

Waikato District Council

# WAIKATO DISTRICT PLAN REVIEW SIGNIFICANT NATURAL AREAS ASSESSMENTS -SUPPLEMENTARY REPORT

24 JUNE 2021



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## WAIKATO DISTRICT PLAN REVIEW



### SIGNIFICANT NATURAL AREAS ASSESSMENTS – SUPPLEMENTARY REPORT

Waikato District Council

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REV	DATE	DETAILS
1	24/06/2021	Significant Natural Areas Assessments – Supplementary Report

	NAME	DATE	SIGNATURE
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Reviewed by:	Claire Cunningham	24/06/2021	

This report ('Report') has been prepared by WSP exclusively for Waikato District Council ('Client') in relation to submissions received in connection with the Waikato District Plan review relating to Significant Natural Areas ('Purpose') and in accordance with the purchase order PSP000088 under the LASS Contract. The findings in this Report are based on and are subject to the assumptions specified in the Report and property mapping and details provided by the Client. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.



# TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	METHODOLOGY.....	2
2.1	GENERAL APPROACH.....	2
2.2	SURVEY METHODOLOGY.....	2
3	RESULTS.....	4
4	DISCUSSION.....	6
5	CONCLUSIONS.....	7
6	LIMITATIONS.....	8
APPENDIX A: SIGNIFICANT NATURAL AREAS		
	GROUND TRUTHING SURVEYS.....	10
8	HORAHORA ROAD.....	11
53B	MCGOVERN ROAD.....	19
87	RATAROA ROAD.....	27
314	MURRAY ROAD.....	35
536	WAINUI ROAD.....	44
747	RUTHERFURD ROAD.....	54
862B	WAIKARE ROAD.....	62
970	OLD MOUNTAIN ROAD.....	71
1807	WHAANGA ROAD.....	80
5254	STATE HIGHWAY 22.....	90
	BATHURST RESOURCES LTD & BT MINING LTD.....	99
	RANGITAHU PENINSULA.....	108



# 1 INTRODUCTION

The notified Proposed Waikato District Plan (PWDP) identified Significant Natural Areas (SNA's) on District Planning maps. The SNA boundaries shown on the Planning Maps within the PWDP are based on data provided to Waikato District Council (WDC) by Waikato Regional Council (WRC). It is understood from subsequent discussions held with WRC personnel on 10<sup>th</sup> September 2020 that the SNA boundaries were largely based on a desktop assessment of aerial images with very limited ground truth survey.

Many of the property owners that had SNA's identified on their property made submissions during the notification period. These included property owners contesting the quality of the vegetation and habitats within their property and the accuracy of the district planning maps in terms of the definition of valuable vegetation/habitat versus vegetation/habitat of minimal value that should not have been included. In some cases, property owners identified both vegetation/habitat that should be excluded from the SNA and other vegetation/habitat that was of high value that had not been included and which they considered should have been included.

The purpose of this report is to document the results of ground truth surveys that have been undertaken in response to submissions received from property owners with respect to Significant Natural Areas (SNA's) that have been identified on their property as part of the District Plan Review.

The scope of this report covers the following:

- survey methodology in Section 2;
- survey results presented as a summary in Section 3, with site specific reports provided in Appendix A; and
- a brief discussion the results in Section 4 and conclusions in Section 5.

This report is a supplementary report to the report "*Waikato District Plan Review – Significant Natural Areas Assessments*" prepared by WSP for WDC and dated 17<sup>th</sup> October 2020. This report provided an assessment of 40 sites prior to the District Plan Hearing 21a: Significant Natural Areas, that commenced on 20<sup>th</sup> November 2021. The additional site visits and the preparation of this report is provided in response to the direction of the Hearing Panel to complete the review of all sites where submissions were made concerning SNA's on submitter properties. This report covers an additional 12 sites. The report documents the results of additional ground truth surveys considered necessary to provide responses to submitters as directed by Council WDC officers.

## 2 METHODOLOGY

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### 2.1 GENERAL APPROACH

Site visits were made to selected properties where owners had made submissions in response to the PWDP, as directed by Waikato District Council. A total of 12 properties were visited. The visits were undertaken by John Turner, Ecologist (Technical Principal – Ecology) and Susan Chibnall, Policy Planner (Waikato District Council). In all cases site visits were undertaken with the property owner.

Within the Waikato District those areas of vegetation or habitat worthy of meeting a recognisable level of value are those meeting the criteria listed in Section 11A of the Waikato Regional Policy Statement (WRPS), as included in Appendix 2 of the Proposed District Plan as “Criteria for determining Significance of Indigenous Biodiversity”. The aim of the site visit was to determine if the areas of land within the property identified on the planning maps within the PWDP (either in part or in their entirety) met the criteria in Section 11A of WRPS. In undertaking the site assessments, the recording methodology used broadly followed that used in other SNA surveys previously undertaken within the district. However, some modifications to the assessment methodology have been made to reflect the specific objectives of the site visit in the context of the District Plan Review process as described below.

It is important to note that the purpose of the site visits in the context of the District Plan review process was to determine whether the vegetation or habitats within the specific properties that were the subject of the submission met the criteria in Section 11A of the WRPS. The intent was not to undertake a full and detailed assessment of the entire SNA which in many cases extended well beyond the property boundary. Only the ecological information and data that was required to determine if the vegetation and habitats within the specific property met the criteria of Section 11A of the WRPS and make adjustment to the boundary of the SNA where appropriate, was gathered. Consequently, this assessment does not necessarily provide a comprehensive assessment of the entire SNA that could encompass a given property, and it does not provide an assessment of the validity and extent of the SNA beyond the property boundary.

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### 2.2 SURVEY METHODOLOGY

Appendix A provides a record of the site assessments that were undertaken on selected properties where submissions concerning SNA's were made. A total of 12 sites were surveyed. The Appendix contains details of the ecosystems found within the property, the vegetation and fauna, as well as site management. It provides an assessment of the vegetation and habitats against the criteria in Section 11A of WRPS and determination of whether the vegetation or habitat within the property meets the criteria. Each site report includes a property map showing the property boundary and the extent of the SNA within the property. Where a recommendation is made to remove or alter the boundary of the SNA, a second map is provided showing the recommended SNA boundary, including sites where entire removal of the SNA is recommended.

Due to the large size of many of the properties and reporting time constraints of the statutory process a comprehensive ground truth survey of entire properties was often not possible. The

information gathered during field surveys was therefore supported by information provided during discussions with land owners, existing reports, review of aerial photographs and historical aerial images available via the website <https://www.waikatolass.co.nz/shared-services/historical-aerial-photos/>.

### 3 RESULTS

The results of the ground truth surveys are summarised in Table 3.1 below.

**Table 3.1 Summary of findings of the ground truth surveys**

Property	Recommendation	Reason
8 Horahora Road	Remove SNA from property.	Dry/ damp pasture that does not meet SNA criteria.
53B McGovern Road	Amend SNA boundaries to exclude low value vegetation.	Most of the areas of podocarp broadleaved forest within the SNAs meet at least one criterion however, small areas dominated by pasture and supporting sparse tree cover do not.
87 Rataroa Road	Amend SNA boundaries to exclude low value vegetation.	Some of the vegetation within the SNA's includes kanuka/manuka scrub over pasture and exotic plantation forest.
314 Murray Road	Amend SNA boundaries to exclude low value vegetation.	Some of the vegetation within the SNA's includes kanuka/manuka scrub over pasture and exotic weed communities.
536 Wainui Road	Amend SNA boundary to exclude areas of landscape planting and woodlot within the property.	Areas of predominantly landscape planting along the property driveway and around the woodlot are not representative of natural vegetation and are essentially part of a garden environment.
747 Rutherford Road	Amend SNA boundary to exclude areas that have been cleared of vegetation and areas where vegetation clearance has been consented.	Based on a previous ecological assessment by Kessels Associates, areas of vegetation – mainly kanuka forest and scrub over pasture, have been consented for clearance and much of this vegetation has subsequently been removed. These areas have removed from the SNAs.
862B Waikare Road	Amend SNA boundary to exclude areas of kanuka/manuka over pasture.	Extensive areas of the property comprise kanuka/manuka that has regenerated over grazed pasture within the property.
970 Mountain Road	Amend SNA boundaries to exclude areas dominated by gorse, manuka and exotic weed species.	Areas dominated by exotic weeds, gorse and manuka, including areas of manuka planted with the intention of future cropping, are currently included within the SNA's.

1807 Whaanga Road	Amend SNA boundary to exclude the property buildings, garden areas and areas of recent kanuka/manuka regeneration.	SNA boundaries extend over the main dwelling, areas of garden and recent kanuka/manuka regeneration that do not meet the SNA criteria.
5254 State Highway 22	Amend SNA boundary to exclude areas of kanuka/manuka over pasture.	The property has a history of vegetation clearance and kanuka/manuka/totara scrub regeneration over pasture that do not meet the SNA criteria.
Bathurst Mining	Amend SNA boundaries to exclude areas dominated by exotic forest and scrub and low value wetland areas.	SNA boundaries include areas that currently do not meet SNA criteria or that will have reduced value and viability as a result of mining.
Rangitahi Peninsula	Amend SNA boundaries to exclude areas of low value vegetation that do not meet SNA criteria.	The coastal vegetation that has been mapped has highly variable character and quality. Areas that have been cleared, that are dominated by weed species or are kanuka/manuka over grassland do not meet the criteria.

## 4 DISCUSSION

The following is a summary of the recommendations concerning the SNA boundaries within the selected properties visited as a result of the submissions received concerning the PWDP:

- 11 SNA boundaries to be amended to reflect a revised assessment of ecological values within the property;
- 1 SNA to be removed in its entirety from the property;

The high degree of variability between sites surveyed in terms of the validity of the SNA boundaries when assessed against the Section 11A criteria further confirms that the data provided to WDC by WRC cannot be relied upon to accurately reflect the boundaries of SNA's within the District. None of the SNA boundaries surveyed remained as per the District Planning Maps following ground truth survey conducted in preparing this report. In effect the SNA boundaries provided by WRC represent "potential" SNA's until detailed ground truth surveys are undertaken. Consequently, SNA boundaries shown on the Proposed District Planning Maps cannot be relied upon for planning purposes until ground truth surveys have been undertaken.

A key issue encountered on many properties, particularly in hill country, was the presence of extensive areas of kanuka and manuka within SNAs. Much of this is over pasture that provides grazing for stock. Typically, these areas have very low species diversity and reflect historic land clearance followed by regeneration. While kanuka and manuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being significantly impacted by the disease, either nationally, or within the Waikato District. Both species are very common within the District. There appears to be little justification at this time for including areas of kanuka and manuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA. There are still extensive areas of kanuka/manuka forest/scrub in hill country areas and inclusion of these areas in SNA's only based on the threatened status of these species would designate large areas of relatively low value habitat as SNA's. In many areas these species grow as pasture weeds and in areas where canopy has established still form part of the available grazing within farms.

## 5 CONCLUSIONS

The additional sites surveyed in response to submissions received relating to SNA boundaries as part of the District Plan Review showed a high degree a variability in terms of the accuracy of the SNA boundaries shown on the Proposed District Planning Maps. The results of these site visits undertaken during the preparation of this report further confirm that SNA boundaries shown on the Proposed District Planning Maps cannot be relied upon for planning purposes until comprehensive ground truth surveys have been undertaken.

## 6 LIMITATIONS

This report ('Report') has been prepared by WSP New Zealand Limited ('WSP') exclusively for Waikato District Council ('Client') in accordance with the Waikato District Council purchase order PSP000088 under the LASS Contract ('Agreement').

### Permitted Purpose

This Report has been prepared expressly for the purpose of detailing the results of site-specific surveys of Significant Natural Areas with selected properties that made submissions in response to the notified Proposed Waikato District Plan ('Permitted Purpose'). WSP accepts no liability whatsoever for the use of the Report, in whole or in part, for any purpose other than the Permitted Purpose. Unless expressly stated otherwise, this Report has been prepared without regard to any special interest of any party other than the Client.

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# APPENDIX A: SIGNIFICANT NATURAL AREAS GROUND TRUTHING SURVEYS

This appendix provides ground truth survey reports for each property visited in response to submissions made regarding Significant Natural Areas as part of the Waikato District Plan Review.

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## 8 HORAHORA ROAD

Visit date	Owner and property address
10 <sup>th</sup> February 2021	Simpsons Farm 8 Horahora Road, Rangariri West.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Dry and damp pasture.	

## SECTION B FIELD SURVEY ASSESSMENT

### Boundary alignment notes

SNA forms part of an area of pasture grazed by cattle and consequently is not fenced.

### Vegetation types, key species and species of notes

The SNA comprises a narrow strip of dry pasture and an old stream channel that is adjacent to, and parallel, with the Whangape Stream.

The dry and damp pasture is dominated by pasture grasses and pasture weeds. No standing water at the time of visit. Within the old stream channel reed canary-grass (*Phalaris arundinacea*) and paspalum (*Paspalum dilatatum*) are abundant, with spear thistle (*Cirsium vulgare*) and curled dock (*Rumex crispus*) occurring frequently. Ryegrass and (*Agrostis sp.*) are also present, with small patches of yellow flag (*Iris pseudacorus*). Many of the species present reflect the periods when soil conditions are wetter as a result of that periodic inundation. However, the area is functionally damp pasture used for grazing and dominated by pasture grasses and weed species. It does not provide habitat for native plant communities and is likely to be of limited value for indigenous fauna.

