

Christchurch District Plan Site of Ecological Significance

Site Significance Statement

Site name: Upper Port Levy Miro

Site number: SES/H/9

Physical address of site: Off Western Valley Road, Upper Port Levy

Summary of Significance:

This site is significant because it contains the only mature miro stand in the ecological district (and in the ecological region). The forest is highly representative of lowland podocarp forest, but is also distinctive and very rare. It contains a high diversity of indigenous plant species including two species that are At Risk nationally, several that are uncommon within the ecological region or ecological district and two that are at their distributional limits. It is also part of a network of connected indigenous forest in the upper part of the Port Levy catchment that is an important ecological corridor for the movement and dispersal of indigenous fauna.

Site Map:



Additional Site Information

Ecological District: Herbert

Area of SES (ha): 7.21ha

Central point (NZTM): E1582152, N5161936

Site Description

The site is an area of indigenous forest in a narrow generally east-facing gully above (and west) of Western Valley Road in the upper Port Levy Catchment. The altitudinal range of the site is from approximately 280 to 360 metres above sea level. The aspect is largely south facing, with a smaller area of north facing slope on the southern side of the gully. An un-named tributary of Te Kawa Stream flows through the gully.

This site was described by Wilson (unpubl. data) as an “outstanding bush remnant” and the best locality on Banks Peninsula for miro (*Prunopitys ferruginea*). More recent surveys confirm this (Partridge 2008). A few scattered individuals of this species occur elsewhere on the Peninsula, but this is the only site where miro remains in any abundance.

The vegetation at the site is mid-altitude old-growth podocarp/hardwood forest. It has four species of remnant emergent podocarp trees (matai, lowland totara, kahikatea and miro) and some regenerating miro were recorded by Wilson (1992). The mixed hardwood canopy is comprised of species such as mahoe, kowhai, tree fuchsia, lemonwood, marbleleaf and pigeonwood. The site was fenced in the mid 1980s and there has been good regeneration of the understorey since. The subcanopy and understorey has a variety of mostly small-leaved shrubs of which *Coprosma* species are the most common. Tree ferns are common along the stream with four species recorded at the site. The understorey also supports a diverse assemblage of indigenous ferns, especially along the road banks and stream margins (Wilson 1992) and the small greenhood orchid *Pterostylis graminea* was found under mature miro trees. Climbers are relatively common (Partridge 2008).

The vegetation changes around the forest margins, especially at the interface with the pine forest. There are small areas of open grassland and bracken being colonised by successional species such as kanuka. Forest margin species include wineberry, turpentine scrub (*Dracophyllum acerosum*), *Hebe salicifolia*, *Coprosma wallii* (At Risk – Declining) and bush lawyer (*Rubus cissoides*) (Partridge 2008).

Extent of Site of Ecological Significance

The site is a narrow forested gully bounded by Western Valley Road on its lower (eastern boundary), exotic pine plantations on its northern and southern boundaries and the cadastral property boundary on its western side.

Assessment Summary

The Upper Port Levy Miro 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 and 6), diversity and pattern (criterion 7) and ecological context criteria (criterion 8).

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.

It is a highly representative example of podocarp/hardwood forest in the Herbert ED. Partridge (2008) surveyed the eastern side of the gully and commented that the forest canopy and understory layers are in remarkably good condition and that there are very few exotic species. Those present are mostly scattered along the roadside and around the forest edge with the pine trees, where the exotic plants are mostly pasture grasses in open areas.

- 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 contains the only (and therefore largest) mature miro stand in the ecological district (and in the ecological region) (Wilson 1992, Partridge 2008).

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.

Old growth lowland forest has been reduced to a fragment of its former extent at the Region and ecological district scales. Harding (2009) estimates that the original extent of podocarp/hardwood forest in the ED (as a % of the ED) was 51 - 75%. The present extent of all old growth forest on Banks Peninsula is estimated to be approximately 800 ha or <1% of its original extent (Wilson 2009). The extent of all indigenous forest (excluding manuka and/or kanuka) in the ED is estimated to be 7% (10.9% including manuka and/or kanuka) of the ecological district (New Zealand Landcover Database (Version 4)).

