

Christchurch District Plan Site of Ecological Significance

Site Significance Statement

Site name: Decanter Bay Valley

Site number: SES/H/2

Physical address of site: Decanter Bay

Summary of Significance:

This site is significant because it contains a large example of forest, treeland, scrub and shrubland that is typical of indigenous vegetation on steep lowland slopes in the ecological district and indigenous vegetation on basic cliffs, scarps and tors which are an originally rare ecosystem. It supports a high diversity of indigenous plants, moths and cicadas including species that are nationally At Risk and/or endemic to Banks Peninsula, uncommon within the ecological district or region or at their distributional limits on Banks Peninsula. It also provides important habitat for indigenous fauna.

Site Map



Additional Site Information

Ecological District: Herbert

Area of SES (ha): 142.09

Central point (NZTM): E1598083, N5165621

Site Description

The site is situated on the north-west side of Decanter Bay Valley. It includes the steep coastal headland above the bay and south-east facing slopes that extend inland. The altitudinal range of the site is from sea level to approximately 380 m. A layer of bluffs cut a line across the steep slopes on the north-eastern half of the area. Several small tributaries of Duncan Stream, which is on the valley floor below the site, flow down the steep slopes within the site. 3.7 ha of the SES is protected by a Banks Peninsula Conservation Trust (BPCT) covenant.

The area is a mosaic of forest, treeland, scrub and shrubland over steep short tussock grassland and pasture. Scrub and regenerating forest occupy many of the gullies with treeland and shrubland over extensive grassland. Open grassy spurs descend between forest and shrubland from the main spur to the valley floor. Common tree species are kanuka, kowhai, mahoe, ngaio and *Hoheria angustifolia* and common shrubs include *Coprosma virescens*, *C. crassifolia*, *Hebe strictissima*, *Helichrysum lanceolata* and *Melicope simplex*.

The land rises from bluffs at sea level up to 400 m and this altitude range is reflected in a gradient of coastal vegetation merging into montane shrubland/forest at higher levels. There is a diverse flora and regeneration is vigorous with many seedlings and saplings establishing on the forest floor and into shrubland. Plants of note include *Olearia fragrantissima*, *Parietaria debilis* and a single young matai on the valley floor. The fenced BPCT covenant contains several *Olearia fragrantissima* and there are many more outside the fenced area. Together this population is the largest on Banks Peninsula (Walls 2001, 2010). With the exception of the fenced covenant the site is grazed by cattle and sheep and in places where stock have access, the forest floor is bare.

Common indigenous bird species recorded from the site are bellbird, grey warbler, swamp harrier, South Island fantail and silvereye (Walls 2010). South Island rifleman, a species that is uncommon within the Herbert Ecological District, has also been recorded at the site (Jensen 2014).

Extent of Site of Ecological Significance

The site includes the indigenous forest, treeland, scrub and shrubland communities on the east to south-east facing slopes of Decanter Bay Valley. There are some large areas of silver tussock and pasture on steep slopes within the site that have been

included because excluding them would fragment the site and reduce its ecological integrity.

Assessment Summary

The Decanter Bay Valley 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) and diversity and pattern criteria (criterion 7).

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.

The mosaic of forest, treeland, scrub and shrubland over steep short tussock grassland is typical of indigenous vegetation on steep lowland slopes on the drier northern side of the Herbert Ecological District. Although largely second-growth, the vegetation on the higher slopes also contains large old totara (*Podocarpus totara*, *P. hallii* and hybrids) and broadleaf which are remnants of the original forest cover (Jensen 2014, Walls 2010). Although the structure and composition of the vegetation has been modified by grazing, the flora is diverse and representative and regeneration is vigorous with many seedlings and saplings establishing on the forest floor and into shrubland (Jensen 2014).

The indigenous invertebrate assemblage is diverse and representative of the habitat types that occur within the site (Wildland Consultants 2014).

- 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.

It is a large example of indigenous forest, treeland, scrub and shrubland on lowland hill slopes 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 forest within the site is significant under this criterion.

