

NORSEWOOD ESTATE LIMITED

Forest Management Plan

October 2020

This document has been prepared by Forest Enterprises Growth Limited as the property manager for Norsewood Estate Limited.

The forests owned by Norsewood Estate Limited are managed in accordance with FSC® principles and standards for responsible forest management.



The mark of
responsible forestry



**Forest
Enterprises®**
Creating wealth. Naturally.

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Introduction

Wood has many different uses, from firewood to construction timber, to newspapers and tissue paper, from furniture to clothing. Wood fibre is extremely versatile and is produced using carbon dioxide and the energy of the sun. Wood from well managed forests is a renewable resource which can meet the economic, social and cultural needs of our society without compromising the environment.

Norsewood Estate Limited's objective is to grow wood for further processing in New Zealand or overseas and obtain an economic return on investment. Norsewood Estate seeks to achieve this through the growing of suitable species with wood characteristics which meet the demand of the market. The trees are established, protected and tended as required to meet those demands.

Principles and Criteria

The estate is to be managed under a Forest Stewardship Council (FSC) Certification Scheme.

The Forest Owners are committed to the FSC® Principles, Criteria and Standards of Good Forest Management. These standards include ecological, social and economic parameters.

Once FSC Certification is achieved, the Manager will be able to market the forest log products as certified wood for input into domestic processor markets and international log markets where some are seeking certified wood inputs for manufacture of certifiable end-use products to international consumer markets.

Maintenance of the Certified status is managed through the Manager's Integrated Management System (IMS) and associated documents, IT-based support tools, and by a process of internal and independent external audit undertaken at least annually.

About the Forest Management Plan

This **Forest Management Plan ("the Plan")** is a broad document defining the management structures and vehicles in place to manage an aggregation of individual forests subject to different ownership structures or relationships. Each operational forest, or group of forests, has its own detailed management plan which describes basic but specific management details.

This document provides a summary of the Forest Management Plan for the forests and contains:

- Ownership, management and management planning structure
- Management objectives
- A description of the land and forest resources
- Environmental safeguards
- Identification and protection of rare, threatened and endangered species
- Management regimes and harvest planning
- Forest health
- Management of HCV areas and reserves
- Maps showing plantation area, legal boundaries and protected areas
- Provisions for monitoring and protection



Management and Ownership Structure

The estate is owned by Norsewood Estate Limited, which is wholly owned by ANZFOF2 NZ Pty Ltd, situated at Level 23, 141 Walker Street, North Sydney, NSW 2060, Australia.

Forest Enterprises Growth Limited has been appointed as Property Manager (“the Manager”) by Norsewood Estate. The estate is a mixture of freehold land and Forestry Rights.

Norsewood Estate will protect any resource and tenure rights of Tangata Whenua.

As Property Manager, Forest Enterprises will manage day-to-day operational activities and in general manage the estate to standards required to maintain FSC certification.

Forest Enterprises operates out of its head office in Masterton. Forest Management Limited (FML) manages harvest operations in Norsewood Estate forests in the Manawatu/Wanganui, Wairarapa and Wellington regions.

The people responsible for enacting this Plan are:

- Bert Hughes RMNZIF CMInstD - CEO and Forestry Director, Forest Enterprises
- Malte Coulmann RMNZIF - Forest Estate Manager, Forest Enterprises
- Chris Hawthorn - Senior Forester, Forest Enterprises
- Tom Otterson - Harvest Manager, Forest Enterprises
- Hannah Harvey - Environmental & Risk Co-ordinator, Forest Enterprises
- Stu Harvey - GIS Manager, Forest Enterprises
- Bryn Townend - GIS Analyst, Forest Enterprises
- John (JJ) Rasmussen - Operations Manager, FML
- Gary Connolly - Operations Manager, FML
- Pete Newland - Harvest/Training Manager, FML



Management Objectives

Economic and Social

The forests are managed to provide environmental benefits, including:

- Enhanced water quality
- Soil stabilisation and conservation
- A buffer against flooding during storms
- Shading waterways for aquatic life
- Enhance wildlife and plant habitat leading to increased biodiversity
- A reduction in greenhouse gases
- Providing economic and social benefits to the community

The forests are all managed to the Manager's Environmental Standards.

Management

The Manager is committed to ensuring the management of the forest is sustainable, achieves economic sustainability and provides the best possible returns for the forest owner. In addition, the Manager will ensure all forests retain the capacity to do the above while meeting a range of environmental, social and cultural outcomes.

The estate will be managed to:

- Ensure the estate is a renewable and sustainable resource
- Grow trees and produce logs for wood products in New Zealand and overseas
- Ensure productivity of the land does not decline
- Ensure environmental and social values are identified and maintained, and undertake operations to minimise impacts on the environment and the community
- Ensure historic sites are identified and protected
- Harvest trees as close as possible to their economic optimum age and achieve the best possible financial returns to the Forest Owners
- Replant following harvesting where land tenure allows
- Meet all statutory requirements - for example, **New Zealand's** Resource Management Act 1991, the National Environmental Standards for Plantation Forestry 2017, the New Zealand Forest Accord 1991, the Principles for Commercial Plantation Forest Management in New Zealand 1995, and comply with forest industry best practice
- A safe and healthy workplace free of workplace injuries
- Act as a good corporate citizen and neighbour
- Ensure all forest management practices are consistent with the principles of the Forest Stewardship Council
- Identify and protect areas of significant ecological and scientific value within the forests and put in place processes to protect and enhance identified values
- Ensure forest sustainably and minimise adverse effects of forest operations on soil and water values
- Minimise impact of operations on archaeological and cultural sites and ensure compliance with the Heritage New Zealand Pouhere Taonga Act 2014
- Minimise impact of operations on amenity values (visual, noise and air effects) and neighbouring properties
- Use chemicals responsibly and seek to minimise the use of chemicals in operations as far as practical



- Capture and learn from environmental incidents through incident reporting, investigation and sharing of learnings
- Ensure staff and contractors receive appropriate training to comply with the law and the requirements of the company Integrated Management System
- Monitor, research and seek new ways to minimise impacts of forestry operations on the environment, and maximise environmental benefits of forests
- Recognise the recreational value of the forest estate to local communities and the general public, and proactively manage public access taking into account safety of people, environmental considerations and forestry operations
- Identify areas within our estate which meet the FSC definition of High Conservation Value Areas and manage these in accordance with FSC requirements
- Ensure there is no conflict with written leases and right of ways as per the individual agreements

Norsewood Estate and the Manager are committed to ensuring the management of the forest is sustainable from an environmental, social, cultural and economic perspective. These perspectives underpin the FSC management culture.

1. Environmental Perspective

Includes steps to identify rare, threatened and endangered species where such presence is a possibility, protection of reserve areas, waterways and the control of pests and weeds.

2. Social Perspective

Includes ensuring contractors and their workers adhere to health and safety standards, consultation with neighbours and stakeholders in respect of operations on the forest occur. All staff have the right to be a member of a union if they wish.

3. Cultural Perspective

Includes consultation with the appropriate iwi to ensure culturally significant resources, land, historic and archaeological sites are identified and appropriately managed.

Norsewood Estate will be managed to protect any resource and tenure rights of Tangata Whenua. Tangata Whenua are being identified for each area. However, at time of writing no culturally important areas have been identified.

4. Economic Perspective

Refers to the selection of a species and ensuring management and harvesting regimes provide a reasonable return on investment while minimising the risks of investment.

External Agreements

Through its membership of the New Zealand Forest Owners Association, the Manager is bound by the requirements of the New Zealand Forest Accord 1991 and the Principles for Commercial Plantation Forest Management in New Zealand 1995.

The Forest Accord protects remaining indigenous forest remnants within the plantation forest which meet minimum size and quality criteria from clearance and conversion to plantation forest. All New Zealand Forest Accord vegetation within Norsewood Estate is identified in a Geographic Information System (GIS) and is protected.

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

The Manager encourages all staff to join the New Zealand Institute of Forestry which requires an annual agreement to maintain a code of conduct and provides professional development opportunities for members.



Implementation

The forest management objectives described above are implemented by the Manager. The Manager applies best forest management practice within a quality management framework to plan for and deliver the required forest management objectives.

The Quality Management Framework includes:

- A forest management system (Tigermoth and GeoMaster) to ensure the forest management planning is up to date and operations are scheduled and undertaken according to the plan
- Environmental Standards to ensure operations follow the Standards, and ensuring high standards of environmental management is integrated into all areas of forest and operational planning and management
- The Health and Safety Management System (HSMS) to ensure all operations are managed safely with the goal of zero serious harm
- FSC Certification to ensure management principles and practice adhere to internationally recognised and adopted standards for forest management



Stakeholders

Community relations are an important focus for the Manager who is committed to being ethically and socially responsible, while meeting its business needs. The Manager makes every attempt to operate with the communities which neighbour Norsewood Estate forest properties.

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

Social Impact Assessment

The Manager undertakes a social impact assessment annually. This assessment is available to public on request.

The Manager has developed a Social Impact Assessment (SIA) procedure to identify and manage decisions which may have significant impact on the local community. Key staff receive training in SIA techniques.

Key results from the SIA are:

(A) Regional Development

The Manager will remain alert to any adverse impacts from its operations and deal with them accordingly, either individually or as part of an industry grouping. The major impacts are mostly felt by neighbours. The Manager has a list of neighbours and refreshes the list before the start of the Fire Season each year.

Impacts on neighbours are measured by records of compliments and complaints maintained in the **Manager's** office, records of cooperation on boundary spraying, summer grazing run-off etc.

(B) Optimal Use

Good environmental stewardship means the existing indigenous vegetation enclaves have been assessed, ranked and are protected. Additional areas such as riverine gravels and limestone outcrops are also protected for their environmental values.

(C) Illegal Activities

No illegal logging takes place.

The neighbours referred to in (A) above maintain a good watch over Norsewood Estate forestlands, mainly to protect their own stock from poachers who may hunt in Norsewood **Estate's** blocks. The police are also available to assist if required. The **Manager's** employees have cameras within the forest to monitor illegal use.

(D) Skills Development

Training plans for staff and contractors will be established each year.

Contractors selected for specific tasks will be selected on the basis of specific criteria including proven skills for the task, training achievements and experience.

The Manager will maintain and be part of industry initiatives to develop a motivated, drug-free and fully **skilled workforce for the industry's needs in the near future.**

(E) Health & Safety

The Manager has a documented Health & Safety Management System (HSMS).

A formal induction to each forest block and work site is a prerequisite of each operation.

The Manager maintains an Integrated Management System (IMS) incident database and compares itself against the overall industry Loss Time Injury Rate (LTIR) figures. Near misses are reported, as are incidents. Significant near misses will be investigated by the contractor and company supervisor in the **spirit of a "no blame"** culture. Records are kept and analysed for trends.

Reports on accidents and investigations from other companies are circulated to crew. Ensuring public safety is the rationale behind strict entry controls on Norsewood Estate forests. There are no staff available to patrol on a regular basis and so free public entry is not an option.



(F) Worker Rights

Crew members have the opportunity to belong to a union.

The Manager ensures any principal contractors used on the estate comply with legislation for minimum wage rates, holidays, superannuation and sick leave. The Manager does not discourage staff or contractors from joining unions should they wish to do so.

(H) Tangata Whenua

Norsewood Estate will protect any resource and tenure rights of Tangata Whenua.

(I) Neighbours

All neighbours are rural dwellers and are involved in a range of rural economic activities such as farming, tourism, horticulture, agriculture or other small businesses. Corporate neighbours are usually other forest owners.

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



Regulations

In order to minimise the risk to forest owners, managers and contractors, it is important relevant legislation and agreements are identified and appropriate measures put in place to ensure breaches of legislation are avoided.

The Manager is kept current on changes in legislation by receiving communications issued by the New Zealand Law Society, reviewing the regular legal updates provided by its external legal advisors, and those published in the New Zealand Institute of Forestry newsletter, as well as reviewing any relevant updates sent out by the New Zealand Forest Owners Association.

All New Zealand legislation is available at <http://legislation.govt.nz>. Important legislation is in hardcopy within the Managers office and this is reviewed and updated annually as required.

The following legislation and agreements summarise key regulatory and voluntary controls which currently apply to forest operations in the forest.

National Environmental Standards for Plantation Forestry

The estate is subject to the provisions of the National Environmental Standards for Plantation Forestry (NES-PF). The NES-PF is a resource management system under the RMA that provides a nationally consistent set of standards to manage the environmental effects of plantation forestry activities.

Resource Management Act

The estate is subject to the provisions of the Resource Management Act 1991 (RMA). The RMA is a resource management system which promotes the sustainable management of natural and physical resources and is now the principal statute for the management of land, water, soil and other resources in New Zealand.

Under the RMA, each council has its own plans and rules which must be adhered to.

District Councils look after land management issues such as land use, landscapes and biodiversity. Regional Councils deal with soil conservation, water quality issues, discharges to the air, water and land and the coastal marine environment.

Regional Council	District Council
Horizons	Horowhenua
	Tararua
Greater Wellington	Masterton
	South Wairarapa
	Upper Hutt City

Heritage New Zealand Act

Under the Heritage New Zealand Pouhere Taonga Act 2014, **it is the landowner's** responsibility to identify any historic sites on their land prior to undertaking any work which may disturb or destroy such sites. Where such circumstances might exist, an **“Authority to Modify or Destroy” will be sought from Historic Places Trust** (HPT). Such authorities are similar in function to a resource consent and, if granted, normally come with conditions which must be met.

Records of archaeological and historical places are maintained in the New Zealand Archaeological Association Site Recording Scheme run by the HPT. There is a searchable register maintained online on the HPT website. To search in this register, follow this link:

<http://www.historic.org.nz/en/TheRegister/RegisterSearch.aspx>

Registered historic sites are also often included in schedules of places and sites of significance in District Plans along with sites of cultural significance.

If a site is found or suspected on any block, the protocols specified in the Manager's Environmental Standards, and any others specifically developed in conjunction with HPT and iwi or other stakeholders must be observed.

Resource Consents

There are currently three Resource Consents held for Norsewood Estate.



Emissions Trade Scheme

Forests in **New Zealand** are governed by rules related to **New Zealand's** commitments to reduce greenhouse gas emissions.

Any existing forest originally planted prior to 1 January 1990 will be required to cover all their emissions if the forest is deforested. Deforestation occurs if the forest is not replanted, is left to regenerate naturally or, does not achieve the regulated heights and stocking densities as required under the Climate Change Response Act 2002.

All Post-1989 forest in Norsewood Estate is not registered in **New Zealand's Emissions Trading Scheme (ETS)**. Norsewood Estate does not own Pre-1990 NZUs.

Other Relevant Legislation

- Animal Welfare Act 1999
- Biosecurity Act 1993
- Climate Change Response Act 2002
- Conservation Act 1987
- Fencing Act 1978
- Forests Act 1949
- Fire and Emergency New Zealand Act 2017
- Forests Amendment Act 1993
- Forestry Rights Registration Act 1983
- Hazardous Substances and New Organisms Act 1996
- Health & Safety at Work Act 2015
- Injury Prevention, Rehabilitation and Compensation Act 2001
- New Zealand Forest Accord
- Noxious Plants Act 1978
- Pesticides Act 1999
- Reserves Act 1977
- Soil Conservation and River Control Act 1941
- Trespass Act 1980

Additional relevant legislation is included in the Appendix of this Plan.

Environmental Code of Practice

All operations carried out on the estate must be undertaken to the standards specified in the New Zealand Environmental Code of Practice for Plantation Forestry and the New Zealand Code of Practice for Forest Engineering.

Health and Safety

All operations managed by the Manager are subject to the Manager's Health and Safety Management System (HSMS). This programme includes active accident prevention programmes, training, injury management and drug and alcohol testing.

Health and safety statistics are reported quarterly to Norsewood Estate Limited.

Responsibilities and Authorities

All staff are responsible for ensuring operations under their immediate control are planned and carried out to meet relevant requirements of any Resource Consent or Permitted Activity Conditions.

Staff are also required to ensure the Manager's crews and/or contractors carrying out these operations are fully aware of these requirements and the steps required to comply.



Any breach of these requirements is deemed a Significant Environmental Event and shall be dealt with as such.

The Environment and Forestry Activities

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

Well managed forests can:

- Enhance water quality
- Stabilise and conserve soil
- Provide a buffer against flood flows during storms
- Shade waterways keeping water cool for enhanced fish and macroinvertebrate life
- Provide habitat for rare, threatened and endangered native species
- Sequester carbon to combat climate change and
- Provide recreational, economic and social benefits to the community

Conversely, poorly managed forestry activities can have harmful impacts. The Manager aims to identify the potential negative impacts and to implement environmental safeguards to prevent or to minimise the negative impact from its operations.



Environmental Policy and Practices

Environmental policy and practices are an integral part of every operation which takes place on the forest. The Manager maintains an Environmental Policy Statement which is signed by the Forestry Director and followed by all staff.

Regular monitoring of key environmental parameters will be undertaken where necessary to ensure the impact on the forest environment from events such as windstorms, flooding and fire, or of agents such as pests, diseases, and weeds are minimised.

The management of the forest recognises the importance of the natural and social environment for the future of its business. The people employed in the forest and processing plants, the neighbouring landowners, the appropriate iwi and the community at large are all recognised as stakeholders.

All activities within the estate are subject to the Manager's Environmental Standards.

Environmental Goals

1. Achieve a greater understanding from all persons working within the forest of their environmental responsibilities
2. Establish working relationships with all councils
3. Establish relationships with iwi, neighbours, and other stakeholders
4. Promote and undertake sound environmental stewardship of land and other natural resources on, or adjacent to, this land

Environmental Standards

The Manager's Environmental Standards set out the expectations with regard to managing the environment during forest operations. They are designed to communicate expectations for environmentally sound forestry operations.

Standard Operating Procedures (SOPs) guide all operations and are continuously reviewed and updated.

Assessment of environmental risks due to operations are covered within the SOPs along with other specific forms relating to harvest operations, some of which are managed on BraveGen.

The Environmental Standards and SOPs cover hazardous substances management and clearly outlines the expectations the Manager has of all staff, contractors and suppliers in relation to hazardous substance management.

Hazardous materials which may be used within Norsewood Estate are:

- Herbicides
- Pesticides
- Fuels
- Oil
- Fire retardants
- Surfactants
- Paint

The Manager is committed to reducing the use of hazardous substances. All aspects of chemical use are reported annually.



Estate Description

Forest Area

Norsewood Estate is made up of 8 forests with a total Gross area of 3933 hectares. The table below shows the breakdown of the estate by forest and type.

Forest	Gross Area (HA)	Net planted area (ha) All Species	Working Forest Area	FSC RSAA (HA)	RSAA (% of net productive area)
Angora	249	167.34	258.41	132.73	51%
Bowlands	80.8	66.79	75.88	19.81	26%
Fell Crag	392.8	212.64	212.64	106.13	50%
Kohitere	478.7	343.16	343.16	106.80	31%
Manakau	442.8	239.72	249.42	155.11	62%
Mangaroa	198.5	202.24	202.24	162.82	81%
Waipango	54.6	54.72	54.72	98.55	180%
Waitarere	2036.1	1670.91	1800.69	170.62	9%
NEL Total	3933.3	2957.52	3197.16	952.58	30%

*Net Productive area (ha) p.radiata /FSC RSAA (HA)

**Cutting/Forestry Right Forest. Note: the Gross Area is the agreement area and Net Productive Area is the mapped area.

Species

Norsewood Estate is primarily Pinus radiata, with some minor species planted in patches. All radiata crops are managed either on a pruned, framing or untended regime. It is intended to replant all areas after harvest with improved genetics.

Pinus radiata is the most extensively used species for plantation forestry in New Zealand due to its fast-growing behaviour, durability and versatility. It was introduced to New Zealand in the 1850s, adapted to our climate quickly and by the early 1900's radiata plantations were throughout the country. During the 1950s, genetic improvement commenced and currently continue to produce higher quality wood. Demand for quality wood is always increasing both domestic and internationally.

Age Class

Norsewood Estate has an uneven age-class spread with the majority of stand aged 1-5 years. The following table shows the breakdown of the estate by age class.

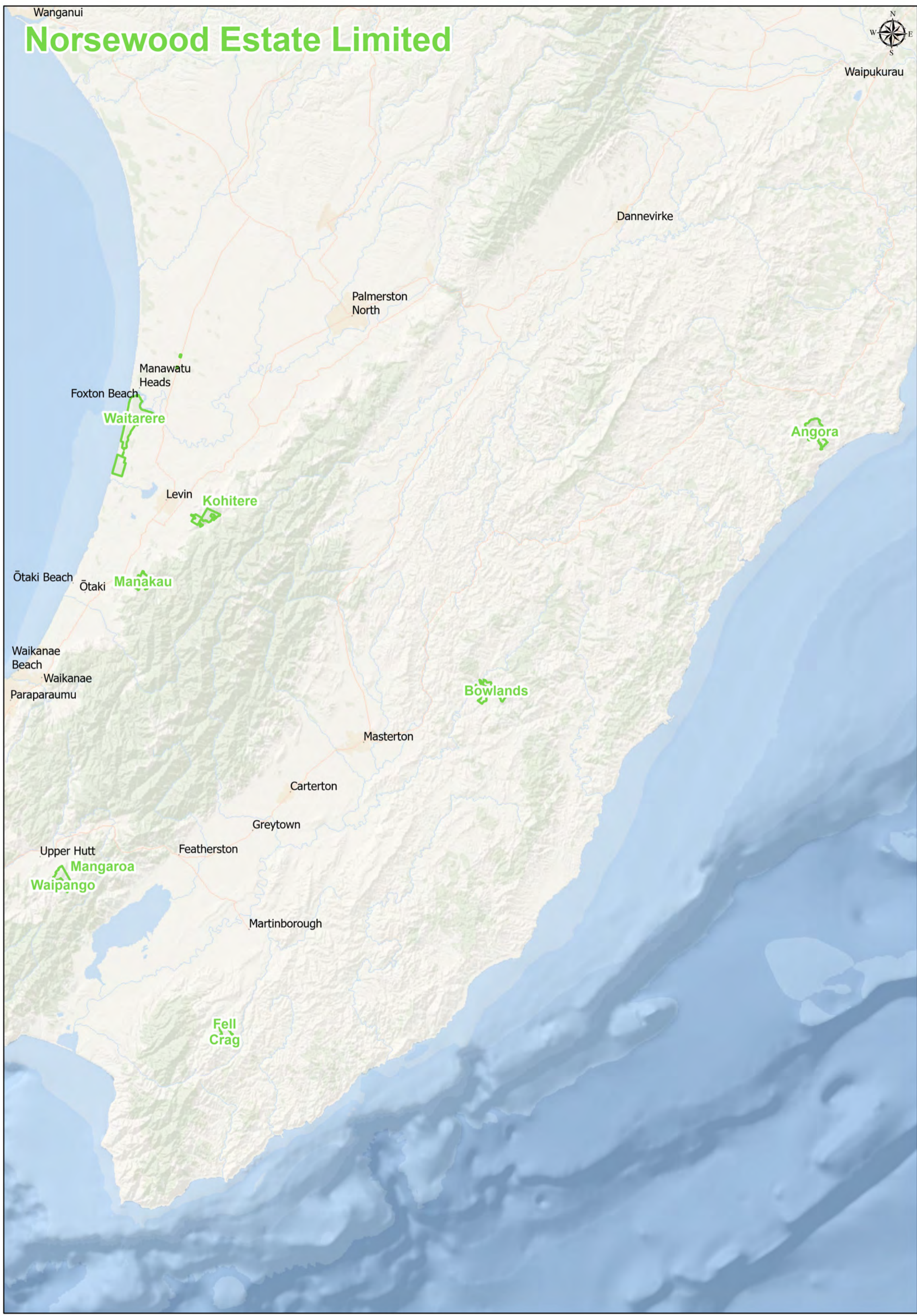
Tree Age (years)	Area (ha)
Fallow	197.3
1-5	656.2
6-10	270.3
11-15	411.1
16-20	525.4
21-25	391.6
26-30	492.6
30+	134.4

Norsewood Estate Map

A map of the forests comprising Norsewood Estate is included on the next page.



