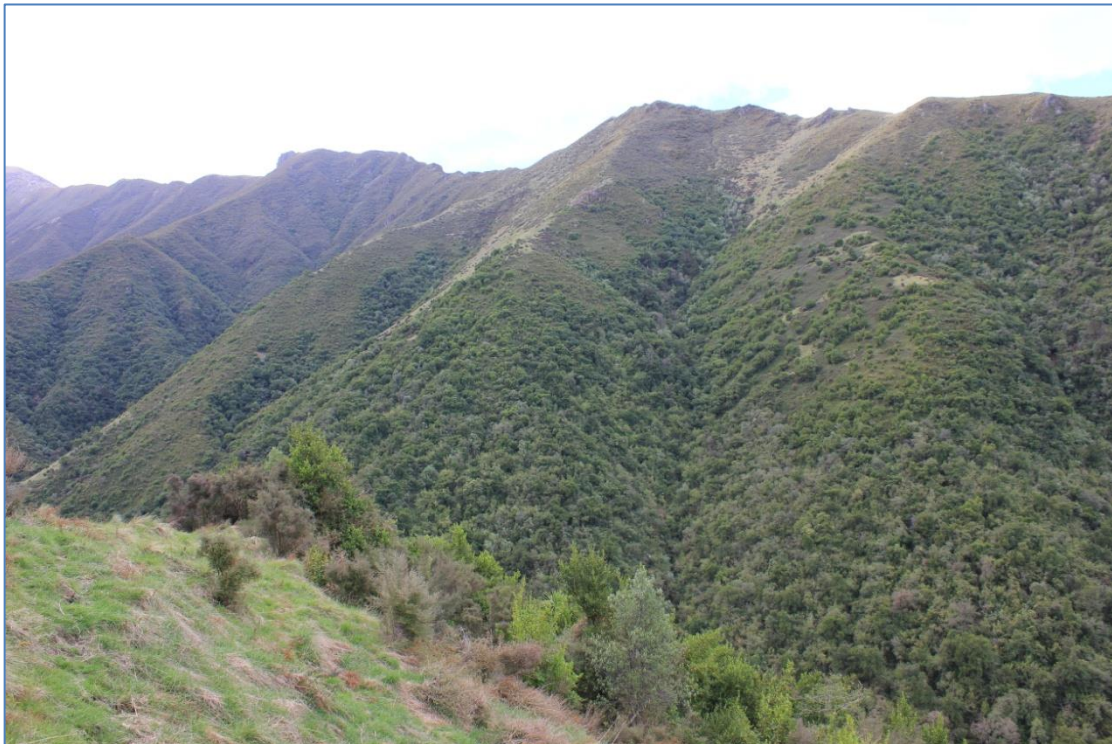


TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

SADDLE PEAK
BLAKELY PACIFIC



Report prepared for the Timaru District Council by Mike Harding
October 2013

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Blakely Pacific Ltd.
Valuation Reference: 24660/011.00
Address: PO Box 139, Timaru.
Location: Upper Waihi River; upper Hae Hae Te Moana North Branch River (Hare River), South Canterbury.
Ecological Districts: Orari Ecological District.
TDC Land Types: Hard Rock Hills and Downs.
Land Environments: Q2 (south-eastern hill country).

ECOLOGICAL CONTEXT:

This large property comprises Blakely Pacific's Saddle Peak Forest and the adjacent upper slopes of Waihi Peak, including the steep faces in the upper Hae Hae Te Moana North Branch (Hare) River. Within the Douglas fir plantations in the Waihi River catchment are areas of indigenous forest and shrubland, many regenerating from earlier disturbance. One much larger area of forest and scrub is present in the Hare valley. The property lies within the Orari Ecological District and comprises moderately-steep to steep slopes up to an altitude of 1478m at Waihi Peak. Lower slopes are incised by tributaries of the two rivers (Waihi and Hare) that drain the property.

