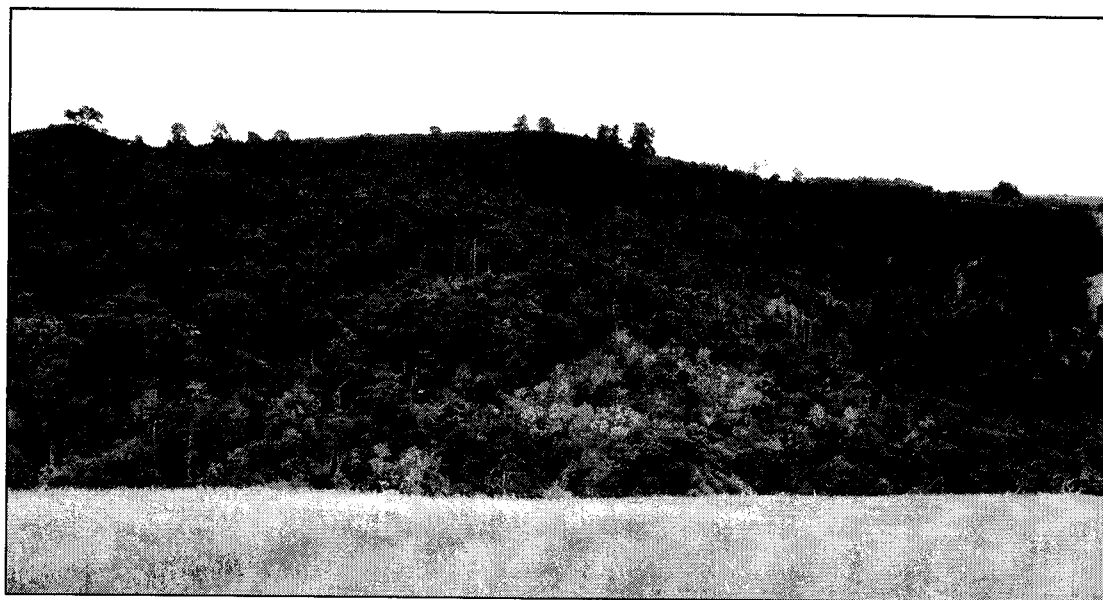


**TIMARU DISTRICT**  
**SIGNIFICANT NATURAL AREAS**  
**SURVEY**

**GEOFFREY HYDES PROPERTY**  
**KAKAHU**



**Report prepared for Timaru District Council by Mike Harding**  
**February 2010**

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** ..... Geoffrey Hydes  
**Valuation References:** .... 24670/231.00  
**Address:** ..... Winchester Hanging Rock Road, Kakahu  
**Location:** ..... Adjacent to the Kakahu River gorge, north of Winchester Hanging Rock Road  
**Ecological District:** ..... Geraldine Ecological District.  
**TDC Land Type:** ..... Soft Rock Hills and Downs.  
**Land Environment:** ..... N3 (eastern South Island undulating plains and hills).

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### ECOLOGICAL CONTEXT:

The property covers gentle hill country on the loess-covered downlands of South Canterbury. The property lies in the central inland part of Geraldine Ecological District.

It is likely that the original vegetation of this area was predominantly mixed podocarp-hardwood forest with smaller areas of scrub, shrubland, wetland and rock-bluff flora. This is the part of the Geraldine Ecological District with the largest remaining areas of indigenous forest. Nevertheless, indigenous forest is still generally confined to small remnants in gullies and around bluffs, with some larger areas of younger regenerating forest.

The indigenous fauna would have originally been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area. The property lies within the known range of the South Canterbury population of long-tailed bat. This species is listed as nationally-endangered.

Indigenous vegetation on the property comprises kanuka forest and podocarp-hardwood forest on a prominent peninsula in the gorge of the Kakahu River. The property lies close to an extensive area of indigenous forest on the slopes of Kakahu Hill and close to other important indigenous forest remnants on limestone scarps.

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### SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during December 2009. Two contiguous areas, totalling approximately 14.3 hectares, are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria. These SNAs are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size (ha)	Vegetation/habitat type
8f1	Hydes Kakahu gorge forest	J38: 552-710	6.79	podocarp-hardwood forest; kanuka forest
8f2	Hydes Kakahu gorge kanuka forest	J38: 553-712	7.52	kanuka forest

These SNAs are illustrated on the attached aerial photograph and described in greater detail on the SNA Forms in this report. Note that the boundaries of the SNAs are indicative, rather than precise. These areas meet the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19) and are considered to be sustainable in the long term, or sustainable with appropriate management (criterion vii, page B19). SNAs are subject to confirmation by Council after regarding the matters listed in the District Plan (pages B19-B20). It is expected that SNAs will eventually be listed in the District Plan by way of a notified plan change.

