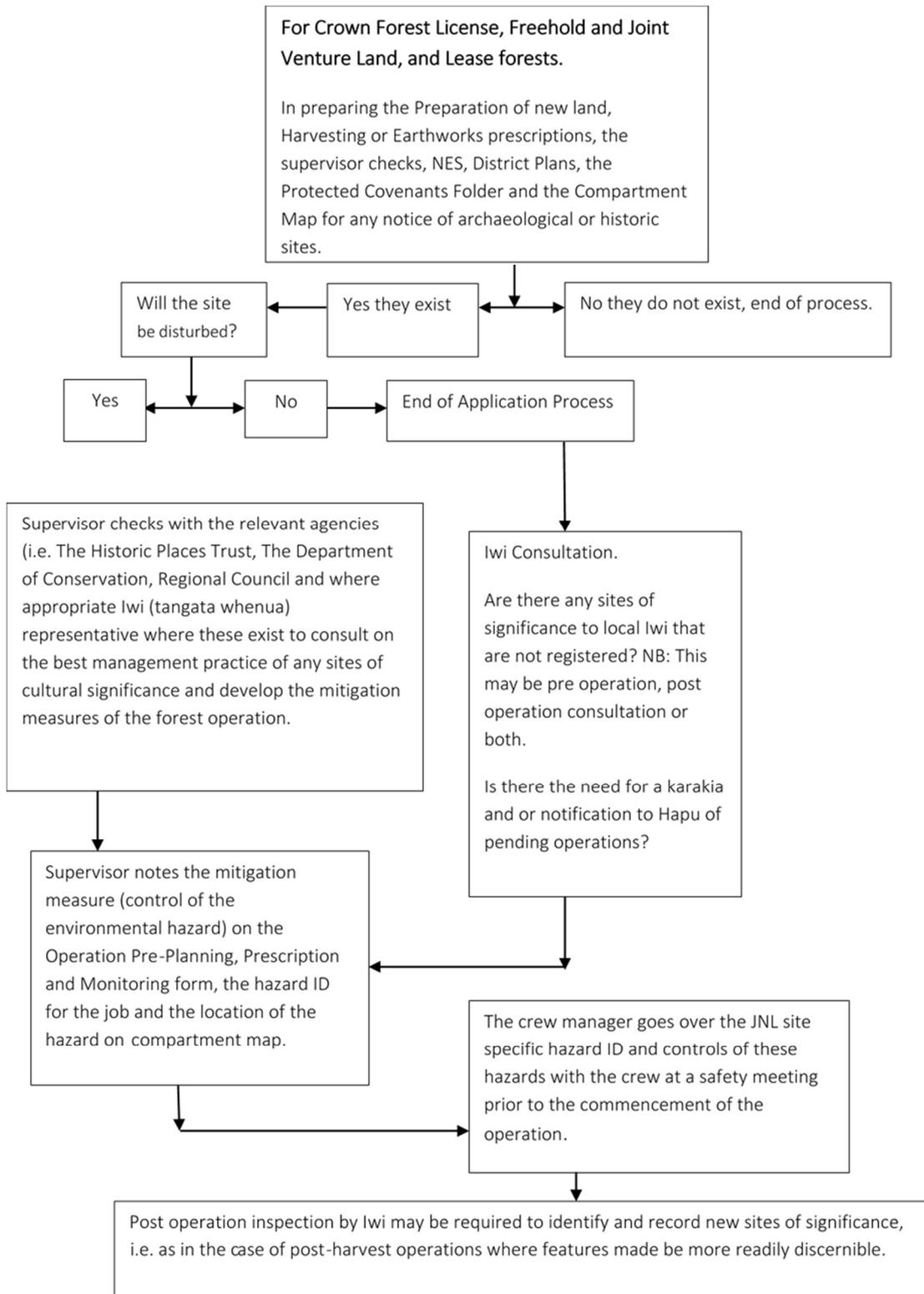
12 Harvest Planning and Archaeological Sites Management

The following points are to be observed during harvest planning to ensure that Historic Sites are cared for.

- Consult the District Plan to identify any registered sites within the forest block.
- Consult the Crown Forest License records to identify sites within CFL areas.
- Look for historic sites while field checking the harvest plan.
- If there are registered sites or potential sites found, an Archaeologist is employed.
- If there is potential to damage any site, the Historic Places Trust are informed and permission sort to carry out the proposed activity well before any work starts in the area.
- During the process of working with the Historic Places Trust, there is also consultation with the relevant Maori group.

FO Standard – Forest Management Plan - 2023

12.1 Risk Management Plan for Archaeological, Historic Sites and the Protection of Resource and Tenure Rights of Tangata Whenua.



13 Stakeholder Management

13.1 Purpose

To manage the communication to and from JNL stakeholders about environmental effects and impacts, and about JNL's Environmental Management System.

13.2 Definition

Stakeholders are defined as those individuals, groups or organizations that may affect, or be affected by JNL operations. Specifically this involves a) JNL employees, b) JNL Contractors, c) Special interest groups such as District & Regional Councils, Government Departments including the Department of Conservation and Iwi groups relevant to JNL land tenure and d) the general public stakeholder interested parties.

13.3 Methods of communicating with Stakeholders

Mail, fax and email, telephone, face to face meetings, open days, website, newsletter, and community surveys.

A stakeholder database is maintained on JNL's environmental server and is maintained by the HSEMS coordinator for each District.

13.4 What do we communicate to Stakeholders

- Public Summary of HSEMS Policy and Management Plan available on request
- Summary of HSEMS Monitoring available on request
- Replies to queries and complaints
- Submissions to Affected Parties as part of Resource Consent Applications

13.5 When do we communicate to Stakeholders

- A Public Summary document is available on request at the forest office front desk for the general public stakeholder interested parties.
- For wider consultation requirements, the fire plan is a source document for a broader stakeholder base such as forest neighbours, government departments, other forest companies etc.
- Prior to Resource Consent Application (affected Stakeholders only)
- Prior to commencement of operations (affected Stakeholders only)

13.6 Responsibilities/Authorities

- The HSEMS Coordinator is responsible for maintaining records of internal and external stakeholder communications. Records shall include date of contact, method of contact, and reason for contact.
- All JNL staff are responsible for recording complaints or comments that relate to significant environmental effects or impacts, and to pass where appropriate these communications on to the General Manager who will determine the appropriate response.