Norsewood Estate Limited



Forest Description

Location

Norsewood Estate currently extends over two regions and five districts:

Forest Name	Region	District
Angora	Manawatu-Wanganui	Tararua
Kohitere		Horowhenua
Manakau		
Waitarere		
Bowlands	Wellington	Masterton
Fell Crag		South Wairarapa
Mangaroa		Upper Hutt City
Waipango		

Topography

Manawatu-Wanganui

The Manawatu-Wanganui region has gentle rolling hills to flat coastal plains as well as the steep Tararua and Ruahine Ranges that separate the region from Wellington. The coastal plains are shaped by extensive river systems which makes the region mostly suitable for intensive land use such as dairy farming and cropping, however, steeper land and land needing erosion protection is suitable for plantation forestry.

Wellington

The Wellington Region, like Manawatu-Wanganui, has a variable topography that includes the steep Tararua and Ruahine Ranges that dissipates into rolling hills and plains. The Wairarapa also includes the Aorangi Range which provides regional central uplift.

Geology and Soils

Norsewood Estate, which lies across the lower North Island, in which to the East is part of a complex geological accretionary system where faulting and folding of rock is significant due to the subduction of the Pacific Oceanic Plate under the Australian Continental Plate. This subduction has created an accretionary wedge regime along the East Coast of the North Island. The geology of Norsewood Estate ranges from Carboniferous (300Mya) (Greywacke Tararuas/Ruahine Ranges) to Quaternary (Recent) in age. To the West is coastal dune plains with uplifted Quaternary rock which meets the central Axial Graywacke Ranges (Tararua and Ruahine).

The soils of Norsewood Estate are majority Brown and Pallic soils with some minor Gley, Pumice, Raw, Recent Soils and one area of podzol. Brown Soils are the most extensive soil type for New Zealand, whereas Pallic Soils cover 12% of New Zealand. Brown Soils have relative stable topsoils with well-developed subsoils whereas Pallic Soils have limited permeability and are surface erosion susceptible (ideal for P. Radiata compared to grass species).

For more information on New Zealand Soils - Hewitt, A., & Dymond, J. (2013). Survey of New Zealand soil orders. Ecosystem services in New Zealand: conditions and trends, 1(10), 121-131

Climate

Manawatu-Wanganui

Temperature (C°)	Sunshine	Rainfall	Ground Frost
Mean daily maximum: 17.9 Mean monthly temperature: 13.65 Mean daily minimum: 9.3	Average annual bright sunshine hours: 1899.25	Average monthly rainfall (mm): 76.49 Average monthly wet days (1mm Or More of Rain): 9.89 Mean annual rainfall (mm): 918.3	Average days of frost: 23.75 per annum



Wellington

Temperature (C°)	Sunshine	Rainfall	Ground Frost
Temperature (C°) Mean daily maximum: 17 Mean monthly temperature: 12.85 Mean daily minimum: 8.7	Average annual bright sunshine hours: 1982.2	Average monthly rainfall (mm): 88.95 Average monthly wet days (1mm Or More of Rain): 10.51 Mean annual rainfall (mm): 1069.15	Average days of frost: 36 per annum



High Conservation Value Areas

Indigenous biodiversity management within the forests is an essential component of everyday forest management. Although exotic forests can provide a level of biodiversity, High Conservation Value (HCV) areas are usually the source of most indigenous biodiversity. Rare, Threatened and Endangered species (RTE) can also be found associated with exotic forests and require special attention for management.

All reserve areas are managed per **Forest Enterprises'** High Conservation Value Areas and Reserves Policy.

The Manager contracts Wildlands Ltd to identify HCV areas. As forests are added to the estate, the Manager identifies HCV areas within the new forests. Wildlands Ltd will be contracted every two years to check and monitor Category One and HCVF areas, and all other classified areas every 5 years.

Norsewood Estate consists of 785 hectares of HCV areas. All HCV areas have been mapped and recorded with the Manager's GIS.

High Conservation Value Forest (HCVF) Areas

There are no HCVF areas in Norsewood Estate.

Category One Reserve Areas

All these areas have been mapped and identified and recorded on the GIS. The Manager will protect these areas.

Wildlands Ltd will monitor the areas on a two-year cycle for pests, weed and rare and threatened species.

Category Two Reserve Areas

All these areas have been mapped and identified and recorded on the GIS. The Manager will protect these areas; however, the areas can be crossed for operational purposes if this is the best environmental result. Any crossing of the area will require a management plan.

Wildlands Ltd will monitor the areas on a five-year cycle for pests, weed and rare and threatened species.

Category Three and Four Areas

All these areas have been mapped and identified and recorded on the GIS. The Manager will protect these areas; however, the areas can be crossed for operational purposes if this is the best environmental result. Any crossing of the area will require a management plan.

Wildlands Ltd will monitor the areas on a five-year cycle for pests, weed and rare and threatened species.

Rare, Threatened and Endangered Species

All contractors and staff must be trained to identify and given the identification form for (also in Environmental Standards), known rare, threatened and endangered species. If any species are found, the Manager is to be notified immediately and a species sighting form completed.

Protection requirements are assessed at the time of re-establishment where additions to riparian or buffering setbacks are often recommended.

In the case of fauna, records of sighting and locations are stored within GeoMaster and GIS.

Whenever an operation is planned, GeoMaster and GIS must be checked for any record of rare and threatened species within or near the operational area. If there have been observations of any species, all contractors and their staff must be made aware of this, and a management plan for protecting the species will be prepared as part of the Harvesting Prescription. If required, this plan will be prepared in association with local experts.



Establishment and Silviculture

All forest operations are planned to ensure the crop achieves maximum growth and is of high quality.

Typical establishment and silviculture operations within Norsewood Estate include:

- Land preparation
- Planting
- Weed control
- Pest and disease control
- Fire protection
- Pruning
- Thinning

In addition, the Manager follows a maintenance plan which includes road, track, fence and water way maintenance.

All operations must follow the standards set within the Manager's Environmental Standards.

Establishment

No land under native vegetation will be converted into plantations as per the New Zealand Forest Accord.

The majority of harvested areas will be replanted the winter following the first spring after harvest.

Establishment may include:

- Raking of slash
- Spot mounding
- Aerial desiccation spraying
- Planting of genetically improved seedlings (generally *Pinus radiata* is planted at 1,000-1,250 stems per hectare)
- Animal pest control
- Fertilising
- Aerial or spot releasing of weed competition

Prior to any forest establishment, a review of the area will be conducted to identify whether there are any risks to rare, threatened or endangered species of flora or fauna. At the same time, consideration will be made of riparian buffer sizes and hard to harvest areas.

All establishment sites will be reviewed to ensure reserves and HCV areas are maintained, that there is a mix of age classes throughout Norsewood Estate, and correct genotypes are used.

Silviculture

Silviculture is the practice of controlling the growth, composition, health and quality of a forest to meet specific objectives.

There are two main tending regimes within Norsewood Estate - pruned and framing. Some areas are left untended as a protection crop or for other reasons, however this is not the norm.

Future regimes will depend on Norsewood Estate **and the Manager's assessment of market opportunities, site factors** (including slope) and the tree-stocks available.

Thinning

Thinning of stands is undertaken, generally between six to nine years of age, to provide the optimum space for selected crop trees within the stand to grow and maximise their economic return. The aim is to thin out the smaller or poorer formed trees leaving the bigger, better formed trees to grow on. Most thinning operations leave the thinned stems on the forest floor to decompose where production thinning is impractical or uneconomic.



Regimes

Pruned

Year	Operation	Stems per ha	Details
0	Establish	1000-1250	Improved genetics
5-6	Prune 0-3m	375	Minimum green crown must be 3.0m
7-8	Prune 3-6m	375	Minimum green crown must be 3.5m
7-8	Thin to waste	350-375	Thin all non-pruned stems to waste after final pruning
25-30	Clearfell		

Framing

Year	Operation	Stems per ha	Details
0	Establish	1000 - 1250	Improved genetics
8-10	Thin to waste	500-600	Thin all non-dominant stems to waste when mean crop height 14m
25-30	Clearfell		

Forest Health

Forest health surveys will be undertaken during routine forest visits. The Manager will complete its own health assessments.



Inventory, Mapping and Forest Records

Forest growth and development is monitored through regular forest inventory. Forest inventories providing stand information are required at different times and for different reasons throughout the life of a rotation. The Manager undertakes audits of all inventory to ensure consistency in approach and accuracy.

The following inventory is applied to Norsewood Estate:

- Pre-assessment
- Quality Control
- Mid-rotation Inventory
- Pre-harvest Inventory

Pre-assessment

Pre-assessment is the collection of parameters prior to a tending operation to help calculate contract rates for tending, and to take a final check on the timing of the operation.

Sampling intensity is low with a minimum of five plots per stand, and data is collected from six to ten trees per plot. Data collected is then used to calculate a labour-day target and hence a contract rate per hectare. Contract rates are often set by tender or negotiation, reducing the need to pre-assess every block.

Pre-assessment is completed on the forests prior to tending operations commencing.

Quality Control

Quality control is carried out during and after a tending operation. The aims of the quality control are to:

- Collect sufficient data to monitor a contractor's performance and correct performance if necessary
- Collect quantitative data to provide reliable estimates of the crop
- Provide data as input for growth modelling

Sampling intensity is a minimum of five plots per stand, or one plot per 2 hectares, with every fourth plot being a full measurement plot. This provides the data for the current crop status and future growth modelling.

Data is summarised by Forest/Compartment/Stand prior to being entered into GeoMaster where it is retained as a permanent record. The records can then be directly accessed for annual reports and valuations and stand growth simulation modelling.

Quality control plots are completed at the stand level at the completion of each tending operation.

Mid-rotation Inventory

The principal aim for the mid-rotation inventory is to collect stand data for inputs into estate modelling and long-term harvest planning and marketing. The objective is to get accurate stand data summaries which will be used for crop typing, estate modelling and valuation.

This is a low intensity inventory, but with full log type cruising. This will enable summary to stand level and more accurate yield projections for the estate model. Mid-rotation inventory is scheduled for between 12 and 16 years of age.

Pre-harvest Inventory

The principal aim of pre-harvest inventory is to obtain estimates of recoverable volume by log grade. This information can then be used to develop marketing and harvesting strategies. Inventories will be undertaken when stands reach five years or less from harvesting. Sampling intensity is targeted to achieve 10% confidence limits on Basal Area on a stand-by-stand basis. Smaller stands may be aggregated into crop types to achieve this as in mid-rotation inventory.

Post-harvest Reconciliation

After harvest, reconciliation of data of the harvest area is undertaken to help improve records and to ensure harvesting has met the standards expected.



Mapping

Updating forest maps is required periodically as the forest changes. The work involves:

- Updating topographic detail
- Remapping forest stand boundaries from aerial photography
- Updating stand and forest attributes such as roads, landings, protected ecosystems and archaeological sites
- Defining legal boundaries

The data is kept and managed in the Manager's GIS system.

Stands are remapped from new aerial photographs around the age of four, when the trees are visible, to accurately determine boundaries. They are also remapped within 2 years of harvest to assist with harvest planning.

Forest Records

Forest records are essential to provide an historic perspective on the physical condition of each stand.

Forest records should provide the following information:

- Record of forest operations for each stand including a summary of quality control data
- A forest map showing the location, stand boundaries and net stocked area of each stand
- Crop inventory results
- Yields achieved from each stand at production thinning or clearfell
- Costs incurred for each operation
- Protected ecosystems attributes
- Threatened species records
- Archaeological and Waahi Tapu sites and other potential features
- Chemicals used

The Manager maintains forest records in GeoMaster.



Harvesting

Currently, harvesting is scheduled by age class. However, as the estate grows, the Manager will attempt to smooth the harvest profile to ensure continuous harvesting with a similar volume harvested per annum.

Harvest Planning

All harvest planning and operations will follow the **Manager's** Environmental Standards.

Planning is essential to ensure roading infrastructure is developed in a timely manner and any resource consents and surveys are completed on time.

Harvest planning must consider:

- Slope - determining what equipment can be used
- The Resource Management Act 1991, the Heritage NZ Pouhere Taonga Act 2014 and any other relevant legislation
- Safety - how to ensure the operation is completed in a safe and legal manner
- Soil and water - how to avoid, remedy or mitigate impacts on soil and water
- Ecosystems - potential rare or threatened species and how to manage, managing in accordance with the New Zealand Forest Accord (1990) and the Code of Environmental Practice (ECOP)
- Possible sites of cultural, architectural, historical, ecological economic or religious significance to Tangata Whenua - Tangata Whenua are to be consulted in regard to all planned harvest sites
- Financial outcomes - plan the operation to ensure it meets current market demand and provides a return on investment
- Offsite impacts - plan to minimise any adverse impacts on people or the environment outside of the forest

Harvesting Operations

All operations will be undertaken by harvest and transport contractors who have been selected for their quality of service and understanding of the **Manager's** Environmental Standards, associated SOPs, Health and Safety Management Systems (HSMS) and the Archaeological & Waahi Tapu Sites and Discovery SOP.

All operations will be supervised by the Manager, who has the right to stop the operation at any time if they feel the operation is having, or has the potential to have, an adverse impact on safety or the environment.

All operations will be regularly audited as per the Manager's health and safety and environmental systems.

Harvesting Methods

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

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

The Manager is committed to adopting harvesting techniques and technology which minimise the impact on the environment and reduce the risk of accidents and injuries. To meet these objectives, Norsewood Estate has been divided into four terrain types and the appropriate machinery configurations are used on each type.

Chain of Custody

All harvest loads leaving the estate will be accompanied by a docket or dockets stating crew, grade, forest location, weight and transport operator. Trucks will be randomly checked to ensure dockets are always present. A decision has not been made as to the branding of logs.

Subject to attaining FSC certification, the Manager would ensure all dockets have the FSC certification number on them and may brand the logs with the FSC® logo.



Protection and Maintenance

The Manager will maintain roads, tracks, fences and water systems. The Manager will ensure pest and disease control, fire protection and management of protected areas occurs at all times.

Pest management within the estate is subject to statutory obligations under the Regional Pest Management Strategy administered by the Regional Council. The strategy applies to both pest plants and animals, categorising them in terms of management objectives. The categories, objectives and landowner obligations are summarised below for each Regional Pest Management Strategy Plan.

Weeds

The overall objective in managing weeds is to:

- Meet statutory obligations under the Regional Pest Management Strategy
- Reduce direct impacts on both plantations and indigenous biodiversity values
- Ensure impacts on neighbouring properties are promptly dealt with
- Reduce the abundance and distribution of these species within the forest estate

The major species within Norsewood Estate are various grasses, gorse, broom, blackberry and wilding conifers.

Competition from colonising weeds will limit tree growth in their first few years after establishment. Control of these weeds involves chemical application which will occur prior to planting and may occur post planting.

Gorse and broom threaten indigenous biodiversity in open communities where they can smother native species, however they can also act as a nurse crop in some areas for native regeneration. Blackberry can displace native species by outcompeting and smothering them.

A list of pest weeds appears in the appendix of the Manager's Environmental Standards and in the Appendix of this Plan.

All weeds will be controlled within Norsewood Estate as follows.

(A) Total Control

Any weeds discovered under this category must be reported to the regional council. The council is responsible for controlling these weeds.

(B) Regional Surveillance

Weeds under this category should be reported to the council so the council can monitor them.

(C) Containment

Weeds under this category should be contained and removed if possible

(D) Site-led

These plants will be cleared by the Manager if within 50m of a neighbour.

Disease

Diseases, which can affect the forest trees and adjacent native vegetation, are monitored throughout the year. Most diseases can cause little damage and do not require control. The exception is *Dothistroma spp.*, a fungus which attacks pine needles and is associated with wet, warm conditions.

Dothistroma is the most commonly occurring fungal disorder within New Zealand's pine plantation. This fungus is controlled using an aerially applied copper-based fungicide spray, but only when the infection reaches a critical level. Dothistroma infection can also be controlled via silviculture by timely thinning and pruning operations, which increases air movement and lowers humidity levels.

There has been no need for Dothistroma control within the Norsewood Estate forests.

No control is currently completed on other fungal disorders.

Any unusual mortality or colouring discovered within Norsewood Estate will be reported to the Ministry for Primary Industries.



Chemical Control

All chemical applications are managed in accordance with the Manager's Environmental Standards, the Manager's Pesticide Application SOP and Chemical Use Policy, the New Zealand Standard for Agrichemical Application, Hazardous Substances and New Organisms Act 1996 regulations, and the obligations conferred by FSC to manage and minimise the use of chemicals; including use of alternatives where available.

As part of the FSC commitment:

- All chemical usage is tracked by active ingredient and application area to enable reporting and monitoring of trends
- The Manager has applied to be a participant in the Forest Owners environmental group which is undertaking research into chemical reduction, efficacy and safety issues related FSC regulations.
- The FSC Pesticides Policy (FSC-POL-30-001 V3-0 EN) is to be followed.
- All unwanted chemical can be booked for pick up via the Agrecovery website
- All empty containers will be disposed of at a registered recycling site

Pest Animals

Forests provide habitat for unwanted pest animals, and in most cases a refuge from which such pests can spread. Animal pests can substantially reduce the productivity of the forest.

The Manager will attempt to identify all pests present and manage them within the relevant regional council pest management strategies. The Manager will work to control or eradicate such species in accordance with these plans, to prevent spread and nuisance to neighbouring properties.

The most cost-effective long-term control is often achieved with the co-operation of neighbours, regional authorities and pest control agencies. The Manager will keep all these stakeholders informed of pest management operations.

Fire Prevention

The Manager complies with Fire and Emergency New Zealand (FENZ) and Norsewood Estate's **fire plan** which is reviewed by the Manager each year before October.

The threat of fire is minimised by:

- Having an effective fire plan which encompasses prevention, detection and control procedures
- Active prevention measures which include restrictions on access, fire prevention signage, publicity when fire danger is high and access to water sources
- Effective detection systems which includes good communication systems, mapping, and fire plan alert procedures
- A close link with the relevant fire authorities, and an understanding of equipment and trained manpower availability
- Good forest management which recognises the influence of terrain, the road network and accessibility on fire prevention and control measures
- Suitable internal access systems of roads and tracks, and maintenance of fire breaks as the need arises

The legal responsibility for fighting forest fires lies with FENZ. In the event of a fire which starts within the forest, FENZ is responsible for attending and providing the resources to extinguish the fire.

The Manager maintains a close liaison with FENZ **in terms of developing the "fire plan"** and the maintenance of good communication relative to potential risks and fire danger ratings.

All neighbours are contacted prior to the fire season to check the Manager's records of contact numbers and other details are correct.



Rare, Threatened and Endangered Species

The Manager is committed to managing Norsewood Estate to maintain a diversity of both indigenous flora and fauna species. Of particular importance are rare, threatened and endangered species living within the estate.

The Manager is undertaking a review to identify all rare, threatened and endangered species either confirmed or suspected to be present in the estate. Management Plans are progressively developed for all species confirmed to be present, focusing initially on those areas where harvesting is imminent.

Any permanent habitat for rare, threatened and endangered species is recorded in the GIS mapping layer as ecological restrictions, and taken into account during planning of operations, to ensure compliance with the Management Plans.



Monitoring

Every year, the Manager and Norsewood Estate Limited will discuss the plan and associated annual plans. A review of measures taken to meet objectives will be undertaken at this time and outcomes recorded.

All monitoring will follow the Manager's monitoring plans and SOPs as per the Environmental Standards. Unless commercially sensitive, all monitoring results will be made available to public on request.

The monitoring program is designed to understand the impact of forest activities on the environment and the impact of the environment on the Manager's ability to grow trees. This leads to the development of strategies to ensure the Manager continues to manage its activities in a sustainable way.

Discussion will be held on the following:

Health and Safety

All contractors and staff will be audited as per the Manager's Health & Safety Management System (HSMS). All near misses, incidents and property damage will be recorded. The Manager will run a random drug and alcohol sampling program.

Environmental

The Manager will ensure all monitoring occurs as specified in its Environmental Standards. In particular, the Stream Health Monitoring and Assessment Kit (SHMAK) testing and Wildlands Ltd reporting on reserves.

Operations

The Manager conducts internal environmental audits to confirm operations have been carried out according to prescriptions, the Manager's Environmental Standards and regulatory requirements. Corrective actions are identified and rectified.

Regional Councils will also conduct resource consent compliance monitoring of operations undertaken under resource consents or permitted activity rules.

Forest Growth

Forest growth will be monitored through a combination of permanent sample plots and regular inventory.

Financial

The Manager will monitor budget versus expenditure quarterly and report variances to Norsewood Estate Limited within the quarterly report and at quarterly meetings.

Annual reports will be provided, and periodic review meeting will be held when requested.

Forest Health

The Manager will undertake ongoing health monitoring survey to identify any health issues in the growing stands such as disease, pest damage or nutrient deficiencies.

The most common disease affecting radiata pine is a fungal disease *Dothistroma spp.* which causes needle cast in radiata pine and can severely slow tree growth. Dothistroma is controlled using copper-based products (cuprous oxide) similar to those used to control disease in home vegetable gardens.

Routine forest health inspections will identify any significant outbreaks of Dothistroma and be used to develop the annual spray programme. Significant amounts of research have been carried out to ensure the lowest possible effective level of fungicide is used to control this disease. Even though risk is low, application is planned to ensure that drift is minimised, and records are kept and audited to ensure that practices can be improved.

Stakeholders

Consultation will occur with stakeholders as per the **Manager's** Environmental Standards and this Forest Management Plan. Feedback from stakeholders will be sought and monitored. This includes actions undertaken to resolve disputes and issues, monitoring of externally generated complaints and client satisfaction surveys.

Consultation will occur with stakeholders during resource consent applications, annual and periodic meetings, contributions to council processes and interactions with forest recreational users and iwi.



Planning

This Forest Management Plan pertains to the management of Norsewood Estate and will be adhered to for the next 5 years. Any deviation from this Plan will be justified only on the basis the changes do not adversely affect the environment. Any changes, which are contrary to the policies contained in this Plan require a full review of the Plan.

The next review date for this Plan is: April 2021.

The review will include review of planned monitoring, reserve areas and their protection, stakeholder engagement and financial performance.

The Forest Management Plan is used for both medium- and long-term planning.

For short-term operational and budgetary control planning, operations plans are prepared on an annual or as necessary basis. These plans are prepared annually and in accordance with this management plan. Operations plans and associated budgets are subject to approval by Norsewood Estate Limited at the beginning of each financial year.