This site also meets this criterion at the Level IV land environment scale. It supports indigenous vegetation on a Chronically Threatened land environment where 10-20% indigenous vegetation is left on these land environments nationally (Walker et al. 2007).

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 has two indigenous plant species that are At Risk nationally and several that are uncommon within the ecological region or ecological district.

The nationally At Risk plant species (de Lange et al. 2013) recorded from the site (Wilson unpubl. data) are:

- *Coprosma wallii* (At Risk – Declining) (on forest margins) (Partridge 2008)

Hugh Wilson (unpubl. data n.d.) recorded *Brachyglottis sciadophila* (At Risk - Declining) from the site.

Plant species recorded from the site (Partridge 2008) that are “uncommon to rare or very local” on Banks Peninsula (Wilson 2013) are:

- *Blechnum colensoi*
- *Dracophyllum acerosum*
- *Histiopteris incisa*
- *Prumnopitys ferruginea*

Several other locally uncommon species were recorded in an earlier survey by Wilson (unpubl. data) that were not recorded by Partridge (2008) during his brief survey of part of the site:

- *Blechnum vulcanicum*
- *Botrychium biforme*
- *Dicksonia fibrosa*
- *Elaeocarpus hookerianus*
- *Lycopodium volubile*
- *Microlaena avenacea*
- *Neomyrtus pedunculata*
- *Rumohra adiantiformis*

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 is one species at its southern national limit on Banks Peninsula and one species at its southern regional limit on Banks Peninsula. The species at its southern national limit is:

- *Dracophyllum acerosum* (Partridge 2008)

The species at its southern regional limit is:

- *Hedycarya arborea* (Wilson unpubl. data, Partridge 2008)

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.

Miro forest is of very restricted occurrence in the ecological region and in Canterbury. This site is the only known locality on Banks Peninsula with mature miro forest (scattered individual trees grow in only a few other locations inland of Port Levy and Pigeon Bay (Wilson 2013)). It is also the only known locality where miro is regenerating on Banks Peninsula (Wilson unpubl. data n.d.).

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 diverse range of indigenous plant species (Wilson unpubl. data, Partridge 2008), particularly tree fern and fern species.

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 a network of connected indigenous forest in the upper part of the Port Levy catchment that is an important ecological corridor for the movement and dispersal of indigenous fauna. The site links the Upper Port Levy Site of Ecological Significance (SES/H/10) (downstream) with indigenous riparian forest, bluff vegetation and festuca and silver tussock grassland in the large basin further upstream on the eastern side of Mt Herbert.

Te Kawa Stream flows through the site and the indigenous riparian vegetation within the site plays a role in shading and buffering the stream. In conjunction with other riparian vegetation in the upper catchment this buffering function is likely to be important.

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.

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.*

There is insufficient information to assess the site against this criterion.

11. *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.*

There is insufficient information to assess the site against this criterion.

Site Management

Existing Protection Status

Partially protected. Western Valley Conservation Area (DOC) (conservation unit N36014) protects a very small, narrow area along the stream in the bottom of the gully.