FO Standard – Forest Management Plan - 2023

13.6.1 Communicating with Stakeholders

13.6.1.1 Initiating

- Letters are sent to relevant stakeholders before implementing or changing areas of operations that may affect them
- When reporting to interested parties on breaches to legal requirements, resource consents, environmental incidents

Newsletters to staff and Contractors about environmental issues, non-conformances, suggestions for improving environmental performance

13.6.1.2 Receiving

- External communications and verbal messages or discussions with relevant stakeholders, must be recorded or printed, filed and the HSEMS database updated.
- Preventive or corrective actions resulting from complaints or letters of concern shall be forwarded to the Risk Manager for monitoring

13.6.1.3 Responding

- Response to relevant stakeholders should be in writing
- No communications with the media are to be carried out unless approved by the Forest General Manager

14 Forest Health Management Plan

14.1 Introduction

The passing of the Biosecurity Act 1993 has provided a unique opportunity to review the way pest plants and forest health issues are managed through the development of Pest Management Strategies.

The Biosecurity Act 1993 repeals the Noxious Plant Act 1978 and the Agricultural Pest Destruction Act 1967. These two Acts previously directed pest control. The Biosecurity Act has shifted the focus of pest management from agricultural protection towards minimising adverse impacts of pests on environmental, social and economic values.

This Management Plan is an important document that will shape the way pests and forest health issues are managed, and will be managed in the future. Through the Management Plan, JNL will endeavour to promote greater awareness of the adverse impact of pests and other forest health issues considered to be of significance to JNL. JNL is proud of its environment, and its contribution to the community in which it exists. What we do in our forests today will impact not only on JNL's forest growing and processing capabilities, but also on the community at large.

14.2 Purpose

The purpose of this Management Plan is to provide a framework for effective and proficient management of pests, diseases and other influences affecting the health of trees in East Coast and Wairarapa regions so as to,

FO Standard – Forest Management Plan - 2023

- Minimise the actual and possible detrimental and unintended effects of unwanted plant, animal and insect pests, diseases fungi and bacteria, nutritional deficiencies, and other abiotic influences; and
- Maximise the effectiveness of detection, prevention, and treatment management options through liaison with other agencies.

14.3 Commencement and Duration

This Management Plan is effective from 1st day of April 2023 and shall cease to have effect:

- When the purpose of the Management Plan has been realised, or;
- The Management Plan is revoked or amended following a review. The General Manager shall hold such review two years after the date of approval.

14.4 Review of the Management Plan

This Management Plan shall be reviewed two years after the date of commencement. A Committee comprising at least the following shall carry out the Review:

- Forest General Manager
- Risk Manager
- Operational Manager responsible for various aspects of Pest Control e.g. Weed Control

In addition, input will be sought from various external agencies/Contractors having specialist knowledge in regard to control methods; e.g. Weed Control Contractors, Regional Council Possum Control staff, etc. The Review shall consider the following:

- Whether pests/problems are still considered to be an issue
- Whether current control methods are still adequate
- Any new pests or control methods

14.5 Area of Jurisdiction

This Management Plan shall apply to all lands owned, leased, or managed by Juken New Zealand limited. Further, JNL operations taking place on lands outside JNL's immediate jurisdiction shall be conducted in such a manner so as to minimise the movement of pests between JNL lands and the lands being worked on.

14.6 Forest Health Surveillance

Juken New Zealand Ltd undertakes both formal and informal forest health surveillance. Juken New Zealand Ltd is a member of the NZ Forest Owners Association (NZFOA), which previously tendered for forest health surveillance contracts Bi-annually. JNL now undertakes this surveillance independently as NZFOA do not complete this from 2017.

These Forest health surveys are carried out annually under this contract, and involve aerial and ground surveys. Temporary health plots are established to assess the



FO Standard – Forest Management Plan - 2023

extent of pests, pathogens, diseases, nutrient deficiency, etc. Forest health certificates are also required to be supplied from forest nurseries supplying JNL with seedlings

Survey results are documented and reported to JNL, stating any issues found and giving recommendations on treatment, monitoring etc. records are kept in a general forest health folder in the office. On receipt of the health reports the recommendations on any treatment recommendations will be acted on or reviewed to ensure the appropriate outcome for the company. Informal forest health surveillance takes the form of general observations and vigilance of forest staff.

14.7 Record Keeping of Operations

Hard copy folders tracking operations such as wild animal control, wilding pine management, noxious weed management and forest health surveys are maintained to document annual management and results of monitoring the success or otherwise of management activities. These hard copy folders also serve as forward planning tools for on-going management requirements.



FO Standard – Forest Management Plan - 2023

Appendix

FO Standard



ENVIRONMENT MANAGEMENT POLICY **JNL FORESTS**

OUR OBJECTIVE

Juken New Zealand Ltd (JNL) is committed to sustainable Environmental Management as an integral part of its business to ensure Environmental integrity is in every part of our operations and estates. JNL shall develop objectives and targets to foster continual improvement and enhance environmental performance.

OUR COMMITMENT

JNL is committed to:

- Complying with all relevant local, national, and international statutory or regulatory requirements and industry best-practice standards including, but not limited to Forest Stewardship Council® certification (Licence Code FSC-C013648).
- Ensuring that the concerns, needs and expectations of the community, stakeholders and local iwi are addressed in a timely manner.
- Providing the resources for all forest activities to be conducted utilising an environmentally sustainable approach.
- Seeking continuous improvement in environmental performance.
- Ensuring Employees and Contractors are adequately trained to carry out their roles and responsibilities in a manner that adheres to the national Health and Safety Policy, and mitigates any potential adverse environmental effects.
- Ensuring that, where they exist, there is an ongoing program for conservation, preservation and protection of:
 - Rare, Threatened and Endangered Species.
 - Sites of significant Historic and Cultural importance.
 - Sites of Environmental Significance, including but not limited to waterways and sites of significant indigenous vegetation.
- Ensuring that operations are performed in a manner that promotes the prevention of pollution to:
 - Air.
 - Soil.
 - Water.
- Communicating this Policy to all Interested Parties, including employees, contractors, and customers

Hiroyuki Kawado
Managing Director
Juken New Zealand Ltd

Date: 11/09/2023

Doc No: JNL-90-010-FO-POL-0001

Version: 005

Review by Date: 30/06/2025

Juken New Zealand Ltd





FO Standard

Policy Statement

Use of Sodium Fluoroacetate (1080) for Animal Pest Control.

JNL does not, and will not, support the dispersal of poison baits containing Sodium Fluoroacetate (commonly called 1080 poison) on lands owned, leased, or managed by JNL.

JNL does not and will not support its land or land it leases being used as a staging place for the loading, storage or dispersal of poison baits containing Sodium Fluoroacetate.

Applications by various officials and authorities to use JNL property for the above purposes will not be supported, but JNL will not actively resist legally justified instructions to provide landing sites.