The original vegetation of this area would have been predominantly hardwood forest with emergent podocarps (matai, totara and mountain totara). Areas of beech forest were present, such as that which remains in the Hare valley. Dense sub-alpine scrub, dominated by inaka, would have been present at higher altitudes. The indigenous fauna would have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area.

Indigenous vegetation on the property in the Hare River is part of the largest areas of indigenous forest remaining in this part of the ecological district. Notable are remnant stands of mountain beech forest in the Hare valley and populations of two at-risk and one threatened plant species in the Waihi valley.

Rifleman, an at-risk (declining) species, was observed at all SNAs on the property. Eastern falcon/karearea, a threatened (nationally vulnerable) species, is present in the area, though was not observed during the survey. The Waihi River provides good habitat for blue duck (a nationally vulnerable species), though it has been several years since this species has been observed in the area.

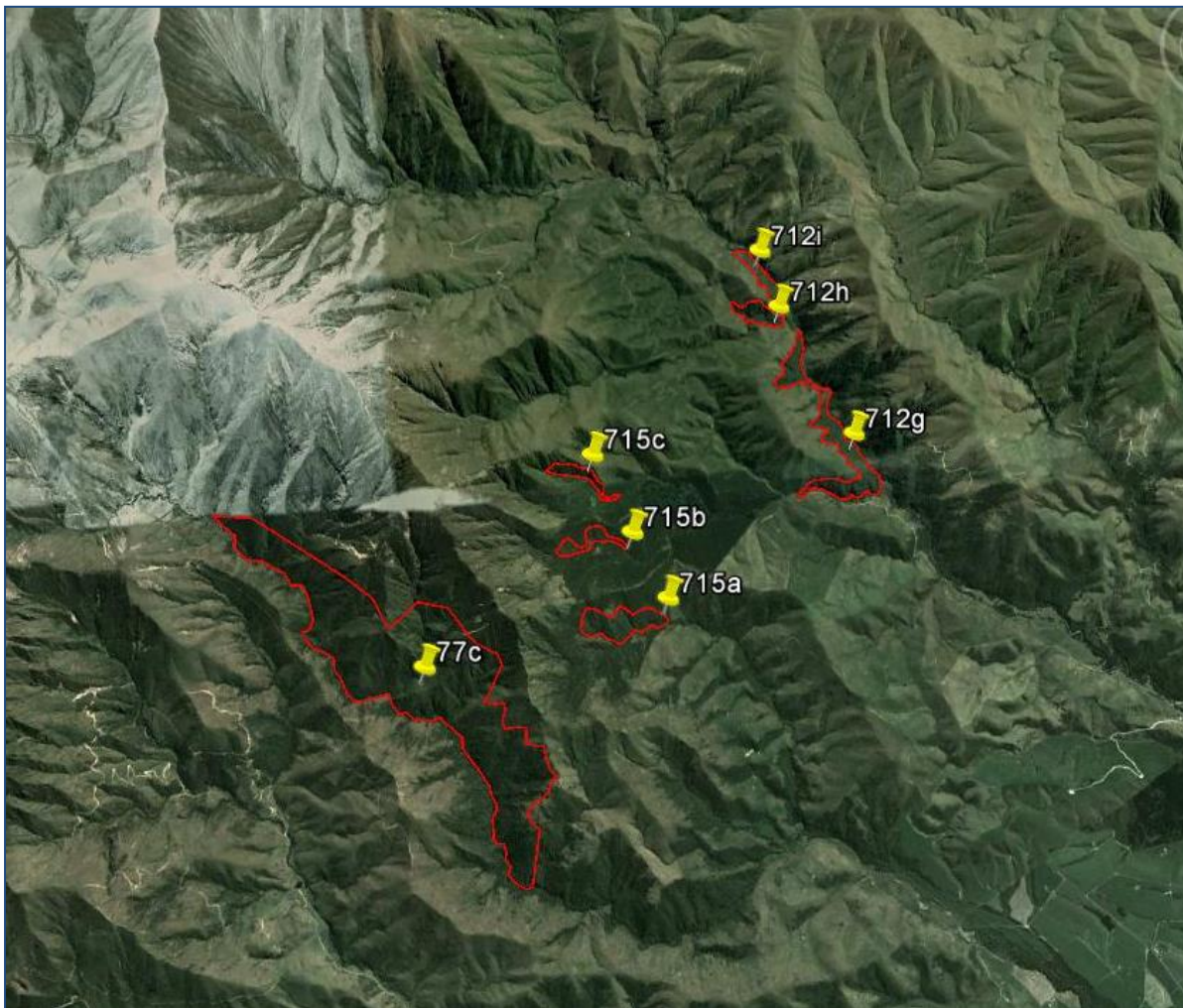
Forests within the SNAs are generally in good condition. The main management issue identified during this survey is the effects of wild animals, notably feral pigs.