At present, consent is required from Council for clearance of areas of indigenous vegetation or habitat which meet the Interim Definitions in the District Plan. Clearance includes burning, spraying with herbicides and over-planting. SNAs encompass most, but not necessarily all, areas of vegetation and habitat which meet the Interim Definitions.

To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.

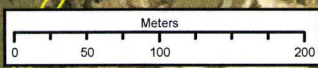


Hydes Property  
24670/231.00

8f2

8f1

Winchester Hanging Rock Road



1:5,000

# TIMARU DISTRICT SNA SURVEY

AREA 8f1

**Area Name:** Hydes Kakahu Gorge mixed forest

**Location (central map reference):** J38: 552-710

**Ecological District:** Geraldine

**Surveyors:** Mike Harding

**Property:** Geoffrey Hydes

**Nearest Locality:** Kakahu

**Area Size (ha):** 6.79

**Survey Time:** 4 hours

**Altitude (m):** 130-190

**Survey Date:** 08-12-09

## General Description:

This SNA lies on gentle to moderately-steep southeast-facing slopes of a small peninsula in the Kakahu River gorge. It adjoins an extensive area of kanuka forest (SNA 8f2) on the drier northwest-facing slopes of the peninsula and adjoins another area of mixed indigenous forest (SNA 8h) across the Kakahu River on an adjacent property.

## Plant Communities:

Two main plant communities are present: kanuka forest and podocarp-hardwood forest. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

### Kanuka forest:

The main area of kanuka forest lies at the southern end of the SNA, on moderately-steep slopes. Trunk diameters (at breast height) of the larger kanuka trees are between 20 and 27 cm. The forest canopy here is dominated by kanuka and to lesser extent marbleleaf. Other canopy species are matipo, cabbage tree, pohuehue, native jasmine, lawyer, bush lawyer, clematis, *Clematis forsteri*(?) and a single sycamore\* tree. The forest understorey is dominated by *Coprosma rotundifolia* and *Coprosma rhamnoides*. Other understorey species are yellowwood, fuchsia, weeping mapou, mahoe, mapou, marbleleaf, wineberry, lancewood, hawthorn\*, blackberry\*, lawyer, bush lawyer, *Clematis* sp. and pohuehue. Occasionally present are narrow-leaved lacebark and five-finger saplings, *Coprosma rigida*, mingimingi and flowering currant\*. Ground-cover species present are prickly shield fern, common shield fern, mountain kiokio, *Blechnum penna-marina*, *Blechnum fluviatile*, *Blechnum procerum*, hen and chickens fern, hanging spleenwort, *Asplenium appendiculatum*, *Asplenium richardii*, *Asplenium hookerianum*, *Hypolepis ambigua*, male fern\*, bidibid, pennywort, hairy pennywort, hookgrass, bush lily, foxglove\*, wall lettuce\* and seedlings of marbleleaf, mahoe, totara, lancewood, matipo, wineberry, fuchsia, weeping mapou, *Coprosma* species, pohuehue, native jasmine, clematis, tutsan\* and sycamore\*.

Species present in forest openings are lancewood, wineberry, *Coprosma propinqua*, *Coprosma tayloriae*, Himalayan honeysuckle\* and thousand-leaved fern. Species present on the forest margin are gorse\*, blackberry\*, broom\*, *Coprosma crassifolia*, *Coprosma propinqua* and marbleleaf.

The forest grades north along the peninsula to a mixed canopied forest and eventually to the mixed podocarp-hardwood forest described below. Additional species present in this transitional forest are: totara, broadleaf, lemonwood and yellowwood in the canopy; totara, korokio, *Helichrysum lanceolatum* and *Calystegia tuguriorum* in the understorey; and, hound's tongue fern, *Libertia ixioides* and sedges (*Carex* sp.) on the forest floor. A single emergent pine\* tree is present near the ridge crest.

### Podocarp-hardwood forest:

This forest is present on the lower slopes on the eastern side of the peninsula. It has a patchy distribution, separated by areas of tall kanuka forest similar to that described above. The main podocarps present are large emergent trees of kahikatea and totara. Matai is also present, notably on a small terrace at the northern end of the peninsula where the largest podocarp trees are present. Trunk diameters (cm at breast height) of some of these trees are: kahikatea 30, 62 and 112; totara 45, 50, 51, 56 and 57; and matai 60 and 63.