Appendices

- 1. Pest Plants of the Wellington Region**
- 2. Relevant Regulations, Standards and Guidelines**
- 3. Maps and Management Plans – Botanised High Conservation Value Areas**
- 4. Maps – High Conservation Value Areas**
- 5. Maps – Stream Health Monitoring and Assessment (SHMAK) Sites**
- 6. Maps – Erosion Susceptibility Classification (ESC)**



Appendix 1: Pest Plants of the Manawatu Region

Common Name	Scientific Name	Primary Programme
African feather grass	<i>Cenchrus macrourus</i>	Eradication
Alligator weed	<i>Alternanthera philoxeroides</i>	Eradication
Arrowhead	<i>Sagittaria montevidensis</i>	Eradication
Australian sedge	<i>Carex longibrachiata</i>	Progressive Containment
Banana passionfruit	<i>Passiflora</i> ssp.	Progressive Containment
Blackberry	<i>Rubus fruticosus</i> agg.	Progressive Containment
Blue passion flower	<i>Passiflora caerulea</i>	Eradication
Humped Bladderwort	<i>Utricularia gibba</i>	Exclusion
Boneseed	<i>Chrysanthemoides monilifera</i>	Progressive Containment
Broom species (exotic)	<i>Cytisus scoparius</i> , <i>Calicotome spinosa</i> <i>Genista monspessulana</i> , <i>Spartium junceum</i>	Progressive Containment
Californian bulrush	<i>Schoenoplectus californicus</i>	Exclusion
Cathedral bells	<i>Cobaea scandens</i>	Eradication
Chilean needle grass	<i>Nassella neesiana</i>	Exclusion
Giant and Chilean rhubarb	" <i>Gunnera tinctoria</i> , <i>G. manicata</i>	
and all varieties"	Eradication	
Chinese pennisetum	<i>Cenchrus purpurascens</i>	Eradication
Climbing alstromeria	<i>Bomarea caldasii</i>	Eradication
Climbing spindleberry	<i>Celastrus orbiculatus</i>	Eradication
Contorta pine	<i>Pinus contorta</i>	Progressive Containment
Darwin's barberry	<i>Berberis darwinii</i>	Progressive Containment
Dwarf mountain pine	<i>Pinus mugo</i>	Progressive Containment
Eelgrass	<i>Vallisneria australis</i>	Progressive Containment
Egeria	<i>Egeria densa</i>	Progressive Containment
Evergreen buckthorn	<i>Rhamnus alaternus</i>	Progressive Containment
Field horsetail	<i>Equisetum arvense</i>	Progressive Containment
Gorse	<i>Ulex europaeus</i>	Progressive Containment
Grey willow	<i>Salix cinerea</i>	Progressive Containment
Heath rush	<i>Juncus squarrosus</i>	Exclusion
Himalayan balsam	<i>Impatiens glandulifera</i>	Eradication
Hornwort	<i>Ceratophyllum demersum</i>	Progressive Containment
Knotweed (Asiatic and giant)	<i>Fallopia japonica</i> and <i>Reynoutria sachalinensis</i>	Eradication
Lagarosiphon	<i>Lagarosiphon major</i>	Progressive Containment
Manchurian wild rice	<i>Zizania latifolia</i>	Exclusion
Moth plant	<i>Araujia sericifera</i>	Progressive Containment
Mountain pine	<i>Pinus uncinata</i>	Progressive Containment
Nodding thistle	<i>Carduus nutans</i>	Progressive Containment
Nassella tussock and Mexican feather grass	<i>Nassella trichotoma</i> and <i>N. tenuissima</i>	Eradication
Noogoora bur	<i>Xanthium strumarium</i>	Exclusion



Old man's beard	<i>Clematis vitalba</i>	Progressive Containment
<i>Phragmites australis</i>	<i>Phragmites australis</i>	Exclusion
Purple loosestrife	<i>Lythrum salicaria</i>	Eradication
Queensland poplar	<i>Homalanthus populifolius</i>	Eradication
Reed sweetgrass	<i>Glyceria maxima</i>	Progressive Containment
Rum cherry	<i>Prunus serotina</i>	Eradication
Saffron thistle	<i>Carthamus lanatus</i>	Exclusion
Sagittaria	<i>Sagittaria platyphylla</i>	Exclusion
Scots pine	<i>Pinus sylvestris</i>	Progressive Containment
Senegal tea	<i>Gymnocoronis spilanthoides</i>	Eradication
Spartina	<i>Spartina</i> (all species and hybrids)	Eradication
Sweet Pittosporum	<i>Pittosporum undulatum</i>	Exclusion
Tussock hawkweed	<i>Hieracium lepidulum</i>	Exclusion
Tutsan	<i>Hypericum androsaemum</i>	Progressive Containment
Variegated thistle	<i>Silybum marianum</i>	Progressive Containment
Woolly nightshade	<i>Solanum mauritianum</i>	Eradication
Yellow bristlegrass	<i>Setaria pumila</i>	Progressive Containment
Yellow ragwort	<i>Jacobaea vulgaris</i>	Progressive Containment



Appendix 2: Relevant Regulations, Standards and Guidelines

A.	NATIONAL LEGISLATION
	Accident Compensation Act 2001
	Biosecurity Act 1993
	Climate Change (Forestry Sector) Regulations 2008
	Climate Change Response Act 2002
	Code of Practice for the Management of Agrichemicals 2004 (NZS8409:2004)
	Commerce Act 1986
	Companies Act 1993
	Conservation Act 1987
	Contract and Commercial Law Act 2017
	Cooperative Companies Act 1996
	Crown Forest Assets Act 1989
	Crown Minerals Act 1991
	Ecological Regions and Districts of New Zealand
	Employment Relations Act 2000
	Fencing Act 1978
	Fire and Emergency New Zealand Act 2017
	Foreshore and Seabed Act 2004
	Forest Disease Control Regulations 1967
	Forest Produce Import & Export Regulations 1989
	Forestry Encouragement Act 1962
	Forestry Encouragement Loans Regulations 1967
	Forestry Rights Registration Act 1983
	Forests Act 1949
	Forests (Regulation of Log Traders and Forestry Advisers) Amendment Act 2020
	Hazardous Substances & New Organisms Act 1996
	Health & Safety at Work Act 2015
	Heritage New Zealand Pouhere Taonga Act 2014
	Holidays Act 2003
	Income Tax Act 2007
	Land Act 1948
	Land Transfer Act 1952
	Land Transport Act 1988
	Local Government Act 2002
	Machinery Act 1950
	Maori Reserved Land Act 1955
	Minimum Wage Act 1983
	Misuse of Drugs Act 1975
	National Environmental Standards for Plantation Forestry
	Native Plants Protection Act 1934



	New Zealand Environmental Code of Practice for Plantation Forestry 2007
	New Zealand Forest Code of Practice June 1993
	New Zealand Threat Classification System 2005
	Overseas Investment Act 2005
	Personal Property Securities Act 1999
	Principles for Commercial Plantation Forest Management in New Zealand 1995
	Public Works Act 1981
	Resource Management Act 1991
	Safety and Health in Forestry Operations: Code of Practice and Best Practice Guidelines
	Soil Conservation and Rivers Control Act 1941
	The New Zealand Forest Accord 1991
	Trade Marks Act 2002
	Treaty of Waitangi Act 1975
	Trespass Act 1980
	Walking Access Act 2008
	Wild Animal Control Act 1977
	Wildlife Act 1953
	Legal Rights to Harvest: <ul style="list-style-type: none"> • Land tenure and management rights • Concession licenses • Management and harvest planning
	Trade and Transport <ul style="list-style-type: none"> • Classification of species, quantities, qualities • Trade and transport • Offshore trading and transfer pricing
	Third Party Rights <ul style="list-style-type: none"> • Customary rights • Free prior and informed consent (FPIC) • Rights of indigenous peoples
	Timber Harvesting Activities <ul style="list-style-type: none"> • Timber harvesting regulations • Protected sites and species • Environmental requirements • Health and safety • Legal employment
	Taxes and Fees <ul style="list-style-type: none"> • Payment of royalties and harvesting fees • Value added and sales taxes • Income and profit taxes
	Custom Regulations
	Biosecurity Act 1993
	Customs and Excise Act 2018
	Forests Act 1949
	The New Zealand Forest Accord 1991
	CITES



	Convention on the International Trade in Endangered Species (CITES)
	Other
	Not applicable at this stage. All relevant legislation has been stated
B.	REGULATIONS PERTINENT TO FORESTRY RELATED TO AND EMERGING FROM NATIONAL LEGISLATION AND OTHER LEGISLATIVE INSTITUTIONS:
	Code of Practice for the Management of Agrichemicals 2004 (NZS8409:2004)
	Ecological Regions and Districts of New Zealand
	Fire and Emergency New Zealand Act 2017
	Fire and Emergency New Zealand Regulations
	Forestry Encouragement Loans Regulations 1967
	Forestry Rights Registration Act 1983
	Forests Act 1949
	New Zealand Environmental Code of Practice for Plantation Forestry 2007
	New Zealand Forest Code of Practice June 1993
	New Zealand Threat Classification system 2005
	Principles for Commercial Plantation Forest Management in New Zealand 1995
	Resource Management Act 1991
	The New Zealand Forest Accord 1991



C.	INTERNATIONAL AGREEMENTS PERTINENT TO FORESTRY
	Convention on Biological Diversity
	Convention on the International Trade in Endangered Species (CITES)
	ICOMOS New Zealand Charter 1993
	ITTA
	IUCN Red List of threatened species
	Kyoto Protocol
	<p>International Labour Organisation (ILO) conventions:</p> <ul style="list-style-type: none"> • 29 Forced Labour Convention 1930 • 87 Freedom of Association and Protection of the Right to Organise Conventions 1948 • 97 Migration for Employment (Revised) Convention 1949 • 98 Right to Organise and Collective Bargaining Convention 1949 • 100 Equal Remuneration Convention 1951 • 105 Abolition of Forced Labour Convention 1957 • 111 Discrimination (Occupation and Employment) Convention 1958 • 131 Minimum Wage Fixing Convention 1970 • 138 Minimum Age Convention 1973 • 141 Rural Workers' Organizations Convention 1975 • 142 Human Resources Development Convention 1975 • 143 Migrant Workers (Supplementary Provisions) Convention 1975 • 155 Occupational Safety and Health Convention 1981 • 169 Indigenous and Tribal Peoples Convention 1989 • 182 Worst Forms of Child Labour Convention 1999 • ILO Code of Practice on Safety and Health in Forestry Work (ILO 1998) • Recommendation 135 Minimum Wage Fixing Recommendation 1970 • ILO Declaration on Fundamental Principles and Rights at Work 1998 and its follow-up • ILO member states are expected to promote and realize these principles, even if they have not ratified the Conventions • The ILO Code of Practice is not a legal instrument, but it provides authoritative guidance on forest work ILO Code of Practice is not a legal instrument, but it provides authoritative guidance on forest work
D.	LOCAL STANDARDS AND BEST OPERATING PRACTICES
	Code of Practice for the Management of Agrichemicals 2004 (NZS8409:2004)
	Ecological Regions and Districts of NZ
	National Environmental Standards for Plantation Forestry
	New Zealand Environmental Code of Practice for Plantation Forestry 2007
	New Zealand Forest Code of Practice June 1993
	New Zealand Threat Classification system 2005
	Principles for Commercial Plantation Forest Management in New Zealand 1995
	Safety and Health in Forestry Operations: Code of Practice and Best Practice Guidelines
	The New Zealand Forest Accord 1991



Appendix 3: Maps – High Conservation Value Areas

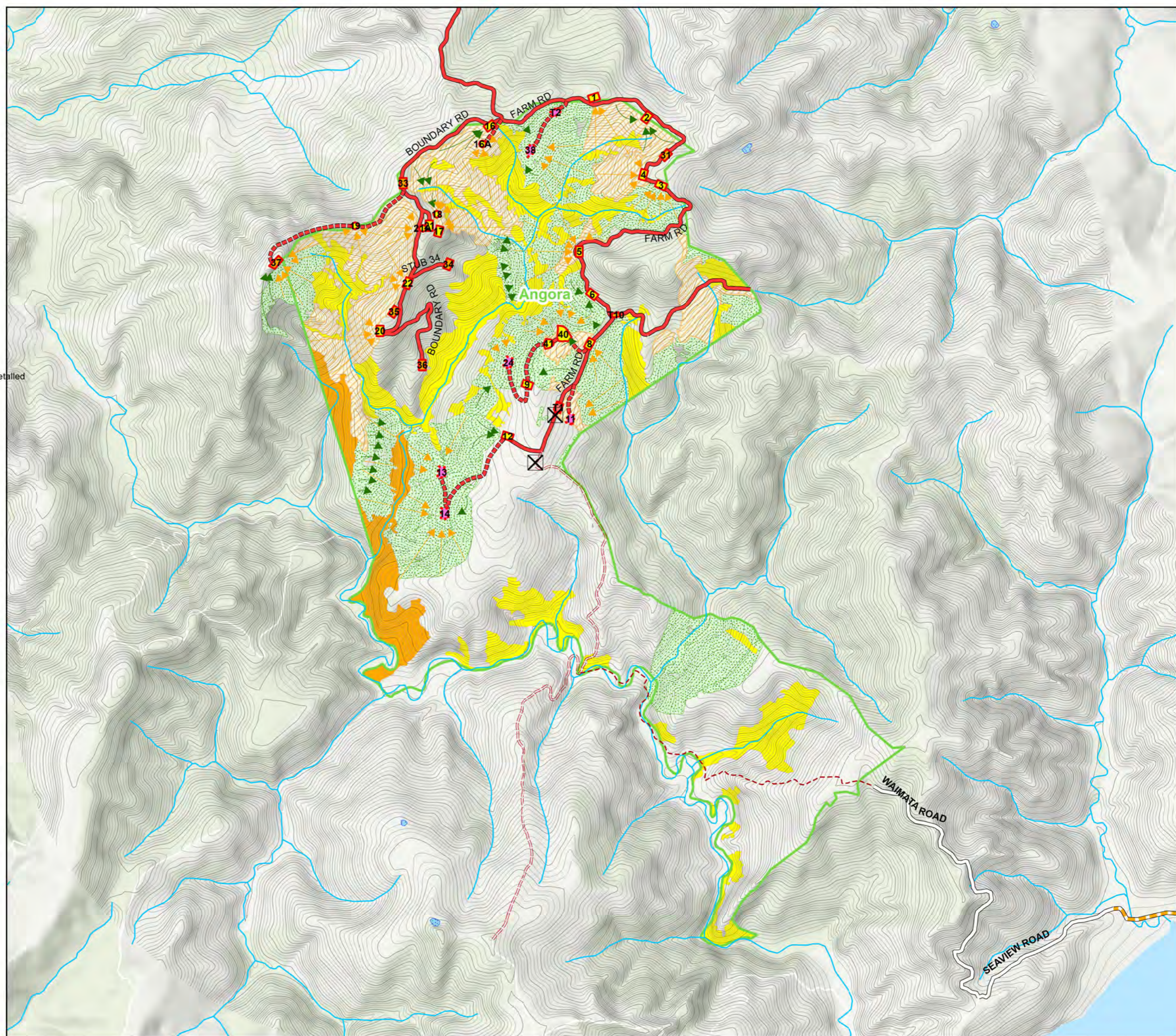
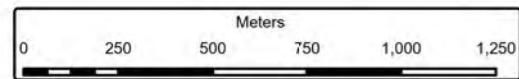
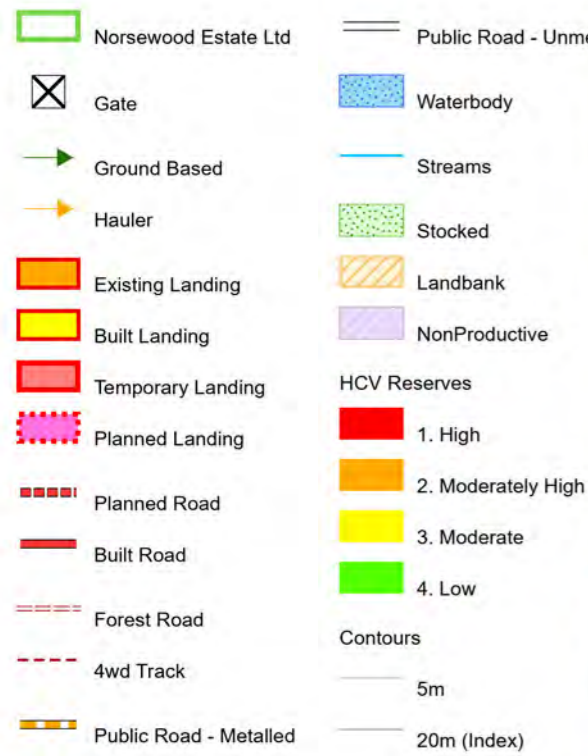


Angora High Conservation Value Map

1:20,000



Date: 1/11/2020



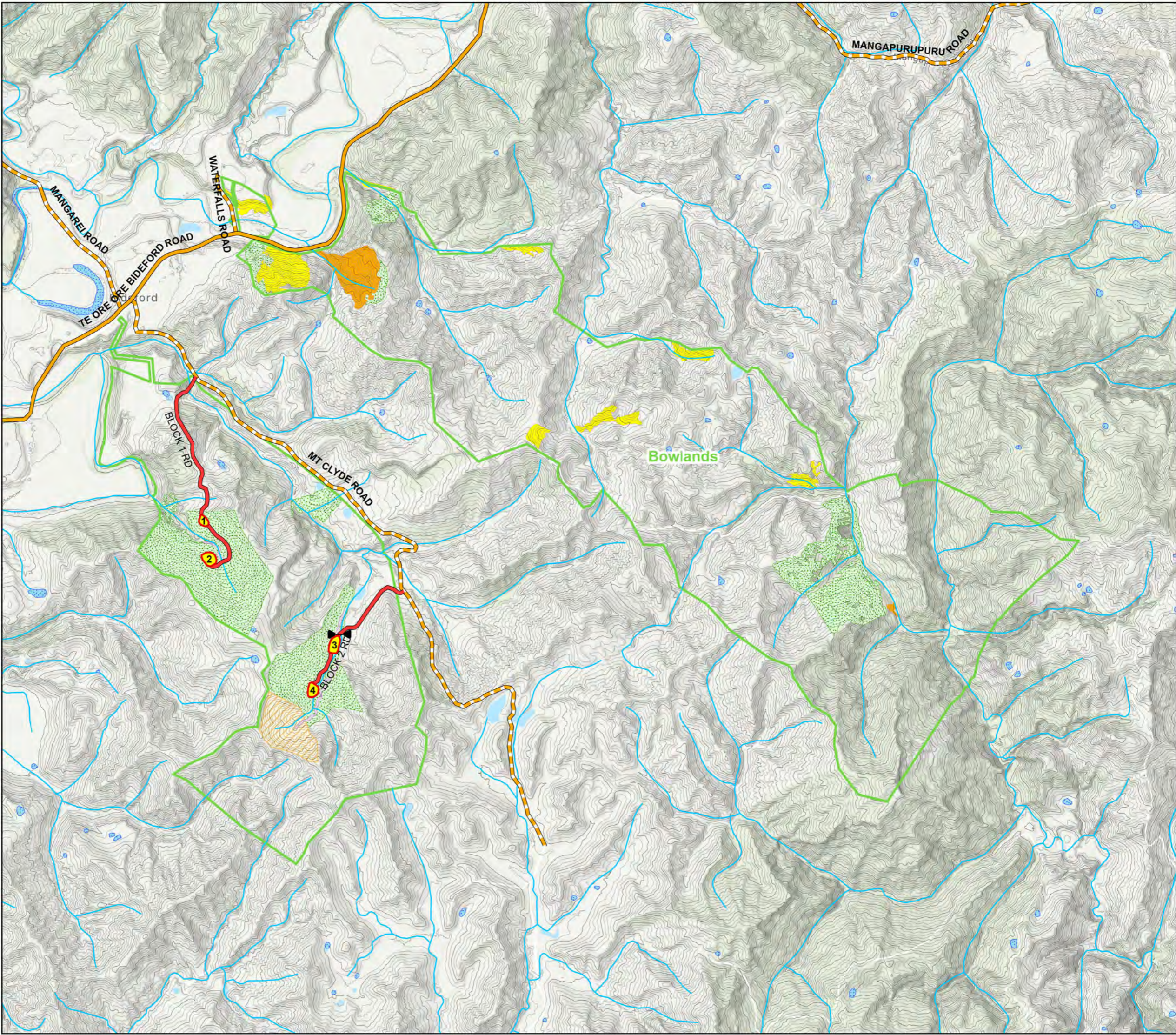
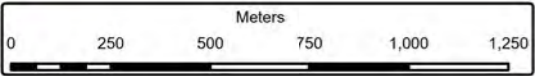
Bowlands High Conservation Value Map

1:19,000



Date: 1/11/2020

- Norsewood Estate Ltd
- Culvert crossing
- Built Landing
- Built Road
- Public Road - Sealed
- Public Road - Metalled
- Waterbody
- Streams
- Stocked
- Landbank
- NonProductive
- HCV Reserves**
1. High
2. Moderately High
3. Moderate
4. Low
- Contours**
- 5m
- 20m (Index)



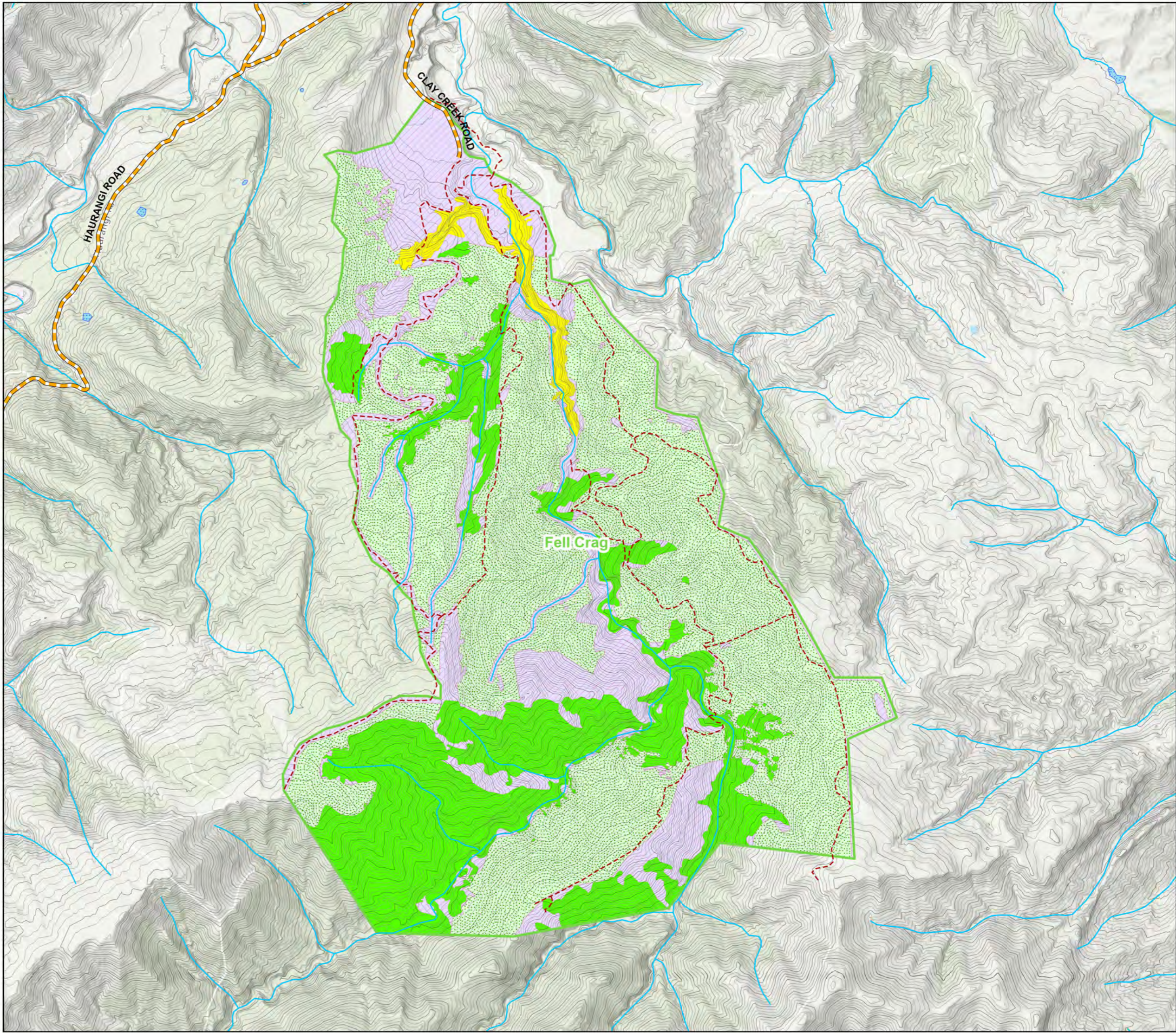
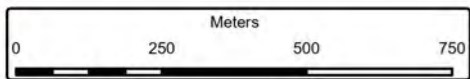
Fell Crag High Conservation Value Map