SIGNIFICANT NATURAL AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas between January and October 2013. Most lower-altitude (below 900m) parts of the property were visited and assessed. Areas above 900m are not covered by the SNA survey. Seven separate areas are regarded as significant when assessed against the District Plan criteria.

Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
77c	Upper Hare Valley	J37: 545-885		Hardwood forest; beech forest; inaka scrub
712g	Mackintosh-Waihi	J37: 583-900		Hardwood (podocarp) forest
712h	Lower Deep Creek	J37: 576-912		Hardwood forest
712i	Upper Waihi River	J37: 576-915		Hardwood (podocarp) forest
715a	Saddle Peak	J37: 563-886		Hardwood (podocarp) forest
715b	Saddle Peak	J37: 561-894		Hardwood (podocarp) forest
715c	Saddle Peak	J37: 560-898		Hardwood-podocarp forest

These SNAs are illustrated on the aerial photograph below and described in greater detail on the SNA Survey 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 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.



Saddle Peak Property SNAs

At present, consent is required from Council for clearance of areas of indigenous vegetation or habitat that 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.

OTHER AREAS INSPECTED ON THE PROPERTY:

Other areas of indigenous vegetation and habitat on the property were inspected but are not regarded as significant when assessed against the criteria on pages B18-B20 of the Timaru District Plan. These are generally smaller or more modified areas of indigenous vegetation.

Failure of an area to meet the significance criteria does not necessarily mean that it is not important for nature conservation or the protection of indigenous biodiversity; it simply means that the area (as assessed at this time) does not meet the criteria in the Timaru District Plan. Some of these areas have considerable potential value and, if left alone, may eventually become significant.



The threatened (nationally endangered) Canterbury tree broom (Carmichaelia torulosa), SNA 712g

Area Name: Upper Hare valley	Property: Saddle Peak (Blakely Pacific)
Location (central map reference): J37: 545-885	Nearest Locality: Woodbury
Ecological District: Orari	Area Size (ha): ? Altitude (m): 540-900
Surveyors: Mike Harding	Survey Time: 4 hours Survey Date: 1-11-13

General Description:

This SNA lies on steep south-facing slopes in the upper reaches of the Hae Hae Te Moana North Branch (Hare) River along the southwest boundary of the Saddle Peak property. The area has not been planted with trees and is not grazed by domestic stock, so there is healthy regeneration of indigenous forest and scrub on these slopes. Valley bottom forest is contiguous with indigenous forest on the southwest side of the river on the adjacent property (Four Peaks Station).

Plant Communities:

Two main plant communities are present: indigenous hardwood forest and inaka scrub. These plant communities are described below. Naturalized (exotic) species are indicated with an asterisk*.

Lower-altitude parts of the area, on lower slopes along the river, are dominated by hardwood forest. Most of this forest has a canopy dominated by broadleaf. Also dominant in the upper valley is mountain ribbonwood. In the lower valley kowhai and lancewood are also dominant. Other canopy species are marbleleaf, yellowwood, three-finger, mountain totara, fuchsia, matipo, mountain akeake, clematis, bush lawyer and, in the upper valley, inaka and narrow-leaved mahoe. In the lower valley wineberry, lemonwood, mapou and pohuehue are also present in the forest canopy.

