Christchurch District Plan Site of Ecological Significance

Site Significance Statement

Site name: Lake Forsyth North Side

Site number: SES/H/18

Physical address of site: Off Christchurch Akaroa Road

Summary of Significance:

This site is significant because it contains a diverse range of representative indigenous vegetation communities that support nine indigenous plant species that are nationally At Risk, of which three are also endemic to Banks Peninsula, two species that are uncommon within the ecological district or region and four species that are at their southern national or regional distributional limits on Banks Peninsula. It also has four invertebrate species that are nationally At Risk, thirteen that are endemic to Banks Peninsula and one that is at its southern national distributional limit on Banks Peninsula. It has extensive basic igneous bluffs, scarps and rock outcrops, and seepages both of which are originally rare ecosystems nationally. It is part of an important network of indigenous forest, scrub and shrubland on the northern side of Lake Forsyth and buffers Lake Forsyth/Wairewa. It is important habitat for an assemblage of invertebrates that has a high proportion of species that are endemic to Banks Peninsula.

Site Map



Additional Site Information

Ecological District: Herbert

Area of SES (ha): 160.56

Central point (NZTM): E1578457, N5150665

Site Description

This site is located on the northern side of Lake Forsyth/Wairewa on very steep slopes above the Christchurch to Akaroa Highway. It includes a small amphitheatre-like side valley and numerous bluffs and scarps. The altitudinal range of the site is from near sea level to approximately 420 m above sea level. The Department of Conservation identified the site as a Recommended Area for Protection (Herbert RAP 16 – Forsyth Spur) (Wilson 1992).

The site is covered in a mosaic of indigenous dominated vegetation including second growth hardwood forest, shrubland, scrub, and tussockland. The main vegetation communities identified at the site by Walls unpubl. data (2014a,b) are:

- (Matai-lowland totara)/mixed secondary hardwood forest and treeland in gullies
- Mixed secondary broadleaved hardwood forest and treeland in gullies
- Secondary kanuka forest and treeland
- Small leaved shrubland and scrub on lowland hillslopes
- Small leaved shrubland/exotic grass species on lowland hillslopes
- Silver tussock-(hard tussock) tussockland on upper slopes
- (Prostrate kowhai-*Coprosma crassifolia*)/lichen sp.-(moss sp.) rockland on bluffs, scarps and rock outcrops
- (Lancewood)/lowland flax/Carex secta flaxland

A range of common indigenous forest bird species occur at the site: bellbird New Zealand wood pigeon, South Island fantail, grey warbler, Australasian harrier, welcome swallow, New Zealand pipit and silvereye. Skink species were also recorded in grassland habitats (Walls unpubl. data 2014 a, b).

Extent of Site of Ecological Significance

The site includes the areas of second growth hardwood forest, shrubland, scrub, and tussockland.

Assessment Summary

The Lake Forsyth North Side Site has been evaluated against the criteria for determining significant indigenous vegetation and significant habitats of indigenous fauna listed in Appendix 3 of the Canterbury Regional Policy Statement (Environment Canterbury, 2013) (see below) referring also to the Wildland Consultants (2013)

Guidelines and advice from the relevant Specialist Ecologist Groups. Under these criteria the site is ecologically significant because it meets the representativeness (criteria 1 and 2), rarity/distinctiveness (criteria 3, 4, 5 and 6), diversity and pattern (criterion 7) and ecological context criteria (criteria 8 and 10).

Assessment against Significance Criteria

Representativeness

1. Indigenous vegetation or habitat of indigenous fauna that is representative, typical or characteristic of the natural diversity of the relevant ecological district. This can include degraded examples where they are some of the best remaining examples of their type, or represent all that remains of indigenous biodiversity in some areas.

The site is significant under this criterion.

Although the vegetation within the site is secondary-growth, and has been modified by sheep grazing and exotic plants and animals, it is dominated by indigenous vegetation that supports a diverse range of indigenous plant species. The structure and composition of these vegetation communities are relatively intact and they are representative of seral communities in the ecological district.

Secondary broadleaved forest and treeland with kanuka occurs in the gullies. The canopy has a representative diversity of trees including ribbonwood, narrow-leaved lacebark, ngaio, titoki, lancewood, lemonwood, mahoe, kowhai and kaikomako, with lesser amounts of other species. At least 15 remnant matai and 4 adult totara trees are present in the northern part of the site. Although the understorey has been depleted by sheep grazing these forest communities are typical of those that would have been present at a baseline of 1840, although podocarps would probably have been more common.

Diverse indigenous shrubland and scrub dominated by *Coprosma crassifolia, C. propinqua, C. virescens, C. rigida, Carmichaelia australis*, niniao, ongaonga, prostrate kowhai and *Muehlenbeckia complexa* occupies much of the site. Although secondary, this community is only lightly to moderately grazed by sheep and is in good condition. It is representative of seral shrubland and scrub communities in the ecological district.