At the ecological district (and ecological region) scale indigenous forest has been reduced to less than 20%. Banks Peninsula, including the Akaroa Ecological District, was almost entirely forested prior to the arrival of humans (Harding 2009, Wilson 2013). The present extent of all indigenous forest in the ED is estimated to be 7% (10.9% including manuka and/or kanuka) (New Zealand Landcover Database (Version 4)).

There is no accurate information to assess the change in extent of indigenous scrub and shrublands within the ecological district, but the extent of all indigenous vegetation (as a percentage of the ecological district) as mapped by the New Zealand Landcover Database (Version 4) is only 14.5%.

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 a number of indigenous plant and invertebrate species that are nationally At Risk and/or endemic to Banks Peninsula and plant, invertebrate and bird species that are uncommon within the ecological district or region.

Plants

The site contains the largest population of *Olearia fragrantissima* on Banks Peninsula. This species has a conservation status of the nationally (At Risk – Declining). There are an estimated 150-200 *Olearia fragrantissima* trees on the north-western slopes above Duncan Stream and Decanter Bay within three adjacent sites with a combined area of about 40ha. A few more plants grow near the Menzies Bay Road (Walls 2001).

Nationally At Risk plant species (de Lange et al. 2013) recorded from the site (Jensen 2014, Walls 2010, Walls 2001) are:

- *Aciphylla subflabellata* (At Risk - Declining)
- *Chenopodium allanii* (At Risk - Naturally Uncommon)
- *Coprosma virescens* (At Risk - Declining)
- *Olearia fragrantissima* (At Risk – Declining)
- *Raoulia monroi* (At Risk - Declining)
- *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)

Four of these nationally At Risk plants occur within the BPCT covenant (Walls 2010):

- *Brachyglottis sciadophila* (At Risk - Declining)
- *Coprosma virescens* (At Risk - Declining)
- *Hebe strictissima* (At Risk - Naturally Uncommon, endemic to Banks Peninsula)
- *Olearia fragrantissima* (At Risk - Declining)

Plant species recorded from the site (Jensen 2014) that are “uncommon to rare or very local” on Banks Peninsula (Wilson 2013) are:

- *Epilobium cinereum*
- *Histiopteris incisa*
- *Pyrrosia eleagnifolia*

Invertebrates

Nationally At Risk invertebrate species recorded from the site (Wildland Consultants 2014) are:

- *Kikihia* new species (Banks Peninsula green cicada) (endemic to Banks Peninsula)
- *Zelleria sphenota* (mistletoe miner) (At Risk – Declining)
- *Gadira petraula* (At Risk – Naturally Uncommon)
- *Declana griseata* (mistletoe moth) (At Risk – Declining)
- *Tatosoma agrionata* (mistletoe carpet moth) (At Risk – Declining)
- *Bityla sericea* (At Risk – Naturally Uncommon)

Invertebrate species recorded from the site (Wildland Consultants 2014) that are uncommon within the ecological district are:

- *Rhodopsalta microdora*
- *Phycomorpha metachrysa* (milktree fruit moth)
- *Meterana octans* (milktree moth)
- *Asterivora chatuidea* (Helichrysum jet)
- *Nola parvitis*

Birds

South Island rifleman, a species that is uncommon within the Herbert Ecological District, occurs within the site (Jensen 2014).

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 species that are at their southern national or regional distributional limits on Banks Peninsula and one that is at its northern national limit (Wilson 2013). These species are (Jensen 2014):

- *Alectryon excelsus* (southern regional limit)
- *Asplenium oblongifolium* (southern national limit)
- *Passiflora tetrandra* (southern national limit)
- *Piper excelsum* (southern national limit)
- *Olearia fragrantissima* (northern 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 igneous bluffs, scarps and rock outcrops throughout the site. At a national scale, basic cliffs, scarps and tors are an originally rare ecosystem (Williams et al. 2007). Where indigenous vegetation occurs on these features within the site they are significant under this criterion.

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.

It supports a very diverse range of indigenous plant taxa. Ninety-six species were recorded at the site in a recent botanical survey (Jensen 2014). Vegetation composition and canopy varies across the site in a complex pattern depending on slope, substrate, altitude, moisture availability, exposure, distance from the coast and historic human disturbance. Species such as native iceplant (*Disphyma australe*), *Passiflora tetrandra*, *Senecio glaucophyllus* subsp. *basinudus* and *Apium prostratum* are only found near the coast. The occurrence of titoki, ngaio, kawakawa and shining spleenwort also reflects the influence of the coastal environment (Jensen 2014).