1:13,000



Date: 1/11/2020

- Norsewood Estate Ltd
- 4wd Track
- Public Road - Metalled
- Waterbody
- Streams
- Stocked
- NonProductive
- HCV Reserves
1. High
2. Moderately High
3. Moderate
4. Low
- Contours
- 5m
- 20m (Index)

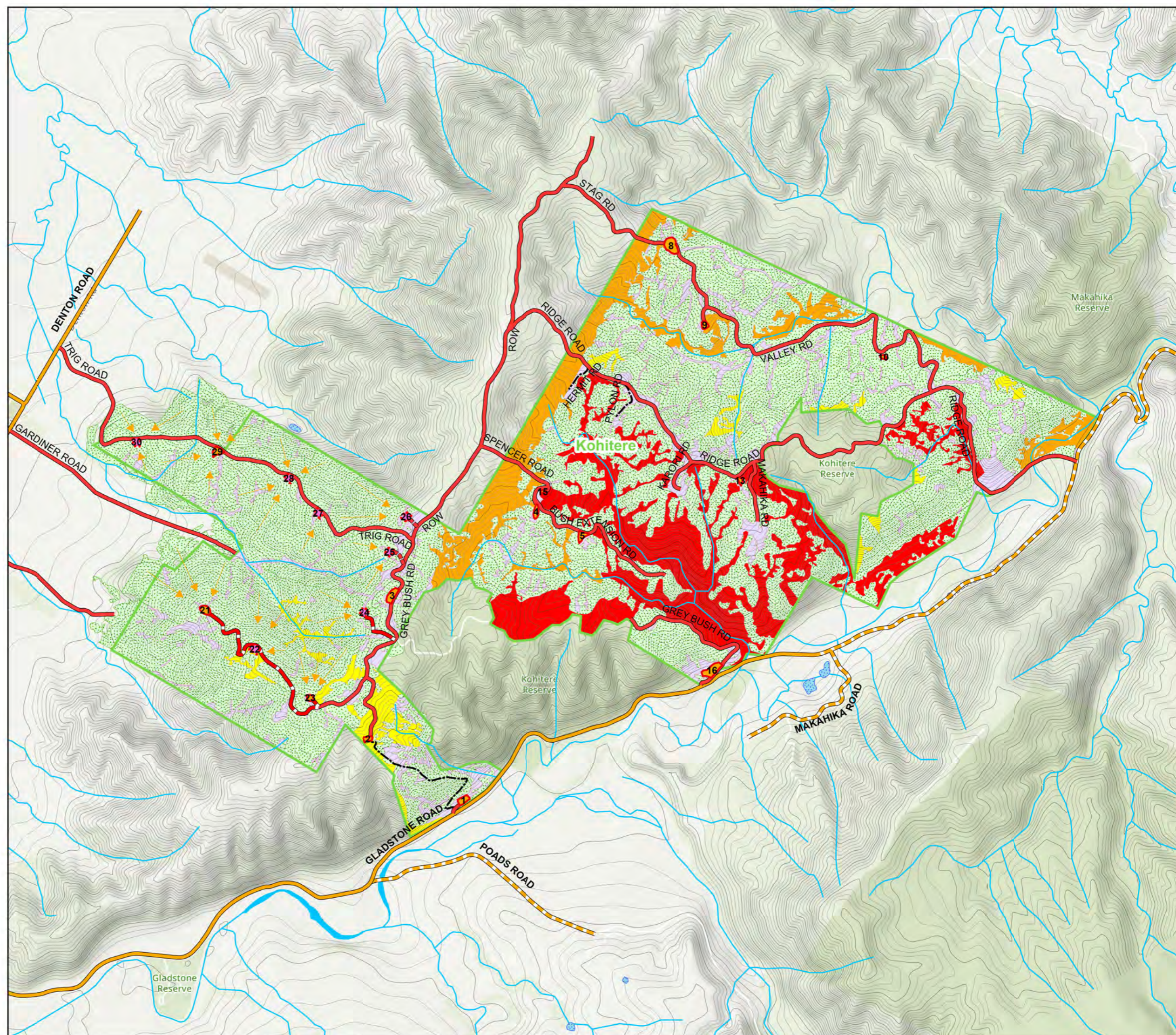
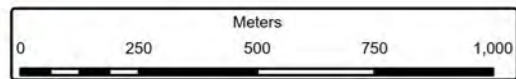


Kohitere High Conservation Value Map

1:16,000



Date: 1/11/2020



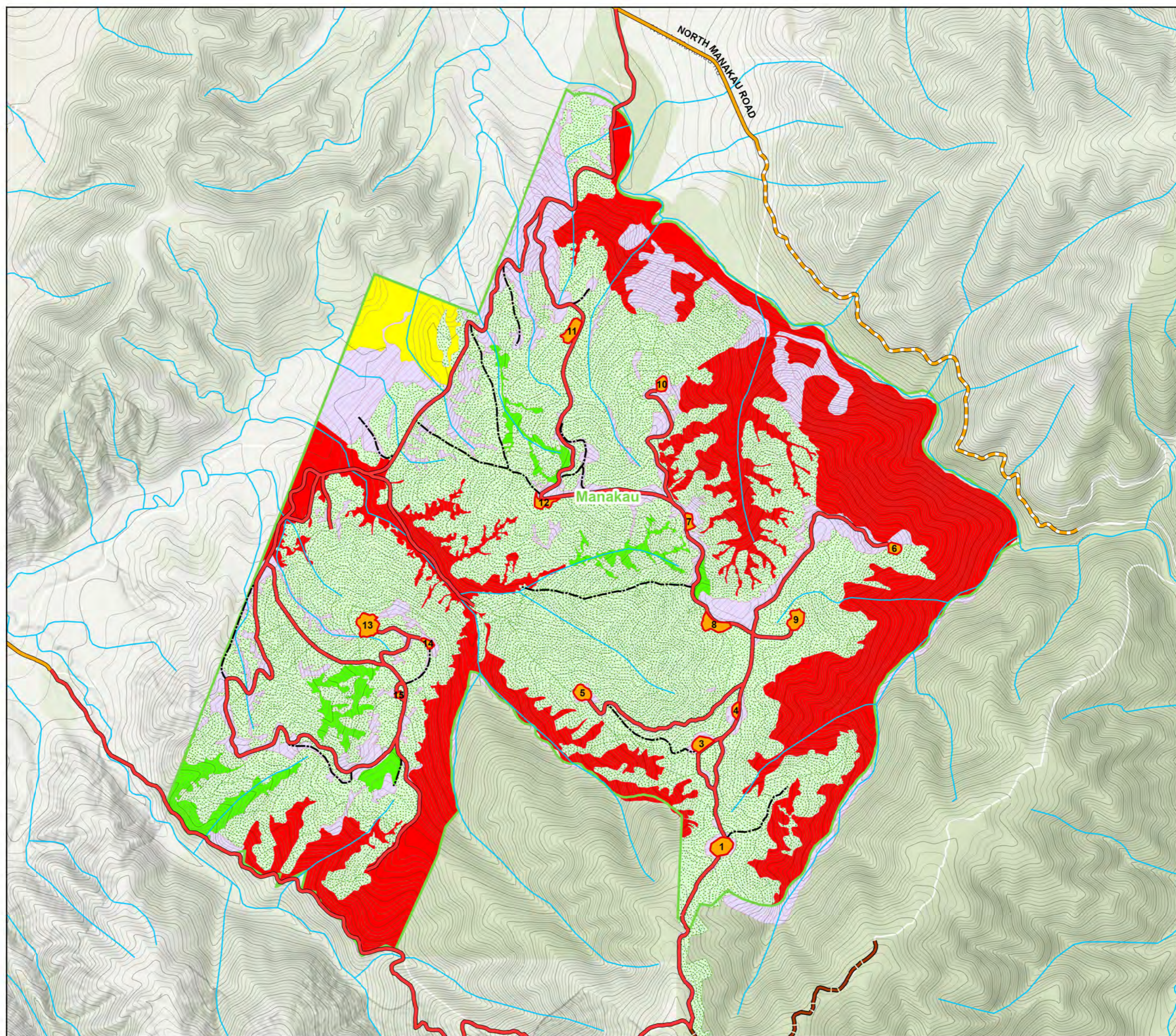
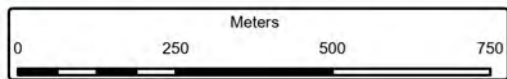
Manakau High Conservation Value Map

1:12,000



Date: 1/11/2020

- | | |
|------------------------|---------------------|
| Norsewood Estate Ltd | Stocked |
| Existing Landing | NonProductive |
| Built Road | HCV Reserves |
| Built Track | 1. High |
| Unmaintained Road | 2. Moderately High |
| Public Road - Sealed | 3. Moderate |
| Public Road - Metalled | 4. Low |
| Waterbody | Contours |
| Streams | 5m |
| | 20m (Index) |



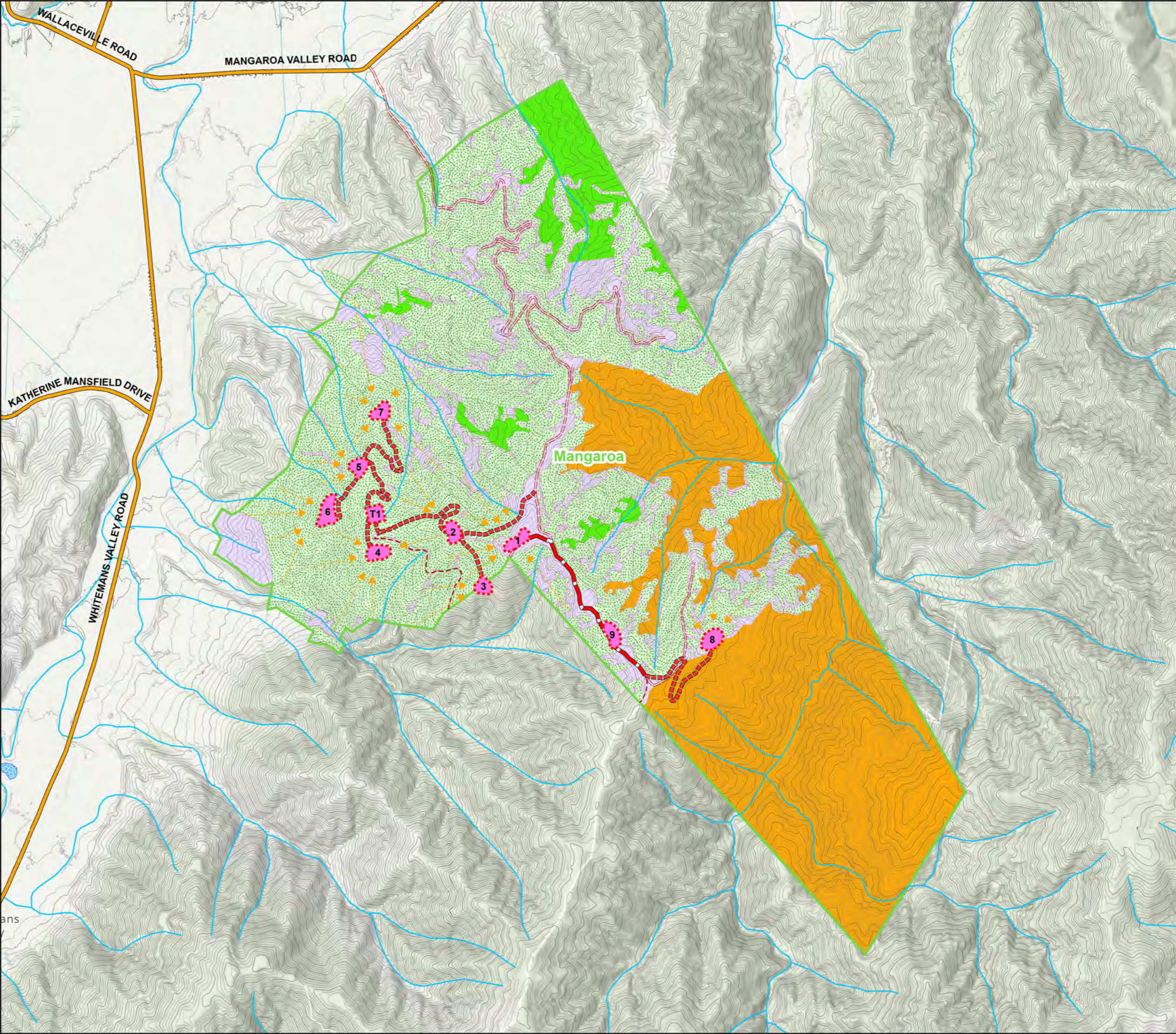
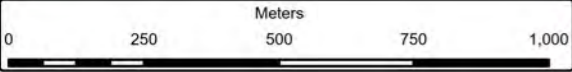
Mangaroa High Conservation Value Map

1:14,000



Date: 1/11/2020

- Norsewood Estate Ltd
- Hauler
- Planned Landing
- Planned Road
- Upgrade Road
- Forest Road
- 4wd Track
- Public Road - Sealed
- Waterbody
- Streams
- 3
- Stocked
- NonProductive
- HCV Reserves
1. High
2. Moderately High
3. Moderate
4. Low
- Contours
- 5m
- 20m (Index)



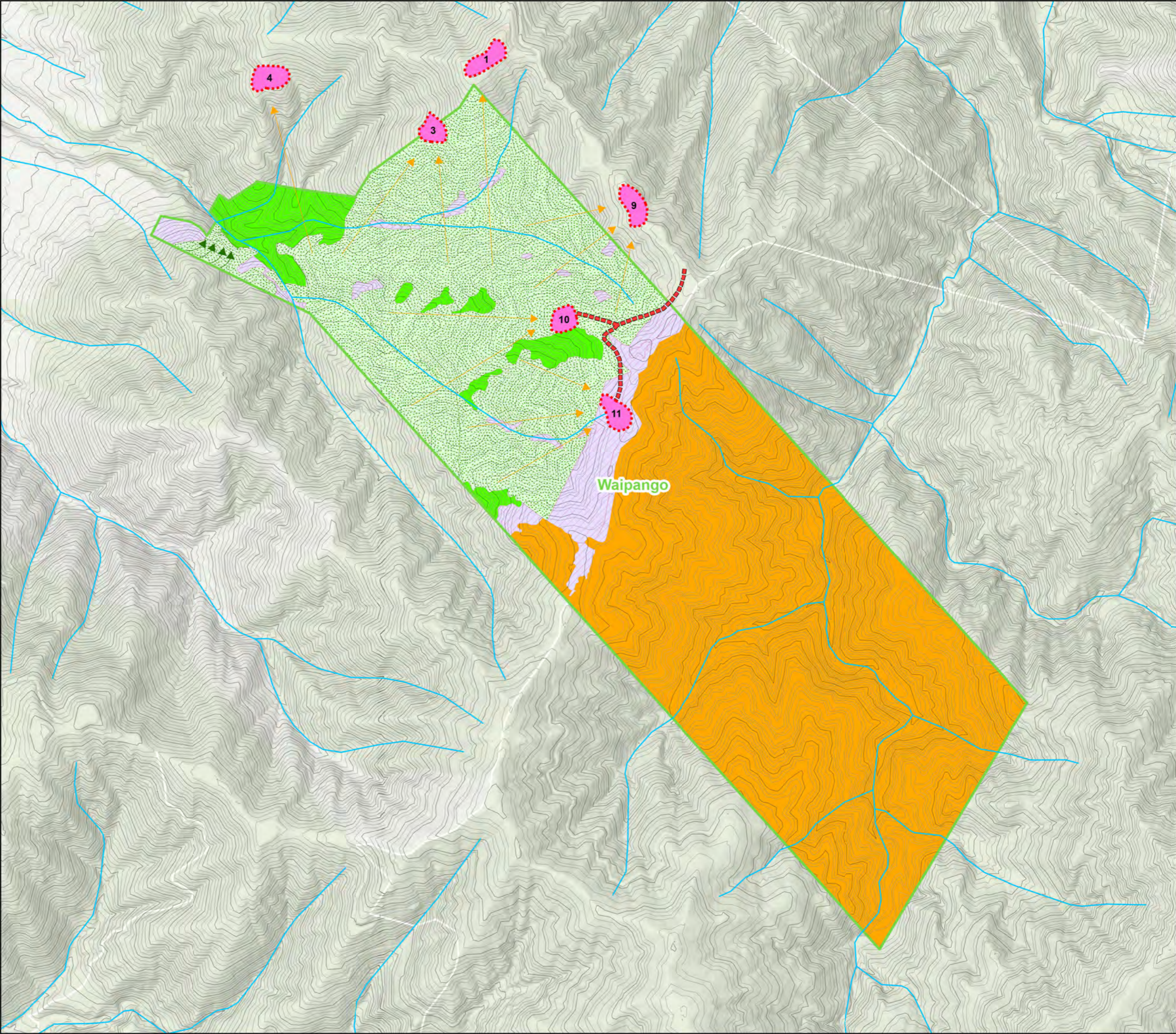
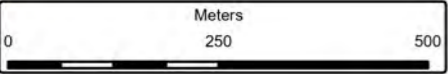
Waipango High Conservation Value Map

1:9,000



Date: 1/11/2020

- Norsewood Estate Ltd
- Ground Based
- Hauler
- Planned Landing
- Planned Road
- Waterbody
- Streams
- Stocked
- NonProductive
1. High
2. Moderately High
3. Moderate
4. Low
- 5m
- 20m (Index)
- Contours



Waitarere (Highway) High Conservation Value Map

1:9,000



Date: 1/11/2020

- Norsewood Estate Ltd

Built Landing

Public Road - Sealed

Public Road - Metalled

Waterbody

Streams

Stocked

Landbank
- NonProductive

HCV Reserves

1. High

2. Moderately High

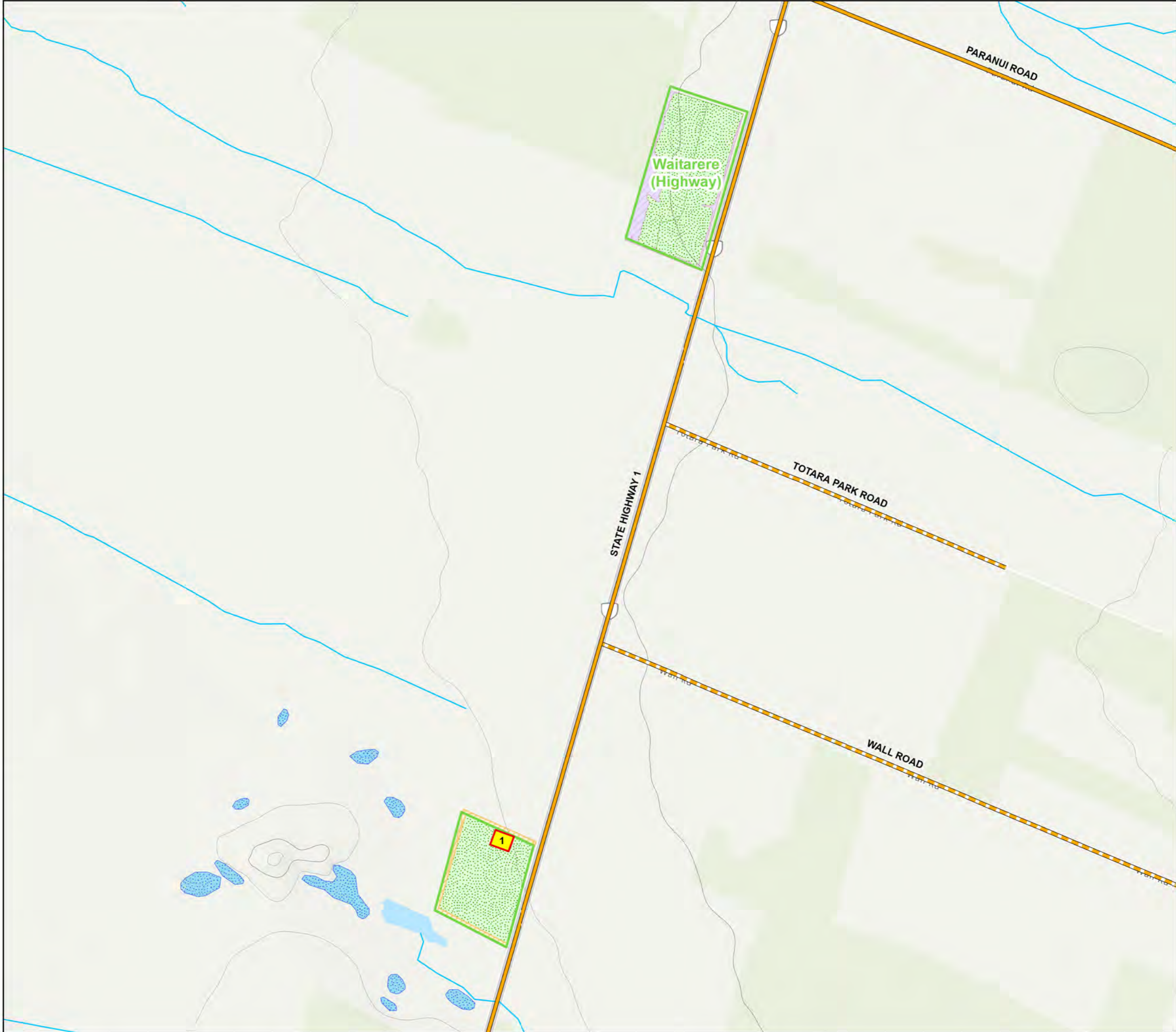
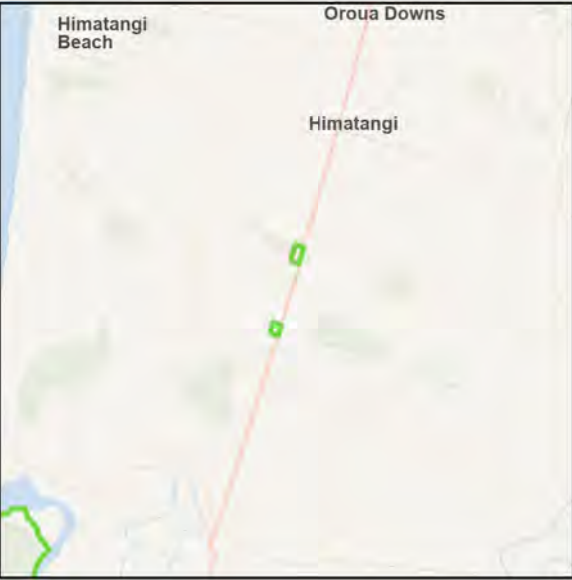
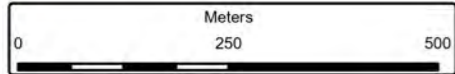
3. Moderate

4. Low

Contours

5m

20m (Index)