| Threats and risks | Management recommendations | Support package options |
|---|--|---|
| <ul style="list-style-type: none"> • Biodiversity pest plants: Chilean flame creeper (<i>Tropaeolum speciosum</i>) (Wilson unpubl. data, Partridge 2008, 2010). | <ul style="list-style-type: none"> • Consider ongoing surveillance for and control of Chilean flame creeper. • Consider ongoing surveillance for and control of other biodiversity pest plants such as old mans beard, tutsan, hawthorn, ash, Darwin's barberry and banana passionfruit. | <ul style="list-style-type: none"> • Advice and guidance for landowner about monitoring and control of pest plants. • Assistance available as appropriate. |
| <ul style="list-style-type: none"> • Western Valley Road is on the eastern boundary of the site. Edge effects and weed invasion are a threat from the roadside. | <ul style="list-style-type: none"> • Regular surveillance for biodiversity pest plants along the roadside adjacent to the site. | <ul style="list-style-type: none"> • N/A |
| <ul style="list-style-type: none"> • Pine plantations on the site boundaries. <ul style="list-style-type: none"> ○ Spread of wilding pines into the site. ○ Damage to the indigenous forest within the site during harvesting operations. ○ Land-use change or re-planting of more invasive conifer species on adjoining land. | <ul style="list-style-type: none"> • Ongoing surveillance for and control of wilding pines • Consider not re-planting more invasive conifer species such as Douglas fir on adjoining land following harvesting of the existing plantation. | <ul style="list-style-type: none"> • Advice and guidance to adjoining landowner/s about impacts of wilding pines on biodiversity prior to planting and harvesting of plantation forestry |
| <ul style="list-style-type: none"> • Stock. Boundary fences need repairing (Partridge 2008). | <ul style="list-style-type: none"> • Consider repairing fences that are no longer stock-proof and undertaking regular fence checks and maintenance as required. | <ul style="list-style-type: none"> • Discussion with landowners about the benefits to biodiversity of stock fencing. • Assistance where possible - in collaboration with agencies and other groups. |

References

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- Wilson, H.D. (1992). Banks Ecological Region: Port Hills, Herbert and Akaroa Ecological Districts. *Protected Natural Areas Programme Survey Report No. 21*. Department of Conservation, Canterbury. 342 pp.
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Assessment completed by: Scott Hooson
Date: 15 September 2014

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Date: 15 September 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 (Wilson unpublished data).

| Scientific Name | Common Name(s) |
|-------------------------------------|---------------------------------|
| Indigenous species | |
| <i>Aristolelia serrata</i> | wineberry, makomako |
| <i>Asplenium appendiculatum</i> | ground spleenwort |
| <i>Asplenium bulbiferum</i> | hen and chicken fern |
| <i>Asplenium flabellifolium</i> | necklace fern |
| <i>Asplenium flaccidum</i> | hanging spleenwort, raukatauri |
| <i>Asplenium hookerianum</i> | Hooker's spleenwort |
| <i>Astelia fragrans</i> | kakaha, bush lily |
| <i>Blechnum chambersii</i> | lance fern |
| <i>Blechnum colensoi</i> | Colenso's hard fern, peretao |
| <i>Blechnum discolor</i> | crown fern, piupiu |
| <i>Blechnum fluviatile</i> | kiwakiwa |
| <i>Blechnum penna-marina</i> | little hard fern |
| <i>Blechnum procerum</i> | small kiokio |
| <i>Blechnum sp 'black spot'</i> | |
| <i>Blechnum vulcanicum</i> | triangular hard fern |
| <i>Botrychium bifforme</i> | fine-leaved parsley fern |
| <i>Brachyglottis sciadophila</i> | climbing groundsel |
| <i>Calystegia tuguriorum</i> | NZ bindweed, pōwhiwhi |
| <i>Cardamine debilis</i> | NZ bitter cress |
| <i>Carex forsteri</i> | cutty grass |
| <i>Carpodetus serratus</i> | marbleleaf, putaputāwētā |
| <i>Clematis foetida</i> | yellow clematis |
| <i>Coprosma linariifolia</i> | yellow-wood |
| <i>Coprosma rhamnoides</i> | mingimingi, mikimiki |
| <i>Coprosma robusta</i> | karamū |
| <i>Coprosma rotundifolia</i> | round-leaved coprosma, mikimiki |
| <i>Cordyline australis</i> | cabbage tree, tī kōuka |
| <i>Coriaria arborea</i> | tree tutu |
| <i>Cyathea dealbata</i> | silver fern, ponga |
| <i>Cyathea smithii</i> | Smith's tree fern, kātote |
| <i>Cyathophorum bulbosum</i> | |
| <i>Dacrycarpus dacrydioides</i> | kahikatea, white pine |
| <i>Dicksonia fibrosa</i> | whekī-ponga, golden tree fern |
| <i>Dicksonia squarrosa</i> | whekī, rough tree fern |
| <i>Elaeocarpus hookerianus</i> | pōkākā |
| <i>Fuchsia excorticata</i> | tree fuchsia, kōtukutuku |
| <i>Gaultheria antipoda</i> | bush snowberry |
| <i>Griselinia littoralis</i> | broadleaf, kāpuka |
| <i>Hedycarya arborea</i> | pigeonwood, porokaiwhiri |
| <i>Hoheria angustifolia</i> | narrow-leaved lacebark, houhere |
| <i>Hypolepis rufobarbata</i> | sticky pig fern |
| <i>Hypopterygium sp.</i> | |
| <i>Kunzea robusta</i> | kānuka |
| <i>Leptopteris hymenophylloides</i> | crepe fern, heruheru |