A high diversity of indigenous moths and cicadas were also recorded at the site, including a number of nationally At Risk and uncommon species (Wildland Consultants 2014).

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 not significant under this criterion. The forest, treeland, scrub and shrublands that make up the site are surrounded by farmed grassland and are distant from other areas of indigenous forest, treeland, scrub and shrublands in the surrounding landscape.

Indigenous vegetation buffers the small steep tributary streams that drain into Duncan Stream and canopy cover is dense along the riparian margins. However, this buffering function is not important enough to meet the threshold for significance under this criterion at this site.

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. There are no wetlands within the site that meet this criterion.

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 is significant under this criterion.

The size, diversity and relative intactness of the vegetation means that the site provides important habitat for common indigenous birds, three species of lizard (Walls 2010) and a diverse range of invertebrates including a number of nationally At Risk and uncommon species (Wildland Consultants 2014).

Site Management

Existing Protection Status

3.7 ha (approximately 2%) of the site is protected by a BPCT covenant. The remainder of the site is not legally protected.

Threats and risks	Management recommendations	Support package options
The BPCT covenant is fenced (although Walls (2010) noted that at the time the covenant was still accessible to sheep). The remainder of the site is grazed by stock.	Consider fencing other areas within the site. High priority areas are those with more mature forest and unfenced areas of <i>Olearia fragrantissima</i>.	- Discussion with landowner about the benefits to biodiversity of fencing and the options available for stock control. - Assistance available as appropriate.
Biodiversity pest plants. There are few weeds of ecological concern and no serious woody weeds (Jensen 2014, Walls 2010). Pigs ear is present on coastal rocks.	- Consider controlling pigs ear to protect rock out-crop and shrubland values. - Consider ongoing surveillance for, and control if detected, of other biodiversity pest plants such as banana passionfruit and sycamore that are known to occur in the vicinity of the site.	- Advice and guidance for landowner about monitoring and control of pest plants. - Assistance available as appropriate.
Pest animals. Possums and rabbits numbers are low as a result of wider control programmes on Banks Peninsula but Walls (2010) noted some damage to seedlings in BPCT covenant. An increase in rabbit and/or possums populations would threaten the establishment and survival of <i>Olearia fragrantissima</i> seedlings.	Consider controlling rabbit and possum numbers if populations increase. Any additional pest animal control (e.g. trapping or poisoning of hedgehogs, stoats, cats and rats) would benefit native fauna (birds, lizards and larger invertebrates).	- Advice and guidance for landowner about monitoring and control of pest animals. - Assistance available as appropriate.

References

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Assessment completed by: Scott Hooson
Date: 17 December 2014

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Date: 17 December 2014

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

Sourced from Jensen unpubl. data (2014).

N.B. exotic species were not recorded during this survey.