JNL supports attempts to eradicate Bovine Tb infected wild animals but does not support broadcast poisoning programmes using 1080 poison as it contravenes the principles of environmental management pursued by the company through the company's Forestry HSEMS.

JNL actively promotes opossum and other wild animal control programmes by means of approved pesticides and trapping, as detailed in the various JNL Districts' Pest Management Strategy Documents.

Date: 06/05/2024	Doc No: JNL JNL-90-010-FO-POL-0002	Version: 003.1	Review by Date: 31/03/2027	Authorised by: Sean McBride
Printed Date: 9/05/2024		Printed Document is Uncontrolled, next day after Printing or after Review by Date		
				Page 1 of 1

HEAD OFFICE | Level 3 | AON Centre | 29 Customs Street W | Auckland 1010 | PO Box 1450 | Auckland 1140 | New Zealand










FO Standard

Policy Statement

Forests - Chemical Management

JNL promotes the reduction of chemical use in its forests through:

- research into the effectiveness of non-chemical alternatives, integrated pest management control, and reduction in chemical use and toxicity.
- regular review of the Chemical register.
- feedback on current operations from managers, field staff, and subject matter experts.

JNL will manage the use of Agrichemicals in accordance with:

- Relevant Legislation – Hazardous Substances and New Organisms Act, and the Health and Safety at Work Act, and any attendant regulations.
- Regional and District plans.
- NZ Standard for the Management of Agrichemicals *NZS 8409:2021*
- Industry Best Practice Guidelines.
- Safety in the use of chemicals at work, ILO 1993
- JNL's Health, Safety and Environment Management System.

Date: 03/05/2024	Doc No: JNL-90-010-FO-POL-0003	Version: 003.1	Review by Date: 31/03/2027	Authorised by: Sean McBride
Printed Date: 03/05/2024	Printed Document is Uncontrolled, next day after Printing or after Review by Date			Page 1 of 1

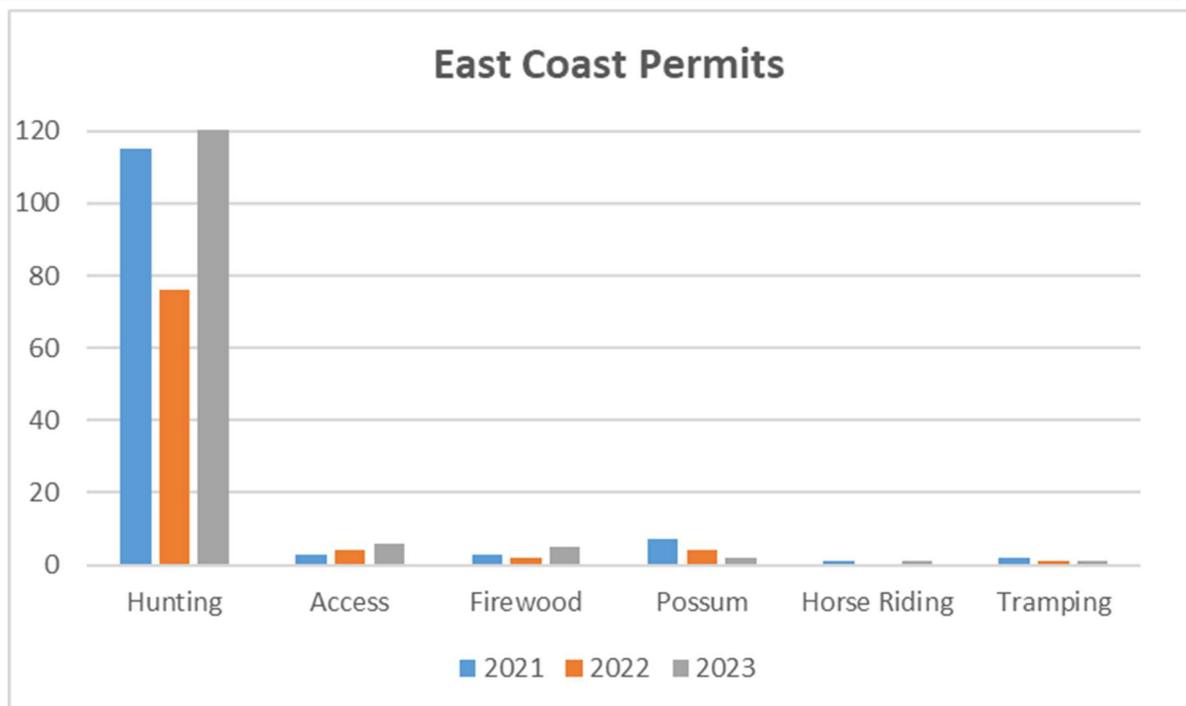
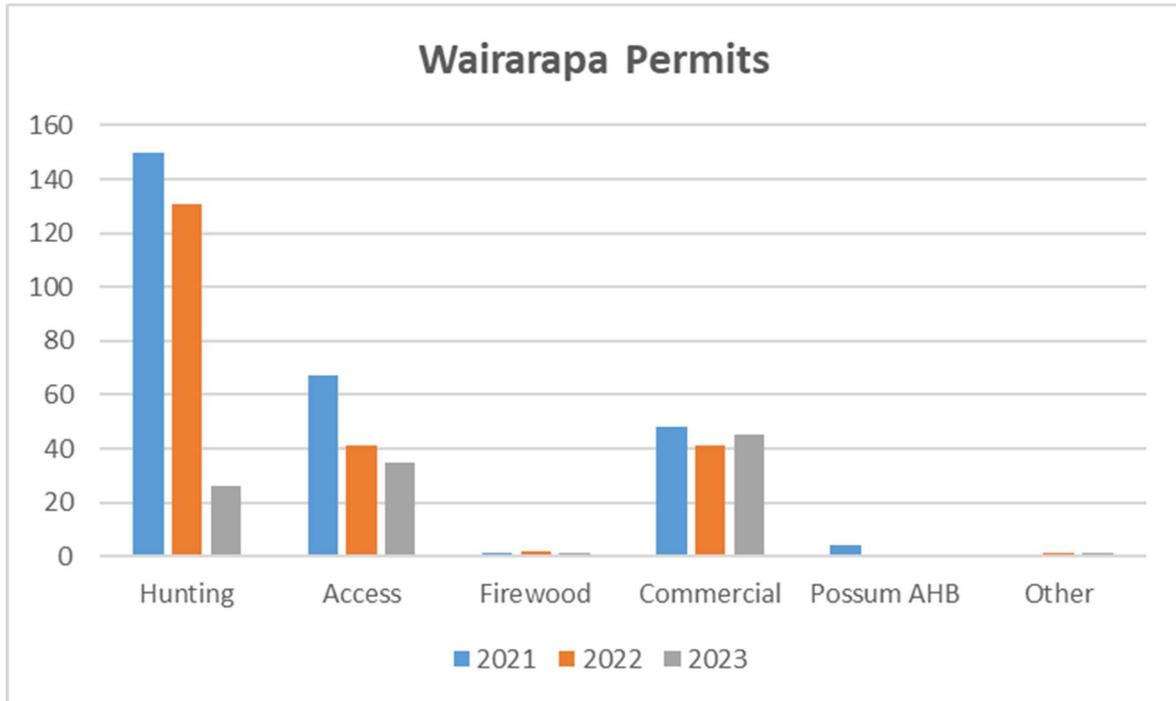
HEAD OFFICE | Level 3 | AON Centre | 29 Customs Street W | Auckland 1010 | PO Box 1450 | Auckland 1140 | New Zealand