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| <i>Lycopodium volubile</i> | climbing clubmoss, waewaekoukou |
| <i>Melicope simplex</i> | poataniwha |
| <i>Melicytus ramiflorus</i> | māhoe, whiteywood |
| <i>Metrosideros diffusa</i> | white climbing rātā |
| <i>Microlaena avenacea</i> | bush rice grass |
| <i>Microsorium pustulatum</i> | hounds tongue, kōwaowao |
| <i>Muehlenbeckia australis</i> | large-leaved pōhuehue |
| <i>Myrsine australis</i> | red māpou, red matipo |
| <i>Neomyrtus pedunculata</i> | rōhutu, myrtle |
| <i>Parsonsia heterophylla</i> | native jasmine, akakaikiore |
| <i>Pennantia corymbosa</i> | kaikōmako, ducks foot |
| <i>Pittosporum eugenioides</i> | lemonwood, tarātā |
| <i>Plagianthus regius</i> | lowland ribbonwood, mānatu |
| <i>Pneumatopteris pennigera</i> | gully fern, pākau |
| <i>Podocarpus sp.</i> | |
| <i>Podocarpus totara</i> | lowland tōtara |
| <i>Polystichum richardii</i> | shield fern |
| <i>Polystichum vestitum</i> | prickly shield fern, pūniu |
| <i>Prumnopitys ferruginea</i> | miro |
| <i>Prumnopitys taxifolia</i> | mataī, black pine |
| <i>Pseudopanax arboreus</i> | five-finger, whauwhaupaku |
| <i>Pseudopanax crassifolius</i> | lancewood, horoeka |
| <i>Pseudowintera colorata</i> | horopito, peppertree |
| <i>Pyrrosia eleagnifolia</i> | leatherleaf fern |
| <i>Ripogonum scandens</i> | supplejack, kareao |
| <i>Rubus schmidelioides</i> | bush lawyer, tātarāmoa |
| <i>Rumohra adiantiformis</i> | leathery shield fern |
| <i>Schefflera digitata</i> | patē, seven-finger |
| <i>Senecio minimus</i> | native fireweed |
| <i>Sophora microphylla</i> | small-leaved kōwhai |
| <i>Trichomanes venosum</i> | veined filmy fern |
| <i>Uncinia uncinata</i> | hook grass |
| <i>Urtica ferox</i> | ongaonga, tree nettle |
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| Exotic Species | |
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| <i>Mycelis muralis</i> | wall lettuce |
| <i>Prunus avium</i> | sweet cherry |
| <i>Tropaeolum speciosum</i> | Chilean flame creeper |
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Appendix 2: Indigenous Plant Species List - Richardson Property

Sourced from (Partridge 2008).

