

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

**LISSAMAN PROPERTY**  
**MOUNT DONALD**



Report prepared for Timaru District Council by Mike Harding  
June 2015

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** ..... Tim Lissaman (Mount Donald Limited)  
**Valuation Reference:** ...24670/254.00  
**Address:** ..... McMaster Road, Beautiful Valley  
**Location:** ..... On low hill country between Opuha River and Beautiful Valley  
**Ecological District:** ..... Geraldine  
**TDC Land Type:**..... 'Soft Rock Hills and Downs'  
**Land Environments:** ..... N3.1a

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### ECOLOGICAL CONTEXT:

The property lies on low hill country northeast of the Opuha River, near Beautiful Valley. It is in Geraldine Ecological District (McEwen, 1987). Limestone scarps on the property lie within the N3.1a Level IV Land Environment as defined by Leathwick *et al* (2003). Indigenous vegetation within this land environment is regarded as acutely-threatened (Walker *et al*, 2005).

It is likely that the original vegetation of this area was predominantly podocarp-hardwood forest, dominated by matai, totara, kowhai, broadleaf and other hardwood trees. Shrubland, treeland and tussockland may have occupied steeper slopes and disturbed sites. Limestone bluffs supported specialised flora, and valley floors would have supported areas of wetland vegetation.

Today the original forest cover in this part of Geraldine Ecological District is largely confined to remnants in gullies or on steep slopes associated with limestone scarps. Otherwise, the indigenous vegetation of the ecological district is substantially depleted or modified. 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.

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### SIGNIFICANT AREAS ON THE PROPERTY:

Indigenous vegetation on the property comprises treeland (scattered trees), shrubland, herbfield and sparsely vegetated rockland on or associated with limestone bluffs, and areas of wetland on the valley floor. These habitats support populations of four 'at risk' plant species, as listed by de Lange *et al* (2012), and several uncommon and yet to be described species restricted to limestone. A threatened plant species (*Gentianella calceis*) is present on the part of the limestone scarp (SNA 330) that lies on the adjacent property. The property lies near to areas of indigenous vegetation on other properties, contributing to the network of fauna habitat in the wider area. This part of the ecological district is within the range of a remnant South Canterbury population of long-tailed bat; a threatened (nationally critical) species.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during April and May 2015. Four areas, comprising approximately six 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	Map reference (NZTM)	Aprox. size (ha)	Vegetation/habitat type
330b		1440210E-5111650N	1.86	rockland, shruland, herbfield
331a		1441090E-5111220N	1.84	rockland, shruland, herbfield, wetland
331b		1440840E-5111040N	0.52	rockland, shruland, herbfield
331c		1440550E-5110910N	1.47	rockland, shruland, herbfield

The boundaries of these SNAs are illustrated on the aerial photograph and the values described 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, track construction, spraying with herbicides and over-planting. 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.



Lissaman  
Mount Donald  
24670/254.00

McMaster Road

330b

331a

331b

331c



1:6,000





## TIMARU DISTRICT SNA SURVEY

## SNA 330 (a & b)

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**Area Name:****Ecological District:** Geraldine**SNA 330a:** Central map ref. (NZTM): 1439990E-5111800N**SNA 330b:** Central map ref. (NZTM): 1440210E-5111650N**Surveyors:** Mike Harding**Property:** Coles (330a) & Lissaman (330b)**Nearest Locality:** Beautiful Valley**Area Size (ha):** 1.3**Altitude (m):** 200-240**Area Size (ha):** 1.9**Altitude (m):** 220-250**Survey Time:** 3 hours**Survey Date:** 23-04-15

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### General Description:

This SNA occupies a prominent limestone scarp on the north side of the Opuha River just west of Beautiful Valley. It is adjacent to the river, with the north and west parts (SNA 330a) on the Coles property and the east part (SNA 330b) on the Lissaman property. It covers the limestone scarp crest, steep northwest slopes and the gentler east face.

### Plant Communities:

Three main plant communities are present at the site: forest on the steep west face; sparsely vegetated rockland; and grassland/herbfield on the east face; and, shrubland/scrub on the scarp crest. These plant communities are described below. Naturalized (exotic) species are indicated with an asterisk\*.