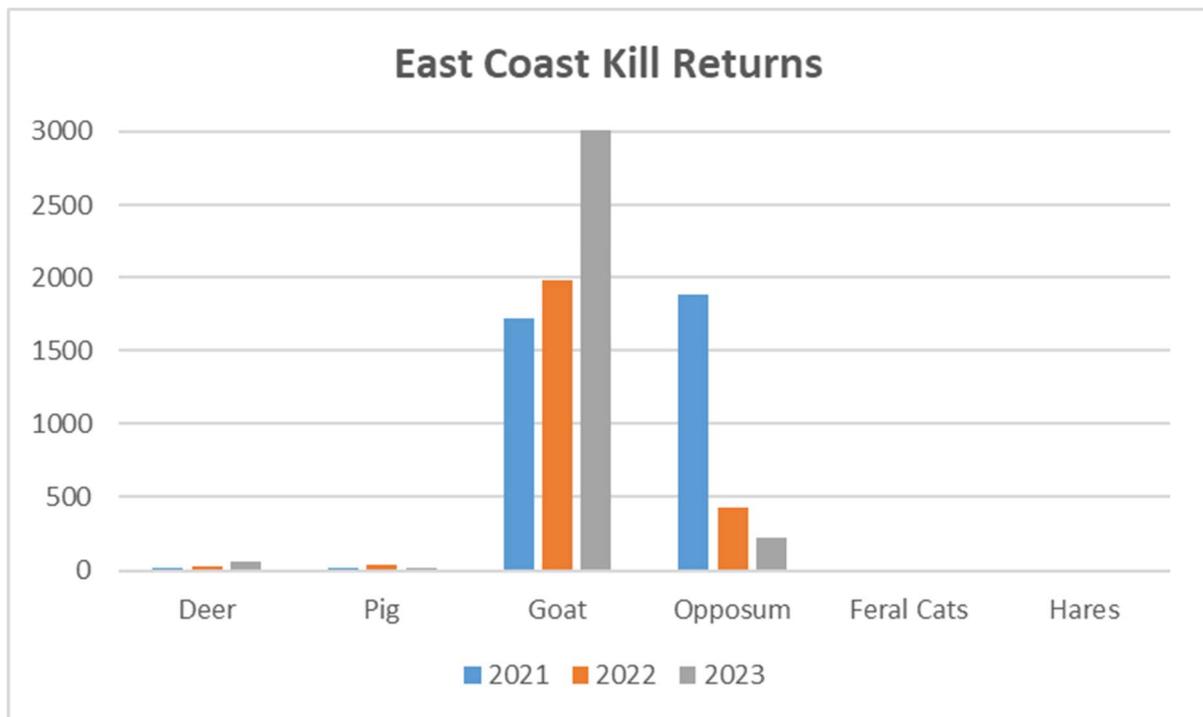
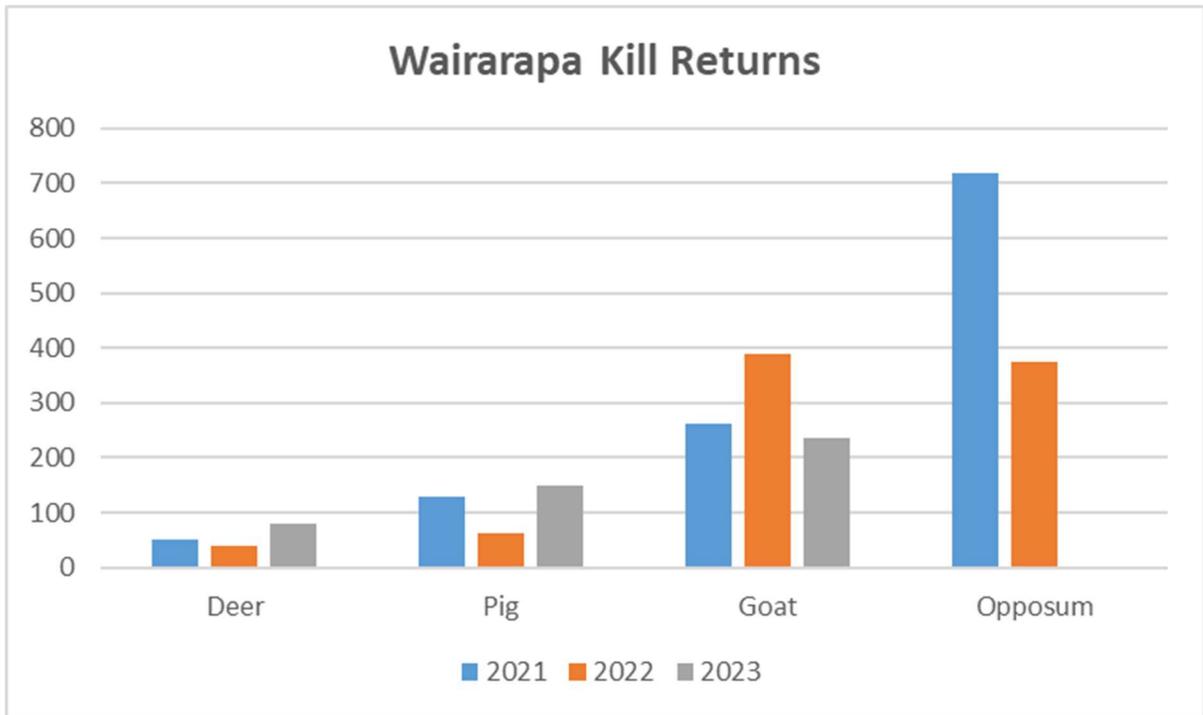
Appendix 2