The forest canopy comprises scattered trees of wineberry, matipo, fuchsia, marbleleaf, narrow-leaved lacebark, lancewood, kowhai, broadleaf, five-finger, kanuka, yellowwood, hawthorn\* and a single emergent pokaka tree (with a trunk diameter of 45 cm). Also present are bush lawyer, pohuehue and native jasmine. The forest understorey is, in most places, dominated by *Coprosma rotundifolia* and *Neomyrtus pedunculata*. Other understorey species are five-finger, mapou, pate, fuchsia, shrubby mahoe, mahoe, matipo, weeping mapou, poataniwha, *Coprosma rhamnoides*, *Coprosma crassifolia*, horopito, rohutu, kowhai, *Raukaua anomalus*, elderberry\*, *Clematis marata*, *Clematis forsteri*(?), native jasmine and saplings of kahikatea, totara and occasionally matai.

Ground cover species present are prickly shield fern, common shield fern, *Blechnum fluviatile*, kiokio, mountain kiokio, *Blechnum chambersii*, *Blechnum penna-marina*, *Blechnum procerum*, hen and chickens fern, *Asplenium richardii*, *Asplenium hookerianum*, necklace fern, *Pellaea rotundifolia*, hound's tongue fern, *Carex* sp., bush lily, bush rice grass, hookgrass, hairy pennywort, bidibid, green-hooded orchid (*Pterostylis* sp.), wall lettuce\*, black nightshade\* and seedlings of totara, kahikatea, wineberry, mapou, lancewood, broadleaf, kowhai, cabbage tree, native jasmine, shrubby mahoe, *Coprosma* species, sycamore\* and pohuehue.

Other species present on the forest margin near the river are *Coprosma tayloriae*, *Coprosma propinqua*, crack willow\*, gorse\*, broom\*, gooseberry\*, bittersweet\*, burdock\*, columbine\*, mint\* and dead (poisoned) sycamore\* trees.

Additional species present in the small area of river-terrace forest are: kaikomako in the canopy; kaikomako and *Calystegia tuguriorum* in the understorey; and, *Libertia ixioides* and nettle (*Urtica* sp.) on the forest floor.

### **Birds/Fauna Observed:**

Native birds observed during this survey were bellbird, kereru, silvereye, shining cuckoo, rifleman, grey warbler, brown creeper and fantail. Welcome swallow, pukeko, black shag and harrier were observed along or over the river gorge.

### **Notable Flora, Fauna and Habitats:**

Important features of this area are the presence of old podocarp trees (kahikatea, matai and totara), podocarp saplings and seedlings, locally uncommon plant species (bush rice grass, korokio, *Blechnum procerum* and *Raukaua anomalus*), the diversity of indigenous vascular plant species present (74), good quality forest bird habitat, good habitat (including roost sites) for long-tailed bat, the buffering the area provides to the Kakahu River and the contribution the area makes to forest bird habitat in the wider area.

### **Notable Plant and Animal Pests:**

Sycamore and hawthorn are the most important plant pests present. Sycamore trees have been recently poisoned at the site, though occasional small trees and many seedlings are present. Hawthorn is present as small trees and seedlings throughout the SNA. Other woody weeds present are elderberry, Himalayan honeysuckle, tutsan and flowering currant, though these do not pose a significant threat to the forest. Crack willow trees and herbaceous weeds are present along the river. Animal pests were not surveyed but feral goats were observed.

### **Boundaries (buffering, fencing, adjoining plant communities and habitats):**

The SNA is well buffered by its location on a peninsula in the Kakahu River gorge. It is separated from SNA 8f2 by a narrow strip of open pasture along the crest of the peninsula ridge. It adjoins or lies close to other areas of indigenous vegetation across the Kakahu River on adjoining properties. The SNA is not fenced.

### **Condition and Management Issues:**

The forest is mostly in very good condition. It is unfenced, though appears largely unaffected by domestic stock. The main management issues are control of invasive woody weeds, especially sycamore and hawthorn, and control of animal pests, notably feral goats and possums. Roost boxes for long-tailed bat are present on trees within the SNA.