Mountain beech is present at two valley-floor locations, comprising tall trees emergent over a hardwood canopy. An additional understorey species commonly present is *Coprosma rhamnoides*. Notable is the absence of seedling or sapling beech trees.

Species commonly present in the forest understorey are *Coprosma dumosa*, *Coprosma rigida*, pate, narrow-leaved mahoe, broadleaf, saplings of mountain totara, bush lawyer, and, on tree trunks, hound's tongue fern, hanging spleenwort and occasionally *Huperzia varia*. Additional species present in the lower valley are poataniwha, lemonwood, *Coprosma crassifolia* and pohuehue.

The forest floor is dominated in most places by prickly shield fern or mountain kiokio. Other ground-cover species are nettle, buttercup and thousand-leaved fern.

Species present on the forest margin or at forest openings are inaka, *Coprosma dumosa*, *Coprosma rugosa*, *Coprosma propinqua*, koromiko, Himalayan honeysuckle*, scrambling fuchsia, bush snowberry, bush lawyer, native convolvulus, mountain flax, thousand-leaved fern, *Lycopodium fastigiatum* and narrow-leaved snow-tussock.

Additional species present adjacent to the river or at other damp shaded sites are toetoe, *Blechnum chambersii*, *Blechnum fluviatile*, *Ctenopteris heterophylla*, *Grammitis billardiarei*, *Hymenophyllum bivalve* and *Hymenophyllum minimum*. A small tree of southern rata was observed on the shaded rock of the river gorge at one location.

This forest community grades on upper slopes to low-stature shrubland/fermland and scrub. In the upper valley these communities are dominated by mountain kiokio, mountain flax, narrow-leaved snow-tussock and inaka, with inaka forming the dominant cover in scrub communities. In the lower valley the forest margin community is dominated by prickly shield fern and *Coprosma propinqua*, with a number of other regenerating forest species.

Birds/Fauna Observed:

Native birds observed during this survey were tomtit, kereru (NZ pigeon), bellbird, brown creeper, grey warbler, fantail, welcome swallow, silvereye and rifleman. Karearea (NZ falcon) is also likely to be present.



Down-valley part of SNA 77c; beech forest patch at lower centre.

Notable Flora, Fauna and Habitats:

Important features of this area are the extent of the woody vegetation, the presence of patches of mountain beech forest, locally-uncommon plant species (southern rata, *Huperzia varia* and *Hymenophyllum minimum*), the habitat the area provides for birds, notably an at-risk (declining) species (rifleman) and a threatened (nationally vulnerable) species (kareraea), and the contribution the forest provides to maintaining water quality in the river (a domestic water supply catchment).

Notable Plant and Animal Pests:

Himalayan honeysuckle was the only important plant pest observed. This ubiquitous species is difficult to control and does not pose a significant threat to intact forest. Sign of wild animals, notably feral pig, deer and possum, was observed. Feral pigs, in particular, are causing considerable damage at some locations.

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

This SNA is very well buffered by its location in a steep-sided valley. It grades to pasture on higher slopes in the lower valley, and to inaka scrub and regenerating forest on higher slopes in the upper valley. In this area the SNA boundary is drawn roughly at the 900m contour, as areas above that altitude are not covered by this SNA survey. The SNA adjoins other areas of indigenous forest across the river on Four Peaks Station (SNA 77d) and down-valley on an adjacent property (SNA 77b). Together, these SNAs form one of the larger areas of indigenous forest remaining in this part of Orari Ecological District.