Waitarere (North)
High Conservation
Value Map

1:35,000



Date: 1/11/2020

- Norsewood Estate Ltd

Built Landing

Built Road

Built Track

Decommissioned Road

4wd Track

Public Road - Sealed

Public Road - Metalled

Public Road - Unmetalled

Waterbody
- Streams

Stocked

Landbank

NonProductive

HCV Reserves

1. High

2. Moderately High

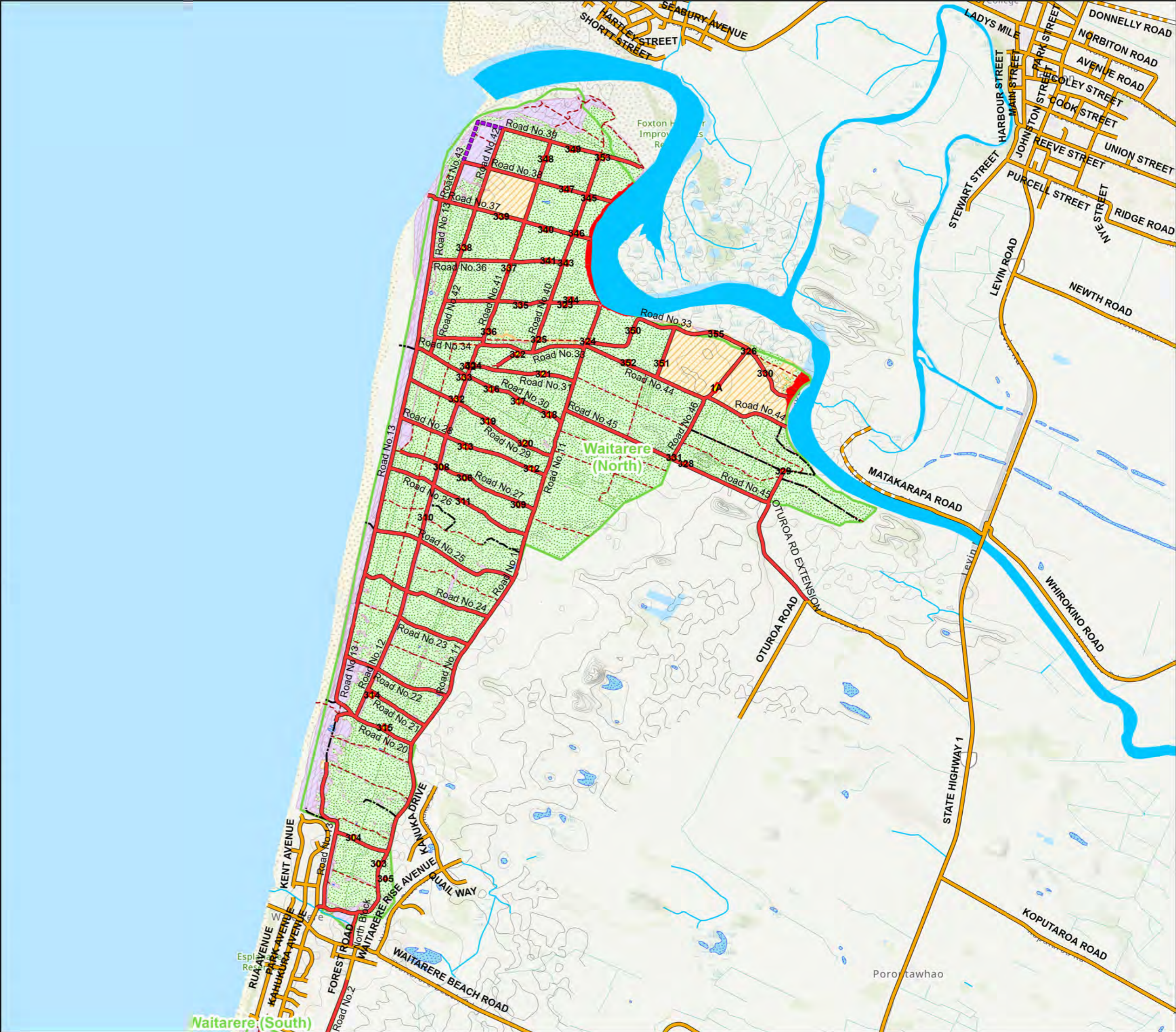
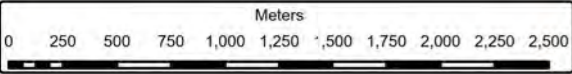
3. Moderate

4. Low

Contours

5m

20m (Index)



Waitarere (South) High Conservation Value Map

1:15,000



Date: 1/11/2020

- Norsewood Estate Ltd

Built Landing

Built Road

Built Track

4wd Track

Public Road - Sealed

Waterbody

Streams
- Stocked

NonProductive

HCV Reserves

1. High

2. Moderately High

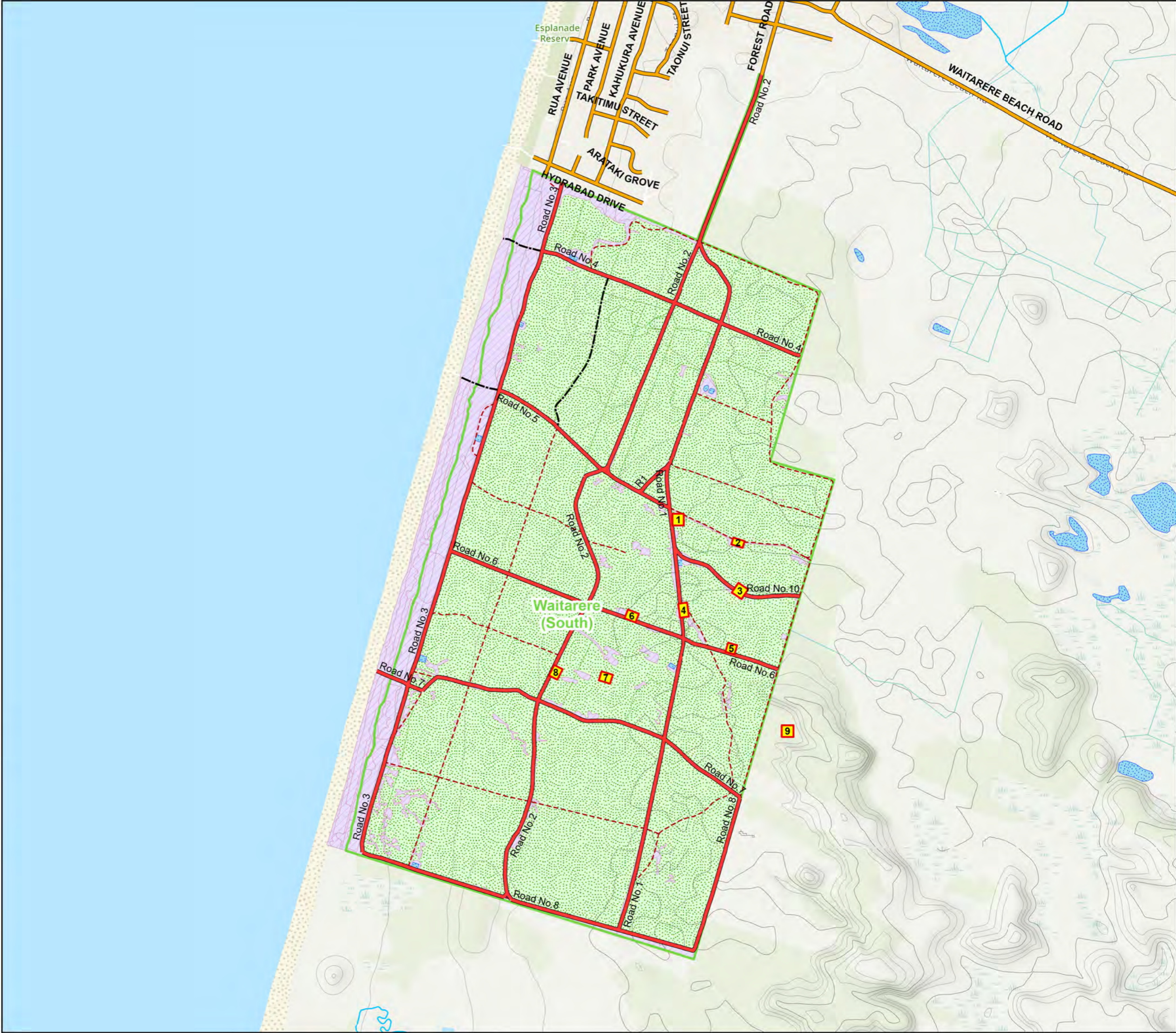
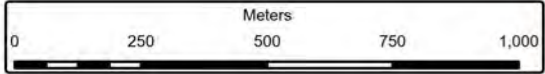
3. Moderate

4. Low

Contours

5m

20m (Index)



Appendix 4: Maps – Stream Health Monitoring and Assessment (SHMAK) Sites



Angora SHMAK Map

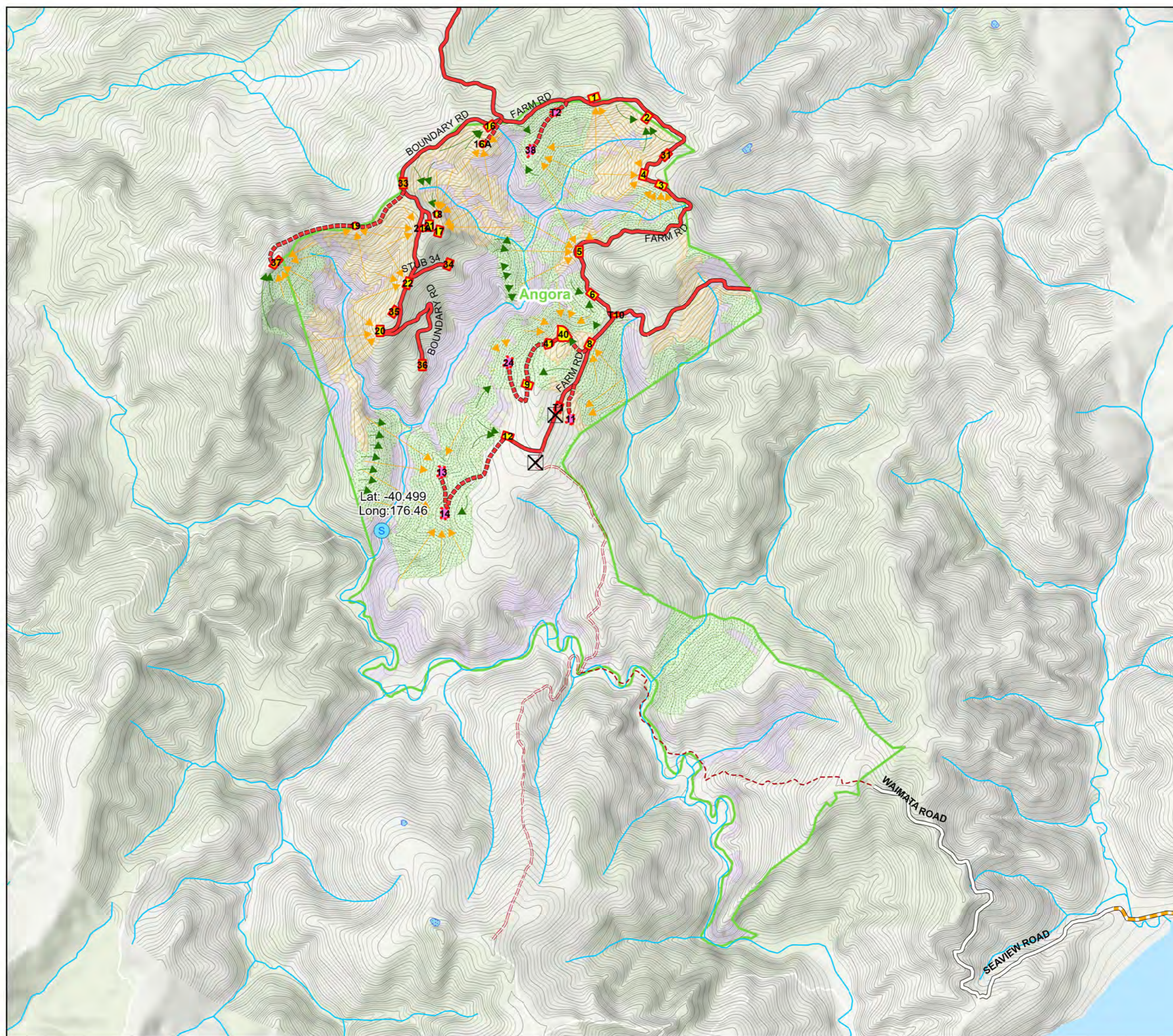
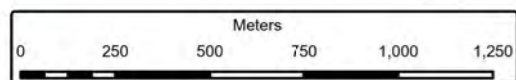
1:20,000



Date: 1/11/2020

Legend

- | | |
|----------------------|--------------------------|
| Norsewood Estate Ltd | Public Road - Metalled |
| SHMAK Site | Public Road - Unmetalled |
| Gate | Forest Road |
| Ground Based | 4wd Track |
| Hauler | Waterbody |
| Existing Landing | Streams |
| Built Landing | Stocked |
| Temporary Landing | Landbank |
| Planned Landing | NonProductive |
| Planned Road | Contours |
| Built Road | 5m |
| | 20m (Index) |



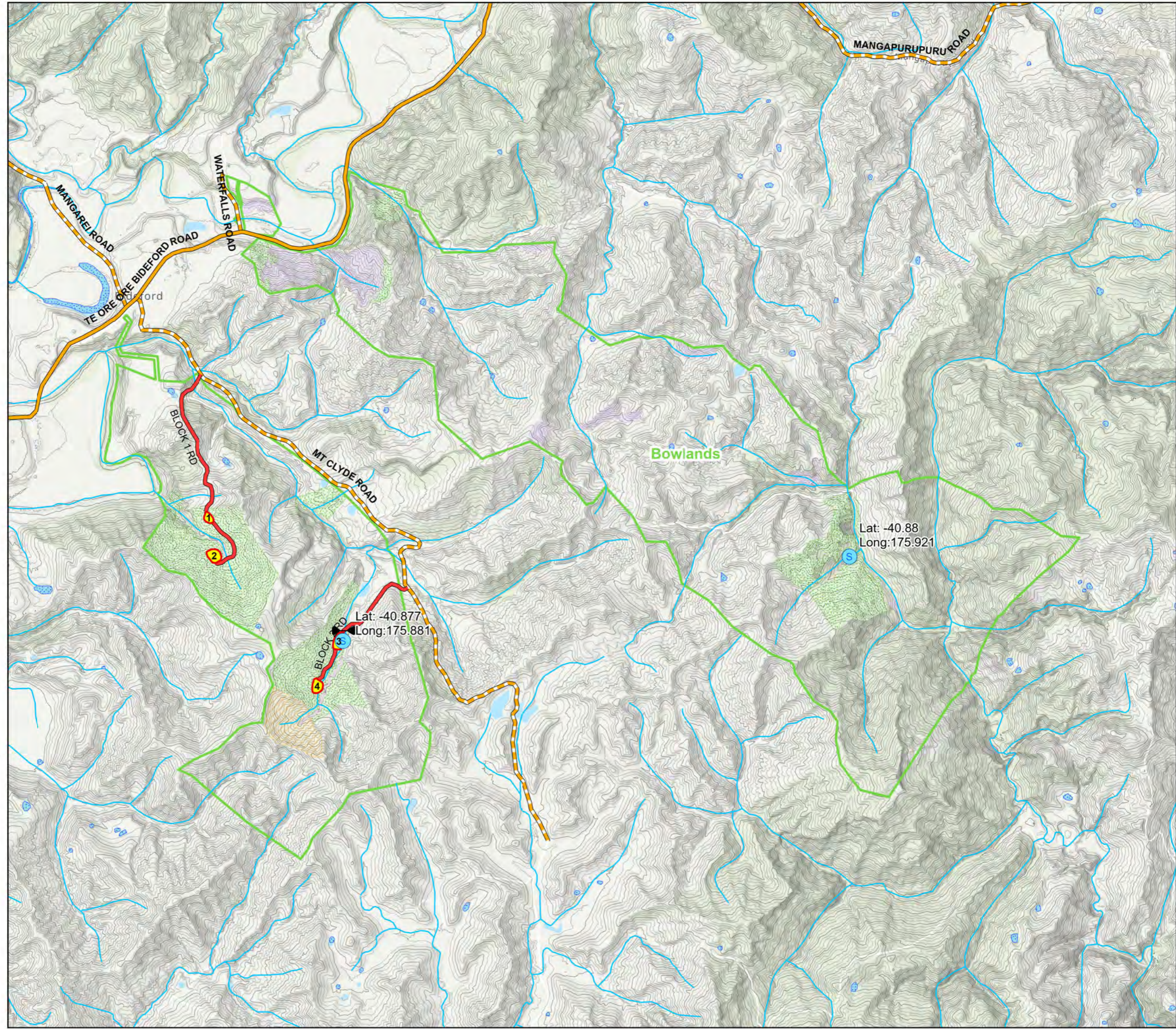
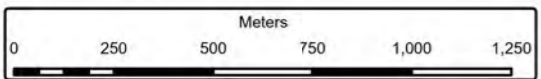
Bowlands SHMAK Map

1:19,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - SHMAK Site
 - Culvert crossing
 - Built Landing
 - Built Road
 - Public Road - Sealed
 - Public Road - Metalled
 - Waterbody
 - Streams
 - Stocked
 - Landbank
 - NonProductive
 - Contours
 - 5m
 - 20m (Index)



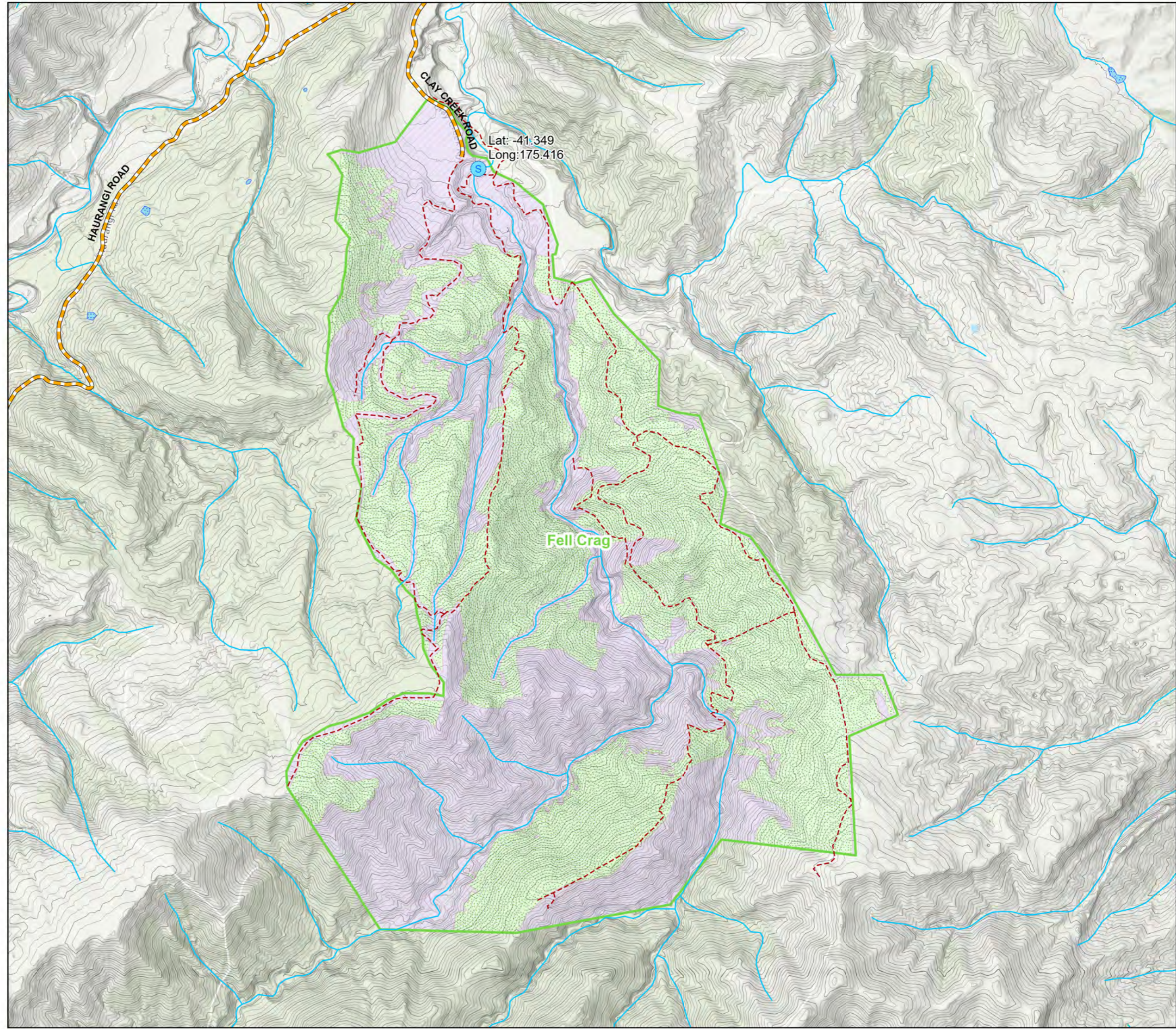
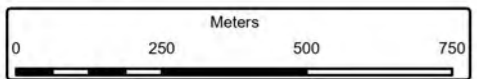
Fell Crag SHMAK Map

1:13,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - SHMAK Site
 - Public Road - Metalled
 - 4wd Track
 - Waterbody
 - Streams
 - Stocked
 - NonProductive
- Contours
- 5m
 - 20m (Index)



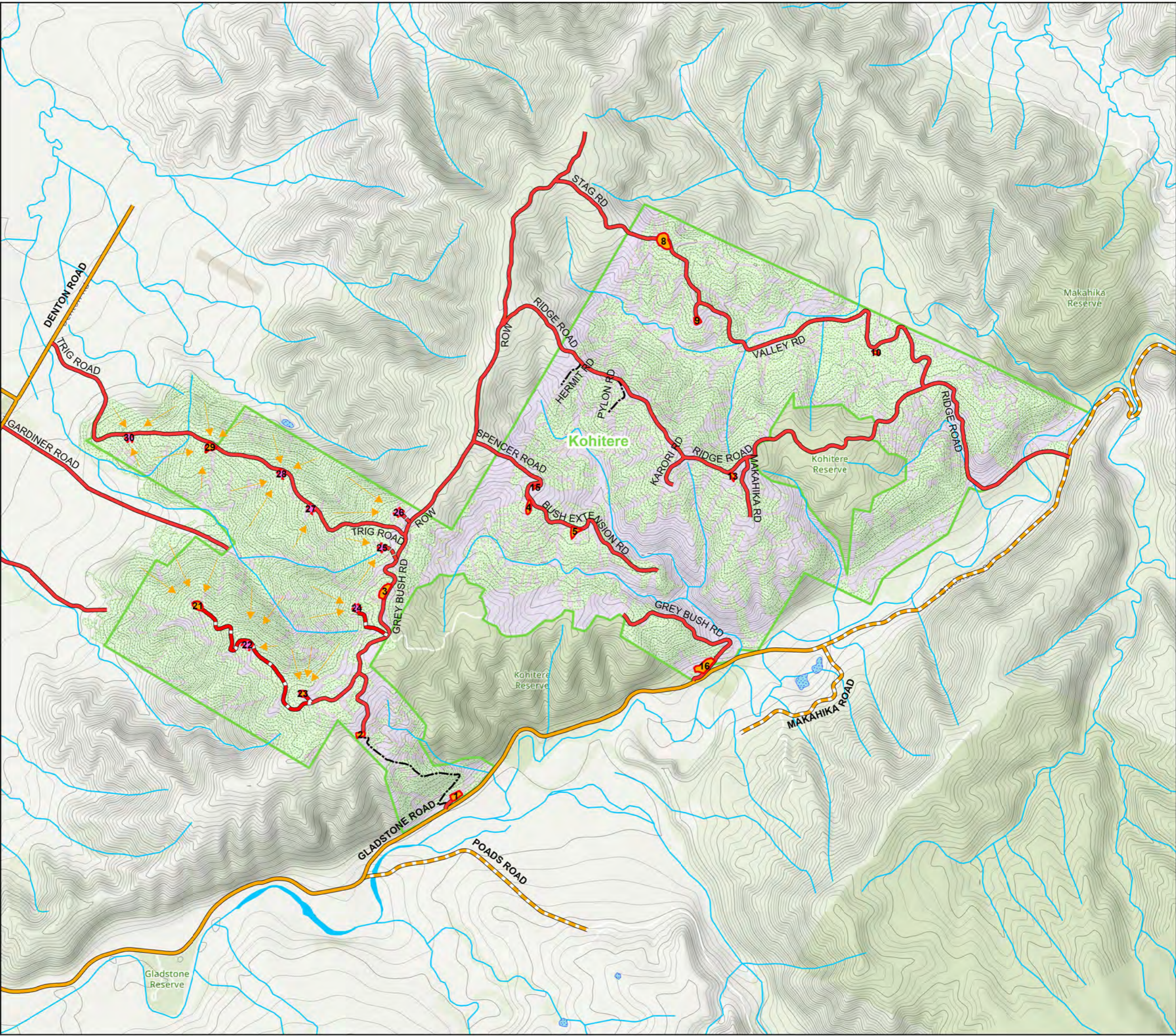
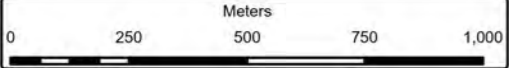
Kohitere SHMAK Map