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**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

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<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	M/H	A very good example of indigenous forest typical of the ecological district and, in some places, highly representative of the original vegetation.
Rarity	H	Provides good habitat for long-tailed bat. Provides habitat for two at-risk species (rifleman and black shag) and four locally uncommon plant species.
Diversity and pattern	H	Supports two main forest types (kanuka and podocarp-hardwood), including riparian forest, and a very high diversity of indigenous vascular plant species (74).
Distinctiveness/special features	M	The presence of large old podocarp trees is a special feature.
<b>Other Criteria</b>		
Size/shape	H	A moderate-sized area, with a good shape and very well buffered.
Connectivity	M/H	Adjoins and links other indigenous forest.
Long-term Sustainability	M	Plant pest (notably sycamore) control and possibly feral goat control will probably be necessary to maintain the ecological values of the area in the long term.

**Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):**

This important area has been informally protected by the landowner. It lies mostly on steeper slopes that have limited potential for farm development.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of old podocarp trees, podocarp saplings and seedlings, four locally uncommon plant species, the diversity of indigenous vascular plant species present (74), good quality forest bird habitat, good habitat (including roost sites) for long-tailed bat, the buffering the area provides to the Kakahu River and the contribution the area makes to forest bird habitat in the wider area.

# TIMARU DISTRICT SNA SURVEY

AREA 8f2

**Area Name:** Hydes Kakahu Gorge kanuka forest

**Location (central map reference):** J38: 553-712

**Ecological District:** Geraldine

**Surveyors:** Mike Harding

**Property:** Geoffrey Hydes

**Nearest Locality:** Kakahu

**Area Size (ha):** 7.52

**Altitude (m):** 140-190

**Survey Time:** 1½ hours

**Survey Date:** 08-12-09

## General Description:

This SNA lies on moderately-steep northwest-facing slopes of a small peninsula in the Kakahu River gorge. It adjoins an extensive area of kanuka and podocarp-hardwood forest on the southeast side of the peninsula and another area of indigenous forest (SNA 8c) across the Kakahu River on an adjoining property.

## Plant Communities:

The main plant community present is kanuka forest. This plant community is described in detail below. Naturalized (exotic) species are indicated with an asterisk\*.

The forest canopy over most part of this area is dominated by kanuka. Trunk diameters (at breast height) of the larger kanuka trees range between 10 and 15 cm at most sites and between 15 and 20 cm at other sites, with occasional larger trees (up to 28 cm). Other canopy species are yellowwood, matipo, mapou, lancewood, hawthorn\*, native jasmine and occasionally young totara trees. A single young ash\* tree was observed near the northeast end of the site.

The forest understorey is dominated in most areas by *Coprosma rhamnoides* and mingimingi. Other understorey species are five-finger, korokio, matipo, lancewood, yellowwood, mapou, *Helichrysum lanceolatum*, weeping mapou, *Coprosma crassifolia*, hawthorn\*, clematis, lawyer, pohuehue and saplings of totara. Occasionally present are *Coprosma propinqua*, mahoe, shrubby mahoe, blackberry\*, sweet brier\* and cherry plum\*.

Important ground-cover species are hound's tongue fern, hookgrass, moss and, in some areas, pasture grasses\*. Other ground-cover species present are *Pellaea rotundifolia*, common shield fern, necklace fern, *Lagenifera* sp., bidibid, hairy pennywort, pennywort, wall lettuce\*, mouse-ear hawkweed\* and seedlings of matipo, mapou, five-finger, *Coprosma* species and hawthorn\*.

Additional species present on the forest margin or in open or snow-damaged areas of forest are *Coprosma tayloriae*, wineberry, marbleleaf, broom\*, Himalayan honeysuckle\*, *Clematis marata*, *Calystegia tuguriorum*, foxglove\*, *Hypolepis ambigua* and *Asplenium appendiculatum*.

## Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, rifleman, grey warbler, fantail and kereru. Welcome swallow, harrier and black shag were observed over the river gorge.

## Notable Flora, Fauna and Habitats:

Important features of this area are the presence of young podocarps (totara), a locally uncommon plant species (korokio), the extent of the forest bird habitat, the potential habitat the area provides for long-tailed bat, the buffering the area provides to the Kakahu River and the contribution the area makes to forest bird habitat in the wider area.

## Notable Plant and Animal Pests:

Hawthorn is the most important plant pest present. It is present as small trees and seedlings throughout the SNA. Other woody weeds present are cherry plum and a single ash tree. Crack willow trees and herbaceous weeds are present along the river. Animal pests were not surveyed but feral goats were observed.

## Boundaries (buffering, fencing, adjoining plant communities and habitats):

The SNA is well buffered by its location on a peninsula in the Kakahu River gorge. It is separated from SNA 8f1 by a narrow strip of open pasture along the crest of the peninsula ridge. It adjoins or lies close to other areas of indigenous vegetation across the Kakahu River on adjoining properties. The SNA is not fenced.