The extensive rock bluffs, scarps and outcrops throughout the site are still relatively intact and support representative bluff communities.

The silver tussock grasslands have abundant exotic pasture grasses and herbs between tussocks but they are extensive, particularly on the upper slopes and have a dense cover of silver tussock. There is a strong population of speargrass (*Aciphylla subflabellata*) in the highest (NE) part of the Hutchison property. The silver tussock grasslands are a good example of their type within the ecological district, especially at low altitude.

The site has an invertebrate assemblage that is highly representative of the composition that is expected for the vegetation communities present. Of 225

species recorded at the site (Wildland Consultants 2015 a,b) only four (1.8%) are exotic.

2. Indigenous vegetation or habitat of indigenous fauna that is a relatively large example of its type within the relevant ecological district.

The site is significant under this criterion.

The site is extensive and is a large example of a mosaic of lowland second growth hardwood forest, shrubland, scrub, and tussockland in the Herbert Ecological District.

Rarity/Distinctiveness

3. Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its former extent in the Region, or relevant land environment, ecological district, or freshwater environment.

The site is significant under this criterion.

The indigenous forest within the site is significant under this criterion because it has been reduced to less than 20% of its former extent in the ecological district. Banks Peninsula, including the Herbert Ecological District, was almost entirely forested prior to the arrival of humans (Harding 2009, Wilson 2013). The present extent of all other indigenous forest (excluding manuka and/or kanuka) in the ED is estimated to be 7% (10.9% including manuka and/or kanuka) (New Zealand Landcover Database (Version 4)).

Seral vegetation communities such as secondary kanuka forest and treeland and small leaved shrubland and scrub that occur within the site have expanded their range in the ecological district as a result of human disturbance. However, the extent of all indigenous woody vegetation in the ecological district is estimated to be only 10.9% (New Zealand Landcover Database (Version 4)).

4. Indigenous vegetation or habitat of indigenous fauna that supports an indigenous species that is threatened, at risk, or uncommon, nationally or within the relevant ecological district.

The site is significant under this criterion.

It supports nine indigenous plant species that are nationally At Risk, of which three are also endemic to Banks Peninsula and two species that are uncommon within the ecological district or region. It has four invertebrate species that are nationally At Risk and thirteen species that are endemic to Banks Peninsula.

Plants

Nationally At Risk plant species (de Lange et al. 2013) recorded from the site (Walls unpubl. data 2014a,b) are:

- Aciphylla subflabellata (At Risk Declining) a strong population grows in silver tussockland on the upper slopes of the Hutchison property.
- Coprosma virescens (At Risk Declining)

- Coprosma wallii (At Risk Declining)
- Teucridium parvifolium (At Risk Declining)
- Festuca actae (At Risk Naturally Uncommon, endemic to Banks Peninsula)
- Hebe strictissima (At Risk Naturally Uncommon, endemic to Banks Peninsula)
- Leptinella minor (At Risk Naturally Uncommon, endemic to Banks Peninsula)
- Pseudopanax ferox (At Risk Naturally Uncommon)
- Senecio glaucophyllus subsp. basinudus (At Risk Naturally Uncommon)

Plant species recorded from the site (Walls unpubl. data 2014a,b) that are "uncommon to rare or very local" on Banks Peninsula (Wilson 2013) are:

- Carex secta
- Pyrrosia eleagnifolia

Invertebrates

Nationally Threatened and At Risk invertebrate species recorded from the site (Wildland Consultants unpubl. data 2015 a, b) are:

- Zelleria sphenota (At Risk Declining)
- Dasyuris partheniata (At Risk Declining)
- Gadira petraula (At Risk Naturally Uncommon)
- Glyphipterix euastera (At Risk Naturally Uncommon)

Endemic invertebrate species recorded from the site (Wildland Consultants unpubl. data 2015 a, b) are:

- Stanwellia sp. (probably S.kaituna)
- Megadromus guerinii
- Mimopeus granulosus
- Hemiandrus "peninsularis" ground weta
- Kikihia new species
- Aorangia isolata (likely rare Banks Peninsula endemic, likely to be the male, which is undescribed. Known only from a single female from Akaroa (Wildland Consultants unpubl. data 2015b)
- Indeterminate. genus and species of golden harvestman possible new Banks Peninsula endemic? never seen before (Wildland Consultants unpubl. data 2015b)
- Phrynixus sp. weevil
- Undescribed genus 'Epitimetes'
- Maniho ngaitahu
- Kikihia new species
- Pseudocoremia modica
- *Maoridrilis sp.* possibly a Banks Peninsula endemic (Wildland Consultants unpubl. data 2015a)

5. The site contains indigenous vegetation or an indigenous species at its distribution limit within Canterbury Region or nationally.