#### Forest on the west face (SNA 330a):

This plant community occupies the steep western face at the north end of the limestone scarp. Further south the rock face supports plantation pine trees. The indigenous forest is dominated by broadleaf. Other canopy species are mahoe, mountain akeake, cabbage tree, mingimingi and the climbers: native jasmine, native bindweed, leafless lawyer and pohuehue. The dominant species on the boulder-strewn forest floor is *Asplenium lyallii*. Other ground-cover and understorey species are common shield fern, *Blechnum chambersii*, hound's tongue fern, mingimingi, blackberry\* and bittersweet\*.

This forest community grades, on lower slopes, to forest dominated by sycamore\* and then, on the river terrace, crack willow\* (outside the SNA). Additional species here are elderberry\*, alder\*, barberry\*, gooseberry\*, *Carex secta*, swamp kiokio and creeping buttercup\*.



*The western face of the scarp with indigenous forest on upper slopes*

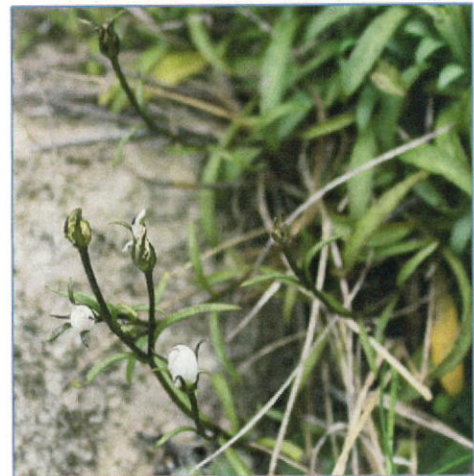


#### Open bluff: rockland and herbfield/grassland:

Areas of exposed limestone are sparsely vegetated. Gentler faces are generally dominated by a dense sward of pasture grasses, notably Chewings fescue\*. Indigenous plant species commonly present are broadleaf, mingimingi, mountain akeake, native broom, matagouri, koromiko, sweet brier\*, porcupine shrub, toatoa, *Einadia allanii*, *Gingidia ensyia*, *Epilobium nummularifolium*, *Carex breviculmis*, maidenhair fern, hound's tongue fern and *Asplenium lyallii*. Common naturalized (exotic) species are hemlock\*, mouse-ear hawkweed\*, king devil hawkweed\*, suckling clover\*, yarrow\*, narrow-leaved plantain\*, stonecrop\*, daisy\*, horehound\* and dwarf mallow\*. Occasional wilding pine trees\* are present.

Additional species present on steep grassy slopes at the northern tip of the scarp (within SNA 330a) are white fuzzweed and one small patch of an endemic South Canterbury limestone gentian species (*Gentianella calceis*): a threatened (nationally critical) species (photo at right).

A small patch of shrubland on lower slopes at the north end of the scarp is dominated by mingimingi. Other species present are cabbage tree, native broom, matagouri, mahoe, elderberry\*, sweet brier\*, porcupine shrub, blackberry\*, mistletoe (on mingimingi), pohuehue, native jasmine, native bindweed, scrub pohuehue and two large shrubs of *Coprosma virescens*, an 'at risk' (declining) species.



*The northeast face of the scarp: shrubland with Coprosma virescens at base; gentian population on upper slopes.*

The southern part of the exposed limestone on the east face of the scarp (within SNA 330b) appears more modified. Chewings fescue\* is dominant over large areas and indigenous species are more sparsely distributed. Additional indigenous species present are kowhai and, at one location, a large patch of tree nettle.

#### Scarp crest shrubland/scrub:

This plant community occupies the relatively broad crest of the scarp, on the boundary between the two properties. It is a dense woody plant community dominated by mingimingi, matagouri, native broom, mahoe, broadleaf, koromiko, mountain akeake, cabbage tree, porcupine shrub and pohuehue. Other prominent species are matipo, five-finger, mistletoe, scrub pohuehue, native jasmine and blue tussock. Broom\* scrub is present at the south end.



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

Native birds observed during this brief survey were bellbird, fantail, rifleman, grey warbler, kingfisher and harrier. Additional species observed in the crack willow forest were pukeko and paradise shelduck.

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

Notable features of this area are the presence of indigenous vegetation on a naturally uncommon ecosystem (limestone) listed as 'nationally vulnerable' (Holdway *et al*, 2012) and in an 'acutely threatened' land environment. The presence of a threatened (nationally critical) species (de Lange *et al*, 2012), *Gentianella calceis*, is especially important. One 'at risk' (declining) species (*Coprosma virescens*), two 'at risk' (naturally uncommon) plant species (*Einadia allanii* and *Gingidia enysii*) and two locally uncommon species (white fuzzweed and tree nettle) are present. The site lies close to other areas of indigenous vegetation on limestone.