### Condition and Management Issues:

The forest is in good condition for regenerating forest. It is unfenced, though appears largely unaffected by domestic stock. The main management issues are control of invasive woody weeds, especially ash and hawthorn, and control of animal pests, notably feral goats and possums. Roost boxes for long-tailed bat are present on trees within the SNA.

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### ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of regenerating indigenous forest typical of the ecological district and containing podocarp (totara) trees.
Rarity	M/H	Provides potential habitat for a nationally-endangered species (long-tailed bat); supports an at-risk species (rifleman) and a locally uncommon plant species (korokio).
Diversity and pattern	M	Species diversity is typical of regenerating forest in the area.
Distinctiveness/special features	L/M	The presence of young totara trees is a special feature.
Other Criteria		
Size/shape	H	A moderate-sized area with a good shape and well buffered.
Connectivity	M/H	Adjoins and links other areas of indigenous forest.
Long-term Sustainability	M	Plant and animal pest control will probably be necessary to maintain the ecological values of the area in the long term.

### Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):

This area has been informally protected by the landowner. It lies mostly on steeper slopes that have limited potential for farm development.

### Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of young podocarps (totara), a locally uncommon plant species, the extent of the forest bird habitat, the potential habitat the area provides for long-tailed bat, the buffering the area provides to the Kakahu River and the contribution the area makes to forest bird habitat in the wider area.

## Scientific names of species cited by common name in this report

(Note: this is not a complete species list; it is a list only of species cited by common name in this report)

Common Name .....	Scientific name
(* = naturalised species)	
ash*	<i>Fraxinus excelsior</i>
bidibid	<i>Acaena</i> sp.
bittersweet*	<i>Solanum dulcamara</i>
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
broadleaf	<i>Griselinia littoralis</i>
broom*	<i>Cytisus scoparius</i>
burdock*	<i>Arctium minus</i>
bush lawyer	<i>Rubus cissoides</i>
bush lily	<i>Astelia</i> sp.
bush rice grass	<i>Microlaena</i> sp.
cabbage tree/ti rakau	<i>Cordyline australis</i>
cherry plum*	<i>Prunus cerasifera</i>
clematis	<i>Clematis paniculata</i>
columbine (granny's bonnet)*	<i>Aquilegia vulgaris</i>
common shield fern	<i>Polystichum richardii</i>
crack willow*	<i>Salix fragilis</i>
elderberry*	<i>Sambucus nigra</i>
five-finger	<i>Pseudopanax arboreus</i>
flowering currant*	<i>Ribes sanguineum</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hawthorn*	<i>Crataegus monogyna</i>
hen and chickens fern	<i>Asplenium bulbiferum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
hookgrass	<i>Uncinia</i> sp.
horopito/pepperwood	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
kaikomako	<i>Pennantia corymbosa</i>
kanuka	<i>Kunzea ericoides</i>
kiokio	<i>Blechnum novae-zelandiae</i>
korokio	<i>Corokia cotoneaster</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
lemonwood	<i>Pittosporum eugenioides</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
mapou	<i>Myrsine australis</i>
marbleleaf/putaputaweta	<i>Carpodetus serratus</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mingimingi	<i>Cyathodes juniperina</i>
mountain kiokio	<i>Blechnum montanum</i>
mouse-ear hawkweed*	<i>Hieracium pilosella</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
native jasmine	<i>Parsonsia</i> sp.
necklace fern	<i>Asplenium flabellifolium</i>

pate.....	<i>Schefflera digitata</i>
pennywort.....	<i>Hydrocotyle</i> sp.
poataniwha.....	<i>Melicope simplex</i>
pohuehue.....	<i>Muehlenbeckia australis</i>
pokaka.....	<i>Elaeocarpus hookerianus</i>
prickly shield fern.....	<i>Polystichum vestitum</i>
rohutu.....	<i>Lophomyrtus obcordata</i>
shrubby mahoe.....	<i>Melicytus micranthus</i>
sweet brier*.....	<i>Rosa rubiginosa</i>
sycamore*.....	<i>Acer pseudoplatanus</i>
thousand-leaved fern.....	<i>Hypolepis millefolium</i>
totara.....	<i>Podocarpus totara</i>
tutsan*.....	<i>Hypericum androsaemum</i>
wall lettuce*.....	<i>Mycelis muralis</i>
weeping mapou.....	<i>Myrsine divaricata</i>
wineberry.....	<i>Aristotelia serrata</i>
yellowwood.....	<i>Coprosma linariifolia</i>