Scientific Name	Common Name(s)
Indigenous species	
<i>Acaena anserinifolia</i>	bidibidi, piripiri
<i>Acaena juvenca</i>	bidibidi, piripiri
<i>Aciphylla subflabellata</i>	grassland speargrass
<i>Alectryon excelsus</i>	titoki
<i>Apium prostratum</i>	New Zealand celery
<i>Asplenium appendiculatum</i>	ground spleenwort
<i>Asplenium flabellifolium</i>	necklace fern
<i>Asplenium gracillimum</i>	
<i>Asplenium hookerianum</i>	Hooker's spleenwort
<i>Asplenium oblongifolium</i>	shining spleenwort, huruhuruwhenua
<i>Athnosachne solandri</i>	native wheatgrass, blue wheatgrass
<i>Blechnum fluviatile</i>	kiwakiwa
<i>Blechnum penna-marina</i>	little hard fern
<i>Calystegia tuguriorum</i>	NZ bindweed, pōwhiwhi
<i>Carex resectans</i>	
<i>Carmichaelia australis</i>	native broom, common broom
<i>Carpodetus serratus</i>	marbleleaf, putaputāwētā
<i>Chenopodium allanii</i>	
<i>Clematis afoliata</i>	leafless clematis
<i>Clematis foetida</i>	yellow clematis
<i>Convolvulus waitaha</i>	grass convolvulus
<i>Coprosma areolata</i>	mingimingi, mikimiki
<i>Coprosma crassifolia</i>	thick-leaved coprosma, mikimiki
<i>Coprosma propinqua</i>	mingimingi, mikimiki
<i>Coprosma rhamnoides</i>	mingimingi, mikimiki
<i>Coprosma rotundifolia</i>	round-leaved coprosma, mikimiki
<i>Coprosma virescens</i>	mikimiki
<i>Cordyline australis</i>	cabbage tree, tī kōuka
<i>Corokia cotoneaster</i>	korokio
<i>Corynocarpus laevigatus</i>	karaka
<i>Crassula colligata</i>	stonecrop
<i>Cyathea smithii</i>	Smith's tree fern, kātote
<i>Dichelachne crinita</i>	plume grass
<i>Dichondra repens</i>	dichondra
<i>Disphyma australe</i>	NZ iceplant
<i>Einadia triandra</i>	pigweed
<i>Epilobium cinereum</i>	willow herb
<i>Fuchsia excorticata</i>	tree fuchsia, kōtukutuku
<i>Fuchsia x colensoi</i>	
<i>Griselinia littoralis</i>	broadleaf, kāpuka
<i>Hebe strictissima</i>	Banks Peninsula hebe

<i>Helichrysum lanceolatum</i>	niniaio
<i>Histiopteris incisa</i>	water fern, mātātā
<i>Hoheria angustifolia</i>	narrow-leaved lacebark, houhere
<i>Hydrocotyle moschata</i>	pennywort
<i>Ileostylus micranthus</i>	green mistletoe
<i>Juncus distegus</i>	wiwi
<i>Juncus edgariae</i>	leafless rush, wi
<i>Kunzea robusta</i>	kānuka
<i>Leptinella minor</i>	Banks Peninsula button daisy
<i>Libertia ixioides</i>	mikoikoi, native iris
<i>Lophomyrtus obcordata</i>	rōhutu, NZ myrtle
<i>Luzula banksiana</i> var. <i>orina</i>	woodrush
<i>Melicope simplex</i>	poataniwha
<i>Melicytus alpinus</i>	porcupine shrub
<i>Melicytus ramiflorus</i>	māhoe, whiteywood
<i>Metrosideros diffusa</i>	white climbing rātā
<i>Microsorium pustulatum</i>	hounds tongue, kōwaowao
<i>Muehlenbeckia australis</i>	large-leaved pōhuehue
<i>Muehlenbeckia complexa</i>	scrub pōhuehue, wire vine
<i>Myoporum laetum</i>	ngaio
<i>Myrsine australis</i>	red māpou, red matipo
<i>Myrsine divaricata</i>	weeping matipo, weeping māpou
<i>Olearia fragrantissima</i>	fragrant tree daisy
<i>Oxalis exilis</i>	yellow oxalis
<i>Parietaria debilis</i>	NZ pellitory
<i>Parsonsia capsularis</i>	native jasmine, akakaikiore
<i>Parsonsia heterophylla</i>	native jasmine, akakaikiore
<i>Passiflora tetrandra</i>	native passion vine
<i>Pennantia corymbosa</i>	kaikōmako, ducks foot
<i>Piper excelsum</i>	kawakawa
<i>Pittosporum eugeniioides</i>	lemonwood, tarātā
<i>Pittosporum tenuifolium</i>	kōhūhū, black matipo
<i>Plagianthus regius</i>	lowland ribbonwood, mānatu
<i>Poa cita</i>	silver tussock, wī
<i>Poa matthewsii</i>	Matthew's poa
<i>Podocarpus cunninghamii</i>	mountain tōtara, thin-barked tōtara
<i>Polystichum oculatum</i>	shield fern
<i>Prumnopitys taxifolia</i>	mataī, black pine
<i>Pseudopanax crassifolius</i>	lancewood, horoeka
<i>Pseudopanax ferox</i>	fierce lancewood
<i>Pteridium esculentum</i>	bracken, rārahu, rauaruhe
<i>Pyrrosia eleagnifolia</i>	leatherleaf fern
<i>Raoulia monroi</i>	fan-leaved mat daisy
<i>Ripogonum scandens</i>	supplejack, kareao
<i>Rubus cissoides</i>	bush lawyer, tātarāmoa
<i>Rubus schmidelioides</i>	bush lawyer, tātarāmoa
<i>Rubus squarrosus</i>	leafless bush lawyer, tātarāmoa
<i>Scandia geniculata</i>	climbing aniseed
<i>Senecio glaucophyllus</i> subsp. <i>basinudus</i>	yellow rock groundsel
<i>Senecio quadridentatus</i>	cotton fireweed, pekapeka
<i>Solanum laciniatum</i>	poroporo
<i>Sophora microphylla</i>	small-leaved kōwhai
<i>Streblus heterophyllus</i>	small-leaved milk tree, tūrepo