Condition and Management Issues:

Forest and scrub communities in this SNA are in good condition, except for the (mostly localized) effects of wild animals, notably feral pigs. The most important management issue is to reduce wild animal populations.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	One of the best examples of indigenous forest, including regenerating forest and scrub, in the ecological district. Supports species highly representative of the original vegetation of the district, notably mountain beech and mountain totara.
Rarity	M/H	Provides extensive habitat for an at-risk bird species (rifleman) and probably for a threatened bird species (karearea). Supports populations of locally uncommon plant species.
Diversity and pattern	M	Plant species diversity is probably reduced from that originally present.
Distinctiveness/special features	M/H	An intact area covering a wide altitudinal range. Patches of mountain beech forest are notable.
Other Criteria		
Size/shape	H	A large area that is very well buffered.
Connectivity	M/H	Adjoins other areas of indigenous vegetation and is a very important component of the network of forest habitat in the ecological district.
Long-term Sustainability	M/H	Wild animal control will 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 set aside from plantation forest and, before then, relatively undisturbed by grazing. Forest regeneration is well advanced. The steepness of the slopes, high altitude of much of the area and inaccessibility limit its potential for development.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the extent of the woody vegetation, the presence of patches of mountain beech forest, locally-uncommon plant species (southern rata, *Huperzia varia* and *Hymenophyllum minimum*), the habitat the area provides for birds, notably an at-risk (declining) species (rifleman) and a threatened (nationally vulnerable) species (kareraea), and the contribution the forest provides to maintaining water quality in the river (a domestic water supply catchment).

TIMARU DISTRICT SNA SURVEY

SNA 712g

Area Name: Mackintosh-Waihi	Property: Saddle Peak (Blakely Pacific)
Location (central map reference): J37: 583-900	Nearest Locality: Woodbury
Ecological District: Orari	Area Size (ha): ? Altitude (m): 400-600
Surveyors: Mike Harding	Survey Time: 6 hours Survey Date: 23-01-13

General Description:

This SNA lies on steep south-facing slopes of lower Mackintosh Stream and east-facing slopes of the upper Waihi River, at the southeast corner of the Saddle Peak property.

Plant Communities:

The main plant communities present are hardwood forest with scattered podocarps and shrubland at the forest margins. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

South-facing slopes (Mackintosh Stream):

The forest canopy here is dominated by lancewood, broadleaf and five-finger. Other canopy species are mountain ribbonwood, matipo, yellowwood, kowhai, narrow-leaved mahoe, marbleleaf, lemonwood, mapou, cabbage tree, mountain akeake, fuchsia, wineberry, pohuehue and bush lawyer. Totara trees are emergent from the forest canopy, notably on steeper lower slopes in the stream gorge.

The forest understorey is relatively open. Species present are narrow-leaved mahoe, lancewood, five-finger, mountain ribbonwood, wineberry, hybrid wineberry, *Coprosma rigida*, *Coprosma crassifolia*, *Coprosma propinqua*, yellowwood, weeping mapou, horopito, bush lawyer, lawyer, clematis and, on tree trunks, hound's tongue fern. Prickly shield fern is the dominant ground-cover species. Other species are *Asplenium richardii*, *Asplenium hookerianum*, hanging spleenwort, necklace fern, hound's tongue fern, bush lily, nettle and cardamine.

Additional species present on the forest margin or in forest openings are koromiko, *Olearia arborescens*, *Coprosma rugosa*, *Coprosma dumosa*, inaka, matagouri, bush snowberry, Himalayan honeysuckle*, scrambling fuchsia, native convolvulus, bush lily, mountain flax, golden speargrass, cotton daisy, tutu, mountain kiokio, thousand-leaved fern, *Blechnum penna-marina*, bracken, fescue tussock, bidibid, patotara, *Carex geminata* and, along the stream, grey willow*.

A small population (approximately 12 plants) of the threatened (nationally endangered) Canterbury tree broom (*Carmichaelia torulosa*) is present near the stream. Also present here is one shrub of the local endemic *Melicytus* "Waihi".