Monitoring Results

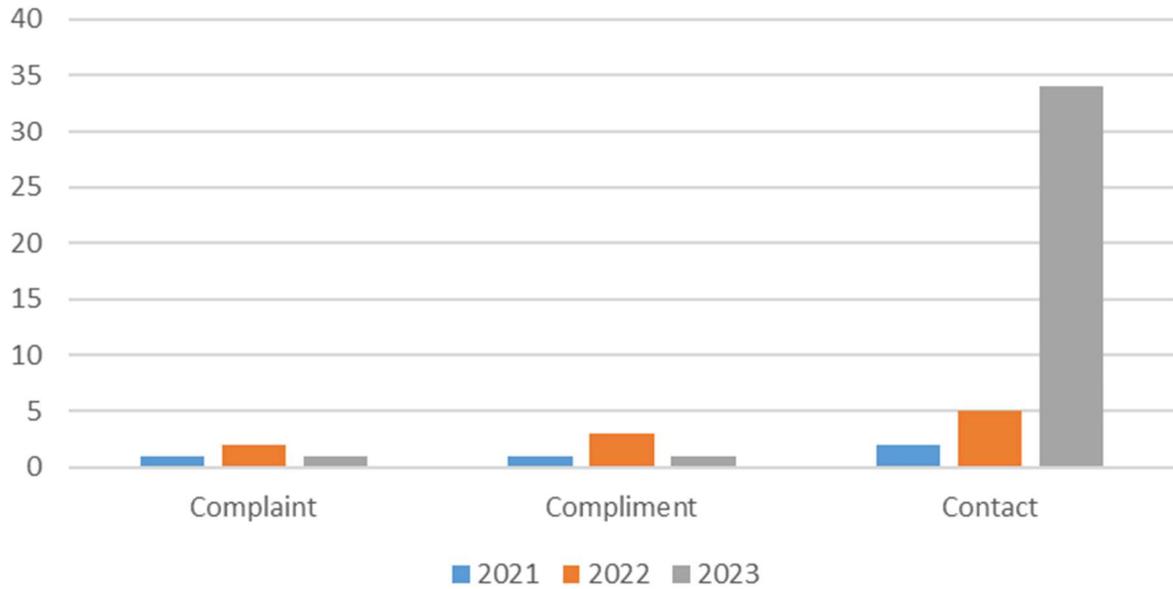
1. Permits Issued



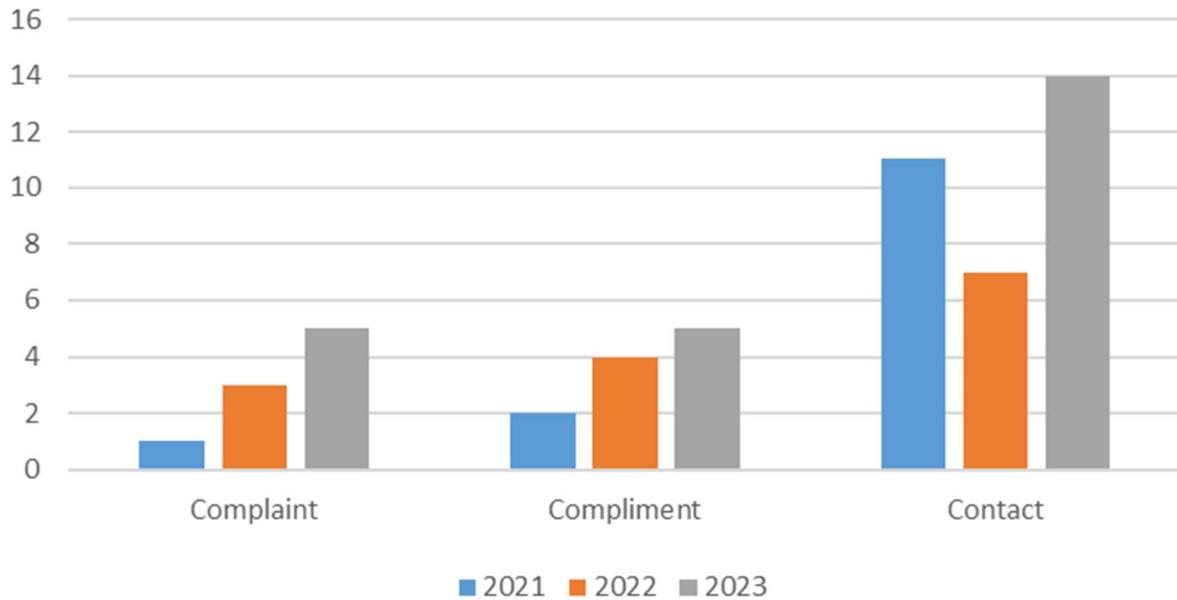