*The scarp crest.*

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

The most important woody weeds present are sycamore, barberry, broom, elderberry and sweet brier. Of these, sycamore, barberry and broom pose the greatest threat. The most important herbaceous weeds are Chewings fescue, stonecrop, mouse-ear hawkweed and narrow-leaved plantain. Animal pests were not surveyed, though possums are likely to be present.

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

This is a relatively large limestone scarp. Western parts (SNA 330a) are buffered by the steep rocky slope and the dense exotic forest on the adjacent river terrace. The eastern scarp face is more modified. The scarp crest is well protected by difficult access and dense woody vegetation. It is grazed as part of larger paddocks, though parts of the site are protected from grazing by steep rock and dense vegetation. It lies close to other areas of indigenous vegetation on limestone and is part of a network of bird habitat in the wider area.

### **Condition and Management:**

Indigenous vegetation on the western face and crest of the scarp is in good condition; elsewhere the vegetation is more modified. Forest and shrubland communities are healthy, but the exposed limestone is affected by invasive naturalized plants. The most important management issues are control of weeds (especially sycamore, broom and Chewings fescue) and protection of the site from intensive grazing, especially by cattle.



## ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Indigenous vegetation that is moderately representative of the original vegetation and typical of that remaining on limestone in the area.
Rarity	H	Indigenous vegetation on a naturally uncommon ecosystem (limestone) and in an acutely threatened land environment (N3.1a). Supports one threatened (nationally critical), three 'at risk' and two locally uncommon plant species.
Diversity and pattern	M	Species diversity is moderate.
Distinctiveness/special features	M	The intactness of the indigenous forest on the northwest face is notable.
<b>Other Criteria</b>		
Size/shape	M/H	A moderate-sized area that is partly buffered.
Connectivity	M	Lies close to other areas of indigenous vegetation on limestone.
Long-term Sustainability	M	Some plant pest control will probably be necessary to maintain ecological values in the long term.

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

This area has been protected informally by the landowners. It lies on a steep scarp that has only limited potential for farm development. It is on the boundary between the two properties and does not appear to provide important access for farm management.

### Discussion:

This area easily meets the District Plan criteria for a significant natural area. Important features are the presence of indigenous vegetation on limestone and within an acutely threatened land environment, and the presence of threatened, at risk and locally uncommon plant species.



The 'at risk' (naturally uncommon) limestone species: *Gingidia enysii*



## TIMARU DISTRICT SNA SURVEY

## SNAs 331 a, b and c

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**Area Name:****Ecological District:** Geraldine**SNA 331a: map ref. (NZTM):** 1441090E-5111220N**SNA 331b: map ref. (NZTM):** 1440840E-5111040N**SNA 331c: map ref. (NZTM):** 1440550E-5110910N**Surveyors:** Mike Harding**Property:** Mount Donald (Lissaman)**Nearest Locality:** Beautiful Valley**Area Size (ha):** 1.84      **Altitude (m):** 200-220**Area Size (ha):** 0.52      **Altitude (m):** 200-220**Area Size (ha):** 1.47      **Altitude (m):** 200-220**Survey Time:** 6 hours      **Survey Date:** 05-05-15

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**General Description:**

These three small areas are located on steep limestone bluffs along a small valley on the property. They are linked along the valley by a series of wetlands, crack willow forest and a large pond. This limestone valley lies close to other areas of exposed limestone in the area.

**Plant Communities:**

Three main plant communities are present on the limestone: sparsely vegetated rockland, herbfield and shrubland (with scattered trees). The main areas of open wetland support sedgeland and reedland. These plant communities are described below. Naturalized (exotic) species are indicated with an asterisk\*.

**Rockland:**

Areas of exposed limestone bluff are mostly sparsely vegetated. Woody species commonly present are cabbage tree, broadleaf, elderberry\*, matipo, mingimingi, matagouri, mountain akeake, native broom, koromiko, porcupine shrub and the native smothering climber, pohuehue. Less commonly present are scrub pohuehue, leafless lawyer, lawyer, sweet brier\*, Himalayan honeysuckle\* and tauhinu. Additional woody species present at SNA 331c are kowhai and mahoe. There is a large walnut\* tree at the north end of SNA 331a.