East-facing slopes (Waihi River):

The forest canopy on these moderately-steep slopes is dominated by kowhai and marbleleaf. Other canopy species are lancewood, broadleaf, narrow-leaved mahoe, cabbage tree, mapou, fuchsia, wineberry, mountain ribbonwood, pohuehue, *Clematis foetida* and bush lawyer, with scattered emergent trees of totara and, less commonly, matai.

The most common understorey species is mapou. Other understorey species are mahoe, lemonwood, weeping mapou, kowhai, wineberry, narrow-leaved mahoe, fuchsia, mountain ribbonwood, *Coprosma rhamnoides*, *Coprosma propinqua*, *Coprosma crassifolia*, yellowwood, horopito, pate, bush lawyer, *Clematis foetida*, native convolvulus, and, on tree trunks, hound's tongue fern and hanging spleenwort.

The ground-cover is dominated in most places by prickly shield fern. Other species are common shield fern, hen and chickens fern, *Asplenium richardii*, *Asplenium hookerianum*, hound's tongue fern, *Blechnum fluviatile*, *Blechnum chambersii*, thousand-leaved fern, bush lily, bittersweet*, wall lettuce*, hookgrass, pennywort, hairy pennywort, nettle and seedlings of narrow-leaved mahoe, broadleaf, mahoe, cabbage tree and *Coprosma* species.

Additional species present at the upper forest margin are *Coprosma tayloriae*, Himalayan honeysuckle*, bracken, lawyer and toatoa. Species commonly present at the forest margin along the Waihi River are mountain akeake, tutu, fuchsia, Himalayan honeysuckle*, koromiko, *Coprosma rugosa*, *Coprosma propinqua*, grey willow* and kowhai.

Other species occasionally present, often on streamside rock banks, are *Hebe traversii*, *Olearia arborescens*, korokio, native broom, *Dracophyllum longifolium*, bush snowberry, *Gaultheria crassa*, toetoe, bush lily, hound's tongue fern, *Blechnum chambersii*, *Blechnum penna-marina*, *Ctenopteris heterophylla*, necklace fern, hanging spleenwort, leather-leaf fern, filmy fern, *Huperzia varia*, *Pratia angulata*, toatoa, *Schoenus pauciflorus*, star lily, *Galium perpusillum*, bidibid, *Helichrysum filicaule*, *Euchiton audax*, *Wahlenbergia gracilis*, *Parahebe lyallii*, *Raoulia glabra*, *Epilobium nummularifolium*, creeping pohuehue, spider orchid, blue wheat grass, danthonia sp. and blue tussock.



Forested slopes above Mackintosh Stream, within SNA 712g

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, silvereve, fantail, rifleman, welcome swallow, grey warbler and kereru. Other species likely to be present are tomtit and NZ falcon.

Notable Flora, Fauna and Habitats:

Important features of this area are the diversity of plant species (92 vascular species), the presence of podocarp trees (totara and matai), a population of the nationally-endangered Canterbury tree broom, the presence of a large number of locally uncommon plant species, the habitat the area provides for

forest birds including an at-risk (declining) species (rifleman), the extent of the area and its role in buffering Mackintosh Stream and the Waihi River.

Notable Plant and Animal Pests:

Himalayan honeysuckle is the only important plant pest observed within the forest. Grey willow and broom are present at the forest margins. Of these, grey willow is the only species that poses a significant threat. Animal pests were not surveyed, though possum and pig sign was common.

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

This area is well buffered by its location on steep slopes. It adjoins an extensive area of indigenous forest across the Waihi River and is surrounded by plantation Douglas fir forest at its upper boundary.