The site is significant under this criterion.

There are four plant species that are at their southern national or regional distributional limits on Banks Peninsula (Wilson 2013) and one invertebrate species at its southern national distributional limit on Banks Peninsula.

Plant species at their southern national or regional distributional limits on Banks Peninsula are (Walls unpubl. data 2014a,b):

- Alectryon excelsus (southern national limit)
- Hedycarya arborea (southern regional limit)
- Passiflora tetrandra (southern national limit)
- Piper excelsum (southern national limit)

The invertebrate species at its southern national distributional limit on Banks Peninsula (Wildland Consultants unpubl. data 2015 a,b) is:

- Zelanda kaituna (southern national limit)
- 6. Indigenous vegetation or an association of indigenous species that is distinctive, of restricted occurrence, occurs within an originally rare ecosystem, or has developed as a result of an unusual environmental factor or combinations of factors.

The site is significant under this criterion.

There are extensive basic igneous bluffs, scarps and rock outcrops throughout the site that support indigenous vegetation (Walls unpubl. data 2014a,b). At a national scale these features are an originally rare ecosystem (Williams et al. 2007).

There are also lowland flax seepages with emergent young lancewoods and *Carex secta* on upper slopes (Walls unpubl. data 2014a,b). Some of these are extensive. Seepages and flushes are also an originally rare ecosystem on a national scale (Williams et al. 2007).

Walls unpubl. data (2014b) recorded an unusual hybrid ribbonwood (*Plagianthus regius* x *Plagianthus divaricata*) at the site. This unusual hybrid reflects the close proximity of *Plagianthus regius* on lowland hill slopes with *Plagianthus divaricata* on the shoreline of Lake Forsyth/Wairewa.

Diversity and Pattern

7. Indigenous vegetation or habitat of indigenous fauna that contains a high diversity of indigenous ecosystem or habitat types, indigenous taxa, or has changes in species composition reflecting the existence of diverse natural features or ecological gradients.

The site is significant under this criterion.

The site contains a high diversity of vegetation communities and habitat types, including rocklands, seepages, broadleaved forest, kanuka forest, treelands, scrub, shrublands, tussocklands and exotic grasslands. They exist as a mosaic across the site. Because of the altitudinal gradient from near sea level to over 400 m the indigenous plant species composition has coastal, lowland and montane

elements. One-hundred and two species were recorded during recent botanical surveys (Walls 2014 a,b). This high diversity of plant taxa reflects both the diversity of the vegetation communities and habitat types and the altitudinal gradient.

The southern part of the site has a relatively high diversity of invertebrates (Wildland Consultants unpubl. data 2015b).

Ecological Context

8. Vegetation or habitat of indigenous fauna that provides or contributes to an important ecological linkage or network, or provides an important buffering function.

The site is significant under this criterion.

It is part of an important network of indigenous forest, scrub and shrubland extending from the southern end of Lake Forsyth/Wairewa around the eastern faces of High Bare Peak into the upper catchment. It is likely to provide an important ecological linkage for the dispersal of indigenous fauna (birds, lizards and invertebrates) and plants (via seed dispersal) along the north-western side of Lake Forsyth/Wairewa between Birdlings Flat and Kaitorete Spit and Banks Peninsula.

The site adjoins Lake Forsyth/Wairewa (SES/H/6), a lake of very high ecological value, and particularly as a habitat for indigenous fauna (although the Christchurch to Akaroa Highway passes between the lake and the site). Lake Forsyth/Wairewa is in a highly eutrophic state and reducing nutrient and sediment inputs is a high priority (Gray 2013). Maintaining vegetation cover on these slopes reduces these local inputs, but management within the wider catchment is also essential to address water quality issues.

9. A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal system.

The site is not significant under this criterion. The only wetlands within the site are seepages on steep slopes dominated by lowland flax, with emergent young lancewoods and *Carex secta* (Walls unpubl. data 2014a,b). These are limited in extent and do not play an important hydrological, biological or ecological role in the natural functioning of a river or coastal system.

10. Indigenous vegetation or habitat of indigenous fauna that provides important habitat (including refuges from predation, or key habitat for feeding, breeding, or resting) for indigenous species, either seasonally or permanently.

The site provides important habitat for a high diversity of indigenous invertebrates, including a high proportion of species that are endemic to Banks Peninsula. The rocklands, grasslands and shrublands provide good habitat for gecko and skinks (Walls unpubl. data 2014 a,b).

Existing Protection Status

The site is not legally protected.