2. Kill Returns



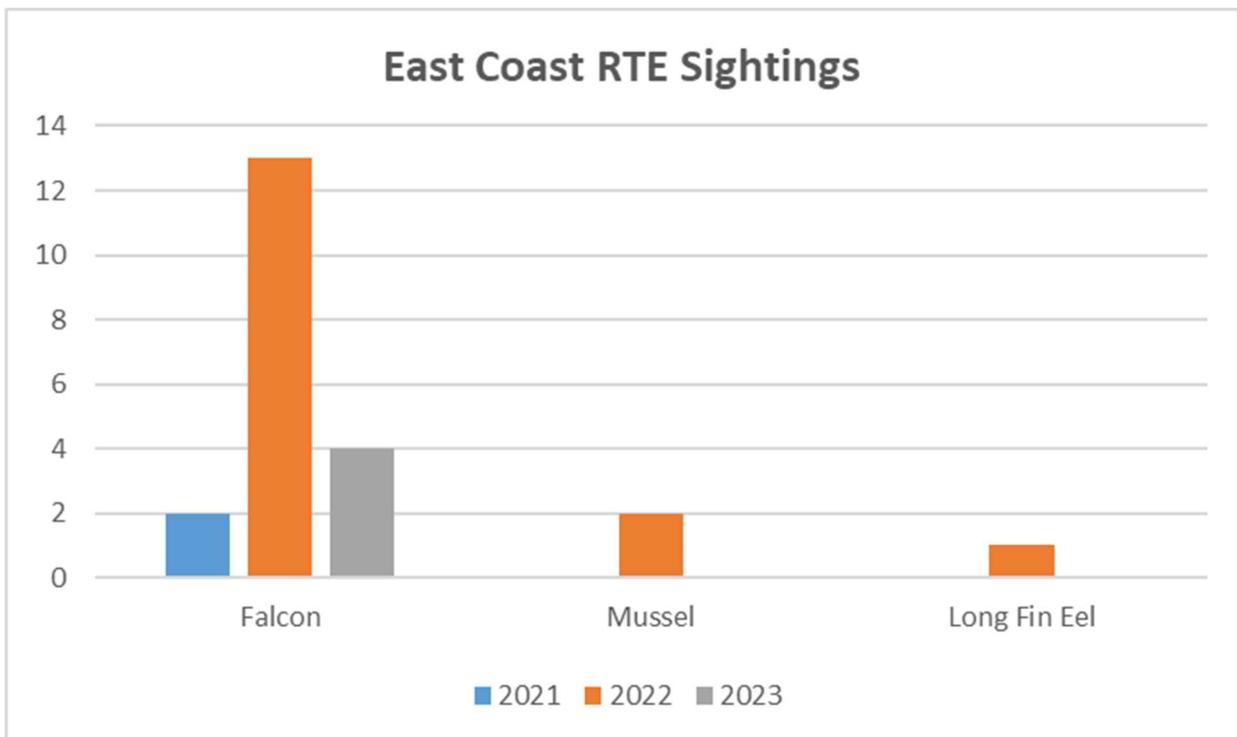
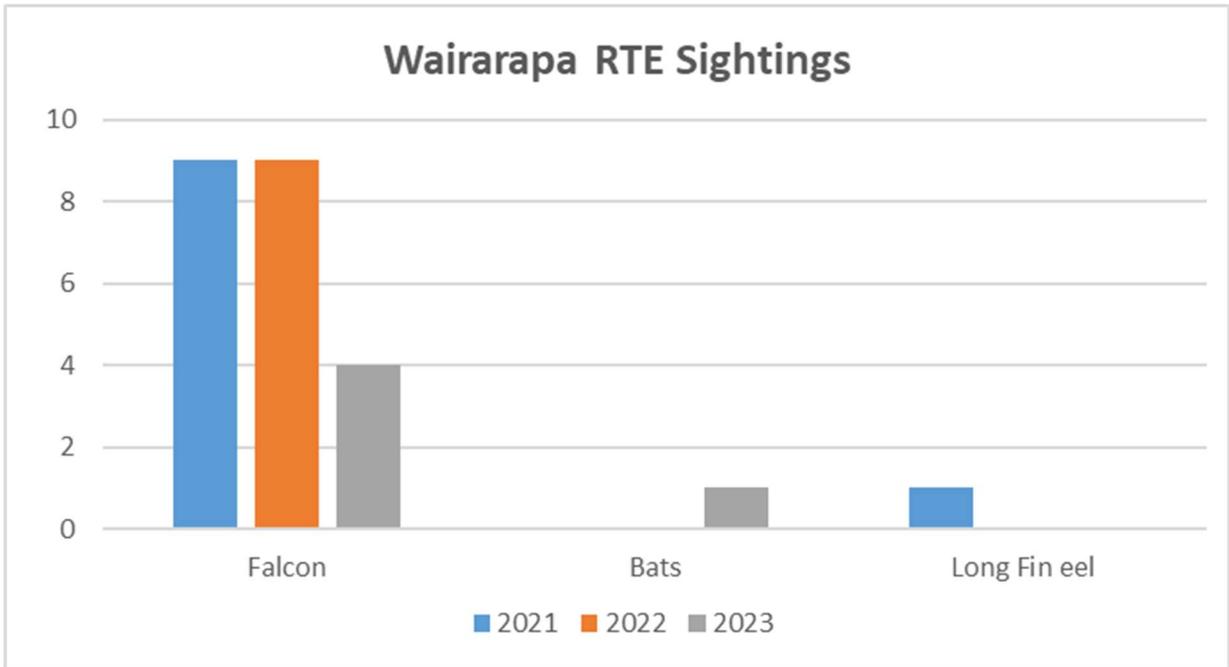
Wairarapa Complaints and Compliments