Condition and Management Issues:

The forest canopy is in good condition. The forest understorey is affected by pig rooting, especially near the forest margins. The main management issue is continued control of animal pests. Removal of grey willow is desirable. The forest should be monitored for any spread of Douglas fir.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest typical of this part of the ecological district and containing a good range of species representative of the original forest.
Rarity	H	Supports a population of a nationally endangered plant species (<i>Carmichaelia torulosa</i>) and provides good habitat for an at-risk bird species (rifleman). Supports a large number of locally uncommon species.
Diversity and pattern	H	A very diverse plant community (92 indigenous vascular plant species).
Distinctiveness/special features	M	The dominance of kowhai on the Waihi valley slopes is notable.
Other Criteria		
Size/shape	M/H	A relatively large area for this part of the ecological district.
Connectivity	M	Provides a corridor of forest up the upper Waihi valley.
Long-term Sustainability	M/H	Some animal pest control is probably required 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 set aside from commercial use by Blakely Pacific. The steep slopes within this area limit its potential for development.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the diversity of plant species (92 vascular species), the presence of podocarp trees (totara and matai), a population of the nationally-endangered Canterbury tree broom, the presence of a large number of locally uncommon plant species, the habitat the area provides for forest birds including an at-risk (declining) species (rifleman), the extent of the area and its role in buffering Mackintosh Stream and the Waihi River.

Area Name: Lower Deep Creek	Property: Saddle Peak (Blakely Pacific)
Location (central map reference): J37: 576-912	Nearest Locality: Woodbury
Ecological District: Orari	Area Size (ha): ? Altitude (m): 480-560
Surveyors: Mike Harding	Survey Time: 3 hours Survey Date: 29-01-13

General Description:

This SNA lies on steep slopes in the lower reaches of Deep Creek, just above its confluence with the Waihi River, at the eastern property boundary. It adjoins SNA 712i and lies close to SNA 712g, both of which lie in the Waihi River valley. The SNA is surrounded by plantation Douglas fir forest.

Plant Communities:

Two main plant communities are present: montane hardwood forest and shrubland/scrub. These plant communities are described separately below, though they merge with one another. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest occupies slopes adjacent to the stream and is more extensive on south-facing slopes. The forest canopy is dominated by broadleaf, matipo and mountain ribbonwood. Other canopy species are kowhai, three-finger, cabbage tree, yellowwood, narrow-leaved mahoe, mountain akeake, pohuehue, *Clematis foetida* and bush lawyer. One moderate-sized mountain totara tree is present alongside the stream.

Species present in the forest understorey are weeping mapou, *Coprosma rigida*, korokio, hybrid wineberry, bush lily and bush lawyer. The main ground-cover species is prickly shield fern. Other species present are mountain kiokio, hound's tongue fern, necklace fern, *Asplenium richardii*, *Blechnum penna-marina*, hookgrass, sedge, pennywort, hairy pennywort, cardamine, wall lettuce*, nettle and seedlings of *Melicytus* "Waihi", kowhai, mountain ribbonwood, broadleaf and *Coprosma* species.

Scrub and fernland is present at the forest margins. This community is dominated by *Coprosma rugosa*, mountain kiokio and prickly shield fern. Other species present are *Coprosma propinqua*, *Coprosma dumosa*, *Coprosma rigida*, *Olearia bullata*, inaka, mountain akeake, bush snowberry, *Gaultheria crassa*, hybrid wineberry, korokio, matagouri, porcupine shrub, lawyer, bush lawyer, scrub pohuehue, native convolvulus, native jasmine, bracken, golden speargrass, *Aciphylla scott-thomsonii*, narrow-leaved snow-tussock, mountain flax, cotton daisy, patotara, bidibid and *Blechnum penna-marina*. One large patch of broom* is present near the up-stream margin of the SNA.

Also present are at least four distinct patches of the nationally endangered Canterbury tree broom (*Carmichaelia torulosa*). In total, approximately 50 adult plants are present, one of the largest populations of this species in South Canterbury.

A diverse plant community is present along the river-sides. Important plant species are mountain akeake, *Coprosma rugosa*, fuchsia, tutu, *Carex geminata*, lotus* and creeping buttercup*. Other species present are grey willow*, Himalayan honeysuckle*, koromiko, *Melicytus* "Waihi", scrambling fuchsia, gooseberry*, thousand-leaved fern, male fern*, *Carex secta* and *Blechnum fluviatile*.