Threats and risks	Management recommendations	Support package options
Biodiversity pest plants. There are few species of concern within the site. Common broom occurs in the northern part of the site, elderberry occurs at low altitude and in low numbers, Sweet briar is present but is not an ecological threat (Walls unpubl. data 2014a,b).	 Consider controlling broom and elderberry using methods that do not damage surrounding indigenous vegetation. Consider ongoing surveillance for other biodiversity pest plants such as old mans beard, sycamore, wilding pines, spur valerian, fennel and Polypodium vulgare which are known to be in the surrounding area. 	 Advice and guidance for landowners about identification, monitoring and control of pest plants. Assistance available where possible.
A small number of goats have been observed on the site.	Consider removing goats from the site. Goats are a serious threat to the ecological values of the site. They also have the potential to spread onto neighbouring properties and into other areas with high ecological values. Not removing goats poses a significant threat to the success of the multi-agency Banks Peninsula Feral Goat Eradication Programme.	Assistance to landowners with goat control, with their agreement.
Stock. Sheep graze the site at moderate and low intensity in the northern and southern parts of the site respectively. This appears to be preventing or impeding natural vegetation regeneration, especially in forests, treelands, scrub and shrublands (Walls unpubl. data 2014a,b).	Consider the implications of stock grazing in relation to management of indigenous vegetation communities. Removing stock from the site would allow more natural vegetation regeneration. But a higher level of pest plant surveillance and control would be required.	 Discussions with landowners about the benefits to biodiversity of stock management options. Assistance available where possible.

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Assessment completed by: Scott Hooson **Date:** 27 January 2015

Statement completed by: Scott Hooson **Date:** 27 January 2015

Statement updated by: XXX Date: XXX

PLEASE NOTE THIS STATEMENT IS BASED ON INFORMATION AVAILABLE AT THE TIME OF WRITING. DUE TO THE DYNAMIC NATURE OF ECOSYSTEMS, FUTURE REASSESSMENT OF THE SITE MAY BE NECESSARY TO REFLECT ANY CHANGES IN KNOWLEDGE OF ITS ECOLOGICAL SIGNIFICANCE.

Appendix 1: Plant Species List

List of plant species recorded during botanical surveys of the Millar and Hutchison properties (sourced from Walls unpubl. data (2014a,b)).

Scientific Name	Common Name(s)
Indigenous species	
Acaena anserinifolia	bidibidi, piripiri
Aciphylla subflabellata	speargrass
Alectryon excelsus	titoki
Arthropodium candidum	grass lily, repehinapapa
Asplenium appendiculatum	ground spleenwort
Asplenium flabellifolium	necklace fern
Asplenium flaccidum	hanging spleenwort, raukatauri
Asplenium gracillimum	
Asplenium hookerianum	Hooker's spleenwort
Austroderia richardii	toetoe
Blechnum fluviatile	kiwakiwa
Blechnum minus	swamp kiokio
Blechnum penna-marina	little hard fern
Calystegia tuguriorum	NZ bindweed
Cardamine debilis	NZ bitter cress
Carex secta	purei, tussock sedge
Carmichaelia australis	native broom, common broom
Carpodetus serratus	putaputaweta
Clematis foetida	yellow clematis
Clematis paniculata Convolvulus waitaha	puawananga
	elfin bindweed
Coprosma crassifolia Coprosma propinqua	thick-leaved coprosma, mikimiki
Coprosma rigida	mingimingi, mikimiki stiff coprosma
Coprosma rotundifolia	round-leaved coprosma
Coprosma virescens	mikimiki
Coprosma wallii	mikimiki
Cordyline australis	cabbage tree, ti kouka
Corokia cotoneaster	korokio
Crassula sieberiana	dwarf stonecrop
Discaria toumatou	matagouri, wild irishman
Disphyma australe	native iceplant, horokaka
Epilobium nummalariifolium	willow herb
Festuca actae	Banks Peninsula blue tussock
Festuca novae-zelandiae	fescue tussock
Fuchsia excorticata	tree fuchsia
Griselinia littoralis	broadleaf
Haloragis erecta	toatoa
Hebe strictissima	Banks Peninsula hebe
Hedycarya arborea	pigeonwood
Helichrysum lanceolatum	niniao
Hoheria angustifolia	narrow-leaved lacebark, houhere
Hydrocotyle heteromeria	pennywort

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Pseudopanax feroxfierce lancewoodPteridium esculentumbrackenPyrrosia eleagnifolialeather leaf fernRanunculus reflexushairy buttercup, maruruRubus cissoidesbush lawyer, tataramoaRubus schmidelioidesbush lawyer, tataramoaRubus squarrosusleafless lawyer, tataramoaScandia geniculataclimbing aniseedSchefflera digitatapate		
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Rubus squarrosusleafless lawyer, tataramoaScandia geniculataclimbing aniseedSchefflera digitatapate		
Scandia geniculata climbing aniseed Schefflera digitata pate		
Schefflera digitata pate		
	Scandia geniculata	<u> </u>
Senecio glaucophyllus yellow rock groundsel		•
	Senecio glaucophyllus	yellow rock groundsel