1:16,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Hauler
 - Existing Landing
 - Planned Landing
 - Planned Road
 - Upgrade Road
 - Built Road
 - Built Track
 - Public Road - Sealed
 - Public Road - Metalled
 - Rivers
 - Waterbody
 - Streams
 - Stocked
 - NonProductive
 - Contours
 - 5m
 - 20m (Index)

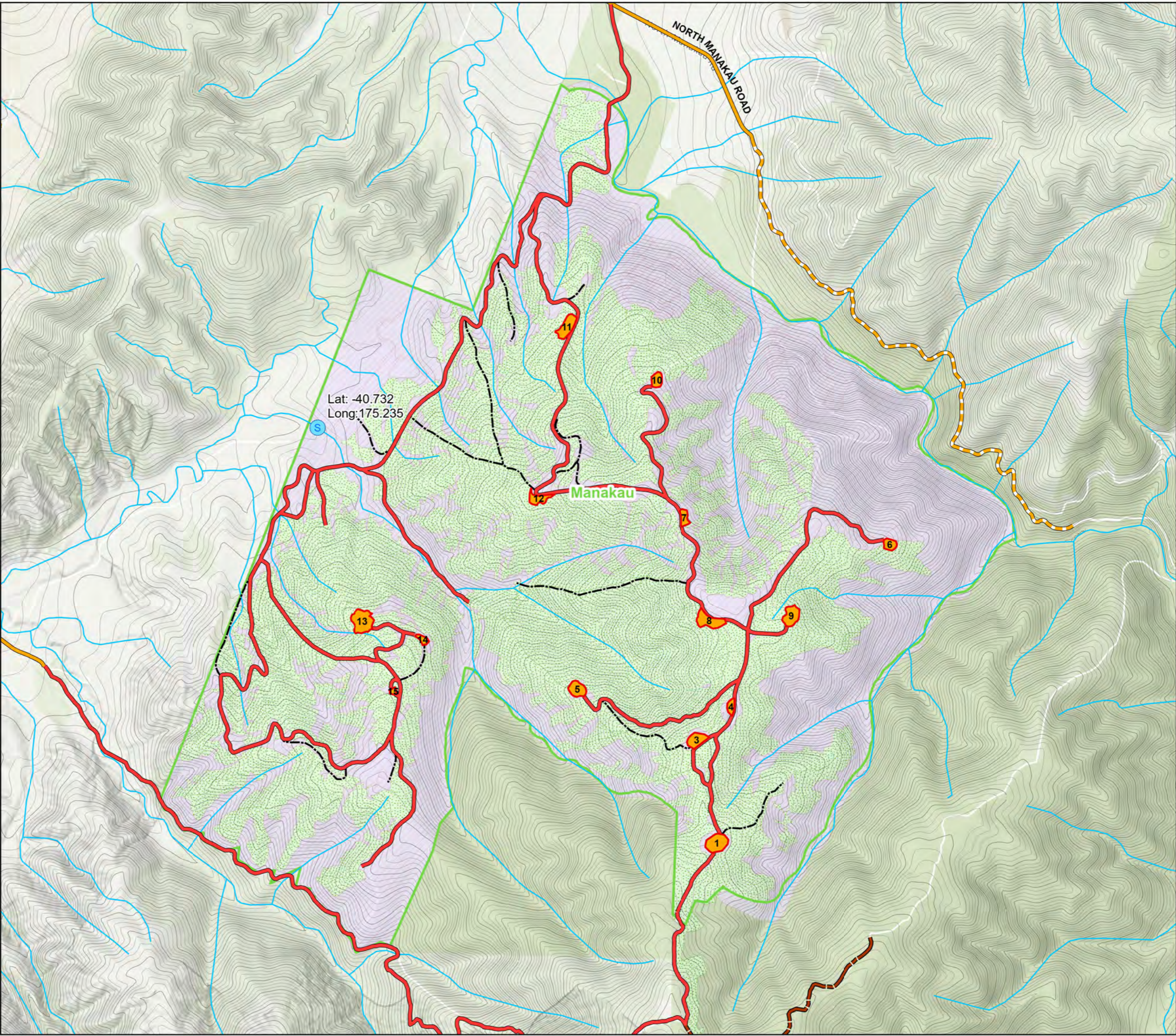
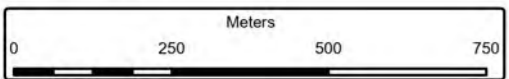


Manakau SHMAK Map

1:12,000



- Legend
- Norsewood Estate Ltd
 - SHMAK Site
 - Existing Landing
 - Built Road
 - Built Track
 - Unmaintained Road
 - Public Road - Sealed
 - Public Road - Metalled
 - Streams
 - Stocked
 - NonProductive
 - Contours
 - 5m
 - 20m (Index)



Mangaroa SHMAK Map

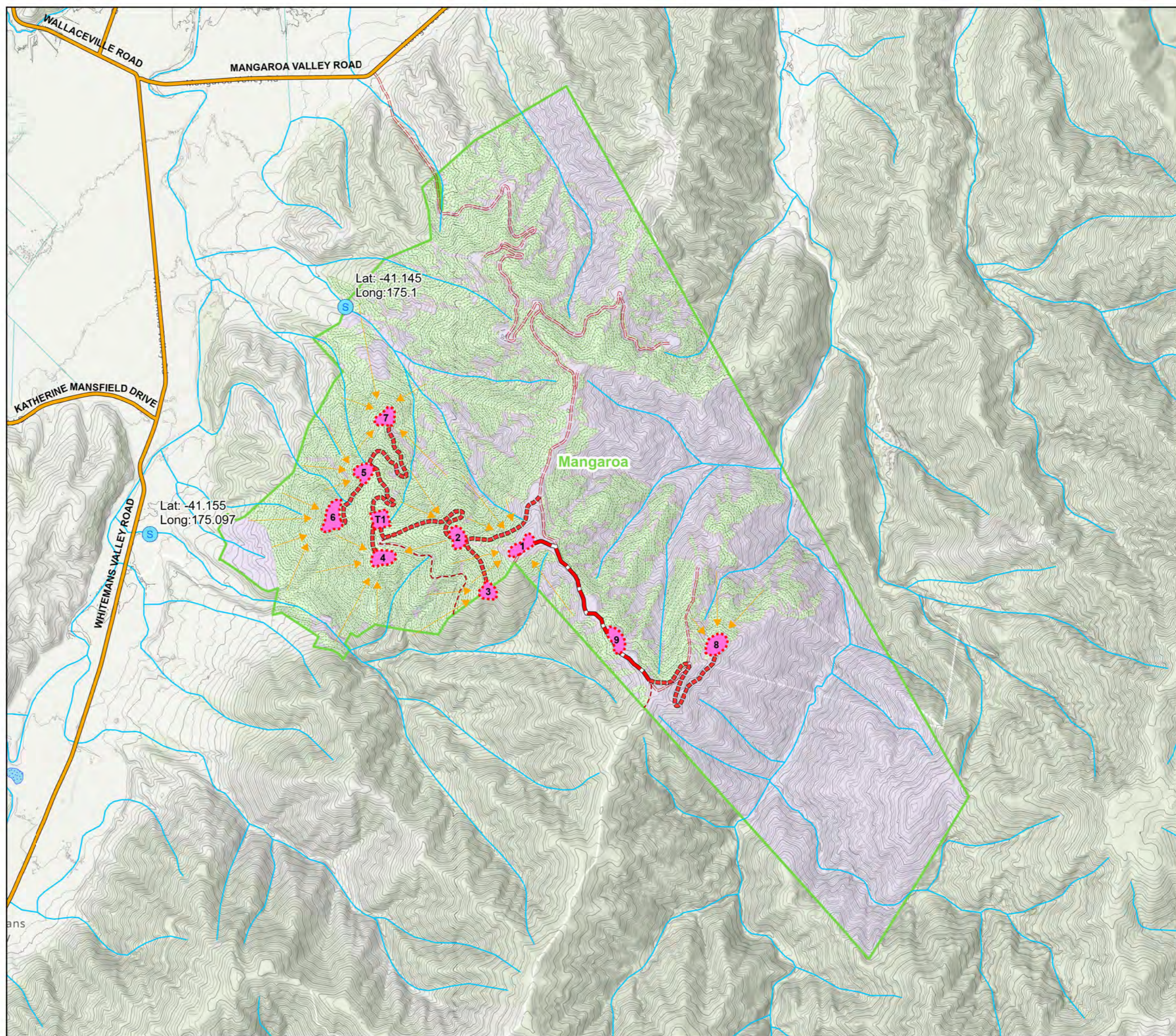
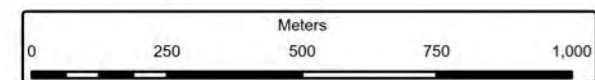
1:14,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- SHMAK Site
- Hauler
- Planned Landing
- Planned Road
- Upgrade Road
- Public Road - Sealed
- Forest Road
- 4wd Track
- Waterbody
- Streams
- Stocked
- NonProductive
- Contours
 - 5m
 - 20m (Index)



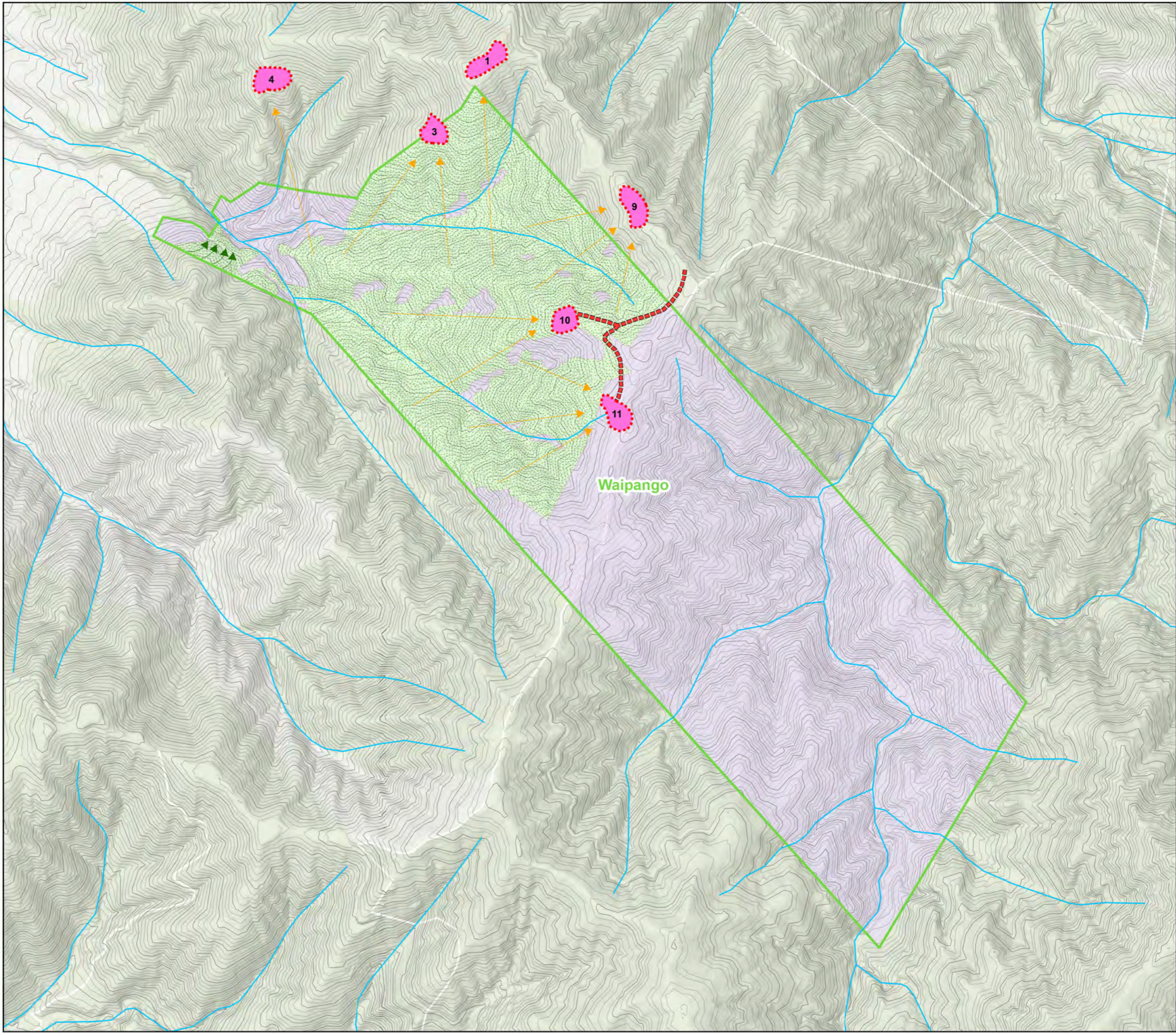
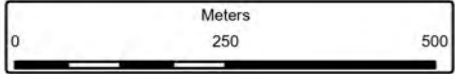
Waipango SHMAK Map

1:9,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Ground Based
 - Hauler
 - Planned Landing
 - Planned Road
 - Streams
 - Stocked
 - NonProductive
- Contours
- 5m
 - 20m (Index)



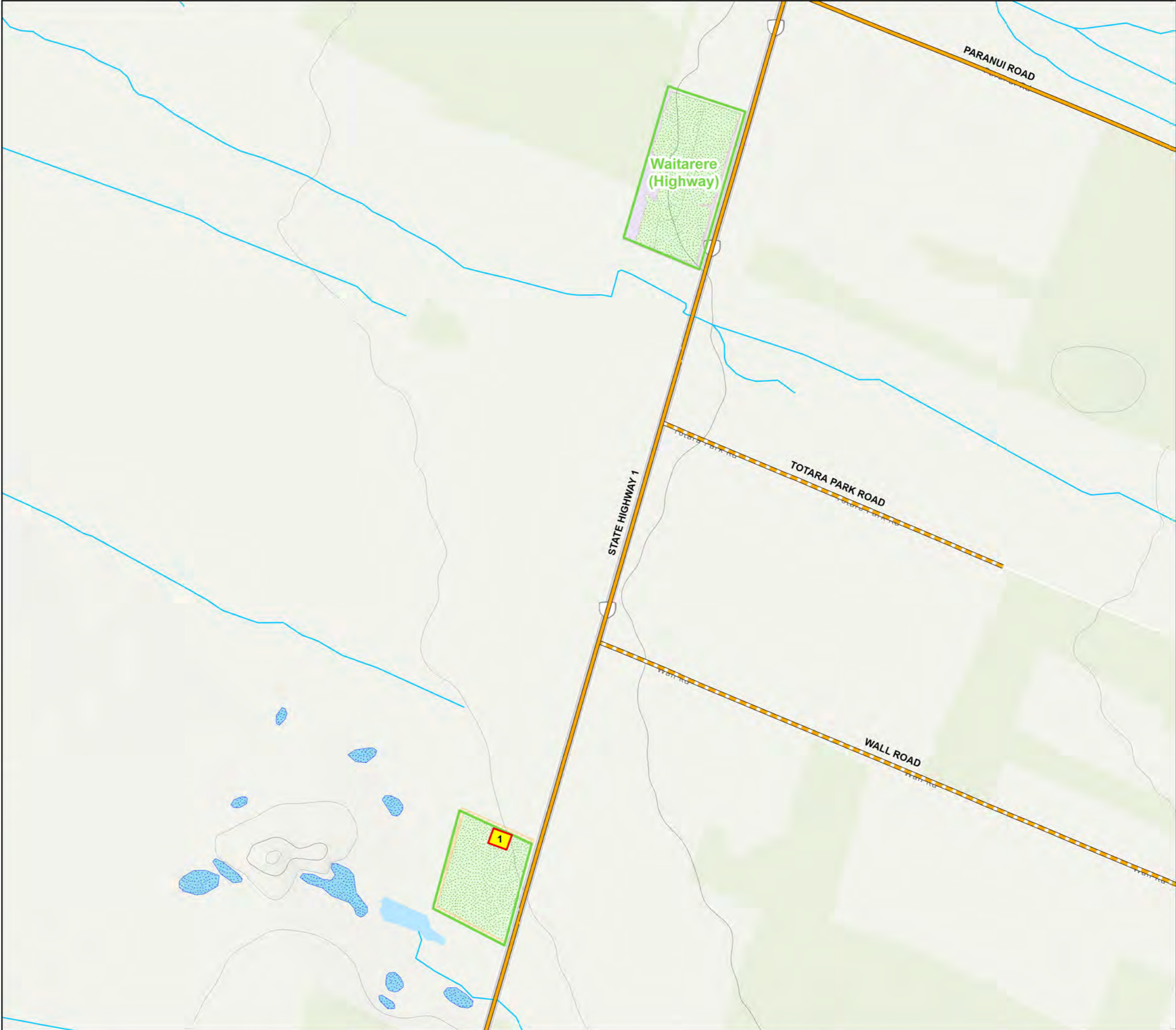
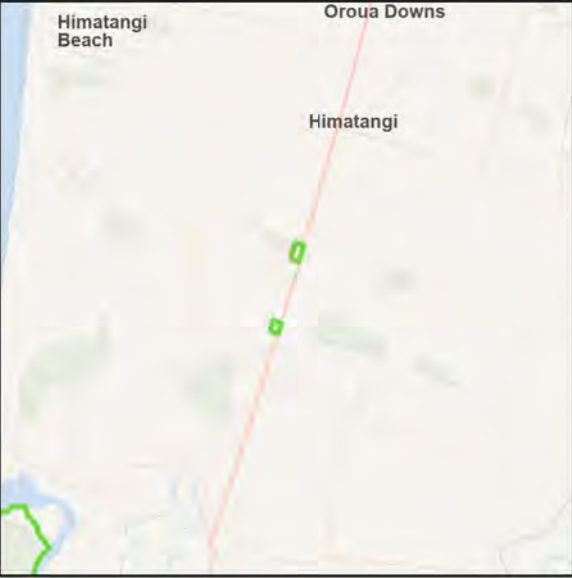
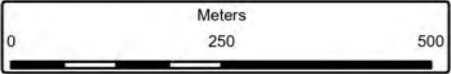
Waitarere (Highway) SHMAK Map

1:9,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Built Landing
 - Public Road - Sealed
 - Public Road - Metalled
 - Waterbody
 - Streams
 - Stocked
 - Landbank
 - NonProductive
- Contours
- 5m
 - 20m (Index)



Waitarere (North) SHMAK Map

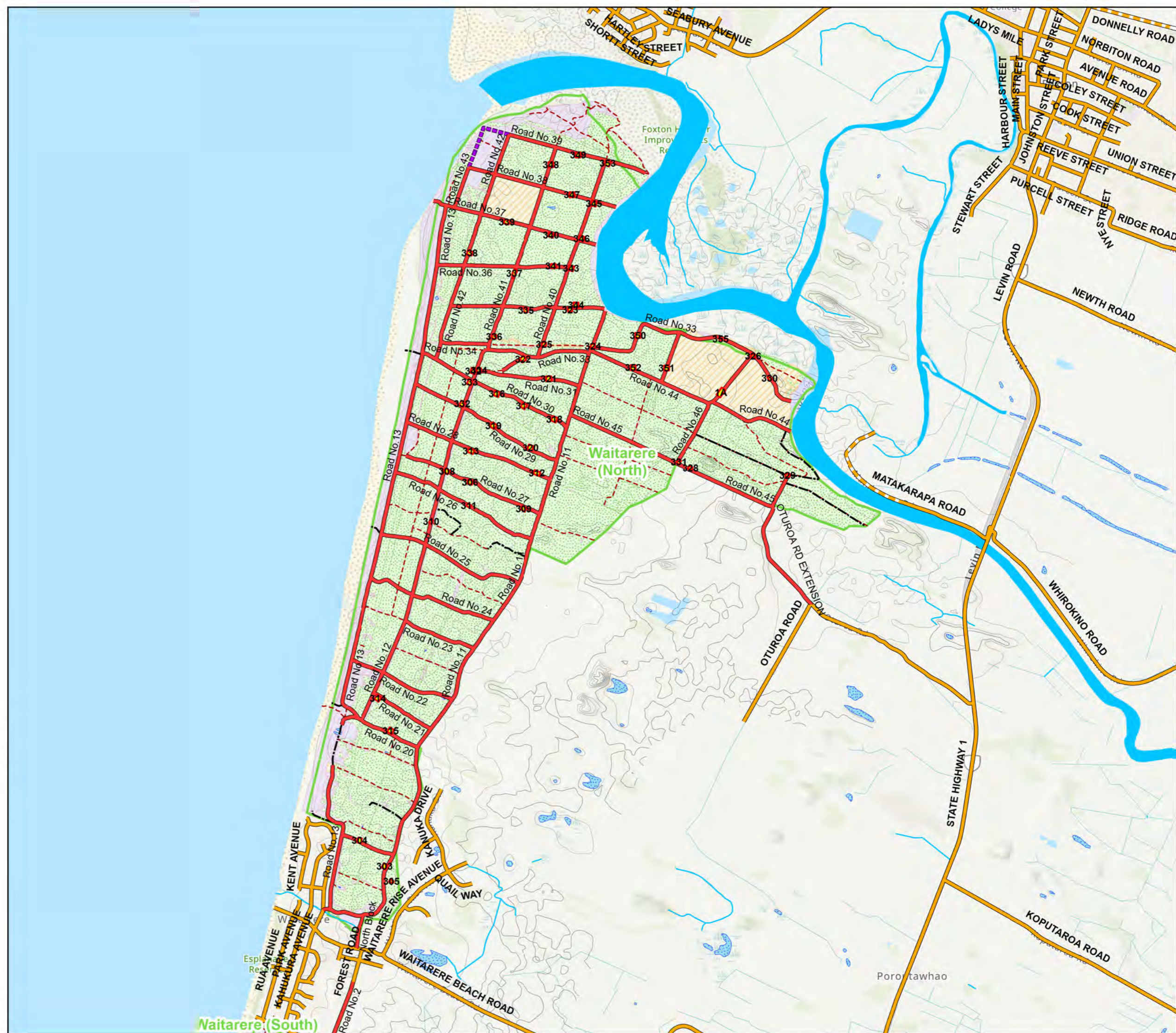
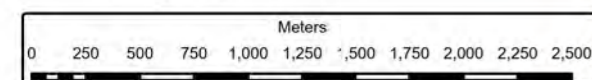
1:35,000



Date: 1/11/2020

Legend

-
- Norsewood Estate Ltd
 Built Landing
 Built Road
 Built Track
 Decommissioned Road
 Public Road - Sealed
 Public Road - Metalled
 Public Road - Unmetalled
 4wd Track
 Rivers
 Waterbody
 Streams
 Stocked
 Landbank
 NonProductive
Contours
 5m
 20m (Index)