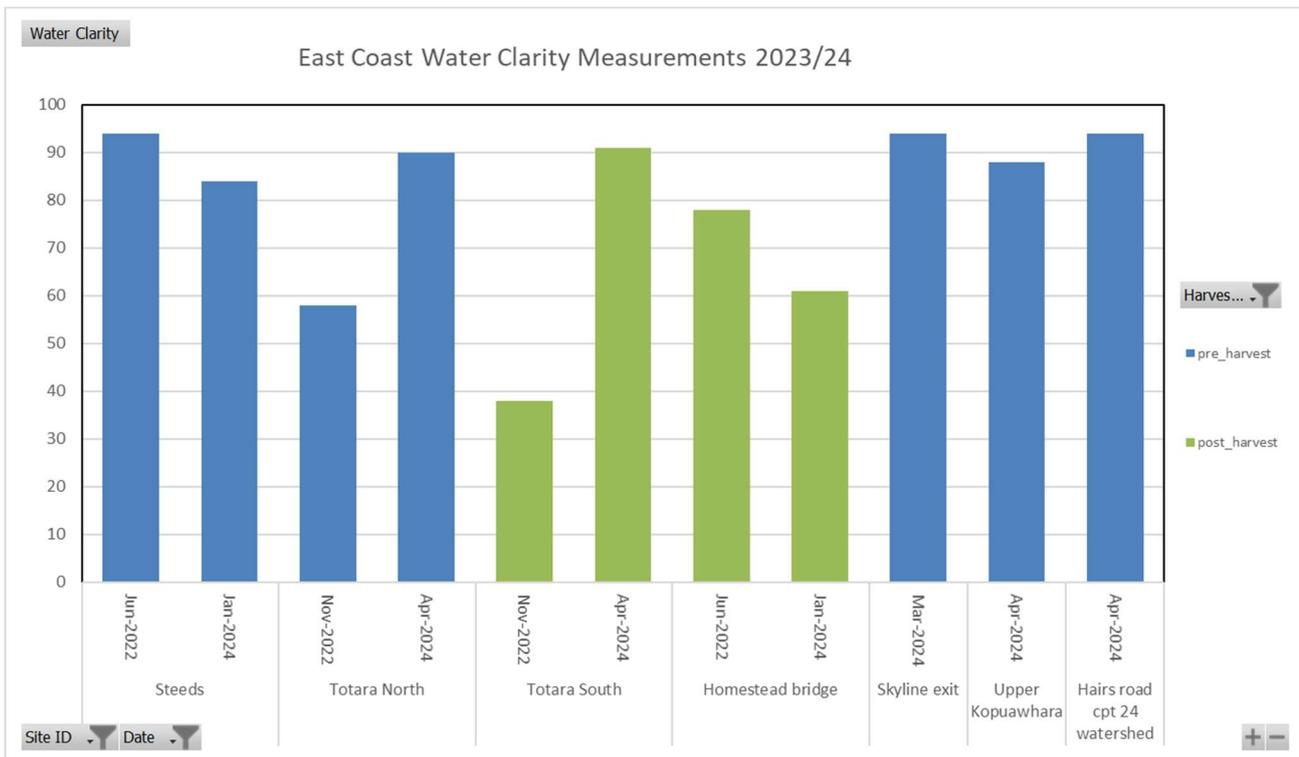
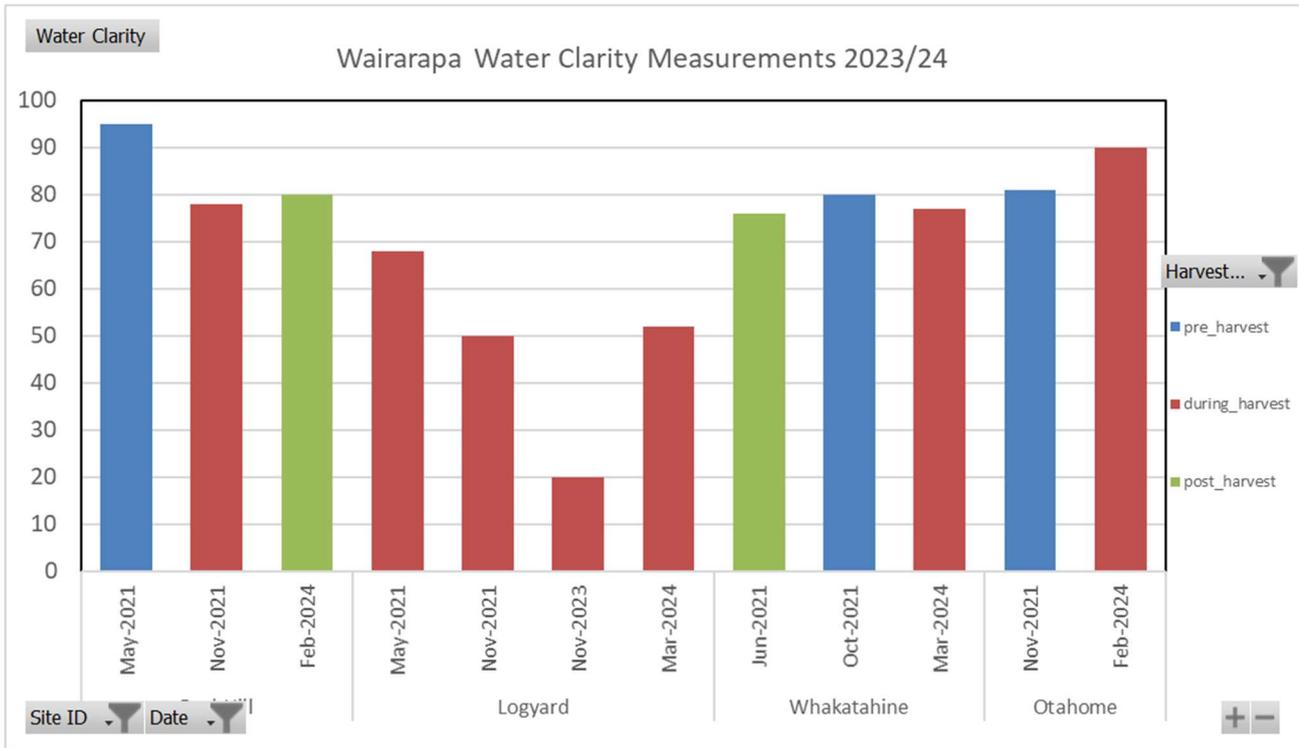
East Coast Complaints and Compliments