### Fauna & habitat types observed

No fauna observed except welcome swallow flying overhead.

### Landowner feedback during site visit

Property owner indicated that the old stream occasionally floods with water when the adjacent river overtops but is dry for most of the time and forms part of the pasture area. It is not directly connected to the Whangape Stream.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input checked="" type="checkbox"/> None present.	N/A
Stock	1 2 3 4	<input checked="" type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	Yes, grazed by cattle. Part of a pasture.
Fencing	1 2 3 4	<input checked="" type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	N/A, within an area of pasture.
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	N/A
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	N/A
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	N/A
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	N/A
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	N/A

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	No
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the ecological sustainability of the ecosystem is threatened.</p>	No
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>• Classed as threatened or at risk, or</li> <li>• Endemic to the Waikato region, or</li> <li>• At the limit of their natural range.</li> </ul>	No
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	No
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	No
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>• Wastewater treatment;</li> <li>• Wastewater renovation;</li> <li>• Hydroelectric power lakes (excluding Lake Taupo);</li> <li>• Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No, vegetation characteristic of dry and damp pasture grassland that does not support wetland indigenous plant communities or provide habitat for indigenous fauna.

CRITERIA		ASSESSMENT
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	No
10	It is an area of indigenous vegetation or habitat that forms part of an ecological sequence, that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

None of the vegetation/habitat within the SNA boundary meet SNA criteria.

### SNA Assessment

The dry and damp pasture are highly modified ecosystems. The area is dominated almost exclusively by exotic pasture and weed species. It is recommended that the entire SNA is removed.



## SECTION D MAPS AND PHOTOGRAPHS

Property map - 8 Horahora Road (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Grasses and pasture weeds within old stream channel. Dry grassland on higher ground to the left.



Photo 2: Grazed pasture within old stream channel.



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The SNA covers an area of dry and damp pasture within an old stream channel dominated by exotic pasture grasses and weed species. Remove SNA from property.

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## 53B MCGOVERN ROAD

Visit date	Owner and property address
19 <sup>th</sup> February 2021	David Gibberd 53B McGovern Road, Te Kauwhata
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest	

### Boundary alignment notes

There are several SNAs within the property. The SNA boundaries extend over secondary podocarp broadleaved forest. The areas of forest include an area of forest on the eastern edge of the property that is part of a large area of forest that extends well beyond the boundary of the property.

### Vegetation types, key species and species of note

The property supports several remnant regenerating areas of podocarp broadleaved forest in varying condition and supporting varying species diversity, within hillslope pasture. The smaller areas of forest have lower species diversity and some of the forest patches are grazed beneath, while others have been fenced.

The large area of secondary broadleaved podocarp forest on the eastern edge of the property supports a wide variety of native tree and shrub species including tawa (*Beilschmiedia tawa*), totara (*Podocarpus totara*), kahikatea (*Dacrycarpus dacrydioides*), rimu (*Dacrydium cupressinum*), rewarewa (*Knightia excelsa*), puriri (*Vitex lucens*), kanuka (*Kunzea robusta*), lancewood (*Pseudopanax crassifolius*), mahoe (*Melicytus ramiflorus*), nikau palm (*Rhopalostylis sapida*) and *Metrosideros* spp., along with tree ferns mamaku (*Cyathea medullaris*), silverfern (*Cyathea dealbata*) and wheki (*Dicksonia squarrosa*).

The other areas of forest support a smaller number of the above species and are less diverse.

### Fauna & habitat types observed

New Zealand pigeon and tui.

### Landowner feedback during site visit

The property owner has fenced some of the areas of forest and excluded stock.



Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input checked="" type="checkbox"/> None present.	Not assessed.
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input checked="" type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	Stock have access to some areas of forest.
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input checked="" type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	Some areas of forest are fenced others are not fenced and grazed.
Canopy condition	1 2 3 4	<input checked="" type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Varies significantly between areas of forest.
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Varies significantly between the areas of forest.
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Not assessed.
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Not assessed.

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	No
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.</p>	No
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	<p>Yes. Podocarp broadleaved forest supports <i>Metrosideros spp.</i> all of which are classified as Threatened. In most cases due to threat from myrtle rust.</p> <p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p>
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	Yes. Podocarp broadleaved forest.
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	No
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No
<p>7</p> <p>It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.</p>	Yes. This criterion applies to the SNA on the eastern boundary of the property.

CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Yes. Applies to the large area of forest on the eastern boundary of the property. The other areas of forest have been more modified and do not trigger this criterion.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

Most of the stands of podocarp broadleaved forest merit inclusion within the SNA. However, SNA boundaries should be adjusted to exclude areas that have sparse vegetation cover that are dominated by pasture.

### SNA Assessment

The areas of podocarp broadleaved forest meet at least one of the SNA criteria and merit inclusion within the SNA. Some meet several criteria with the large area of forest on the eastern boundary of the property being particularly noteworthy. However, there are small areas within the SNA boundaries that have sparse forest vegetation cover and are dominated by pasture. It is recommended that these areas are removed from the SNA's.

## SECTION D    MAPS AND PHOTOGRAPHS

Property map - 53B McGovern Road (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Unfenced areas of podocarp forest.



Photo 2: Large area of podocarp broadleaved forest on the eastern edge of the property





Photo 3: Podocarp dominated forest on northern edge of property.



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest meet at least one of the SNA criteria and merit inclusion within the SNA. The large area of forest on the eastern boundary of the property triggers the greatest number of the criteria and is part of an important area of forest in the context of this part of the Waikato. However, there are areas within the SNA boundaries that have sparse forest vegetation cover and are dominated by pasture. It is recommended that these areas are removed from the SNA's.

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## 87 RATAROA ROAD

Visit date	Owner and property address
10 <sup>th</sup> February 2021	Peter Roberts 87 Rataroa Road, Miranda.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Manuka/kanuka scrub Exotic tree plantation	

## SECTION B      FIELD SURVEY ASSESSMENT

### Boundary alignment notes

The property has several SNAs. The SNA boundaries include podocarp broadleaved forest, manuka/kanuka over pasture and exotic plantation.

### Vegetation types, key species and species of note

Podocarp broadleaved forest was clearly visible from an elevated vantage point within the property as were areas of exotic tree plantation and areas dominated by kanuka/manuka.

### Fauna & habitat types observed

Harrier, New Zealand Pigeon.

### Landowner feedback during site visit

The SNA assessment was based primarily on discussion with the Mr Roberts, review of historic aerial photographs and views of vegetation and habitats from an elevated vantage point. Detailed survey of the vegetation was not undertaken. The discussion identified areas of kanuka/manuka scrub over pasture and exotic tree plantation within the SNA boundaries for removal. The areas identified in discussion were cross referenced with historic aerial photographs data 1988. Podocarp broadleaved forest was left within the SNA's while areas of exotic tree plantation and kanuka/manuka removed.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	Not assessed.
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	Not assessed.
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	Not assessed. Mr Robert indicated that some areas of SNA fenced as part of catchment management activities that he is involved with.
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Not assessed.
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Not assessed.
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Not assessed.
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Not assessed.
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Not assessed.

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	No
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.	No
3	<p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>• Classed as threatened or at risk, or</li> <li>• Endemic to the Waikato region, or</li> <li>• At the limit of their natural range.</li> </ul>	<p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p> <p>Likely to be other species classified as Threatened e.g. <i>Metrosideros spp.</i></p>
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	Yes. Podocarp broadleaved forest.
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	<p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>• Wastewater treatment;</li> <li>• Wastewater renovation;</li> <li>• Hydroelectric power lakes (excluding Lake Taupo);</li> <li>• Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No

CRITERIA		ASSESSMENT
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Podocarp broadleaved forest – potentially.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

## Boundary Assessment

Stands of podocarp broadleaved forest meet at least one of the SNA criteria and therefore merit inclusion within the SNA. However, SNA boundaries should be adjusted to exclude manuka/kanuka scrub and areas of exotic plantation forest.

## SNA Assessment

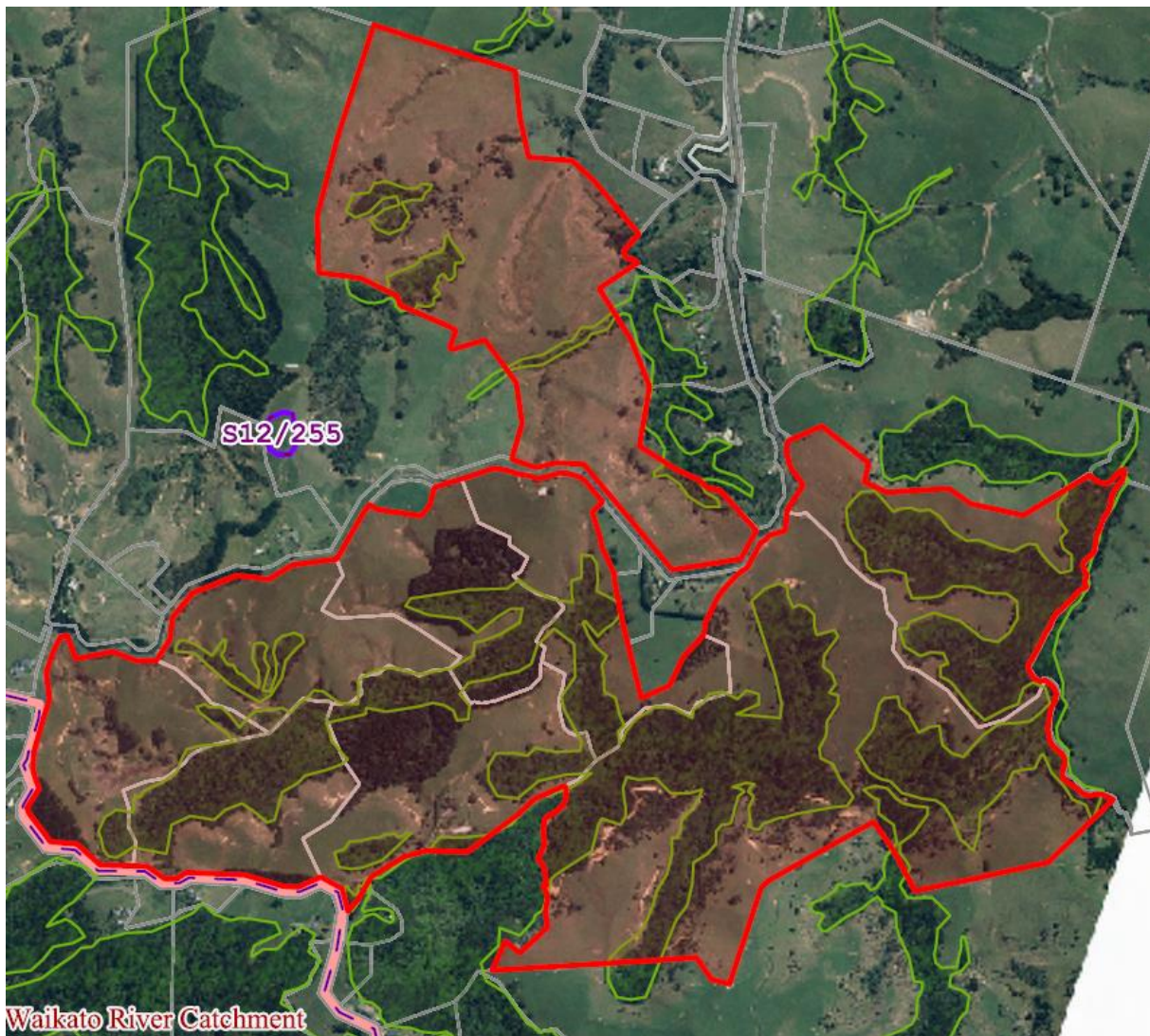
The areas of podocarp broadleaved forest within the property meet at least one of SNA criteria and merit inclusion within the SNA. While manuka and kanuka are classified as At-Risk and Nationally



Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka and kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA. Recommend adjustment of the SNA boundaries to exclude manuka/kanuka scrub and areas of exotic plantation forest.