<i>Urtica ferox</i>	ongaonga, tree nettle
<i>Wahlenbergia gracilis</i>	

Appendix 2: Invertebrate Species List

Sourced from Wildland Consultants unpubl. data (2014)

NEUROPTERA	lacewings
Hemerobiidae	
<i>Drepanacra binocula</i>	
<i>*Micromus tasmaniae</i>	
HEMIPTERA	
Tibicinidae	cicada
<i>Amphipsalta zelandica</i>	clapping cicada
<i>Kikihia new species</i>	
<i>Rhodopsalta microdora</i>	
Pentatomidae	shieldbug
<i>Dictyotis caenosus</i>	
Miridae	
<i>Bipuncticoris species 1</i>	
<i>Bipuncticoris species 2</i>	
ORTHOPTERA	
Tettigoniidae	katydid
<i>Conocephalus bilineatus</i>	
Gryllidae	cricket
<i>Pteronemobius bigelowi</i>	
Acrididae	grasshoppers
<i>Phaulacridium marginale</i>	
Rhaphidophoridae	cave weta
<i>Isoplectron armatum</i>	
COLEOPTERA	
Carabidae	ground beetles
<i>Neocicindella latecincta</i>	tiger beetle
slender species	
Coccinellidae	
<i>Coccinella leonina</i>	ladybird
Scarabaeidae	chafers
<i>Costelytra zelandica</i>	
<i>Odontria striata</i>	striped chafer
HYMENOPTERA	
Colletidae	native bee
<i>Leioproctus huakiwi</i>	
Formicidae	ant
<i>Monomorium antarcticum</i>	
Ichneumonidae	
<i>Netelia producta</i>	
Pompilidae	spider wasp
<i>Epipompilus insularis</i>	
LEPIDOPTERA	
Hepialidae	porina moths
<i>Wiseana copularis</i>	
Nepticulidae	leaf miners
<i>Stigmella ilsea</i>	
Tineidae	

<i>Erechthias fulguritella</i>	
Psychidae	
<i>Liothula omnivora</i>	
Glyphipterigidae	
<i>Glyphipterix cionophora</i>	
<i>Glyphipterix triselenia</i>	
Elachistidae	
<i>Cosmiotes ombrodona</i>	
<i>Cosmiotes ochroleuca</i>	
Copromorphidae	
<i>Phycomorpha metachrysa</i>	
Momphidae	
<i>Zapystra calliphana</i>	
Lyonetiidae	
<i>Bedellia psammitis</i>	
Yponomeutidae	
<i>Zelleria sphenota</i>	
Plutellidae	
<i>Orthenchus chlorocoma</i>	
<i>Plutella antiphona</i>	
Gelechiidae	
<i>Anisoplaca achyrotia</i>	
<i>Kiwaia brontophora</i>	
Oecophoridae	
<i>Gymnobathra parca</i>	
<i>Hierodoris s-fractum</i>	
<i>Izatha huttoni</i>	
<i>Izatha katadiktya</i>	
<i>Izatha convulsella</i>	
<i>Leptocroca species</i>	
<i>Stathmopoda horticola</i>	
<i>Tingena melinella</i>	
<i>Trachypepla euryleucota</i>	
Choreutidae	jets
<i>Asterivora chatuidea</i>	
Tortricidae	leaf rollers
<i>Apoctena flavescens</i>	
<i>Capua semiferana</i>	
<i>Catamacta gavisana</i>	
<i>Ctenopseustis obliquana</i>	
<i>Harmologa amplexana</i>	
<i>Planotortrix notophaea</i>	
<i>Planotortrix excessana</i>	
<i>New genus and species</i>	
<i>Strepsicrates ejectana</i>	
Thyrididae	
<i>Morova subfasciata</i>	
Pyralidae	
<i>Patagoniodes farinaria</i>	
<i>*Stericta carbonalis</i>	
Crambidae	
<i>Deana hybreasalis</i>	
<i>Eudonia cymatias</i>	