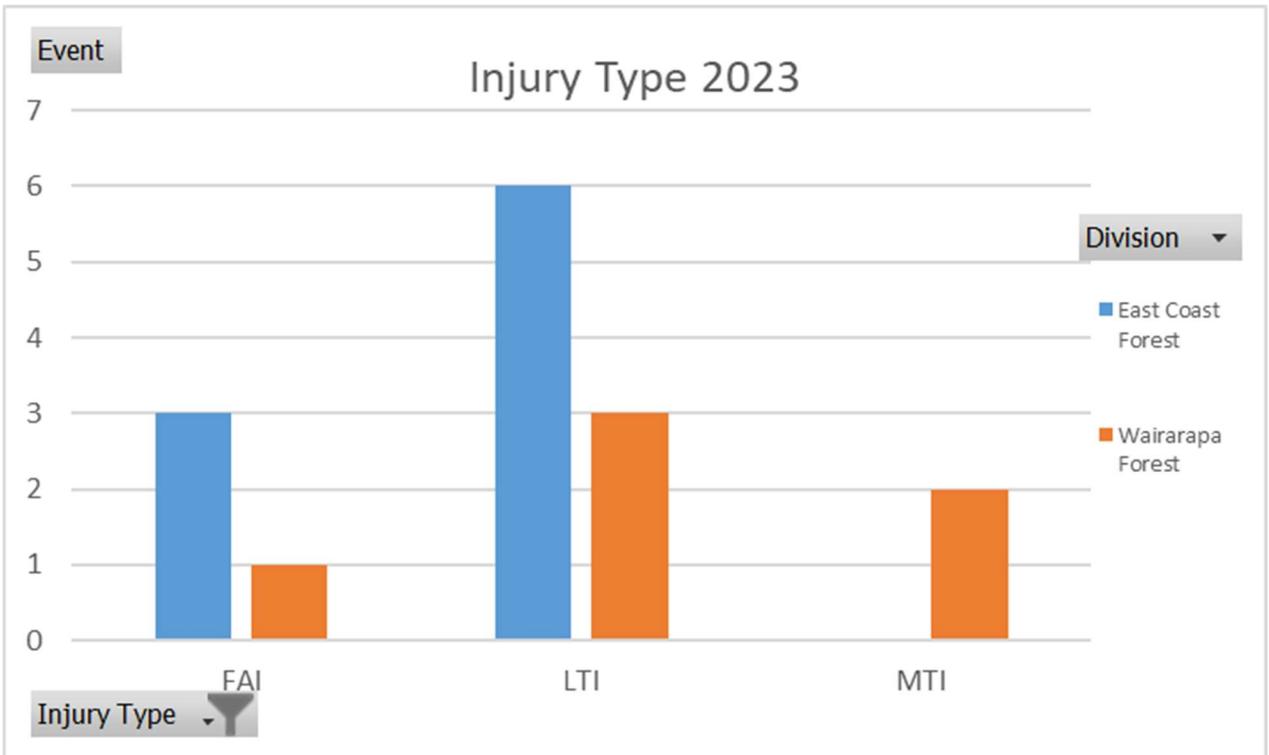
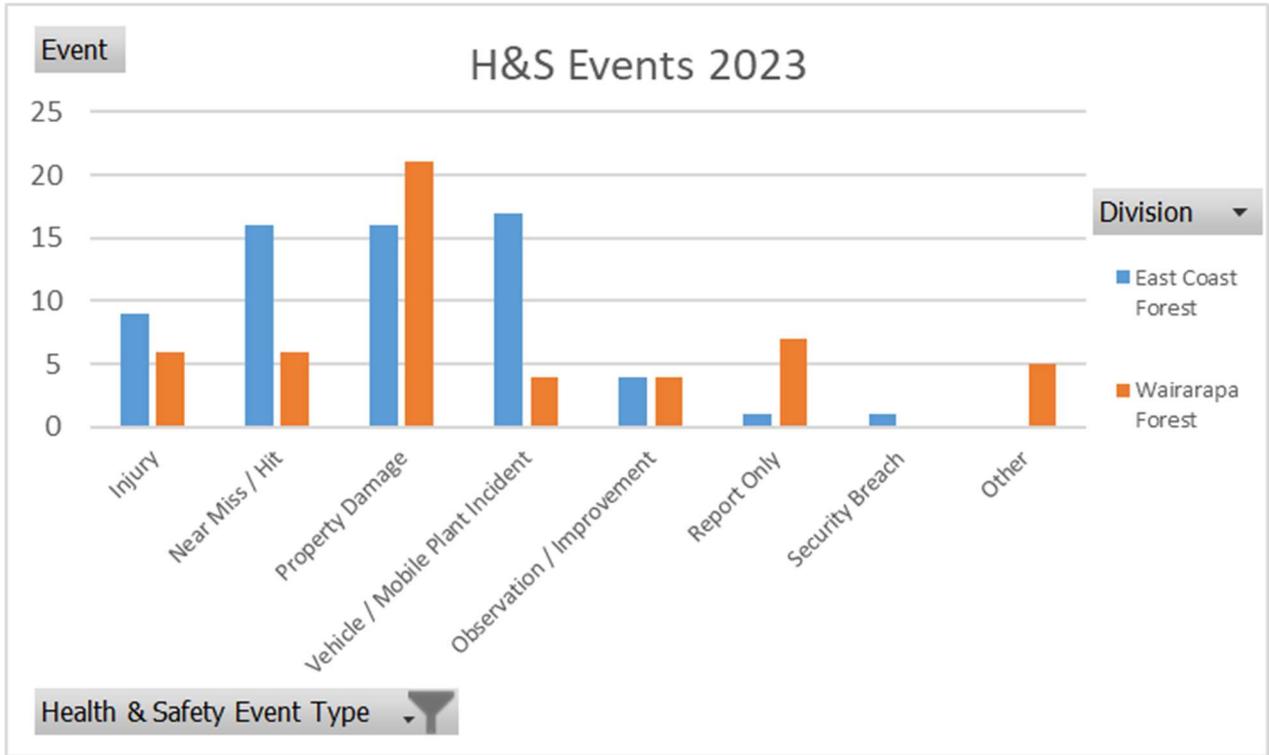


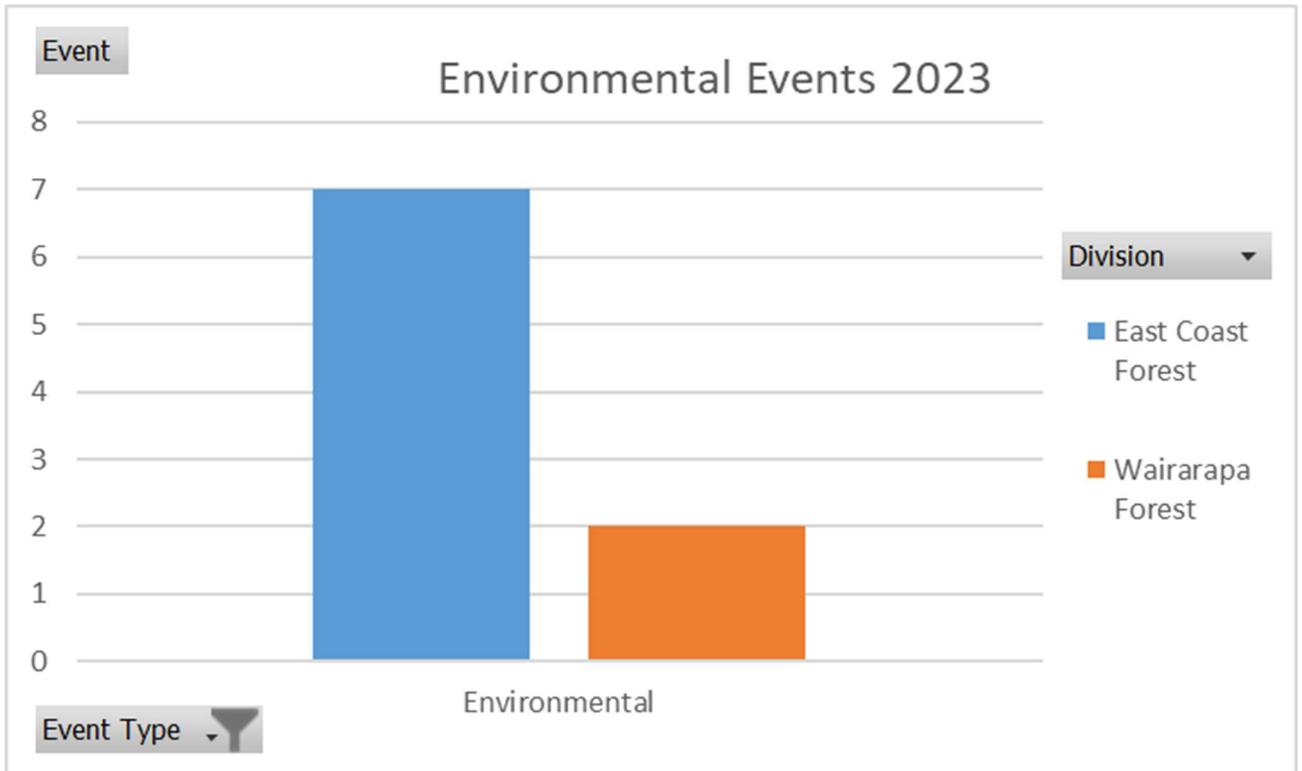
4. Rare Threatened & Endangered Sightings



5. Water Monitoring







7. HSE System Auditing