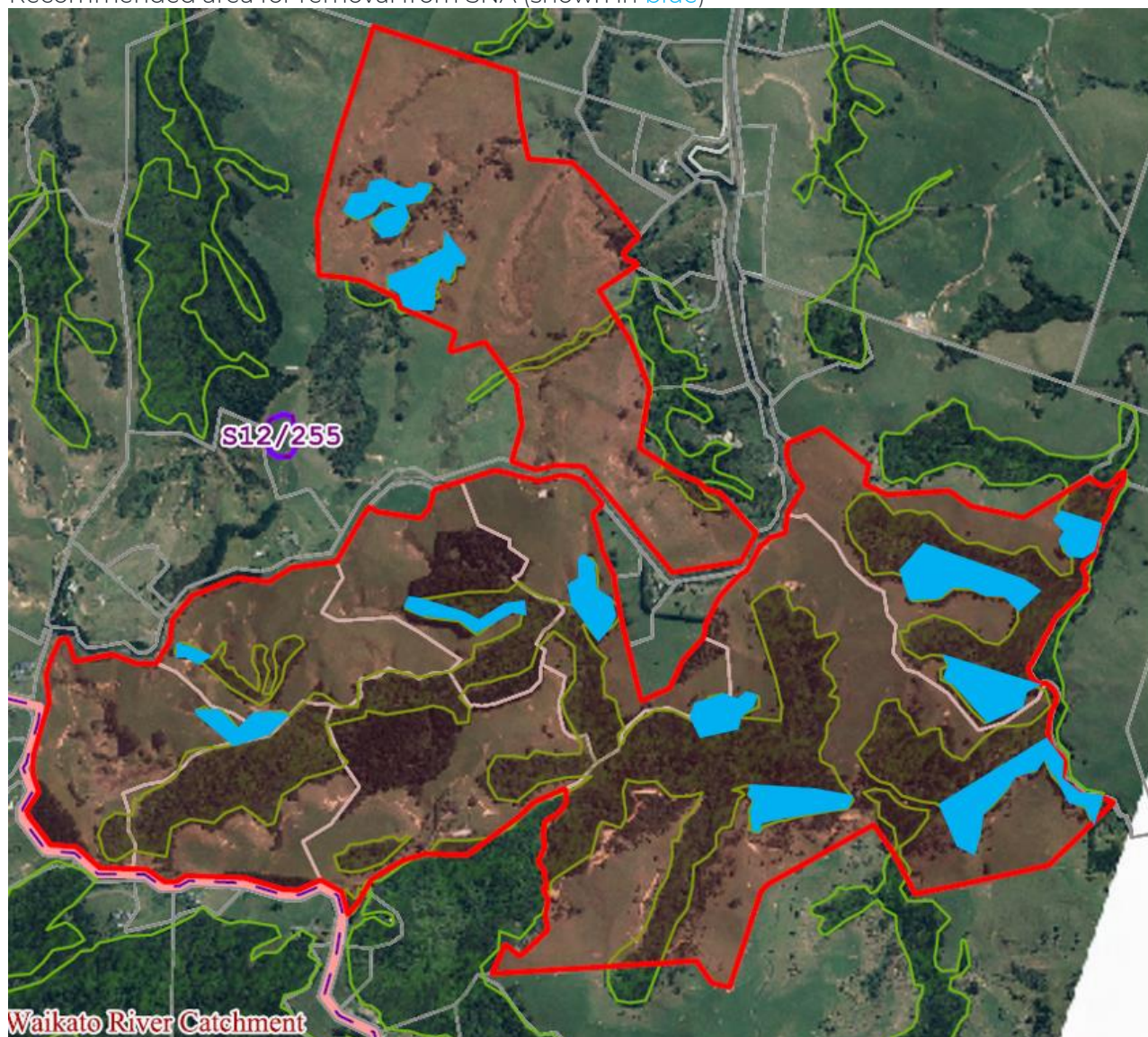
## SECTION D      MAPS AND PHOTOGRAPHS

Property map - 87 Rataroa Road (Property boundary in red, SNA boundary in green)





Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Podocarp broadleaved forest



Photo 2: Podocarp broadleaved forest



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest within the property meeting at least one of SNA criteria merit inclusion within the SNA. For reasons described above it is recommended that areas of kanuka/manuka scrub that have regenerated over pasture and exotic forest plantation be excluded from the SNA's.

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## 314 MURRAY ROAD

Visit date	Owner and property address
24 <sup>th</sup> February 2021	Arthur Wright 314 Murray Road, Pukekawa.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Kanuka/manuka scrub Exotic scrub Wetland	

### Boundary alignment notes

The property has several SNAs that overlay podocarp broadleaved forest, kanuka/manuka scrub, exotic scrub and wetland.

### Vegetation types, key species and species of note

The property supports several small remnants of regenerating podocarp broadleaved forest, the largest being in the north-east corner of the property. In this area there are also extensive areas of kanuka/manuka scrub over pasture with scattered pines, much of which has regenerated since 1988 when pasture was far more dominant in these areas. Wetland also occurs along the north-east boundary however most of it is located beyond the property boundary. In the north-west corner of the property are small patches of kahikatea (*Dacrycarpus dacrydioides*) forest dominated by this species. In the southern part of the property is an area within SNA dominated by weed species including gorse (*Ulex europaeus*), *Berberis* sp., woolly nightshade (*Solanum mauritianum*) and privet (*Ligustrum* sp.). Native species kanuka (*Kunzea robusta*) and titoki (*Alectryon excelsus*) are also present.

The large area of secondary broadleaved podocarp forest on the eastern edge of the property supports a wide variety of native tree and shrub species including tawa (*Beilschmiedia tawa*), kahikatea (*Dacrycarpus dacrydioides*), rimu (*Dacrydium cupressinum*), rewarewa (*Knightia excelsa*), kanuka, mahoe (*Melicotus ramiflorus*), nikau palm (*Rhopalostylis sapida*) and *Metrosideros* spp., along with tree ferns silverfern (*Cyathea dealbata*) and wheki (*Dicksonia squarrosa*). Other smaller areas of secondary native forest also occur in the southern part of the property that support a similar range of species.

### Fauna & habitat types observed

Pukeko, Tui, New Zealand pigeon.

### Landowner feedback during site visit

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	Not assessed.
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	Stock have access to many of the stands of bush with varying impact.
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input checked="" type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	Varies between areas of bush.
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Variable between stands.
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Variable between stands.
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Variable between stands.
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Not assessed
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Variable between stands. Dominant in some localities.

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	No
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.</p>	No
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	<p>Yes. Podocarp broadleaved forest supports <i>Metrosideros</i> spp. all of which are classified as Threatened. In most cases due to threat from myrtle rust.</p> <p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p>
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	Yes. Podocarp broadleaved forest.
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	No
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	Yes – one area of SNA along north-east boundary.
<p>7</p> <p>It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.</p>	No



CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	No.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

The areas of podocarp broadleaved forest, including the stands of kahikatea, meet at least one of the SNA criteria and merit inclusion within the SNA. However, SNA boundaries should be adjusted to exclude manuka/kanuka scrub and areas of exotic scrub.

### SNA Assessment

The areas of podocarp broadleaved forest within the property, including the stands of kahikatea, meet at least one of SNA criteria and merit inclusion within the SNA. While manuka and kanuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka/kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA.

Adjustment of the SNA boundaries to exclude manuka/kanuka scrub and areas dominated by exotic scrub is recommended. It is recommended that the wetland remains with the SNA.

## SECTION D MAPS AND PHOTOGRAPHS

Property map - 314 Murray Road (Property boundary in red, SNA boundary in green)





Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Kanuka/manuka over pasture with scattered pines



Photo 2: Broadleaved forest





Photo 3: Kahikatea forest along northern edge of the property close to Waikato River



Photo 4: SNA dominated by exotic scrub



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest, including the stands of kahikatea, within the property meet at least one of the SNA criteria and merit inclusion within the SNA. For reasons described above it is recommended that areas of kanuka/manuka scrub that have regenerated over pasture and are dominated by exotic scrub be excluded from the SNA's and boundaries adjusted accordingly. It is recommended that the wetland along the north-east boundary remains with the SNA.

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## 536 WAINUI ROAD

Visit date	Owner and property address
4 <sup>th</sup> March 2021	Mark Mathers 536 Wainui Road, Raglan.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Native landscape plantings within garden environment  Podocarp broadleaved forest  Coastal scrub	

## Boundary alignment notes

The SNA boundaries within the property are mainly extensions from areas of native forest to the west. For the most part these have been extended over landscape planting within garden environments.

## Vegetation types, key species and species of note

Most of the vegetation within the SNA has been planted within the garden for landscaping purposes by the owners, albeit the species are mainly native providing habitat for native wildlife. An area of planting along the driveway to the house in the northern part of the property has maturing trees and shrubs including abundant lemonwood (*Pittosporum eugenioides*), with pohutukawa (*Metrosideros excelsa*), kowhai (*Sophora sp.*), rimu (*Dacrydium cupressinum*), cabbage tree (*Chordyline australis*), red matipo (*Myrsine australis*), kawakawa (*Piper excelsum*), karamu (*Coprosma robusta*) and flax (*Phormium tenax*). There are also roses and fruit trees planted along the edges.

The coastal shrubland along the northern edge of the property includes some areas of planting with pohutukawa, flax and *Veronica sp.* On the coastal slope natural regeneration is occurring with species including hangehange (*Geniostoma ligustrifolium*), mahoe (*Melicytus ramiflorus*), mamaku (*Cyathea medullaris*) and bracken (*Pteridium esculentum*). There is a very small area of wetland dominated by raupo (*Typha orientalis*) within this area. It has been artificially created and is too small to be considered significant in itself, however, it adds to the habitat diversity in this area.

Along the driveway in the southern part of the property are a wide variety of native tree and shrub species reflecting regenerating podocarp broadleaved forest mainly on the west side of the drive and planting by the property owners. The vegetation on the west side of the drive is mainly natural forest that forms part of a forest area extending west from the property boundary that was present prior to the revegetation of the property undertaken by the owners. In the north of this area there is also a gum woodlot. The species present in the podocarp broadleaved forest on the western edge of the property include tawa (*Beilschmiedia tawa*), titoki (*Alectryon excelsus*), puriri (*Vitex lucens*), mangeao (*Litsea calicaris*), kanuka (*Kunzea robusta*), mahoe, *Metrosideros sp.* and silverfern (*Cyathea dealbata*). Kanuka is also present in the vicinity of the gum woodlot.

## Fauna & habitat types observed

Tui, fantail, grey warbler.

## Landowner feedback during site visit

The property owners have been landscaping the garden for over 20 years, mainly with native species. Most of the vegetation within the property has been planted by the owners. Historical aerial images from 1974 show that most of the property was pasture with native forest vegetation extending west from the property boundary but with little forest within the actual property.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	N/A
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	N/A
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	Not necessary. Garden environment. No stock.
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	N/A
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	N/A
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	N/A
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	N/A
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	N/A



## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	No
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.</p>	No
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	<p>Yes. Podocarp broadleaved forest supports <i>Metrosideros spp.</i> all of which are classified as Threatened. In most cases due to threat from myrtle rust.</p> <p>Pohutukawa is classified as Nationally Vulnerable</p> <p>Kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p>
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	Yes. Small areas podocarp broadleaved forest and coastal shrubland.
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	No
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No.



CRITERIA		ASSESSMENT
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Potentially. The podocarp broadleaved forest that extends west from the property may meet this criterion, but this was not assessed.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

Within the property the SNA boundary extends over landscape planting mainly along the property driveway and gum woodlot these should be excluded from the SNA. The small areas of podocarp broadleaved forest, coastal shrubland and wetland meet at least one of the SNA criteria and should remain within the SNA.

### SNA Assessment

The areas of podocarp broadleaved forest, coastal shrubland and wetland within the property meet at least one of the SNA criteria and merit inclusion within the SNA. Areas of predominantly landscape planting along the property driveway and around the woodlot are not representative of

natural vegetation and are essentially part of a garden environment and should be excluded from the SNA.

While kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust, there is currently no evidence that population of this species is being significantly impacted by the disease, either nationally, or within the Waikato District. The species is extremely common within the District and grows as a pasture weed in many localities. There appears to be little justification at present for using the status of kanuka as a basis for determining an SNA, therefore areas around the woodlot that support this species have been excluded.

Pohutukawa is also classified as Nationally Vulnerable due to the threat from myrtle rust however it is not considered that specimens that have been planted within landscaping areas should be used as a trigger for Criterion 3.

## SECTION D MAPS AND PHOTOGRAPHS

Property map – 536 Wainui Road (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Maturing native planting along driveway to house



Photo 2: Coastal shrubland





Photo 3: Podocarp broadleaved forest in the southern part of the property



Photo 4: Native planting and regeneration along driveway.



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest, coastal shrubland and wetland within the property meet at least one of the SNA criteria and merit inclusion within the SNA. Areas of predominantly landscape planting along the property driveway and around the woodlot are not representative of natural vegetation and are essentially part of a garden environment and should be excluded from the SNA.



## 747 RUTHERFURD ROAD

Visit date	Owner and property address
23 <sup>rd</sup> February 2021	Steven & Theresa Stark 747 Rutherford Road, Taupiri.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Kanuka forest/scrub	<ul style="list-style-type: none"><li>• Letter to Waikato Regional Council dated 20<sup>th</sup> May 2013 from Kessels Associates – Ecological Assessment of Forest Remnants 747 Rutherford Road - Amendments to the original assessment.</li><li>• Certificate of Compliance issued by Waikato District Council for the clearance of indigenous vegetation areas D, E, F, G, I, J and K.</li><li>• Resource Consent Certificate (Consent no. 122688) to clear up to 21ha. of regenerating indigenous vegetation.</li><li>• SJ &amp; TM Stark Ecological Assessment of Forest Remnants, 747 Rutherford Road, Taupiri Waikato District. Prepared by Gerry Kessels &amp; Britta Deichmann. 14<sup>th</sup> July 2011.</li></ul>



## SECTION B FIELD SURVEY ASSESSMENT

### Boundary alignment notes

SNA boundary extends over areas where scrub has been cleared including several areas where there is a Certificate of Compliance issued by Waikato District Council (WDC) permitting indigenous vegetation clearance. There is also a Resource Consent Certificate (Consent no. 122688) issued by Waikato Regional Council (WRC) permitting clearance of up to 21ha. of regenerating indigenous vegetation.