Sophora microphylla	kowhai, small-leaved kowhai
Sophora prostrata	prostrate kowhai, dwarf kowhai
Teucridium parvifolium	
Urtica ferox	ongaonga, tree nettle
Viola cunninghamii	native violet
Wahlenbergia gracilis	harebell
Exotic Species	
Agrostis capillaris	brown top
Aira caryophyllea	silvery hair grass
Anthoxanthum odoratum	sweet vernal
Anthriscus caucalis	beaked parsley
Bellis perennis	daisy
Bromus diandrus	ripgut brome
Cerastium glomeratum	chickweed
Cirsium arvense	Californian thistle
Cirsium vulgare	Scotch thistle
Critesion murinum	barley grass
Cynosurus echinatus	rough dogstail
Cytisus scoparius	common broom
Dactylis glomerata	cocksfoot
Digitalis purpurea	foxglove
Echium vulgare	vipers bugloss
Galium aparine	cleavers
Geranium molle	dovesfoot cranesbill
Holcus lanatus	Yorkshire fog
Hypochoeris radicata	catsear
Lolium perenne	ryegrass
Marrubium vulgare	horehound
Mycelis muralis	wall lettuce
Orobanche minor	broomrape
Petroselinum crispum	wild parsley
Polycarpon tetraphyllum	allseed
Rosa rubiginosa	sweet brier/briar
Rumex acetosella	sheeps sorrel
Sambucus nigra	elderberry
Silene gallica	catchfly
Silybum marianum	variegated thistle
Sisymbrium officinale	hedge mustard
Stellaria media	chickweed
Trifolium dubium	suckling clover
Trifolium repens	white clover
Verbascum thapsus	woolly mullein
Vicia sativa	vetch
Vitttadinia gracilis	purple fuzzweed

Appendix 2: Invertebrate Species List for Mandalay Station

Sourced from Wildland Consultants unpubl. data (2015a)

Order	Family	Scientific Name	Common Name	Species Status
Indigenous speci				
ilidigellous speci				
ANNELIDA	Megascolecidae	Maoridrilis transalpinus		
		Maoridrilis sp.1		possibly BP endemic species
TUBELLARIA	Geoplanidae	Newzelandia sp. 1		
	•	Newzelandia sp. 2		
MEGALOPTERA	Corydalidae	Archichauliodes diversus	dobsonfly	
NEUROPTERA	Hemerobiidae	Drepanacra binocula	lacewing	
11201101 12101	Tromorosii dae	Micromus tasmaniae	lacewing	
HEMIPTERA	Tibicinidae	Amphipsalta zealandica	clapping cicada	
TILIVIII TERA	Holdindae	Amphipsalta strepitans	rock cicada	
		Kikihia new species		endemic
	Miridae	Chinamiris virescens		
ORTHOPTERA	Tettigoniidae	Conocephalus bilineatus	katydid	
	Gryllidae	Pteronemobius bigelowi	cricket	
	Rhaphidophoridae	Pleioplectron simplex	cave weta	common
	Anostostomatidae	Hemiandrus "peninsularis"		BP endemic
COLEOPTERA	Cerambycidae	Prionoplus reticularis	huhu	
	Carabidae	Megadromus guerini Cicindela latecincta	tiger beetle	BP endemic
		Holcaspis ellongella	. 9.2 2.2	common
		Demetridia deiffenbachii		common
	Lucanidae	Paralissotes reticulatus	Reticulate stag beetle	
	Coccinellidae	Coccinella leonina	ladybird	
	Scarabaeidae	Costelytra zelandica	chafer	

		Odontria striata	striped chafer	
	Zopheridae	Pristoderus bakewelli		common
	Curculionidae	Phrynixus sp.	weevil	BP endemic
	Curcuionidae	Undescribed genus	weevii	Dr endemic
		'Epitimetes'		BP endemic
	Oedemeridae	Thelyphassa nemoralis		common
HYMENOPTERA	Formicidae	Monomorium antarcticum	ant	
	Ichneumonidae	Netelia producta	wasp	
LEPIDOPTERA	Mnesarchaeidae	Mnesarchaea paracosma		
	Hepialidae	Wiseana copularis	porina moth	
	'	Wiseana umbraculata	striped porina moth	
	Tineidae	Erechthias fulguritella		
	Tilleluae	Erechthias charadrota		
		Opogona omoscopa		
		Sagephora phortigera		
	Glyphipterigidae	Glyphipterix achlyoessa		
		Glyphipterix iocheaera		
		Glyphipterix euastera		Naturally Uncommon
	Elachistidae	Cosmiotes ombrodoca		
	Depressariidae	Eutorna caryochroa		
	Gelechiidae	Anisoplaca achyrota Kiwaia brontophora		
		Nwaia bioinophora		
	Oecophoridae	Barea exarcha		
		Gymnobathra parca		
		Gymnobathra		
		sarcoxantha		
		Gymnobathra hamatella		
		Izatha huttoni		
		Izatha katadiktya		
		Izatha convulsella		
		Leptocroca scholaea		
		Leptocroca species		
		Phaeosaces		
		coarctatella		
		Tingena macarella		
		Tingena plagiatella		