Low-growing vegetation on limestone is dominated by naturalized species, notably Chewings fescue\*, cocksfoot\*, mouse-ear hawkweed\*, narrow-leaved plantain\*, yarrow\*, white clover\*, horehound\*, dandelion\*, mouse-ear chickweed\* and suckling clover\*. Indigenous herbaceous species present are toatoa, blue tussock, *Poa imbecilla*, *Asplenium lyallii*, *Blechnum chambersii*, maidenhair fern, *Oreomyrrhis* sp., *Epilobium nummularifolium*, spider orchid (*Nematoceras* sp.), *Colobanthus apetalus*, *Colobanthus* aff. *strictus*, pennywort, hairy pennywort, cardamine, *Einadia allanii*, *Leptinella perpusilla* and *Gingidia enysii*.

Plant species present at shaded fertile sites at the base of the taller bluffs are hemlock\*, Californian thistle\*, woolly mullein\*, horehound\*, bittersweet\*, black nightshade\*, nodding thistle\*, nettle\* and occasionally *Einadia allanii*.



*Vegetation on exposed limestone at SNA 331b*



#### Herbfield:

Herbfield is present on soils on the steep slopes associated with the limestone bluffs and large boulders. It is dominated by naturalized species but supports a number of indigenous herbs. Commonly present are pasture grasses\*, mouse-ear hawkweed\*, narrow-leaved plantain\*, selfheal\*, purging flax\*, *Epilobium nummularifolium*, *Carex breviculmis*, *Hypnum cupressiforme* and other mosses. Less common plant species are daisy\*, king devil hawkweed\*, *Geranium microphyllum*, *Geranium brevicaule*, *Dichondra repens*, *Schizaelema trifoliolatum*, patotara, *Lagenifera pumila*, *Oxalis lactea*, *Helichrysum filicaule*, red woodrush, *Nertera setulosa*, *Gingidia ensyia*, *Epilobium tenuipes* and *Microtis unifolia*. Three plants of the 'at risk' (declining) speargrass *Aciphylla subflabellata* are present at SNA 331b.



*Herbfield habitat on turf at SNA 331a*

#### Shrubland:

Shrubland is present at the crest of the main bluffs and on slopes below the bluffs. Dominant plant species are mingimingi, matagouri, elderberry\* and pohuehue. Also present are native broom, cabbage tree, matipo, gorse\*, broom\*, Douglas fir\* saplings, blackberry\*, bittersweet\*, cleavers\*, male fern\*, *Helichrysum lanceolatum*, tree nettle, native bindweed and scrub pohuehue.

#### Sedgeland and Reedland:

Wetland communities on the valley floor are dominated at most areas by sedges: pukio (*Carex secta*), *Carex geminata* and rautahi (*Carex coriacea*). Crack willow is present, though the SNA does not include the larger stands. Deeper water at the stream junction at the southwest edge of SNA 331a supports a large stand of raupo. Bog rush and jointed rush\* are present at some locations.

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

Native birds observed during this survey were fantail, bellbird, rifleman, welcome swallow, harrier and, near the wetland, paradise shelduck and pukeko.



*raupo below bluffs at SNA 331a*



### Notable Flora, Fauna and Habitats:

Notable features of these areas are the presence of indigenous vegetation on a 'naturally uncommon' ecosystem (limestone) listed as 'nationally vulnerable' (Holdaway *et al*, 2012) and in an 'acutely threatened' land environment, and the presence of four 'at risk' plant species (de Lange *et al*, 2012), *Aciphylla subflabellata*, *Einadia allanii*, *Geranium microphyllum* and *Ginidia enysii*. The wetland is also notable as a 'naturally uncommon' ecosystem. Indigenous plant species diversity is relatively high (51 vascular species).

### Notable Plant and Animal Pests:

Elderberry, broom and gorse are the most important woody plant pests present. Wilding pines (Douglas fir) may also pose a threat. Grasses (especially Chewings fescue and cocksfoot) and herbs (especially mouse-ear hawkweed and narrow-leaved plantain) pose the greatest threat to areas of open limestone. The valley-floor wetland is affected by crack willow and pasture grasses. Animal pests were not surveyed.

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

Each of these three areas is not large but they are buffered by their locations. They are grazed as part of larger paddocks, though the scarp crests are fenced and were less-intensively grazed at the time of survey. These scarps lie close to other areas of limestone.

### Condition and Management:

Indigenous vegetation throughout the sites is in reasonable condition, though is mostly present within communities dominated by exotic species. The most important management issues are the control of woody plant pests, containment of herbaceous plant pests (by continued light grazing) and protection of the sedgeland and reedland communities (wetland) from grazing animals (especially cattle).