### Vegetation types, key species and species of note

Much of the vegetation within the boundaries of the SNA's was described by in the "Ecological Assessment of Forest Remnants" prepared by Gerry Kessels & Britta Deichmann in 2011. Many of the stands of vegetation were dominated by kanuka forest and scrub and were not considered to meet the criteria in Section 11A of the Waikato Regional Policy Statement for determining significance of indigenous biodiversity. Other areas where there was higher proportion (or dominance of) podocarp and broadleaved species were considered to meet the criteria. Based on the assessment dated 14<sup>th</sup> July 2011 and letter to Waikato Regional Council dated 20<sup>th</sup> May 2013 prepared by Kessels Associates a Certificate of Compliance was issued by WDC permitting indigenous vegetation clearance from several areas dominated by kanuka forest and scrub. This was supported by a Resource Consent Certificate (WRC) permitting clearance of up to 21ha. of regenerating indigenous vegetation.

The site visit on 23<sup>rd</sup> February 2021 confirmed the extent of remaining podocarp and broadleaved forest as well as kanuka forest and areas where vegetation clearance has been undertaken.

### Fauna & habitat types observed

Harrier, tui, pheasant.

### Landowner feedback during site visit

The property owners have had the values of forest blocks within the property previously assessed and documented and this information was provided.

Indicator	Rating	Estimate (Tick appropriate level)		Notes Species etc
Ground cover weeds	1	<input type="checkbox"/>	Very common, cover >50% ground area.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Common, 10%-50% ground area.	
	3	<input type="checkbox"/>	Occasional, up to 10% ground area.	
	4	<input type="checkbox"/>	None present.	
Stock	1	<input type="checkbox"/>	Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge.	
	3	<input type="checkbox"/>	Sign uncommon. Sign is often old. Only near edges.	
	4	<input type="checkbox"/>	No damage.	
Fencing	1	x	No fencing.	
	2	<input type="checkbox"/>	Some fencing, for example, one side, or fence poorly maintained with large breaks.	
	3	<input type="checkbox"/>	Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks.	
	4	<input type="checkbox"/>	Secure, intact fencing around whole area.	
Canopy condition	1	<input type="checkbox"/>	Very sparse foliage, many large holes, dieback>20%.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Foliage sparse in some areas, canopy holes uncommon. Some dieback.	
	3	<input type="checkbox"/>	Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback.	
	4	<input type="checkbox"/>	Abundant dense foliage over whole canopy, no canopy holes or dieback.	
Mid-tier	1	<input type="checkbox"/>	No browse palatable species 45cm-1.35m. Understorey bare.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species.	
	3	<input type="checkbox"/>	Moderate browse palatable species 45cm-1.35m. Other species relatively abundant.	
	4	<input type="checkbox"/>	Abundant browse palatable species and other species present.	
Ground cover	1	<input type="checkbox"/>	Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor.	
	3	<input type="checkbox"/>	Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor.	
	4	<input type="checkbox"/>	No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	
Vine weeds	1	<input type="checkbox"/>	Very common, >50% canopy cover.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Common, 10%50% canopy cover.	
	3	<input type="checkbox"/>	Occasional, up to 10% canopy cover.	
	4	<input type="checkbox"/>	None present.	
Shrub/Tree Weeds	1	<input type="checkbox"/>	Very common, <50% understorey or canopy cover.	Varies between the stands of vegetation.
	2	<input type="checkbox"/>	Common, 10%-50% understorey or canopy cover.	
	3	<input type="checkbox"/>	Occasional, up to 10% understorey or canopy cover.	
	4	<input type="checkbox"/>	None present.	

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	No
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.	No
3	It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are: <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	Yes. Podocarp broadleaved forest supports <i>Metrosideros sp.</i> all of which are classified as Threatened. In most cases due to threat from myrtle rust.  Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	Yes. Podocarp broadleaved forest.
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with: <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> Unless in those instances they meet the criteria in Whaley et al. (1995)	No
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No

CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Yes. Podocarp broadleaved forest.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

Adjust boundaries to exclude areas where vegetation clearance has occurred or areas that do not meet the SNA criteria and for which there is a Certificate of Compliance for indigenous vegetation clearance.

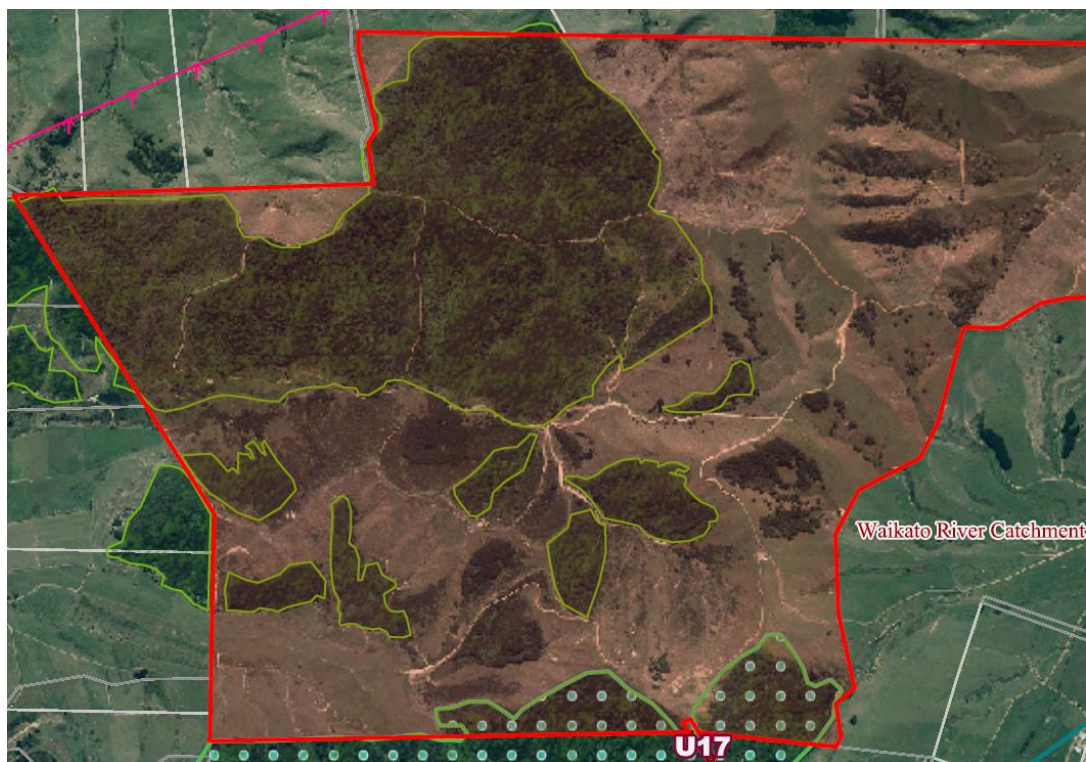
### SNA Assessment

The areas of podocarp broadleaved forest within the property, meet at least one of SNA criteria and merit inclusion within the SNA. While kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. The species are extremely common within the District and it grows as a pasture weed in many localities. There appears to be little justification at this time for including areas of kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA. Furthermore, in the case of this property most of the areas of kanuka forest and scrub have a Certificate of Compliance permitting clearance.

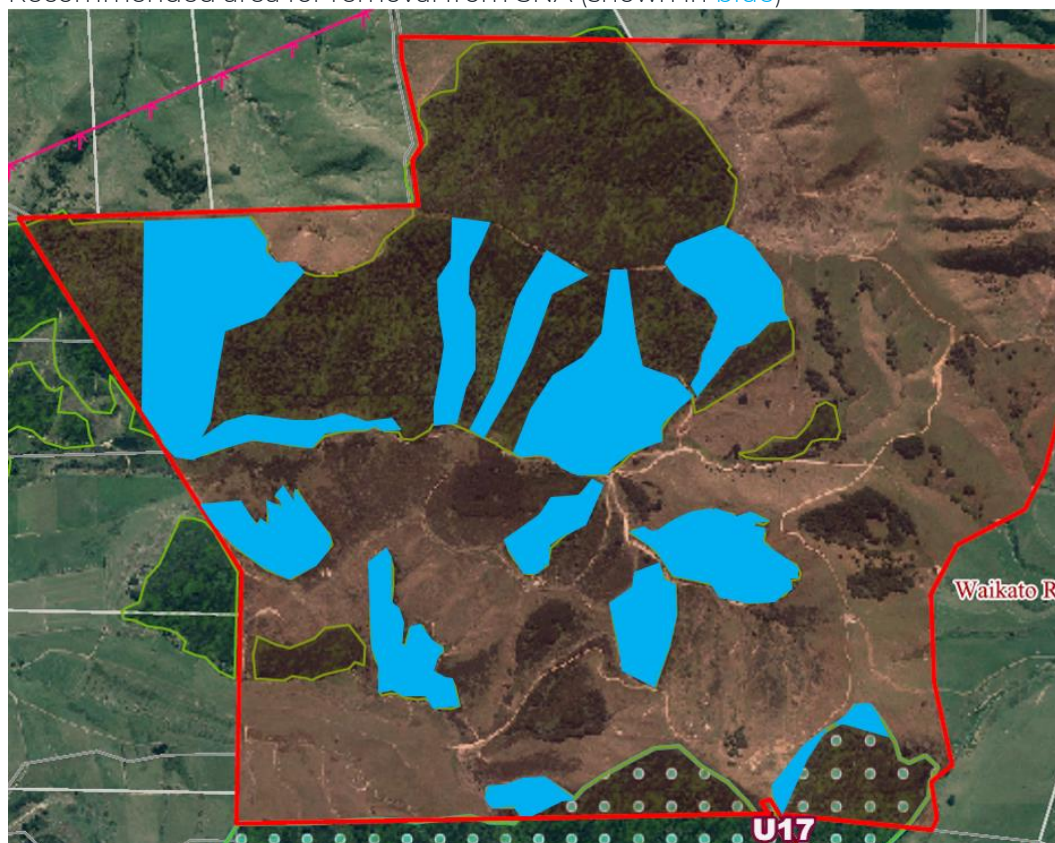


## SECTION D    MAPS AND PHOTOGRAPHS

Property map - 747 Rutherford Road (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Scattered podocarp and broadleaved species in foreground



Photo 2: SNA forest areas dominated by podocarp and broadleaved species





Photo 3: Remnant areas of forest meeting the SNA criteria.



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest within the property, meet at least one of the SNA criteria and merit inclusion within the SNA. Recommend adjustment of boundaries to exclude areas where vegetation clearance has occurred or areas that do not meet the SNA criteria and for which there is a Certificate of Compliance for indigenous vegetation clearance.

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## 862B WAIKARE ROAD

Visit date	Owner and property address
12 <sup>th</sup> February 2021	Andrew Kerr 862B Waikare Road, Waerenga
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Kanuka/manuka over pasture	

### Boundary alignment notes

Boundary of SNA extends over significant areas of kanuka/manuka over pasture which includes remnant areas of podocarp broadleaved forest.

### Vegetation types, key species and species of note

The SNA extends over large areas of kanuka/manuka over pasture. Within the areas of kanuka/manuka there are small remnant areas of podocarp broadleaved forest. The areas of kanuka/manuka tend to be very species poor supporting mainly pasture grasses beneath.

The pockets of podocarp broadleaved forest support a variety of native tree and shrub species including tawa (*Beilschmiedia tawa*), kauri (*Agathis australis*), rimu (*Dacrydium cupressinum*), rewarewa (*Knightia excelsa*), puriri (*Vitex lucens*), kanuka (*Kunzea robusta*), kohekohe (*Dysoxylum spectabile*), mahoe (*Melicytus ramiflorus*), nikau palm (*Rhopalostylis sapida*) and *Metrosideros* spp., along with tree ferns mamaku (*Cyathea medullaris*), silverfern (*Cyathea dealbata*) and wheki (*Dicksonia squarrosa*). There are also small-leaved *Coprosma* spp, hangehange (*Geniostoma ligustrifolium*) and kawakawa (*Piper excelsum*) in the shrub layer.

There is a small area of wet pasture on the northern boundary of the property with abundant reed canary-grass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), lotus (*Lotus pedunculatus*) and *Juncus* spp. It is dominated by exotic species and support minimal indigenous flora and fauna.

### Fauna & habitat types observed

New Zealand pigeon, fantail, tui and harrier.

### Landowner feedback during site visit

A significant part of the property is covered by kanuka/manuka over pasture. The pasture beneath the kanuka/manuka provides important grazing, particularly during the dry summer months.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input checked="" type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input checked="" type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	Varies across the property.
Fencing	1 2 3 4	<input checked="" type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input checked="" type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Varies between the areas of podocarp broadleaved forest.
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input checked="" type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Varies between the areas of podocarp broadleaved forest.
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Mainly grasses beneath the kanuka/manuka
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input checked="" type="checkbox"/> None present.	
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input checked="" type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	No
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.	No
3	<p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	<p>Yes. Podocarp broadleaved forest supports <i>Metrosideros</i> sp. and kauri both of which are classified as Threatened.</p> <p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p>
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	Yes. Podocarp broadleaved forest.
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	<p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No. Small area of wet pasture is dominated by exotic species and does not provide habitat for indigenous plant or fauna species.
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No



CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	No. Too modified by grazing but could meet criterion.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

Stands of podocarp broadleaved forest meet at least one of the SNA criteria and therefore merit inclusion within the SNA. However, SNA boundaries should be adjusted to exclude manuka/kanuka scrub over pasture.