		T = , ,	ī	T
		Trachypepla		
		conspicuella		
		_		
		Stathmopoda		
Stathr	mopodidae	holochra		
		Stathmopoda		
		horticola		
Tortric	cidae	Capua semiferana		
		Cnephasia jactatana		
		Ctenopseustis		
		obliquana		
		Epichorista siriana		
		Harmologa		
		amplexana		
		Leucotenes		
		coprosmae		
		Merophyas		
		leucaniana		
		Planotortrix		
		notophaea		
		Planotortrix		
		excessana		
		New genus and		
		species		
		15		
Thyric	didae	Morova subfasciata		
Cram	bidae	Deana hybreasalis		
		Eudonia philerga		
		Eudonia leptalea		
		Eudonia sabulosella		
		Eudonia		
		submarginalis		
		Eudonia aff. minualis		
		Gadira acerella		
		Glaucocharis lepidella		
		Orocrambus		
		flexuosellus		
		Orocrambus		
		ramosellus		
		Orocrambus vittellus		
		Scoparia chalicodes		
		Scoparia halopis		
		Scoparia minusculalis		
		Udea flavidalis		
		Udea marmarina		
		Uresiphita maorialis	kowhai moth	
GĒON	METRIDAE	Asaphodes aegrota		
		Asaphodes beata		
		Asaphodes		
		chlamydota		
		Austrocidaria		
		callichlora		
		Austrocidaria gobiata		
		Austrocidaria similata		
		Chloroclystis		
		- Critici Cony Cito	<u> </u>	<u> </u>

 			
	inductata		
	Chloroclystis		
	sphragitis		
	Declana egregia	zebra moth	
	Declana floccosa		
	Declana leptomera		
	Declana junctilinea		
	Epiphyrne undosata		
	Epiphyrne verriculata		
	Epyaxa rosearia		
	Gellonia dejectaria		
	Homodotis		
	megaspilata		
	Helastia cinerearia		
	Helastia corcularia		
	Helastia triphragma		
	Hydriomena		
	deltoidata		
	Hydriomena rixata	 	
	Ischalis fortinata		
	Orthocyldon		
	praefectata		
	Pasiphila bilineolata		
	Pasiphila muscosata		
	Pasiphila sandycias		
	Pasiphila urticae		
	Pseudocoremia		
	indistincta		
	Pseudocoremia		
	leucelaea		
	Pseudocoremia		
	modica		endemic
	Pseudocoremia		endernic
	pergrata Pseudocoremia		
	suavis		
	Xanthorhoe		
	semifissata		
NI and all I	Ditale dell'error te		
Noctuidae	Bityla defigurata		
	Feredayia graminosa		
	Graphania morosa		
	Graphania mutans		
	Graphania phricias		
	Graphania plena		
	Graphania ustistriga		
	Meterana decorata		
	Meterana levis		
	Meterana ochthistis		
	Meterana stipata		
	Persectania aversa		
	Proteuxoa comma		
	Tmetolophota arotis		
	Tmetolophota		
	atristriga		
	Tmetolophota propria Tmetolophota unica		

	Nolidae	Celama parvitis		
	Erebidae	Nyctemera annulata Rhapsa scotoscialis	magpie moth	
		Schrankia costaestrigalis		
	Lycaenidae	Lycaena "common copper"	common copper	
			Nymphalidae	Vanessa gonerilla
ODONATA	Coenagrionidae	Xanthocnemis zelandica	damselfly	
MANTODEA	Mantidae	Orthodera novaezelandiae	praying mantis	
PHASMATODEA	Phasmidae	Clitarchus hookeri	stick insect	
ARANEAE	Lycosidae	Anoteropsis hilaris	Spiders	common
	Gnaphosidae	Zelanda kaituna		BP southern most distribution
	Linyphiidae	Pseudafroneta incerta		Dunedin to Lewis Pass
	Amphinectidae	Maniho ngaitahu		BP endemic
	Agelenidae	?Neoramia sp.		unknown
	Nemesiidae	Stanwellia sp. (probably S.kaituna)		BP endemic
	Miturgidae	Argoctenus sp.		?share with Australia
	Araneidae	Novaranea queribunda		throughout NZ
	Salticidae	unknown species 1		Unknown
	Thomisidae	Sidymella sp. (probably S. angularis)		throughout NZ
Exotic species		<u> </u>		
LEPIDOPTERA	Tortricidae	Cydia succedana	gorse seed pod moth	
	Pieridae	Pieris rapae	white butterfly	