<i>Eudonia manganeutis</i>	
<i>Eudonia philerga</i>	
<i>Eudonia leptalea</i>	
<i>Eudonia sabulosella</i>	
<i>Eudonia submarginalis</i>	
<i>Gadira acerella</i>	
<i>Gadira petraula</i>	
<i>Orocrambus enchophorus</i>	
<i>Orocrambus flexuosellus</i>	
<i>Orocrambus ramosellus</i>	
<i>Orocrambus vittellus</i>	
<i>Orocrambus vulgaris</i>	
<i>Udea flavidalis</i>	
<i>Udea marmarina</i>	
<i>Uresiphita maoralis</i>	kowhai moth
GEOMETRIDAE	
<i>Anachloris subochraria</i>	
<i>Asaphodes abrogata</i>	
<i>Asaphodes beata</i>	
<i>Austrocidaria gobiata</i>	
<i>Austrocidaria similata</i>	
<i>*Chloroclystis filata</i>	
<i>Chloroclystis inductata</i>	
<i>Cleora scriptaria</i>	
<i>Declana griseata</i>	
<i>Declana leptomera</i>	
<i>Declana junctilinea</i>	
<i>Epyaxa lucidata</i>	
<i>Epyaxa rosearia</i>	
<i>Epyaxa venipunctata</i>	
<i>Epiphyrne undosata</i>	
<i>Epiphyrne verriculata</i>	
<i>Gellonia pannularia</i>	
<i>Homodotis megaspilata</i>	
<i>Helastia cinerearia</i>	
<i>Helastia corcularia</i>	
<i>Helastia triphragma</i>	
<i>Hydriomena deltoidata</i>	
<i>Hydriomena rixata</i>	
<i>Ischalis fortinata</i>	
<i>Pasiphila testulatus</i>	
<i>Pasiphila urticae</i>	
<i>Poecilasthena schistaria</i>	
<i>Pseudocoremia indistincta</i>	
<i>Pseudocoremia pergrata</i>	
<i>Scopula rubraria</i>	
<i>Tatosoma agrionata</i>	
<i>Xyridacma ustaria</i>	
<i>Xyridacma veronicae</i>	
<i>Xanthorhoe semifissata</i>	
Noctuidae	
<i>Agrotis ipsilon</i>	
<i>Bityla defigurata</i>	

<i>Bityla sericea</i>	
<i>Cosmodes elegans</i>	
<i>Graphania insignis</i>	
<i>Graphania beata</i>	
<i>Graphania lignana</i>	
<i>Graphania morosa</i>	
<i>Graphania mutans</i>	
<i>Graphania plena</i>	
<i>Graphania ustistriga</i>	
<i>Meterana decorata</i>	
<i>Meterana octans</i>	
<i>Meterana ochthistis</i>	
<i>Mythimna separata</i>	
<i>Persectania aversa</i>	
<i>Tmetolophota atristriga</i>	
<i>Tmetolophota propria</i>	
Erebidae	
<i>Celama parvitis</i>	
<i>Nyctemera annulata</i>	magpie moth
<i>Rhapsa scotoscialis</i>	
Lycaenidae	coppers/ blues
<i>Lycaena "comon copper" complex</i>	
<i>Zizina oxleyi</i>	
Nymphalidae	admirals
<i>Vanessa gonerilla</i>	red admiral
Pieridae	white butterfly
<i>*Pieris rapae</i>	
PHASMIDA	stick insects
<i>Pachymorpha hystriculea</i>	lesser spiny