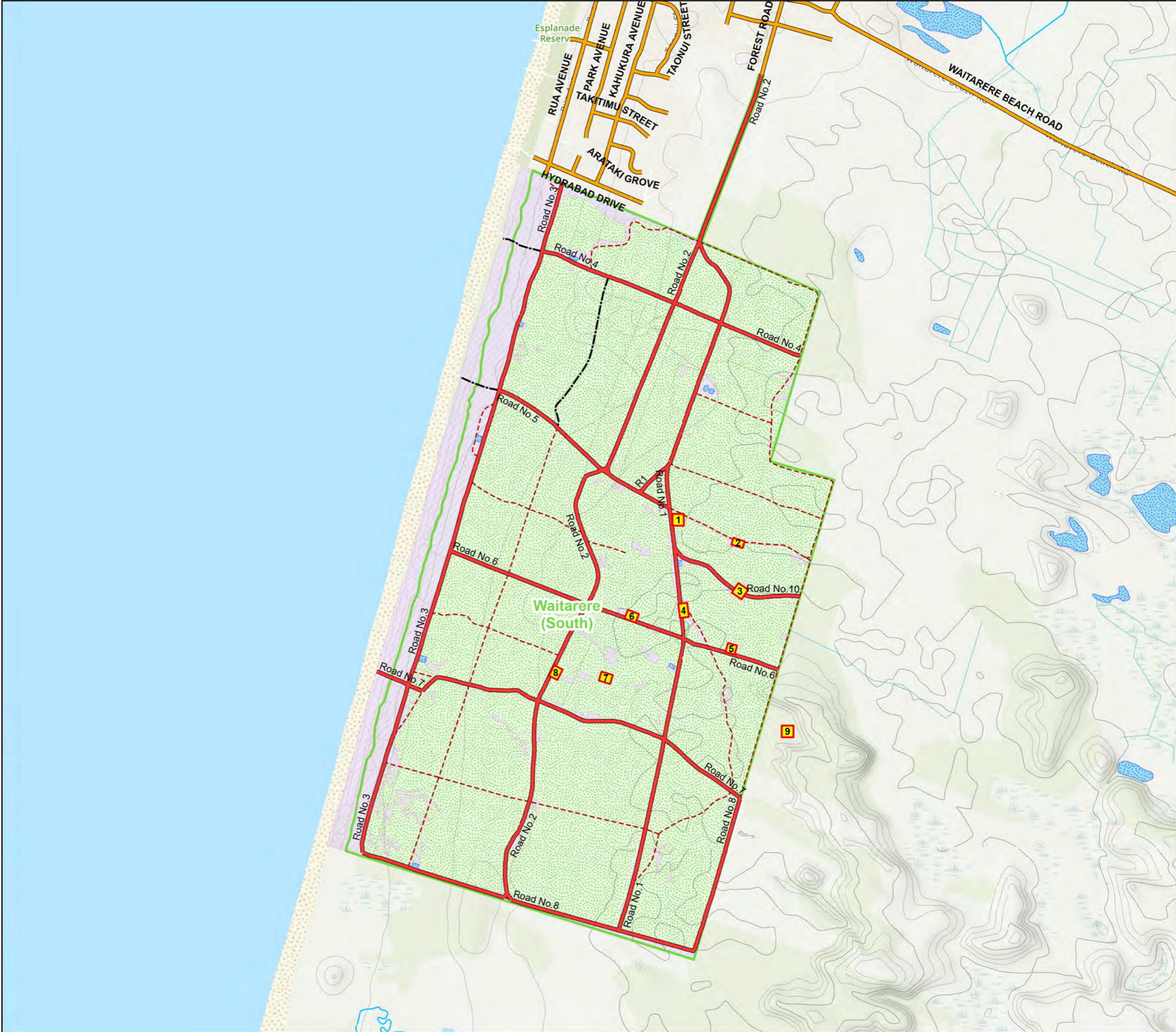
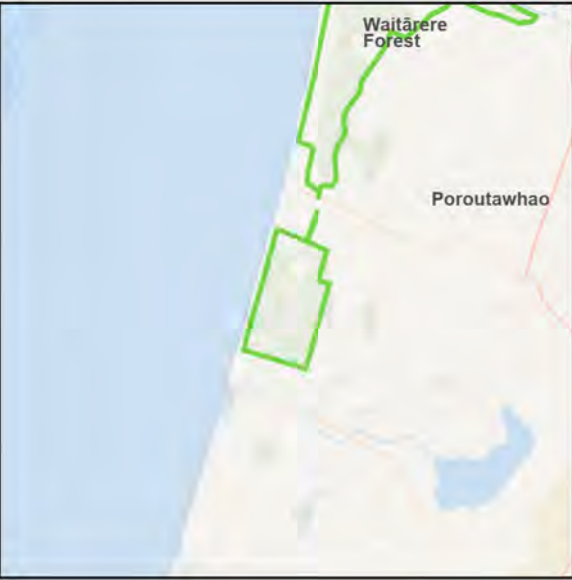
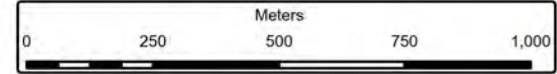
Waitarere (South)
SHMAK Map

1:15,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Built Landing
 - Built Road
 - Built Track
 - Public Road - Sealed
 - 4wd Track
 - Waterbody
 - Streams
 - Stocked
 - NonProductive
- Contours
- 5m
 - 20m (Index)



Appendix 5: Maps – Erosion Susceptibility Classification (ESC)



Angora Stand Map

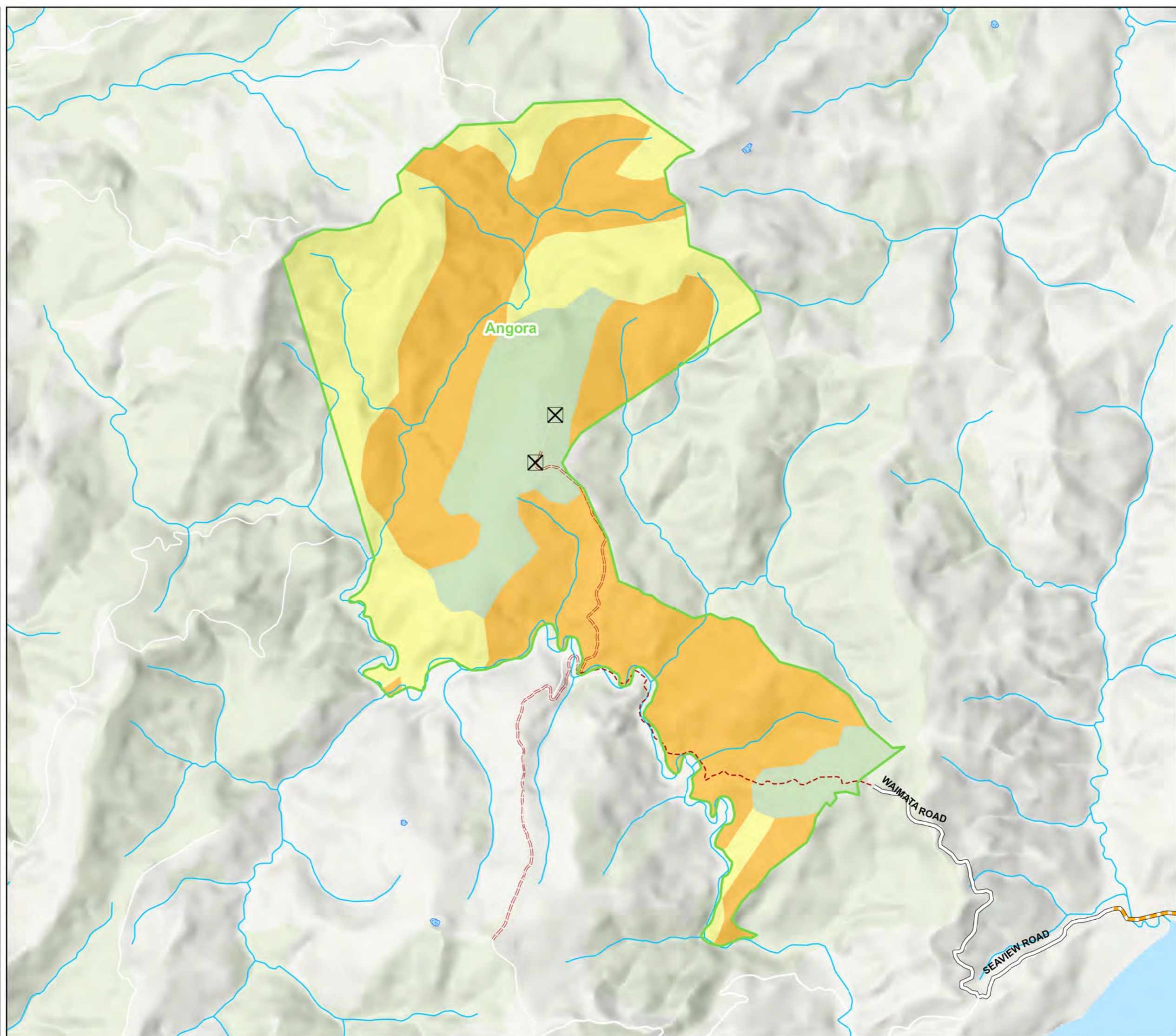
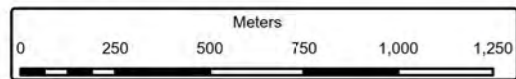
1:20,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Gate
- Public Road - Metalled
- Public Road - Unmetalled
- Forest Road
- 4wd Track
- Waterbody
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Bowlands Stand Map

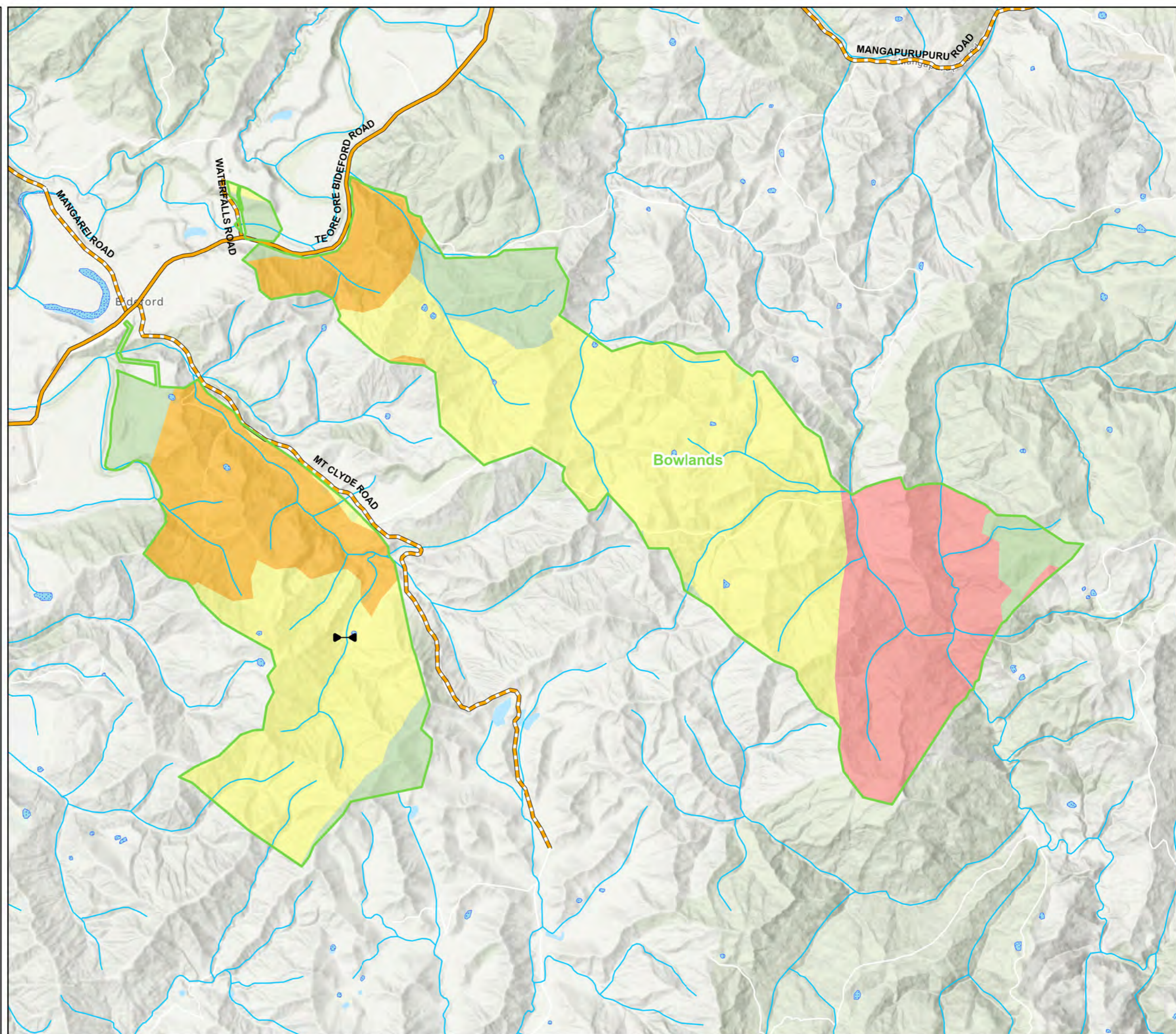
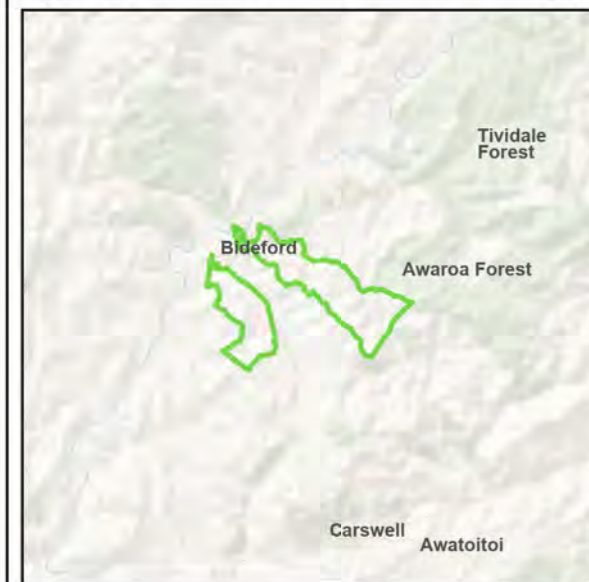
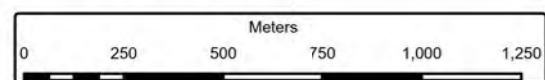
1:19,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Culvert crossing
- Public Road - Sealed
- Public Road - Metalled
- Waterbody
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Fell Crag Stand Map

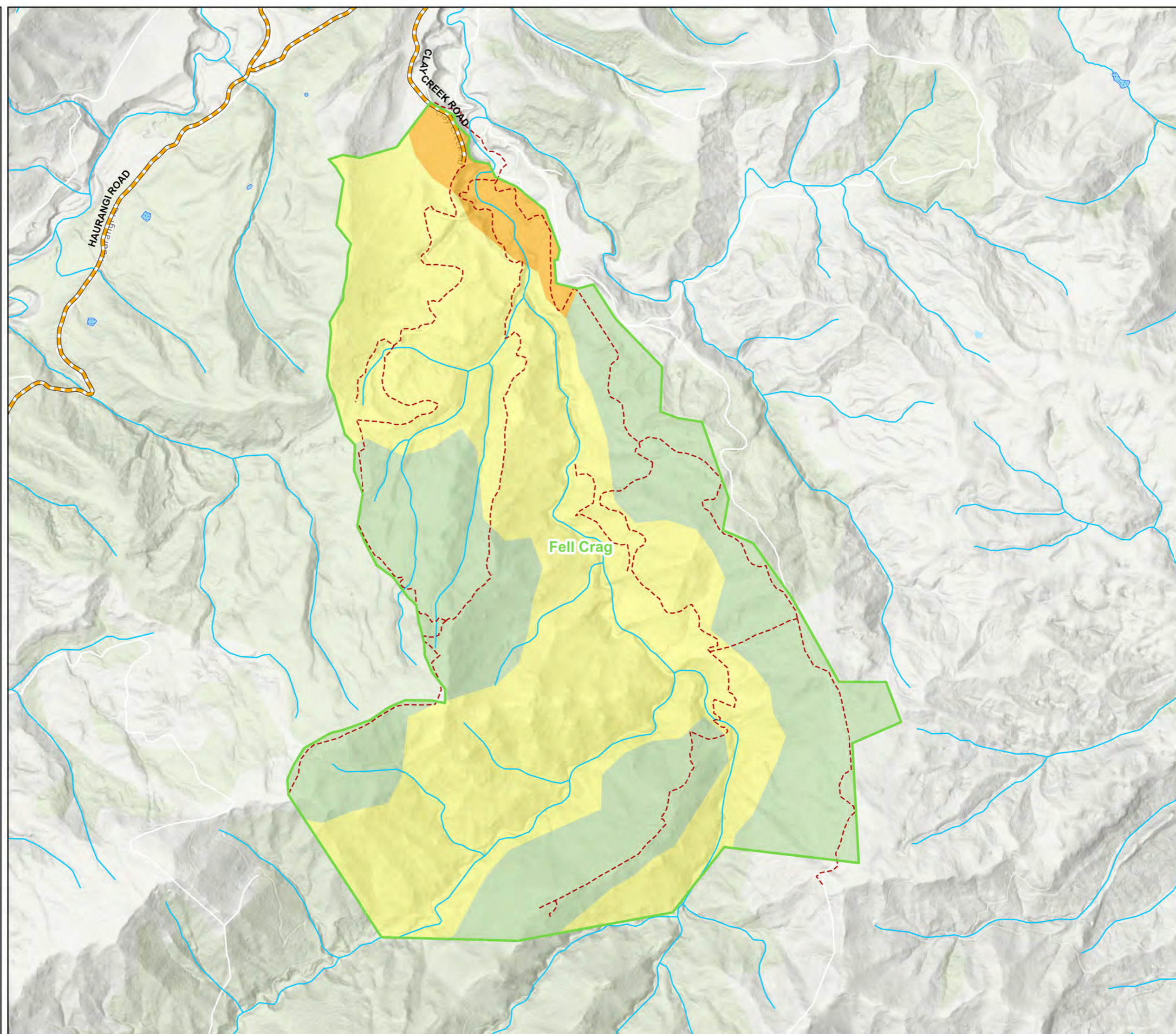
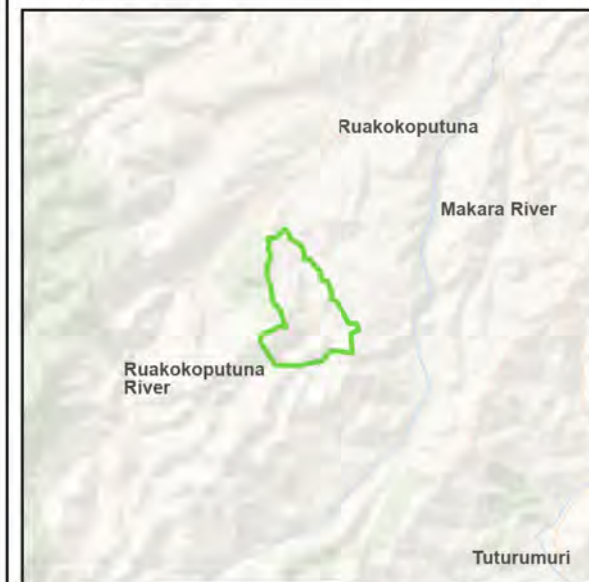
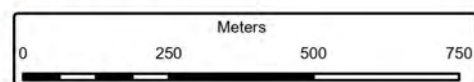
1:13,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Public Road - Metalled
- 4wd Track
- Waterbody
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Kohitere Stand Map

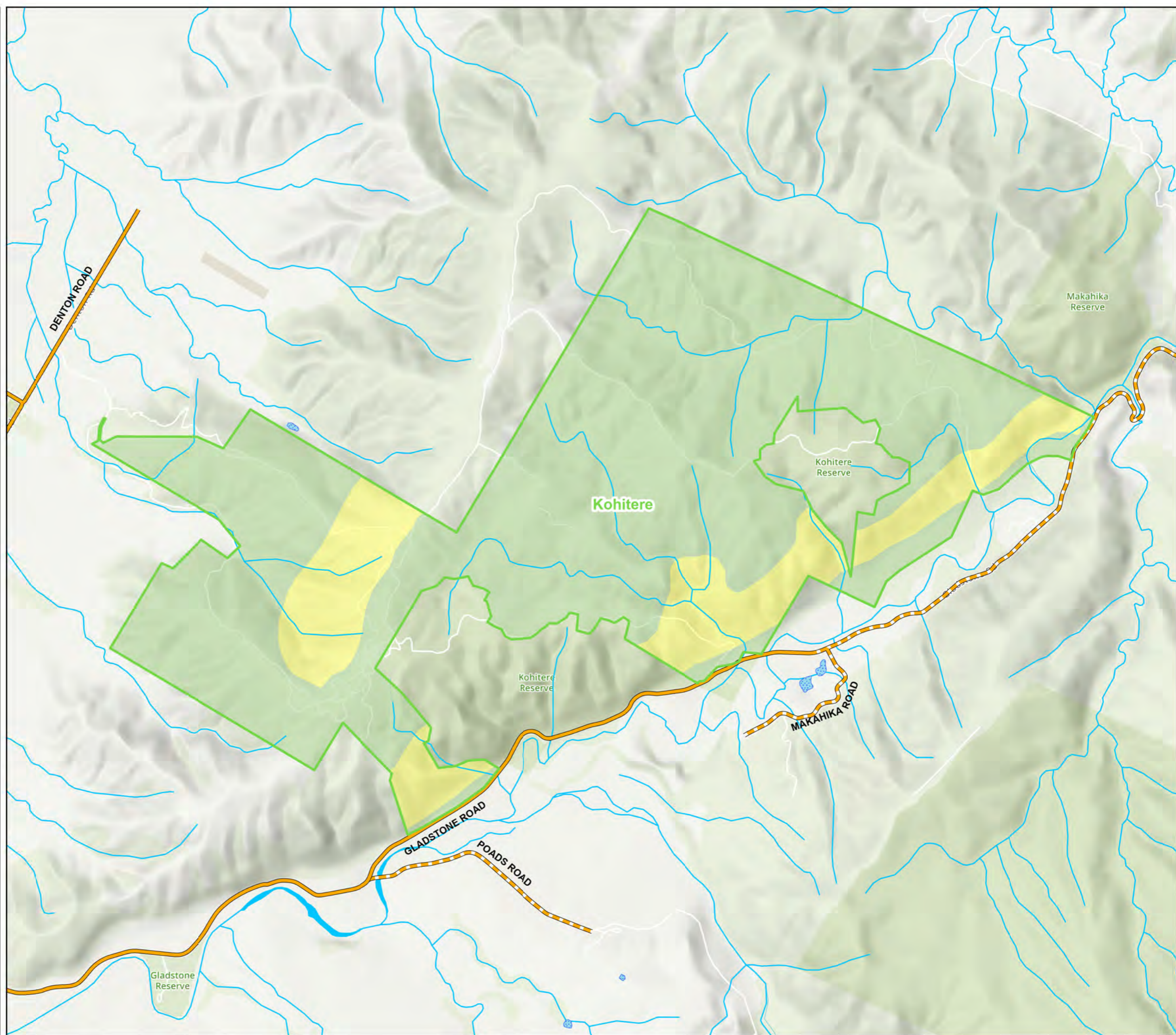
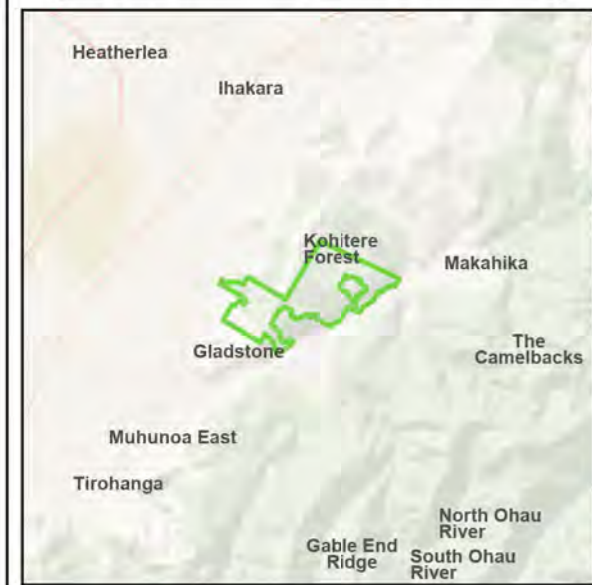
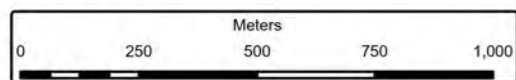
1:16,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Public Road - Sealed
- Public Road - Metalled
- Waterbody
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Manakau Stand Map