Appendix 3: Invertebrate Species List for Hutchinson Property

Sourced from Wildland Consultants unpubl. data (2015b)

Order	Family	Scientific Name	Common Name	Species Status
Indigenous speci	00			
indigenous speci	es			
		Archichauliodes		
MEGALOPTERA	Corydalidae	diversus	dobsonfly	
NEUROPTERA	Hemerobiidae	Drepanacra binocula	lacewing	
		Amphipsalta	clapping	
HEMIPTERA	Tibicinidae	zealandica	cicada	
		Amphipsalta		
		strepitans	rock cicada	
		Kikihia new species		endemic
	Pentatomidae	Dictyotis caenosus	shieldbug	
	Torratornado	Dioty one caeriocae	Omorabag	
	Lygaeidae	Nysius huttoni		
		Rhypodes anceps		
		Conocephalus		
	Tettigoniidae	bilineatus		
		Pteronemobius		
	Gryllidae	bigelowi	cricket	
		5/ / / /		
	A a wi ali al a a	Phaulacridium	~~~~~	
	Acrididae	marginale	grasshopper	
		Archichauliodes		
MEGALOPTERA	Corydalidae	diversus	dobsonfly	
		1		
NEUROPTERA	Hemerobiidae	Drepanacra binocula	lacewing	
		Amphipsalta	clapping	
HEMIPTERA	Tibicinidae	zealandica	cicada	
		Amphipsalta		
		strepitans	rock cicada	
		Kikihia new species		endemic
	Pentatomidae	Dictyotis caenosus	shieldbug	
	i entatornuae	Dictyotis caeriosus	Silielabag	
	Lygaeidae	Nysius huttoni		
	, ,	Rhypodes anceps		
	-	Conocephalus		
	Tettigoniidae	bilineatus		
		Pteronemobius		
	Gryllidae	bigelowi	cricket	
	Acrididae	Phaulacridium	grasshopper	

		marginale		
COLEOPTERA	Cerambycidae	Prionoplus reticularis	huhu	
		Zorion species		
	Carabidae	Holcaspis angustula	ground beetles	
		Demetrida dieffenbachi		
		Megadromus antarcticus		
		Megadromus guerinii Dicrochile atrata		BP endemic
	Zopheridae	Pristoderus bakewelli		
	Byrridae	Epichorius sp.		
	Scarabaeidae	Pyronota festiva	manuka beetle	
	Codiabasidas	Costelytra zealandica	grass grub beetle	
		Odontria varicolourata Odontria 'large'		
	Dermestidae	Trogoderma antennale		
	Oedemeridae	Thelyphassa nemoralis		
	Curculionidae	Cryptorhynchinae sp. indet. 1.		
		Cryptorhynchinae sp. indet. 2.		
	Tenebrionidae	Mimopeus granulosus		BP endemic
	Coccinellidae	Veronicobious sp. 1 Veronicobious sp. 2		
ORTHOPTERA	Raphidophoridae	Pleioplectron simplex	cave weta	
	Anostostomatidae	Hemiandrus "peninsularis"	ground weta	BP endemic
HYMENOPTERA	Formicidae	Monomorium antarcticum	ant	
	Ichneumonidae	Netelia producta		
LEPIDOPTERA	Micropterigidae	Sabatinca aenea		
	Hepialidae	Wiseana copularis	porina moth	
		Wiseana umbraculata	striped porina moth	
	Psychidae	Reductoderces	casemoth	

	species	
Tineidae	Erechthias fulguritella	
Tirieluae	Erecritilas ruiguntella	
Glyphipterigidae	Glyphipterix alchyoessa Glyphipterix oxymacaera	
Elachistidae	Cosmiotes ombrodoca	
Lyonetiidae	Bedellia psammitis	
Yponomeutidae	Zelleria sphenota	At Risk, Declining
Gelechiidae	Anisoplaca achyrota	
Gerearinade	Kiwaia brontophora	
Oecophoridae	Barea exarcha	
	Gymnobathra omphalota	
	Gymnobathra hamatella	
	Gymnobathra parca	
	Gymnobathra	
	sarcoxantha	
	Hierodoris s-fractum	
	Izatha huttoni	
	Izatha katadiktya	
	Izatha convulsella	
	Leptocroca scholaea Tingena macarella	
	Tingena melinella	
	Tingena plagiatella	
	Trachypepla	
	inconspicuella	
Tortricidae	Apoctena conditana	
	Capua semiferana	
	Cnephasia jactatana	
	Ctenopseustis obliquana	
	Catamacta gavisana	
	Epichorista siriana	
	Harmologa amplexana	
	Merophyas leucaniana	
Thyrididae	Morova subfasciata	
Crambidae	Antiscopa epicomia	
	Deana hybreasalis	
	Eudonia cymatias	
	Eudonia cataxesta	
	Eudonia feredayi	
	Eudonia luminatrix	
	Eudonia manganeutis	
	Eudonia leptalea	
	Eudonia sabulosella	