### SNA Assessment

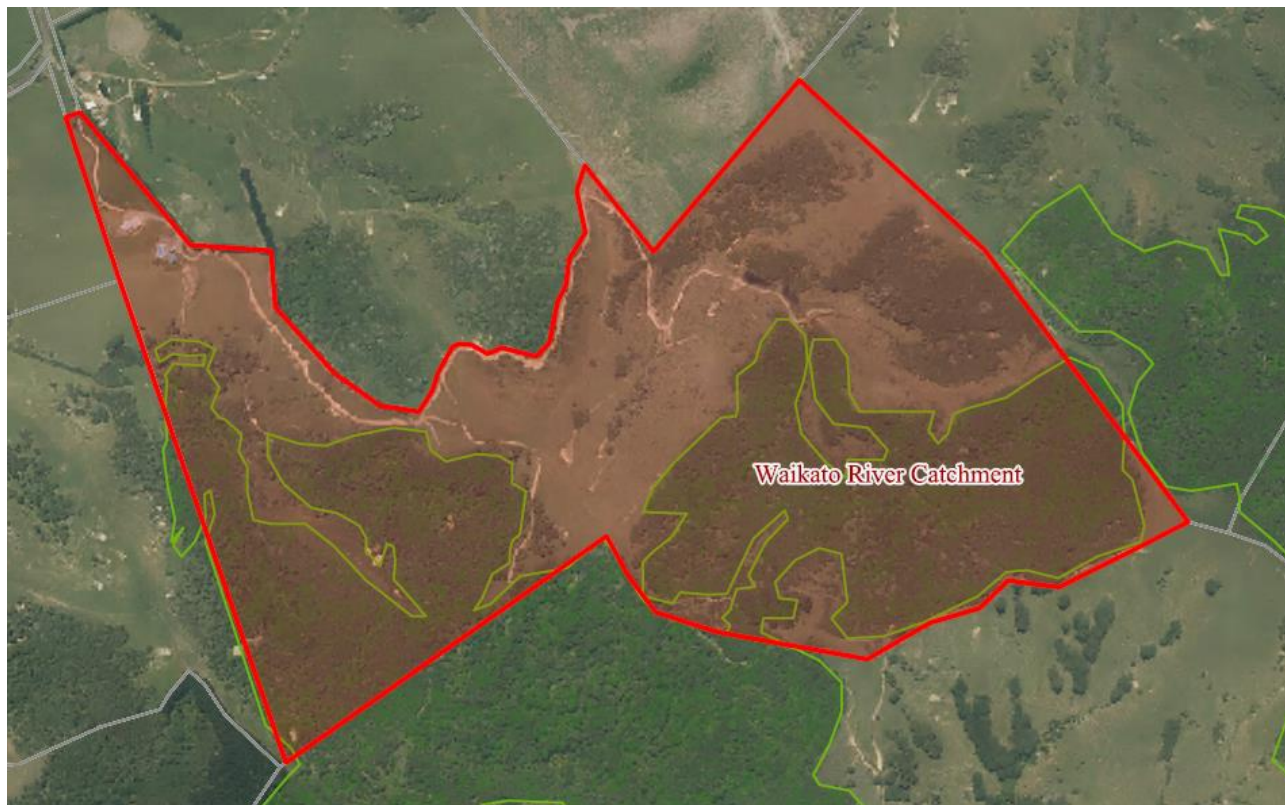
The areas of podocarp broadleaved forest within the property meet at least one of SNA criteria and merit inclusion within the SNA. While manuka and kanuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka and kanuka that have regenerated over pasture within SNA's or indeed using the status

of these species as a basis for determining an SNA. Recommend adjustment of the SNA boundaries to exclude manuka/kanuka scrub and areas of exotic plantation forest.

The small area of wet pasture on the northern boundary of the property does not support indigenous wetland plant communities or provide habitat for indigenous fauna and therefore does not meet the SNA criteria.

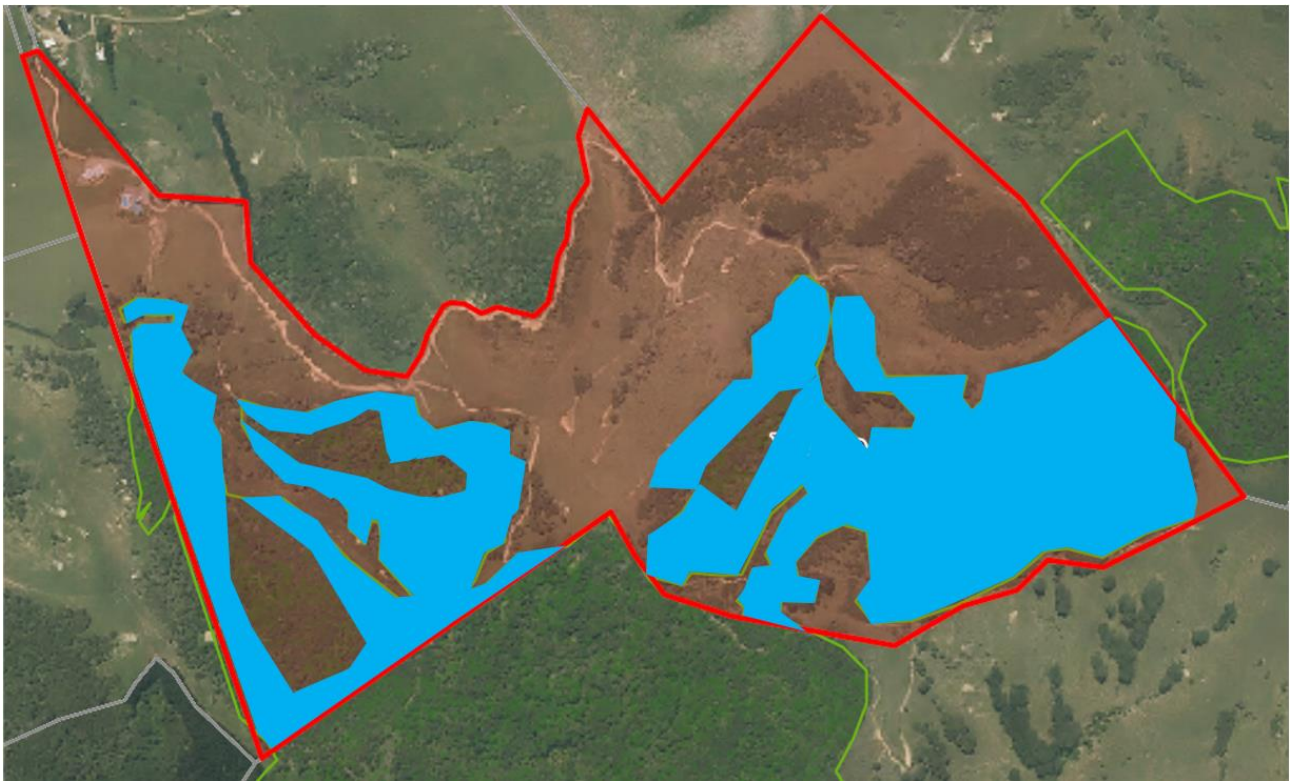
## SECTION D      MAPS AND PHOTOGRAPHS

**Property map - 862B Waikare Road** (Property boundary in red, SNA boundary in green)





Recommended area for removal from SNA (shown in blue)



## Photographs

Photo 1: Kanuka over pasture.





Photo 2: Remnant of podocarp broadleaved forest

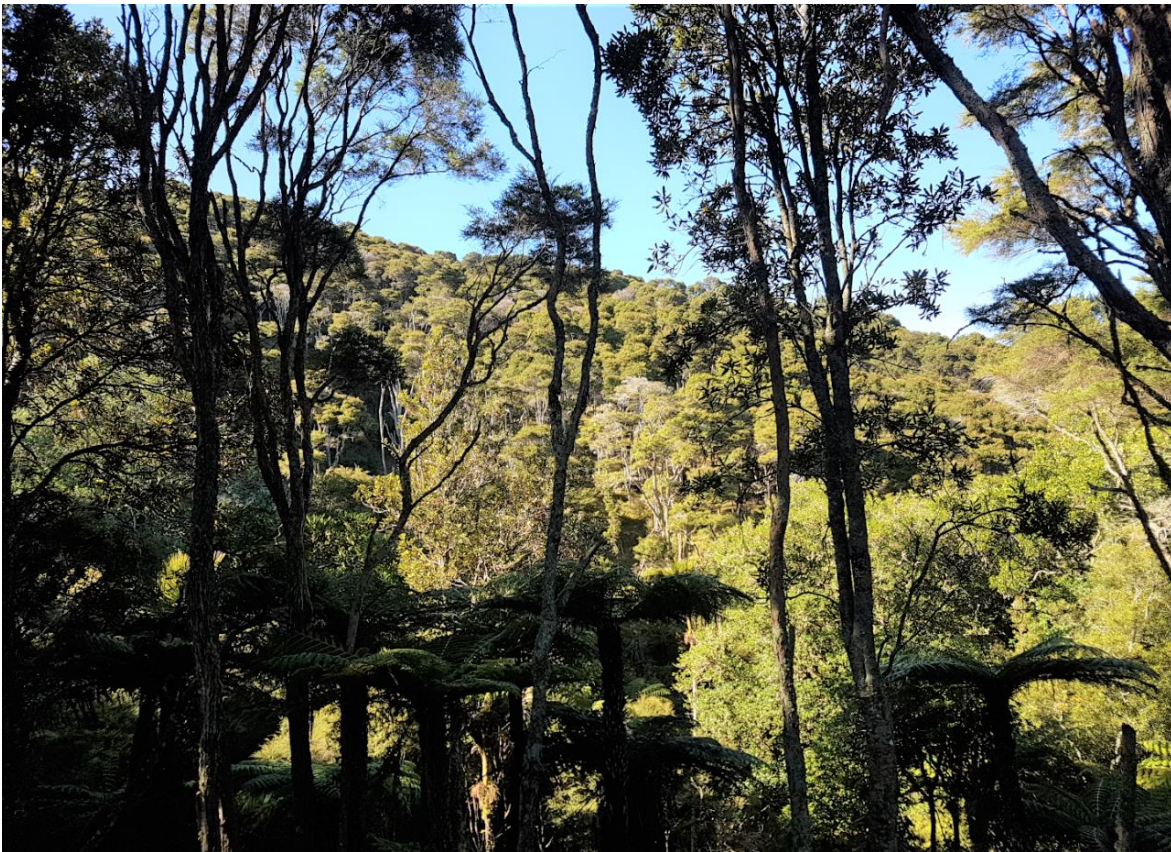


Photo 3: Kanuka/manuka over pasture with small patches of podocarp broadleaf forest





Photo 4: Wet pasture area on northern boundary of the property



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The areas of podocarp broadleaved forest within the property meeting at least one of SNA criteria merit inclusion within the SNA. The areas of kanuka/manuka, which provide an important component of the available grazing within the property, are not considered to meet the criteria and therefore it is recommended that they are excluded from the SNAs.

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## 970 OLD MOUNTAIN ROAD

Visit date	Owner and property address
18 <sup>th</sup> February 2021	Ollie Keesing 970 Old Mountain Road, Waitetuna, Raglan.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Corse and manuka Exotic scrub/weed communities	

### Boundary alignment notes

The SNA boundaries cover three Queen Elizabeth II Trust covenanted areas. These areas include podocarp broadleaved forest but also include areas of exotic scrub/weed that have been mapped in error. The SNA boundaries also extend over areas dominated by gorse and manuka that has been identified for cropping in the future.

### Vegetation types, key species and species of note

The property has a history of logging and plantation forestry. It supports areas of secondary podocarp broadleaved forest within QEII covenanted areas. There are also areas dominated by gorse (*Ulex europaeus*) and gorse with manuka (*Leptospermum scoparium*). The property owner is planning to crop the manuka in the future. In the southern part of the property are exotic weed communities supporting gorse, pampas (*Cortaderia selloana*), Himalayan honeysuckle (*Leycesteria formosa*) and Japanese honeysuckle (*Lonicera japonica*). Parts of these weed communities have been mapped within the QEII covenanted area and SNA area.

### Fauna & habitat types observed

Harrier, fantail, tui.

### Landowner feedback during site visit

The owner provided history of the property during the site visit, current land management activities and proposed future use. Large areas of the property have been placed within QEII covenant including the areas of secondary podocarp broadleaved forest. Parts of the property have been planted with cropping manuka. The owner is willing to have high value vegetation and habitats within SNA but has requested removal of weed communities, gorse/manuka scrub and areas planted with cropping manuka from the SNAs.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	Not assessed
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	No stock.
Fencing	1 2 3 4	x No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	No stock.
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Not assessed.
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Not assessed.
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Not assessed.
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Not assessed.
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Gorse and other weed species dominant over parts of the property.



## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	Yes. Substantial areas of the property are within QEII covenanted areas.
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the ecological sustainability of the ecosystem is threatened.	No
3	It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are: <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	Manuka is classified as At Risk (Declining) due to the threat from myrtle rust.
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	Yes. Podocarp broadleaved forest within QEII covenanted areas.
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with: <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> Unless in those instances they meet the criteria in Whaley et al. (1995)	No
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No

CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No.
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Yes. At least one block of forest within QEII covenanted areas.
10	It is an area of indigenous vegetation or habitat that forms part of an ecological sequence, that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

## Boundary Assessment

Most of the QEII covenanted areas meet criterion 1 and at least one other criteria and merit inclusion within the SNAs. However, SNA boundaries should be adjusted to exclude areas dominated by gorse, manuka or exotic weed communities, including areas planted with cropping manuka.

## SNA Assessment

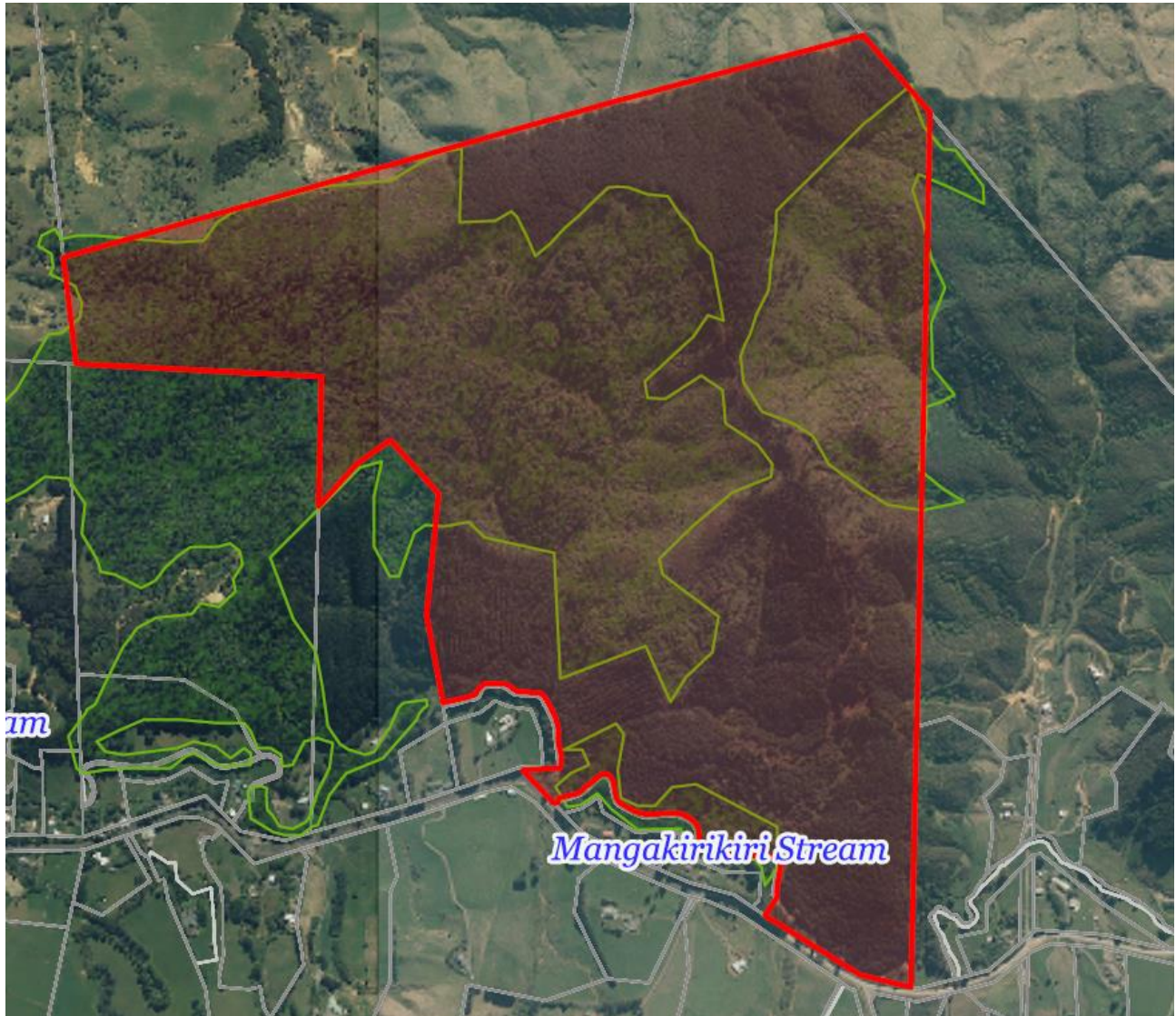
Most of the QEII covenanted areas meet criterion 1 and at least one other criteria and merit inclusion within the SNAs. Areas dominated by gorse, exotic weed communities or manuka do not meet the criteria and it is recommended that these areas are removed from the SNA.

While manuka is classified as At-Risk due to the threat from myrtle rust, there is currently no evidence that population of this species is being significantly impacted by the disease, either nationally, or within the Waikato District. The species is extremely common within the District and grows as a pasture weed in many localities. There appears to be little justification at this time for

including areas of manuka that have regenerated over pasture within SNA's or indeed using the status of this species as a basis for determining an SNA. Furthermore, it is not considered appropriate to designate areas of manuka planted with the intention of cropping in the future, as SNA.

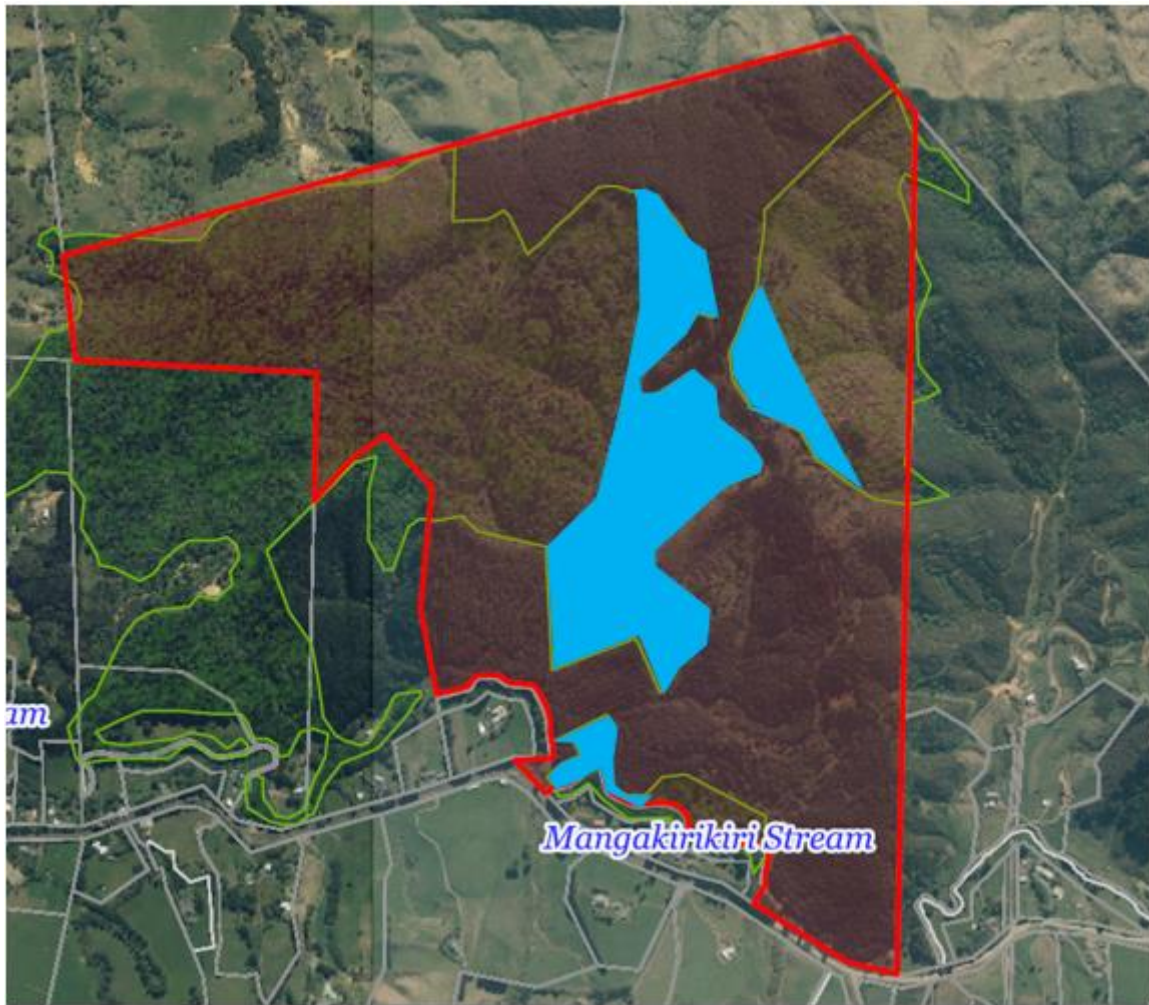
## SECTION D      MAPS AND PHOTOGRAPHS

Property map - 970 Old Mountain Road (Property boundary in red, SNA boundary in green)





Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Previous forest plantation areas now dominated by gorse.



Photo 2: Weed dominated areas in the southern part of the property.





Photo 3: Gorse dominated areas in the foreground, podocarp broadleaved forest in background



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

Most of the QEII covenanted areas meet criterion 1 and at least one other criteria and merit inclusion within the SNAs. However, it is recommended that SNA boundaries be adjusted to exclude areas dominated by gorse, manuka or exotic weed communities, including areas planted with cropping manuka.

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## 1807 WHAANGA ROAD

Visit date	Owner and property address
18 <sup>th</sup> February 2021	Ronald Rumbal and Catherine Evison 1807 Whaanga Road, Raglan.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Regenerating podocarp broadleaved forest/scrub Kanuka/manuka scrub Garden	

### Boundary alignment notes

SNA boundaries extend over an area of regenerating podocarp broadleaved forest/scrub as well as areas of garden, recently regenerated kanuka/manuka scrub and buildings, including the main residence.

### Vegetation types, key species and species of note

The property supports extensive areas of regenerating podocarp broadleaved forest. In places the canopy is still dominated by kanuka/manuka however a wide variety of forest species are beneath and breaking through the canopy including frequently emerging lancewood (*Pseudopanax crassifolius*), rewarewa (*Knightia excelsa*) and rimu (*Dacrydium cupressinum*). Hangehange (*Geniostoma ligustrifolium*) and silverfern (*Cyathea dealbata*) are abundant in the sub-canopy. Other species occurring include mahoe (*Melicytus ramiflorus*), cabbage tree (*Chordyline australis*) and nikau (*Rhopalostylis sapida*). These areas are within the SNA boundary.

The SNA boundary also extends over buildings, including the main residence, small areas of garden and an area in the southern part of the property dominated by kanuka/manuka. This area of kanuka/manuka has largely established during the last 11 years and has few associated species. Aerial images from 2008 show the area largely clear of vegetation.

### Fauna & habitat types observed

New Zealand pigeon, tui, fantail, grey warbler.

### Landowner feedback during site visit

Owners wish to restrict the SNA boundary to the 7.5 ha of the northern part of the property that is protected by a Waikato District Council covenant.



Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input checked="" type="checkbox"/> None present.	
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input checked="" type="checkbox"/> No damage.	
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input checked="" type="checkbox"/> Secure, intact fencing around whole area.	
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input checked="" type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	N/A
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input checked="" type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Not assessed
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Not assessed

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	7.5ha are protected by Waikato District Council covenant dated 7 <sup>th</sup> July 1994.
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the ecological sustainability of the ecosystem is threatened.	No
3	It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are: <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	Manuka is classified as At Risk (Declining) due to the threat from myrtle rust.
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	Yes. Regenerating podocarp broadleaved forest.
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with: <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> Unless in those instances they meet the criteria in Whaley et al. (1995)	No
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No

CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No.
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Yes. Most of the vegetation is an example of healthy regenerating forest that is protected from stock. Its value will continue to develop with continued protection.
10	It is an area of indigenous vegetation or habitat that forms part of an ecological sequence, that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

The regenerating podocarp broadleaved forest meets more than one of the SNA criteria including much of the forest that extends beyond the covenanted area. These areas merit inclusion within the SNA. However, the buildings, main dwelling, areas immediately adjacent to the garden areas do not meet the criteria and should be excluded. Areas of recently established manuka/kanuka should also be excluded.

### SNA Assessment

The regenerating podocarp broadleaved forest supports a high diversity of species and this includes areas that extend beyond the area covered by the WDC covenant. With continued protection from stock these areas will increase in value over time. These areas meet several of the SNA criteria and merit inclusion within the SNA.

Buildings, the areas immediately adjacent to them and areas of garden do not meet the criteria and should be excluded. The area of manuka/kanuka that has largely established since 2008 has very low species diversity and should also be excluded. While manuka and kanuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka and kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA. This area of vegetation lacks the quality and species diversity found within the vegetation occurring elsewhere on the property.



## SECTION D    MAPS AND PHOTOGRAPHS

Property map - 1807 Whaanga Road (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Regenerating podocarp broadleaved forest with lancewood and rimu emerging from kanuka/manuka canopy



Photo 2: Manuka/kanuka established since 2008





Photo 3: Beneath canopy of manuka/kanuka established since 2008



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The regenerating podocarp broadleaved forest meets more than one of the SNA criteria including much of the forest that extends beyond the covenanted area. These areas merit inclusion within the SNA. However, the buildings, main dwelling, areas immediately adjacent to the garden and areas of recently established manuka/kanuka are not significant under the criteria and it is recommended that these areas are excluded.