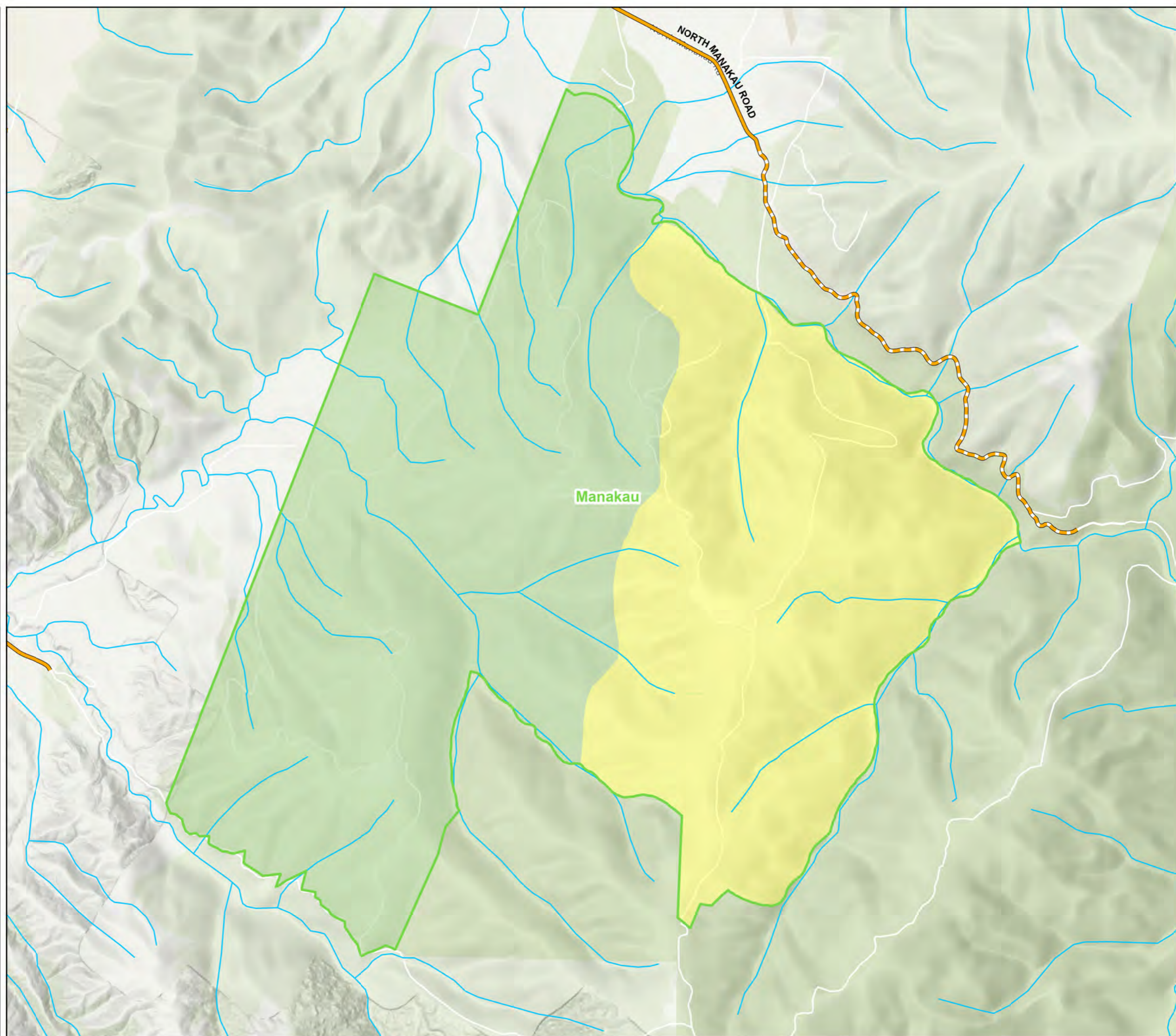
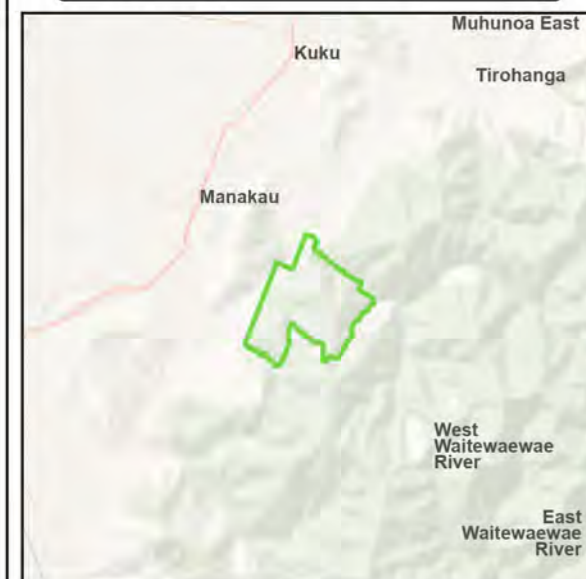
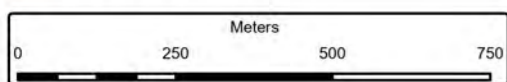
1:12,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Public Road - Sealed
- Public Road - Metalled
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Mangaroa Stand Map

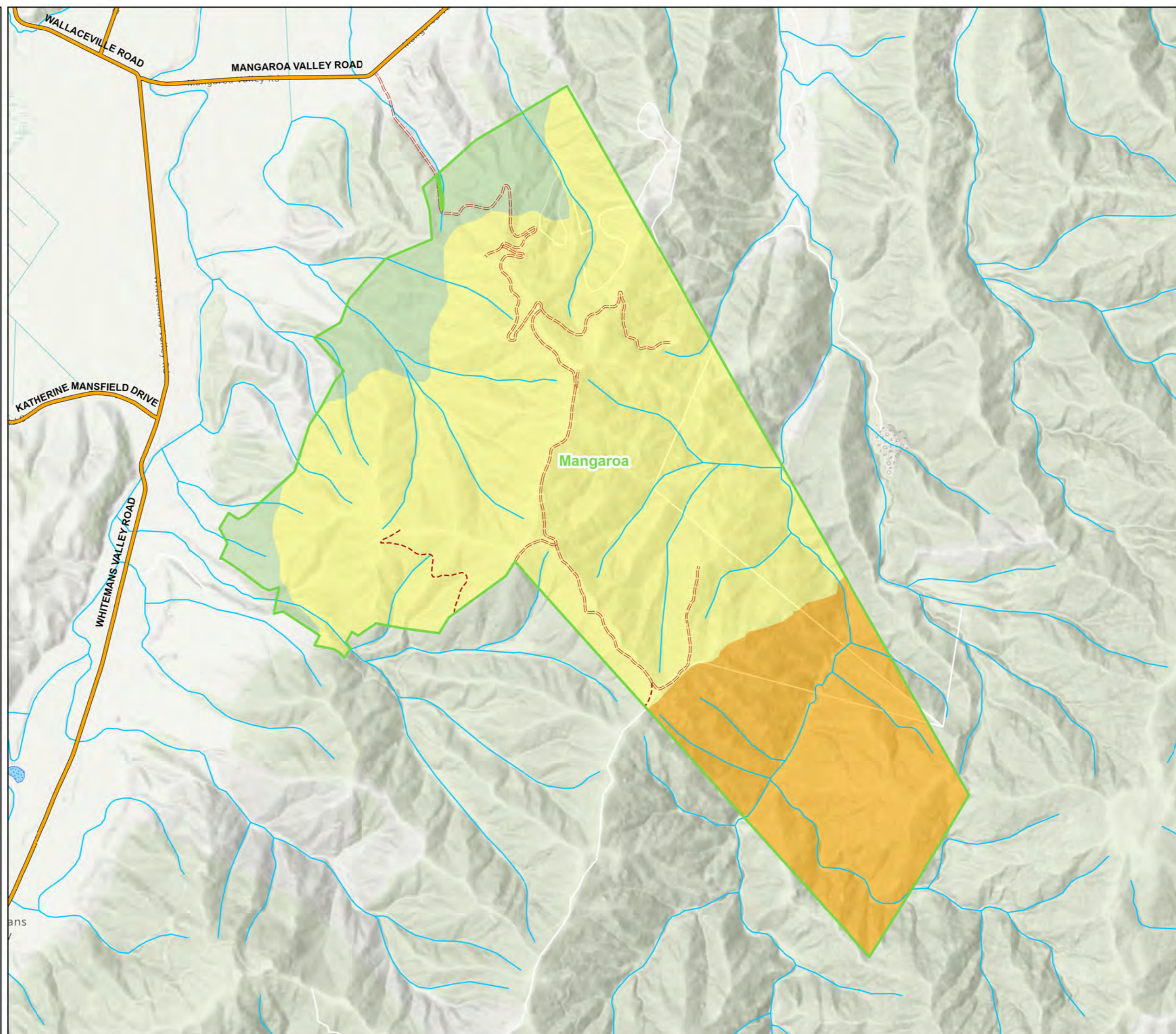
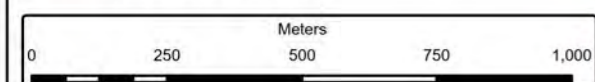
1:14,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Public Road - Sealed
- Forest Road
- 4wd Track
- Waterbody
- Streams
- Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



Waipango Stand Map

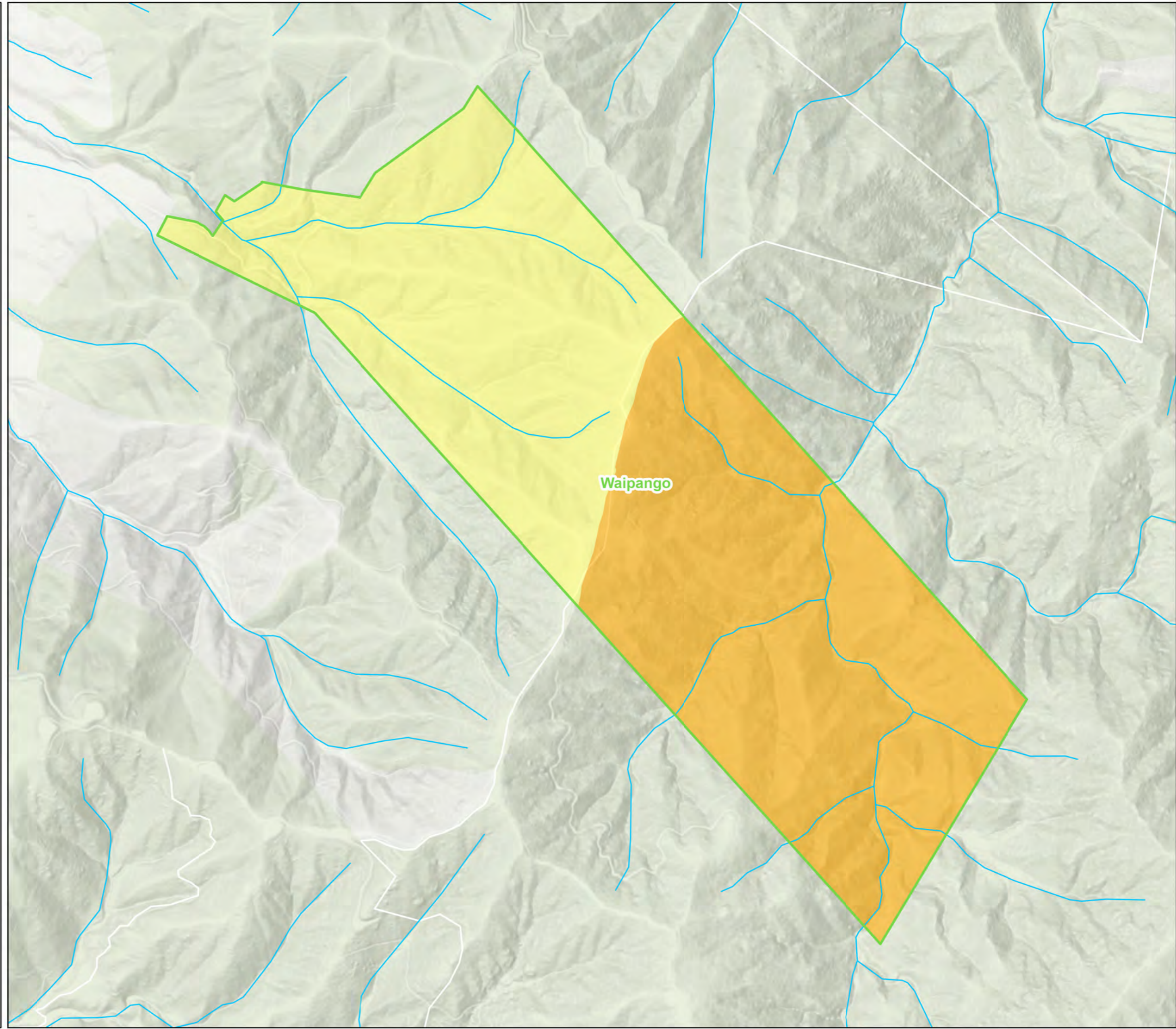
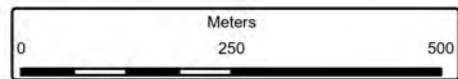
1:9,000



Date: 1/11/2020

Legend

- Norsewood Estate Ltd
- Streams
- Erosion Susceptibility**
 - Very High
 - High
 - Moderate
 - Low
- Town
- Ice
- Shingle
- Water
- New Zealand Hillshade



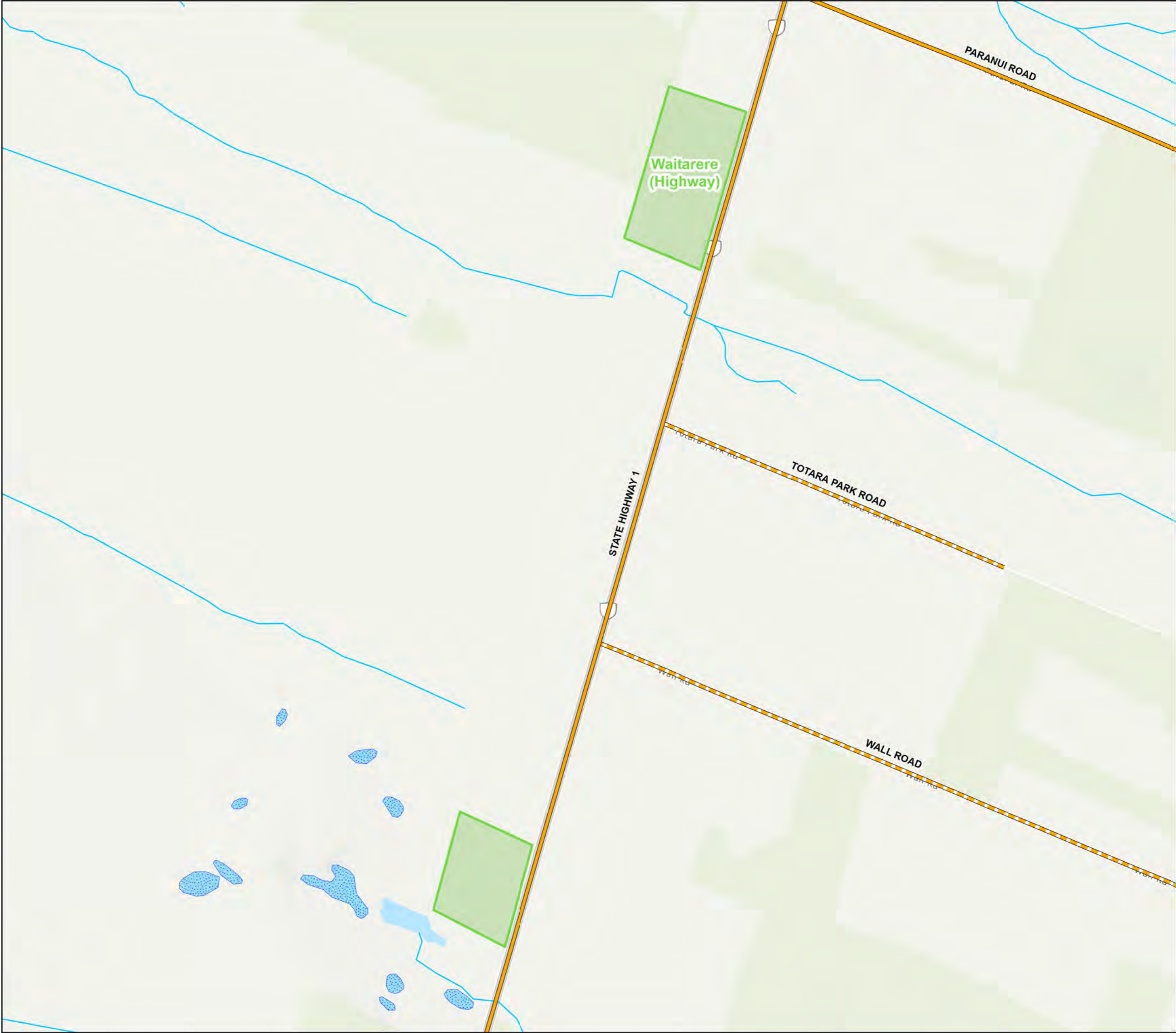
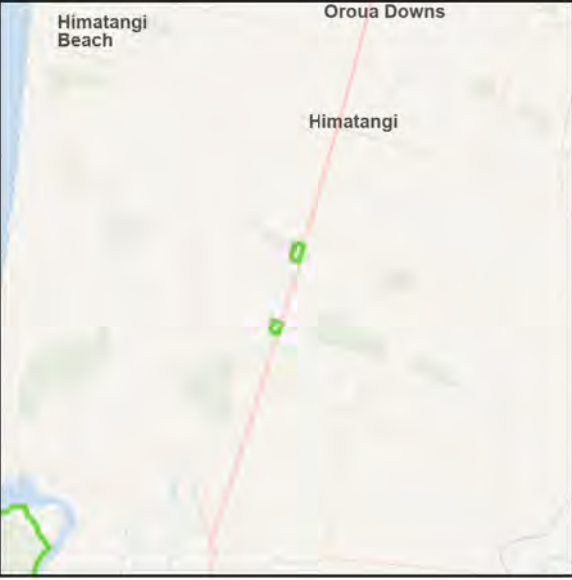
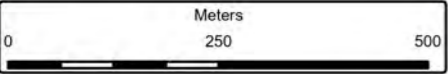
Waitarere (Highway) Stand Map

1:9,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Public Road - Sealed
 - Public Road - Metalled
 - Waterbody
 - Streams
 - Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
 - Town
 - Ice
 - Shingle
 - Water
 - New Zealand Hillshade



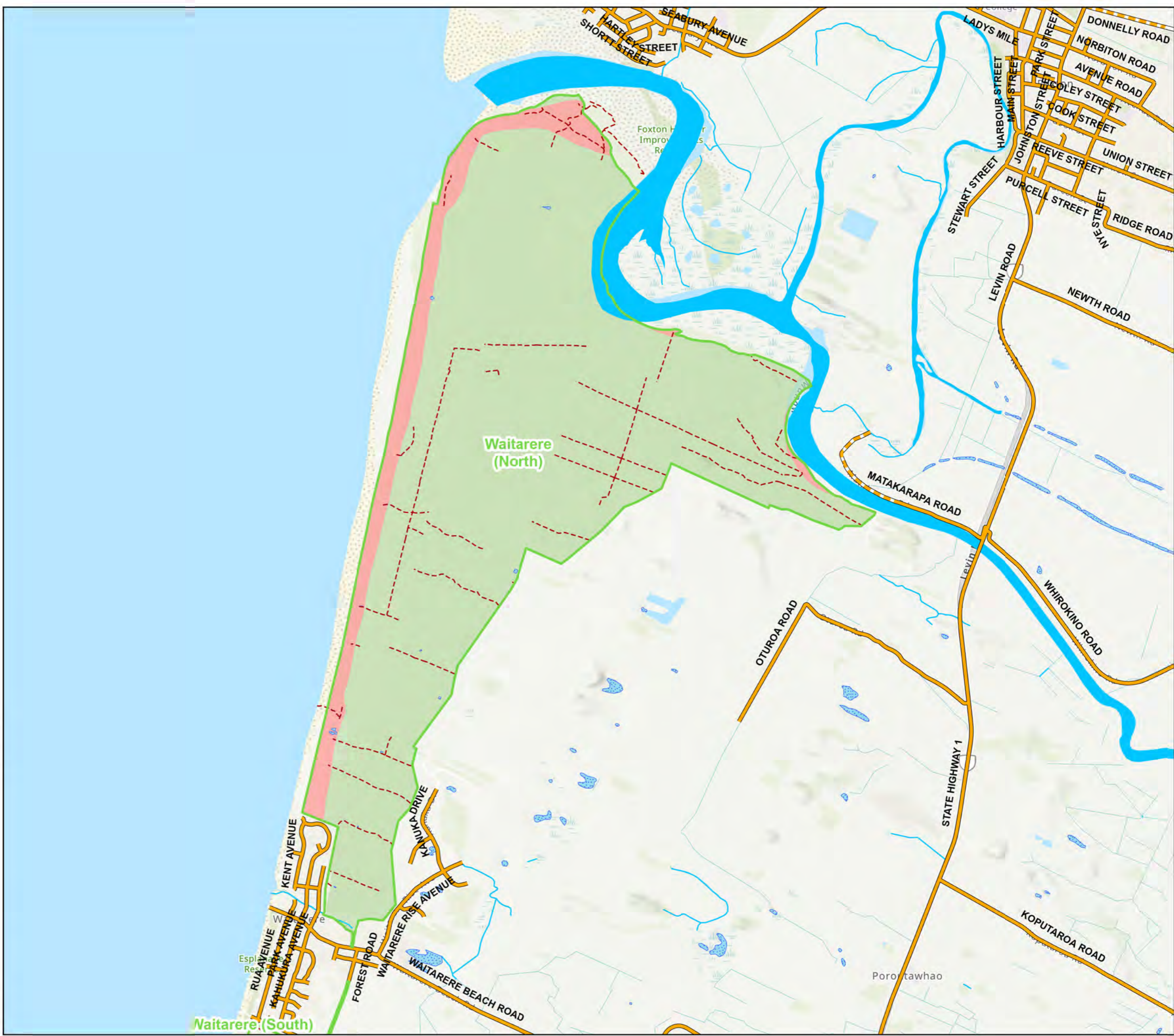
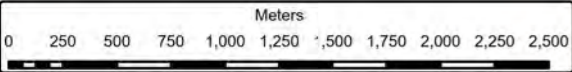
Waitarere (North) Stand Map

1:35,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Public Road - Sealed
 - Public Road - Metalled
 - Public Road - Unmetalled
 - 4wd Track
 - Waterbody
 - Streams
 - Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
 - Town
 - Ice
 - Shingle
 - Water
 - New Zealand Hillshade



Waitarere (South) Stand Map

1:15,000



Date: 1/11/2020

- Legend
- Norsewood Estate Ltd
 - Public Road - Sealed
 - 4wd Track
 - Waterbody
 - Streams
 - Erosion Susceptibility
 - Very High
 - High
 - Moderate
 - Low
 - Town
 - Ice
 - Shingle
 - Water
 - New Zealand Hillshade