Note: this brief survey covered only part of the northern side of the gully.

| Scientific Name | Common Name(s) |
|---------------------------------|------------------------------|
| Indigenous species | |
| <i>Aristolelia serrata</i> | wineberry |
| <i>Astelia fragrans</i> | kakaha |
| <i>Asplenium appendiculatum</i> | ground spleenwort |
| <i>Asplenium flaccidum</i> | hanging spleenwort |
| <i>Asplenium gracillimum</i> | |
| <i>Blechnum chambersii</i> | lance fern |
| <i>Blechnum colensoi</i> | Colenso's hard fern, peretao |
| <i>Blechnum discolor</i> | crown fern |
| <i>Blechnum fluviatile</i> | kiwakiwa |
| <i>Blechnum minus</i> | swamp kiokio |
| <i>Cardamine debilis</i> agg. | bittercress |
| <i>Carpodetus serratus</i> | pouaputaweta |
| <i>Coprosma areolata</i> | mikimiki |
| <i>Coprosma robusta</i> | karamu |
| <i>Coprosma linariifolia</i> | yellow-wood |
| <i>Coprosma lucida</i> | karamu |
| <i>Coprosma propinqua</i> | mikimiki |
| <i>Coprosma rhamnoides</i> | mikimiki |
| <i>Coprosma rotundifolia</i> | round-leaved mikimiki |
| <i>Coprosma tayloriae</i> | mikimiki |
| <i>Coprosma wallii</i> | mikimiki |
| <i>Coriaria arborea</i> | tree tutu |
| <i>Cyathea dealbata</i> | silver tree fern |
| <i>Cyathea smithii</i> | soft tree fern |
| <i>Dacrycarpus dacrydioides</i> | kahikatea |
| <i>Dracophyllum acaerum</i> | turpentine scrub |
| <i>Dicksonia squarrosa</i> | wheki |
| <i>Fuchsia excorticata</i> | tree fuchsia |
| <i>Griselinia littoralis</i> | broadleaf |
| <i>Hebe salicifolia</i> | koromiko |
| <i>Hedycarya arborea</i> | pigeonwood |
| <i>Helichrysum lanceolatum</i> | niniaio |
| <i>Histiopteris incisa</i> | water fern |
| <i>Hoheria angustifolia</i> | lacebark |
| <i>Kunzea ericoides</i> | kanuka |
| <i>Meliccytus ramiflorus</i> | mahoe |
| <i>Metrosideros diffusa</i> | climbing rata |
| <i>Microsorium pustulatum</i> | hound's tongue |
| <i>Muehlenbeckia australis</i> | pohuehue |
| <i>Myrsine australis</i> | mapou |
| <i>Parsonsia heterophylla</i> | NZ jasmine |

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|---------------------------------|---------------------|
| <i>Pellaea rotundifolia</i> | tarawera |
| <i>Pennantia corymbosa</i> | kaikomako |
| <i>Plagianthus regius</i> | ribbonwood |
| <i>Polystichum vestitum</i> | prickly shield fern |
| <i>Pittosporum eugenioides</i> | lemonwood |
| <i>Podocarpus hallii</i> | Hall's totara |
| <i>Podocarpus totara</i> | totara |
| <i>Prumnopitys ferruginea</i> | miro |
| <i>Prumnopitys taxifolia</i> | matai |
| <i>Pseudopanax arboreus</i> | five-finger |
| <i>Pseudopanax crassifolius</i> | lancewood |
| <i>Pseudowintera colorata</i> | pepper tree |
| <i>Pteridium esculentum</i> | bracken |
| <i>Pterostylis graminea</i> | greenhood orchid |
| <i>Raukaua anomalus</i> | |
| <i>Rhipogonum scandens</i> | supplejack |
| <i>Rubus cissoides</i> | bush lawyer |
| <i>Schefflera digitata</i> | pate |
| <i>Senecio glomeratus</i> | fireweed |
| <i>Urtica ferox</i> | ongaonga |
| <i>Uncinia uncinata</i> | hook grass |
| | |