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## 5254 STATE HIGHWAY 22

Visit date	Owner and property address
22 <sup>nd</sup> February 2021	Guy Rathbone 5254 State Highway 22, Waingaro.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp forest Podocarp broadleaved forest Kanuka/manuka scrub	Waikato District Significant Natural Areas Assessment Ground Truthing Phase 2018 – Site Visit Recording Forms – site Visit 11 June 2018 prepared by David Pickett. (SNA nos. 1870 & 4480), Tonkin+Taylor.

### Boundary alignment notes

The SNA boundaries extend over areas of podocarp broadleaved forest including relatively large areas dominated by totara. There are also substantial areas supporting kanuka/manuka over pasture within the SNAs.

### Vegetation types, key species and species of note

The SNA boundaries extend over areas of podocarp broadleaved forest including relatively large areas dominated by totara. There are also substantial areas supporting kanuka/manuka over pasture within the SNAs.

The area of forest dominated by totara also supports kahikatea (*Dacrycarpus dacrydioides*), rimu (*Dacrydium cupressinum*), puriri (*Vitex lucens*), although these are rare within the canopy. The forest canopy is grazed beneath supporting minimal mid-tier and ground layer species. There are also other small remnant patches of podocarp broadleaved forest, these are similarly grazed beneath supporting limited understorey with species including mahoe (*Melicytus ramiflorus*), ponga (*Cyathea dealbata*) and mamaku (*Cyathea medullaris*) occurring locally.

The areas of kanuka/manuka over pasture have few other associated species, except totara, and are grazed beneath. Weed species including blackberry (*Rubus fruticosus* agg.), inkweed (*Phytolacca octandra*) and woolly nightshade (*Solanum mauritianum*) occur locally.

### Fauna & habitat types observed

Harrier, fantail, tui.

### Landowner feedback during site visit

There is a history of kanuka/manuka scrub clearance and regeneration within property over many decades where the species grow as pasture weeds. Totara also grows as a pasture weed however a significant area of totara has been allowed to mature to form a forest canopy. Some of the stands of manuka/kanuka have been cleared twice in the time that the owner has farmed the property. The owner wishes to retain the ability to control and clear native pasture weed species i.e. manuka, kanuka and totara.

Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	Varies between the various areas of forest and scrub.
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. x Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input type="checkbox"/> No damage.	
Fencing	1 2 3 4	x No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input type="checkbox"/> Secure, intact fencing around whole area.	
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Varies between the various areas of forest and scrub.
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. x Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. x Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. x Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Varies between the various areas of forest and scrub.

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	No
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.</p>	No
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>• Classed as threatened or at risk, or</li> <li>• Endemic to the Waikato region, or</li> <li>• At the limit of their natural range.</li> </ul>	Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	Yes. Podocarp and podocarp broadleaf dominated forest.
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	No
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>• Wastewater treatment;</li> <li>• Wastewater renovation;</li> <li>• Hydroelectric power lakes (excluding Lake Taupo);</li> <li>• Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	No
<p>7</p> <p>It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.</p>	No



CRITERIA		ASSESSMENT
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No.
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	No.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

The area of podocarp forest and other small podocarp broadleaved forest remnants meet at least one of the SNA criteria and therefore merit inclusion within the SNA. However, SNA boundaries should be adjusted to exclude kanuka/manuka scrub over pasture.

### SNA Assessment

The areas of podocarp and podocarp broadleaved forest remnants within the property meet at least one of the SNA criteria and merit inclusion within the SNA. However, the areas dominated by kanuka and manuka are not considered significant. While manuka and kanuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka and kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA.

## SECTION D    MAPS AND PHOTOGRAPHS

Property map - 5254 State Highway 22 (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Totara dominated forest canopy



Photo 2: Sub-canopy - kanuka/manuka dominated area





Photo 3: Kanuka dominated area



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

The area of podocarp forest and other small podocarp broadleaved forest remnants meet at least one of the SNA criteria and therefore merit inclusion within the SNA. However, it is recommended that SNA boundaries be adjusted to exclude manuka/kanuka scrub.

## BATHURST RESOURCES LTD & BT MINING LTD

Visit date	Owner and property address
16 <sup>th</sup> April 2021	Bathurst Resources Ltd and BT Mining Ltd. Mineral Exploration Permit (EP) 40698, Rotowara Mine.
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Podocarp broadleaved forest Regenerating broadleaved forest Raupo wetland/lake margin Exotic forest/scrub/weed communities	Significant Natural Area Survey, Mineral Exploration Permit (EP) 40698 Area, AECOM New Zealand Limited, 12 <sup>th</sup> November 2019.

## SECTION B FIELD SURVEY ASSESSMENT

### Boundary alignment notes

The SNA boundaries extend over various types of vegetation and habitat including indigenous forest, regenerating forest, exotic forest and scrub and wetland/lake margin habitat.

### Vegetation types, key species and species of note

The report dated 12<sup>th</sup> November 2019 prepared by Aecom provides a detailed account of the vegetation and habitats within the Mineral Exploration Permit area based on several days of fieldwork. The surveys found mature indigenous podocarp and broadleaved forest, as well as regenerating indigenous forest, with tawa (*Beilschmiedia tawa*) a dominant species in the mature forest. There were also areas within the SNA's dominated by exotic tree, shrub and weed species.

The report refers to 5 SNA areas labelled SNA 1 to SNA 5. SNA 1, SNA 3, SNA 4 and SNA 5 mainly comprise terrestrial habitat. SNA 2 is small (0.6 ha) and includes areas of wetland vegetation dominated by raupo (*Typha orientalis*) at the western end of the lake. However, this area also includes low diversity regenerating broadleaved forest and areas of gorse (*Ulex europaeus*) and pampas (*Cortaderia selloana*). The actual extent of the wetland is approximately 0.36 ha part of which form the fringe to the lake margin.

Detailed accounts of the vegetation and habitats is provided in the report.

At the request of BT/Bathurst an area of podocarp broadleaved forest to the south of the property (see map) was also viewed from the road during the site visit and examined on aerial photographs.

### Fauna & habitat types observed

Californian quail, fantail, grey warbler and goldfinch recorded during the site visit.

### Landowner feedback during site visit

The mine management team provided information based on the 12<sup>th</sup> November 2019 report prepared by Aecom and an indication of where there is likely to be expansion of mining activities in the future.

Indicator	Rating	Estimate (Tick appropriate level)		Notes Species etc
Ground cover weeds	1	<input type="checkbox"/>	Very common, cover >50% ground area.	Varies between the areas of forest and scrub.
	2	<input type="checkbox"/>	Common, 10%-50% ground area.	
	3	<input type="checkbox"/>	Occasional, up to 10% ground area.	
	4	<input type="checkbox"/>	None present.	
Stock	1	<input type="checkbox"/>	Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area.	Some forest areas only.
	2	x	Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge.	
	3	<input type="checkbox"/>	Sign uncommon. Sign is often old. Only near edges.	
	4	<input type="checkbox"/>	No damage.	
Fencing	1	x	No fencing.	
	2	<input type="checkbox"/>	Some fencing, for example, one side, or fence poorly maintained with large breaks.	
	3	<input type="checkbox"/>	Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks.	
	4	<input type="checkbox"/>	Secure, intact fencing around whole area.	
Canopy condition	1	<input type="checkbox"/>	Very sparse foliage, many large holes, dieback>20%.	Varies between the areas of forest and scrub.
	2	<input type="checkbox"/>	Foliage sparse in some areas, canopy holes uncommon. Some dieback.	
	3	<input type="checkbox"/>	Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback.	
	4	<input type="checkbox"/>	Abundant dense foliage over whole canopy, no canopy holes or dieback.	
Mid-tier	1	<input type="checkbox"/>	No browse palatable species 45cm-1.35m. Understorey bare.	Varies between the areas of forest and scrub.
	2	<input type="checkbox"/>	Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species.	
	3	<input type="checkbox"/>	Moderate browse palatable species 45cm-1.35m. Other species relatively abundant.	
	4	<input type="checkbox"/>	Abundant browse palatable species and other species present.	
Ground cover	1	<input type="checkbox"/>	Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor.	Varies between the areas of forest and scrub.
	2	<input type="checkbox"/>	Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor.	
	3	<input type="checkbox"/>	Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor.	
	4	<input type="checkbox"/>	No bare soil or rock, or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	
Vine weeds	1	<input type="checkbox"/>	Very common, >50% canopy cover.	
	2	<input type="checkbox"/>	Common, 10%-50% canopy cover.	
	3	<input type="checkbox"/>	Occasional, up to 10% canopy cover.	
	4	<input type="checkbox"/>	None present.	
Shrub/Tree Weeds	1	<input type="checkbox"/>	Very common, <50% understorey or canopy cover.	Varies between the areas of forest and scrub.
	2	<input type="checkbox"/>	Common, 10%-50% understorey or canopy cover.	
	3	<input type="checkbox"/>	Occasional, up to 10% understorey or canopy cover.	
	4	<input type="checkbox"/>	None present.	



## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA	ASSESSMENT
<p>1</p> <p>It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.</p>	<p>No</p>
<p>2</p> <p>In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.</p>	<p>No</p>
<p>3</p> <p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>Classed as threatened or at risk, or</li> <li>Endemic to the Waikato region, or</li> <li>At the limit of their natural range.</li> </ul>	<p>Yes. The areas of podocarp broadleaved forest support <i>Metrosideros spp.</i> all of which are classified as Threatened. In most cases due to threat from myrtle rust.</p> <p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p>
<p>4</p> <p>It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.</p>	<p>Yes. Podocarp broadleaved forest. SNA 1, SNA 3, SNA 4, SNA 5 and area of forest to the south of the property.</p> <p>Wetland (SNA 2) is not under-represented in the Ecological District but is under-represented Nationally.</p>
<p>5</p> <p>It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.</p>	<p>No</p>
<p>6</p> <p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>Wastewater treatment;</li> <li>Wastewater renovation;</li> <li>Hydroelectric power lakes (excluding Lake Taupo);</li> <li>Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	<p>No</p>

CRITERIA		ASSESSMENT
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>its structure, composition, and ecological processes are largely intact; and</li> <li>if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	Yes. Podocarp broadleaved forest SNAs 1 and 3. Small areas of regenerating forest within SNAs 4 and 5. Podocarp broadleaved forest to the south of the property.
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

## Boundary Assessment

Some of the areas within the SNA boundaries clearly meet the SNA criteria however there are substantial areas that do not and therefore boundary adjustment is required.

## SNA Assessment

The Aecom report concluded that SNAs 1 and 3 meet the criteria as a healthy representative examples of secondary podocarp forest proposing only minor amendment to remove an area of gorse. This assessment is agreed. BT/Bathurst have also proposed an addition to SNA 1 to account for a mapping error.

Aecom concluded that SNA 2 is not significant based on currently available information although it could trigger the SNA criteria based on the results of further bird and aquatic fauna surveys. This assessment is agreed. While criterion 4 is triggered due to wetlands being nationally under-represented, taking into account that wetlands are not under-represented within the Meremere District, the very small size of the wetland, and the man induced origins of the wetland, the area of wetland is not considered significant based on current information.

Aecom concluded that parts of SNA's 4 and 5 meet the SNA criteria based on the presence of two small of areas of regenerating broadleaf forest 1.6ha and 0.9 ha in area. This assessment is in part justified due to the presence of connecting vegetation between the two forest areas and that while this does not meet the SNA criteria it adds value to the two areas of forest. This assessment is agreed. However, the connecting vegetation is within an area proposed for mining. Even if the two small areas of forest could be retained during mining operations, the connection between them would be lost reducing their value and their viability.

The area of podocarp broadleaved forest to the south of the property is likely to meet more than one of the SNA criteria. However, it is clear from site-based observations and aerial images that there are areas around the edges of the forest that do not meet the criteria. Minor adjustments to the SNA boundary are recommended.