		Gadira acerella	
		Gadira acerella Gadira petraula	Naturally Uncommon
		Glaucocharis	INALUIANY ONCOMMON
		auriscriptella	
		Glaucocharis	
		interrupta	
		Glaucocharis lepidella	
		Glaucocharis	
		pyrsophanes	
		Hygraula nitens	
		Orocrambus	
		flexuosellus	
		Orocrambus	
		ramosellus	
		Orocrambus vittellus	
		Udea flavidalis	
		Udea marmarina	
		Uresiphita maorialis	
	GEOMETRIDAE	Asaphodes aegrota	
		Asaphodes beata	
		Asaphodes	
		chlamydota	
		Austrocidaria	
		anguligera	
		Austrocidaria gobiata	
		Chloroclystis inductata	
		Dasyuris partheniata	At Risk, Declining
		Declana leptomera	
		Declana junctilinea	
		Epiphyrne undosata	
		Epiphyrne verriculata	
		Epyaxa lucidata	
		Epyaxa rosearia	
		Homodotis	
		megaspilata	
		Helastia cinerearia	
		Helastia triphragma	
		Ischalis fortinata	
		Orthocyldon	
		praefectata	
		Pasiphila muscosata	
		Pasiphila urticae Poecilasthena	
		schistaria	
		Pseudocoremia	
		indistincta	
		Pseudocoremia Pseudocoremia	
		pergrata	
		Pseudocoremia suavis	
		Xanthorhoe	
		semifissata	
	Noctuidae	Aletia moderata	
		Agrotis ipsilon	
		Bityla defigurata	
 		Feredayia graminosa	<u> </u>
Į.		i cicuayia giailiilosa i	

	T	Graphania mutans	T	
		Graphania omoplaca		
		Graphania plena		
		Graphania ustistriga		
		Meterana coeleno		
		Meterana decorata		
		Meterana levis		
		Persectania aversa		
		Proteuxoa comma		
		Tmetolophota arotis		
		Tmetolophota		
		atristriga Tmetolophota unica		
		ттетоюрнога иніса		
	Nolidae	Celama parvitis		
	Erebidae	Nyctemera annulata	magpie moth	
		Rhapsa scotoscialis		
	Lycaenidae	Lycaena "comon copper"	common copper	
	Lycaeriidae	Lycaena feredayi	glade copper	
		Lycacha forcaayi	glade copper	
	Nymphalidae	Vanessa gonerilla	red admiral	
	,			
		Orthodera	praying	
MANTODEA	Mantidae	novaezelandiae	mantis	
PHASMATODEA	Phasmidae	Clitarchis hookeri	stick insect	
ARANEAE			Spiders	
ANANLAL			Spiders	Common throughout
	 Pisauridae	Dolomedes minor		NZ
	i isauliuae	Bolomedes minor		Banks Peninsula to
	Gnaphosidae	Zelanda kaituna		Feilding
	Onaphosidae	Zolarida Kaltaria		Common throughout
	Lycosidae	Anoteropsis hilaris		NZ
		Allotrochosina		Common throughout
		schauinslandi		NZ
		Stanwellia sp.		
	Nemesiidae	(probably S.kaituna)		Banks Peninsula
		,		Introduced and
	Linyphiidae	Tenuiphantes tenuis		common
				Dunedin to Lewis
		Pseudafroneta incerta		Pass
	Zoropsodae	Uliodon albopunctatus		Common in NZ
		Diaea sp. (probably D.		Common throughout
	Thomisidae	ambara)		NZ
	Salticidae	unknown species 1		unknown
	Amphinostidos	Agrangia igalata		likely rare BP
	Amphinectidae	Aorangia isolata Sidymella sp.		endemic
	Thomisidae	(probably S. angularis)		Common throughout NZ
	momisidae	(probably of drigularis)		1 1/4
OPILIONES	Triaenonychidae	Indet. genus & sp.	harvestman	new BP endemic?
			giant	
COLLEMBOLA	Neanuridae	?Holacanthella sp.	springtail	?

Introduced				
species				
LEPIDOPTERA	Tineidae	Monopis ethelella		
	Geometridae	Chloroclystis filata		
			white	
	Pieridae	Pieris rapae	butterfly	