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### ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

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Primary Criteria	Rank	Notes
Representativeness	M	Indigenous vegetation that is moderately representative of the original vegetation and is typical of that remaining on limestone and in wetlands in the area.
Rarity	H	Indigenous vegetation on naturally uncommon ecosystems (limestone and wetland) in an acutely threatened land environment; supports populations of four 'at risk' plant species.
Diversity and pattern	M/H	Indigenous plant species diversity is relatively high.
Distinctiveness/special features	M	The presence of limestone and wetland communities together is a special feature.
<b>Other Criteria</b>		
Size/shape	M	Three relatively small areas.
Connectivity	M/H	The areas lie close together and are linked by valley-floor wetland vegetation and crack willow forest.
Long-term Sustainability	M	Some plant pest control and careful management of grazing are probably required to maintain ecological values in the long term.

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

These areas have been protected by their location on steep bluffs and by sympathetic management. They lie on steep slopes and on a poorly-drained valley floor, which have limited potential for farm development.

### Discussion:

These three areas easily meet the District Plan criteria for significant natural areas. Important features are the presence of indigenous vegetation on limestone and wetlands, within an acutely threatened land environment. The sites provide good habitat for four at risk plant species.



### 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)

bittersweet*	<i>Solanum dulcamara</i>
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
blue tussock	<i>Poa colensoi</i>
bog rush	<i>Schoenus pauciflorus</i>
broadleaf	<i>Griselinia littoralis</i>
broom*	<i>Cytisus scoparius</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Californian thistle*	<i>Cirsium arvense</i>
cardamine	<i>Cardamine debilis</i>
Chewings fescue*	<i>Festuca rubra</i> ssp. <i>commutata</i>
cleavers*	<i>Galium aparine</i>
cocksfoot*	<i>Dactylis glomerata</i>
crack willow*	<i>Salix fragilis</i>
daisy*	<i>Bellis perennis</i>
dandelion*	<i>Taraxacum officinale</i>
Douglas fir/oregon*	<i>Pseudotsuga menziesii</i>
elderberry*	<i>Sambucus nigra</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hemlock*	<i>Conium maculatum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
horehound*	<i>Marrubium vulgare</i>
jointed rush*	<i>Juncus articulatus</i>
king devil hawkweed*	<i>Pilosella piloselloides</i> ssp. <i>praealta</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lawyer	<i>Rubus schmidelioides</i>
leafless lawyer	<i>Rubus squarrosus</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
maidenhair fern	<i>Adiantum cunninghamii</i>
male fern*	<i>Dryopteris filix-mas</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mingimingi	<i>Coprosma propinqua</i>
mountain akeake	<i>Olearia avicenniifolia</i>
mouse-ear chickweed*	<i>Cerastium fontanum</i>
mouse-ear hawkweed*	<i>Pilosella officinarum</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
native bindweed	<i>Calystegia tuguriorum</i>
native broom	<i>Carmichaelia</i> aff. <i>australis</i>
nettle	<i>Urtica incisa</i>
nodding thistle*	<i>Carduus nutans</i>
patotara	<i>Leucopogon fraseri</i>
pennywort	<i>Hydrocotyle novae-zelandiae</i>
pohuehue	<i>Muehlenbeckia australis</i>
porcupine shrub	<i>Melicytus alpinus</i>
pukio	<i>Carex secta</i>
purging flax*	<i>Linum catharticum</i>
raupo	<i>Typha orientalis</i>
rautahi	<i>Carex coriacea</i>
red woodrush	<i>Luzula</i> sp.
scrub pohuehue	<i>Muehlenbeckia complexa</i>
selfheal*	<i>Prunella vulgaris</i>



suckling clover*	.....	<i>Trifolium dubium</i>
sweet brier*	.....	<i>Rosa rubiginosa</i>
tauhinu	.....	<i>Ozothamnus leptophyllus</i>
toatoa	.....	<i>Haloragis erecta</i>
totara	.....	<i>Podocarpus totara</i>
tree nettle	.....	<i>Urtica ferox</i>
walnut*	.....	<i>Juglans regia</i>
white clover*	.....	<i>Trifolium repens</i>
woolly mullein*	.....	<i>Verbascum thapsus</i>
yarrow*	.....	<i>Achillea millefolium</i>



*Speargrass (Aciphylla subflabellata) (and Douglas fir) at SNA 331b*

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