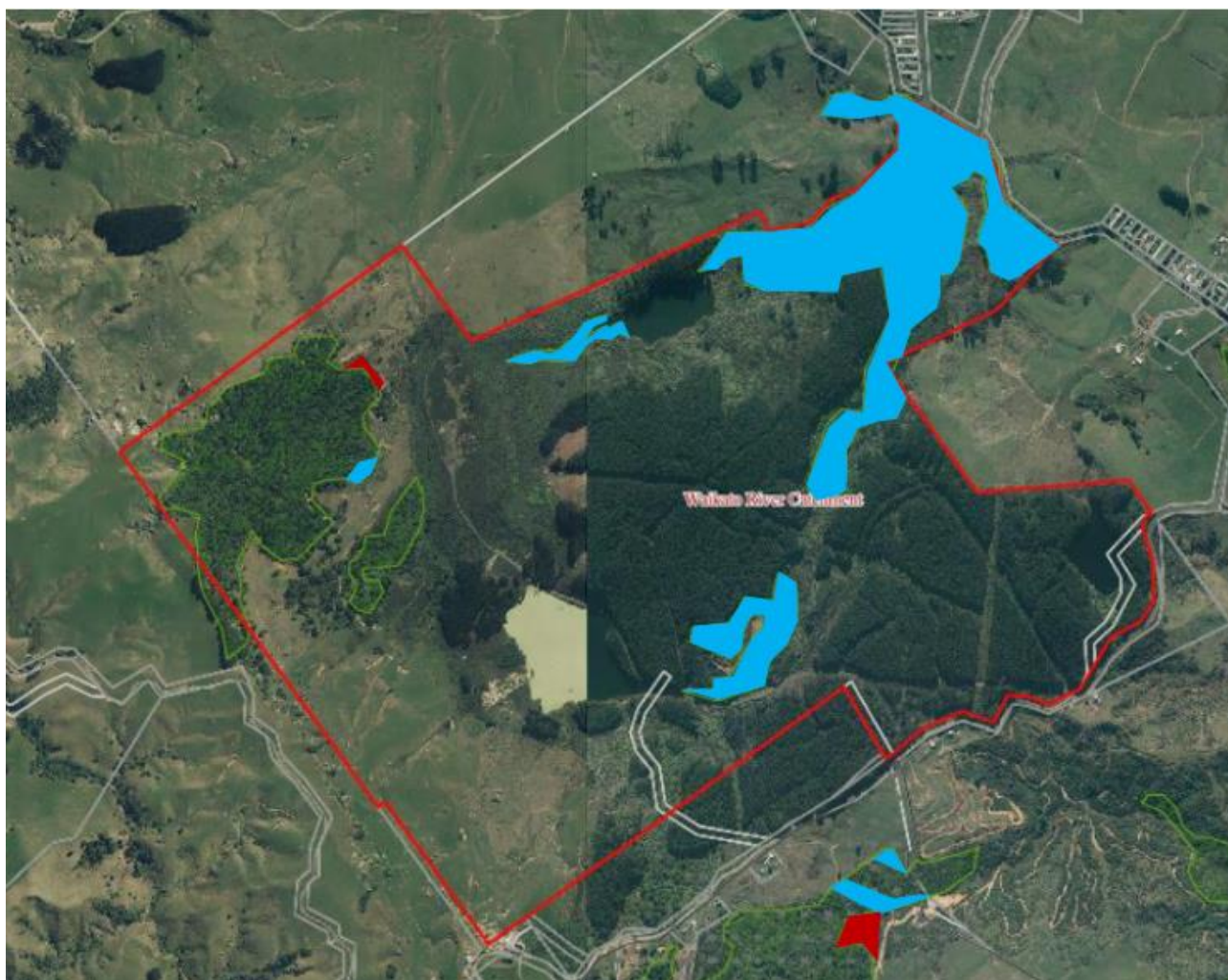
## SECTION D MAPS AND PHOTOGRAPHS

**Property map** - Bathurst Mining (Property boundary in red, SNA boundary in green)





Recommended area for removal from SNA (shown in blue) and addition (shown in red)





## Photographs

Photo 1: Podocarp broadleaved forest (SNA's 1 and 3)



Photo 2: Exotic weed communities within SNA 5





Photo 3: Regenerating secondary forest SNA 4



Photo 4: Podocarp broadleaved forest to the south of the property



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

Some of the areas within the SNA boundaries clearly meet the SNA criteria however there are substantial areas that do not and therefore boundary adjustment is required. Recommendations for areas to be removed from SNA's 1, 2, 4 and 5 are broadly consistent with those recommended in the prepared by Aecom 12<sup>th</sup> November 2019 (see map above). However, it is recommended SNA's 4 and 5 are removed in their entirety since their value as SNA's relies in part on connecting vegetation that does not meet SNA criteria and which is within a proposed mining zone. Removal of the connecting vegetation and isolation of two such small areas of forest would significantly compromise their viability.

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## RANGITAHİ PENINSULA

Visit date	Owner and property address
2 <sup>nd</sup> March 2021	Rangitahi Peninsula
Inspecting ecologist and WDC Council Representative	Ecologist: John Turner (Technical Principal – Ecology, WSP Ltd) WDC Representative: Susan Chibnall (Policy Planner, WDC)

### SECTION A SUMMARY OF EXISTING DATA FROM REPORTS AND DATABASES

Ecosystem types	Existing ecological data
Regenerating secondary forest Kanuka/manuka scrub Exotic scrub/weed communities Wetlands	

### Boundary alignment notes

SNA boundary extends around sections of coastline and along fenced waterways/wetland areas. The quality of the coastal vegetation mapped within SNAs varies considerably.

### Vegetation types, key species and species of note

The vegetation around the coastline that has been mapped within SNA's varies considerably in composition and quality. Some areas are dominated by exotic weed species such as tree privet (*Ligustrum lucidum*), wattle (*Acacia sp.*) and pampas (*Cortaderia selloana*) with other weed species such as gorse (*Ulex europaeus*) and common privet (*Ligustrum vulgare*).

Kanuka is a dominant canopy species around many of the section of coastline supporting regenerating secondary forest. Species composition is variable but often diverse with a wide range of species occurring including manuka (*Leptospermum scoparium*), lancewood (*Pseudopanax crassifolius*), rewarewa (*Knightia excelsa*), rimu (*Dacrydium cupressinum*), mangeao (*Litsea calicaris*), mahoe (*Melicytus ramiflorus*), hangehange (*Geniostoma ligustrifolium*), karamu (*Coprosma robusta*), *Coprosma repens*, kawakawa (*Piper excelsum*), with tree ferns ponga (*Cyathea dealbata*) and mamaku (*Cyathea medullaris*) also occurring. Pohutukawa (*Metrosideros excelsa*) has also been planted in some locality and may be naturally occurring in other.

Low lying areas and waterways within the property have been fenced and planted with cabbage tree and other wetland species. With the exclusion of stock, the areas are developing into valuable wetland areas.

### Fauna & habitat types observed

Pukeko, Tui, fantail, New Zealand Kingfisher

### Landowner feedback during site visit

The Rangitahi Peninsula is currently is under-going phased residential development. The developer has undertaken fencing, native planting and weed control. This will continue as the Peninsula is developed.



Indicator	Rating	Estimate (Tick appropriate level)	Notes Species etc
Ground cover weeds	1 2 3 4	<input type="checkbox"/> Very common, cover >50% ground area. <input checked="" type="checkbox"/> Common, 10%-50% ground area. <input type="checkbox"/> Occasional, up to 10% ground area. <input type="checkbox"/> None present.	
Stock	1 2 3 4	<input type="checkbox"/> Abundant fresh signs (droppings, major tracks and hoof prints) Stock heard or seen throughout area. <input type="checkbox"/> Common fresh sign but sometimes scattered. Occasional stock heard or seen, confined to scattered areas on edge. <input type="checkbox"/> Sign uncommon. Sign is often old. Only near edges. <input checked="" type="checkbox"/> No damage.	N/A
Fencing	1 2 3 4	<input type="checkbox"/> No fencing. <input type="checkbox"/> Some fencing, for example, one side, or fence poorly maintained with large breaks. <input type="checkbox"/> Most of boundary fenced, includes all areas where stock access likely. Some small recent breaks. <input checked="" type="checkbox"/> Secure, intact fencing around whole area.	
Canopy condition	1 2 3 4	<input type="checkbox"/> Very sparse foliage, many large holes, dieback>20%. <input type="checkbox"/> Foliage sparse in some areas, canopy holes uncommon. Some dieback. <input type="checkbox"/> Foliage mostly dense, only occasional sparse areas, canopy holes rare, very occasional dieback. <input type="checkbox"/> Abundant dense foliage over whole canopy, no canopy holes or dieback.	Highly variable
Mid-tier	1 2 3 4	<input type="checkbox"/> No browse palatable species 45cm-1.35m. Understorey bare. <input type="checkbox"/> Very few browse palatable species 45cm-1.35m. Scattered seedlings of less palatable species. <input type="checkbox"/> Moderate browse palatable species 45cm-1.35m. Other species relatively abundant. <input type="checkbox"/> Abundant browse palatable species and other species present.	Variable but well developed in places
Ground cover	1 2 3 4	<input type="checkbox"/> Bare soil, rock, >20% of forest floor. Ground vegetation (ferns, moss, seedlings etc <45cm tall) absent or uncommon. Leaf litter on remainder of forest floor. <input type="checkbox"/> Scattered bare soil & rock. Ground vegetation<20%. Leaf litter on remainder of forest floor. <input type="checkbox"/> Bare soil, rock absent or very uncommon. Ground vegetation 25%-50%. Leaf litter on remainder of forest floor. <input type="checkbox"/> No bare soil or rock or eroding soil. Ground vegetation, abundant, 50%-100%. Leaf letter on remainder.	Variable
Vine weeds	1 2 3 4	<input type="checkbox"/> Very common, >50% canopy cover. <input type="checkbox"/> Common, 10%50% canopy cover. <input type="checkbox"/> Occasional, up to 10% canopy cover. <input type="checkbox"/> None present.	Variable
Shrub/Tree Weeds	1 2 3 4	<input type="checkbox"/> Very common, <50% understorey or canopy cover. <input type="checkbox"/> Common, 10%-50% understorey or canopy cover. <input type="checkbox"/> Occasional, up to 10% understorey or canopy cover. <input type="checkbox"/> None present.	Variable – dominant in places.

## SECTION C RANKING & BOUNDARY ASSESSMENT

Assessment against Section 11A of the Waikato Regional Policy Statement – “Criteria for determining significance of indigenous biodiversity”

CRITERIA		ASSESSMENT
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	No
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the <u>ecological sustainability</u> of the ecosystem is threatened.	No
3	<p>It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are:</p> <ul style="list-style-type: none"> <li>• Classed as threatened or at risk, or</li> <li>• Endemic to the Waikato region, or</li> <li>• At the limit of their natural range.</li> </ul>	<p>Manuka is classified as At Risk (Declining) and kanuka is classified as Nationally Vulnerable due to the threat from myrtle rust.</p> <p>Pohutukawa is classified as Nationally Vulnerable.</p>
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.	<p>Yes. Areas of secondary regenerating forest.</p> <p>Wetlands not under-represented in the District but under-represented Nationally.</p>
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	<p>It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with:</p> <ul style="list-style-type: none"> <li>• Wastewater treatment;</li> <li>• Wastewater renovation;</li> <li>• Hydroelectric power lakes (excluding Lake Taupo);</li> <li>• Water storage for irrigation.</li> </ul> <p>Unless in those instances they meet the criteria in Whaley et al. (1995)</p>	Yes. Wetlands along flow paths/stream channels.

CRITERIA		ASSESSMENT
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self-sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	No
9	<p>It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because:</p> <ul style="list-style-type: none"> <li>• its structure, composition, and ecological processes are largely intact; and</li> <li>• if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.</li> </ul>	No
10	It is an area of indigenous vegetation or habitat that forms part of an <u>ecological sequence</u> , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, ecological buffer, linkage, or corridor and which is necessary to protect any site identified as significant under criteria 1-11 from external adverse effects.	No

### Boundary Assessment

SNA boundaries around the coastline encompass vegetation that meets SNA criteria i.e. secondary regenerating forest and areas that do not meet the criteria, therefore boundary adjustment is required. The SNA boundaries established around the wetland areas in the main include habitat that meets the criteria except in the case of one locality where an access track has been included within the SNA.



## SNA Assessment

The vegetation around the coastline that has been mapped within the SNAs varies significantly in character and quality. Areas of regenerating forest that support canopy species and sub-canopy species meet at least one of the SNA criteria and should be retained within the SNA's. Sections of coastline comprising areas of bare ground, dominated by weed species or scattered kanuka/manuka over grassland should be removed from the SNA's. While manuka and kanuka are classified as At-Risk and Nationally Vulnerable respectively, due to the threat from myrtle rust, there is currently no evidence that populations of these species are being impacted by the disease, either nationally, or within the Waikato District. Both species are extremely common within the District and grow as a pasture weed in many localities. There appears to be little justification at this time for including areas of manuka and kanuka that have regenerated over pasture within SNA's or indeed using the status of these species as a basis for determining an SNA.

Pohutukawa is also classified as Nationally Vulnerable due to the threat from myrtle rust however it is considered that specimens that have been planted for landscaping areas should not be used as a trigger for Criterion 3.

The fenced and planted wetland areas meet two of the criteria and should be retained within the SNA's with the exception of an access track connecting two paddocks.

## SECTION D      MAPS AND PHOTOGRAPHS

Property map - Rangitahi Peninsula (Property boundary in red, SNA boundary in green)



Recommended area for removal from SNA (shown in blue)





## Photographs

Photo 1: Section of the coastline dominated by weed species



Photo 2: Area of kanuka over rgrassland within SNA





Photo 3: Fenced and replanted wetlands



Photo 4: Kanuka forest canopy over regenerating secondary forest



## SECTION E CONCLUSIONS AND RECOMMENDATIONS

SNA boundaries around the coastline encompass vegetation that meets SNA criteria i.e. secondary regenerating forest and areas that do not meet the criteria. It is recommended that areas of cleared ground, sections of coastline dominated by weed and exotic species and areas of kanuka/manuka over grassland be removed from the SNA's. The SNAs established around the wetland areas in the main include habitat that meets the SNA criteria except in the case of one locality where an access track has been included within the SNA. It is recommended that the access track is removed from the SNA.