Additional species present on rocky streamside bluffs are native broom, porcupine shrub, toatoa, necklace fern, hanging spleenwort, *Asplenium trichomanes*, *Asplenium appendiculatum*, *Libertia ixioides*, common shield fern, *Blechnum chambersii*, *Blechnum vulcanicum*, *Grammitis billardierei*, *Ctenopteris heterophylla*, blue wheatgrass, blue tussock and *Pratia angulata*.

Two separate clumps of the at risk (declining) scrambling broom (*Carmichaelia kirkii*) are present beside the stream. Also present on a rocky slope is one clump of the at risk (declining) shrub

Teucrium parvifolium, the only record of this species in Orari Ecological District from SNA surveys.

Birds/Fauna Observed:

Native birds observed during this brief survey were fantail, grey warbler, rifleman, tomtit, silvereye, bellbird, harrier hawk and welcome swallow. Also likely to be present are kereru (NZ pigeon) and karearea (NZ falcon).

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of a large population of a nationally endangered plant species (Canterbury tree broom), populations of two at risk (declining) plant species (*Teucrium parvifolium* and *Carmichaelia kirkii*), populations of locally uncommon plant species (*Aciphylla scott-thomsonii*, *Asplenium trichomanes*, *Blechnum vulcanicum*, *Ctenopteris heterophylla* and *Grammitis billardiarei*), a large population of the un-described but very local *Melicytus* “Waihi”, the habitat the area provides for forest birds including an at-risk (declining) species (rifleman), its role buffering the stream and its proximity to other areas of indigenous vegetation.



The at risk (declining) scrambling broom (Carmichaelia torulosa) in SNA 712h

Notable Plant and Animal Pests:

Grey willow, broom, gooseberry and Himalayan honeysuckle are the most important naturalised plant species present. Of these grey willow and broom pose the greatest threat, though neither species is likely to colonise intact taller indigenous vegetation. Animal pests were not surveyed but pig rooting is common and extensive and possum sign was observed.

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

This area is buffered by its location on steep slopes of an incised valley. It is surrounded by plantation Douglas fir forest except at its lower (east) boundary at the confluence of the Waihi River where it is linked by river-side forest and scrub to SNA 712i upstream, SNA 712g downstream and SNA 712e across the Waihi River.

Condition and Management Issues:

The most important management issues are removal of feral pigs, control or containment of grey willow and broom, and removal of a few Douglas fir trees that threaten to overshadow patches of Canterbury tree broom at the upstream (northwest) end of the SNA.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest typical of that remaining in this part of the ecological district and containing a good range or representative species, including mountain totara.
Rarity	H	Supports an important population of a nationally endangered species (<i>Carmichaelia torulosa</i>), populations of at risk (declining) species (<i>Carmichaelia kirkii</i> and <i>Teucrium parvifolium</i>) and several locally uncommon plant species. Provides habitat for an at risk (declining) bird species (rifleman).
Diversity and pattern	M	Plant species diversity is moderate.
Distinctiveness/special features	M	The range of habitats present at the site and the concentration of threatened, at risk and locally uncommon species are special features.
Other Criteria		
Size/shape	M	A moderate sized area that is well buffered.
Connectivity	M/H	Adjoins or lies close to other areas of indigenous forest.
Long-term Sustainability	M/H	Some plant and animal pest control, and careful harvesting of the adjacent Douglas fir plantation, will be needed 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 set aside from plantation forestry by the owners. The steepness and rockiness of the slopes give the area very limited potential for further development.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of a large population of a nationally endangered plant species (Canterbury tree broom), populations of two at risk (declining) plant species (*Teucrium parvifolium* and *Carmichaelia kirkii*), populations of five locally uncommon plant species, a large population of the un-described but very local *Melicytus* "Waihi", the habitat the area provides for forest birds including an at-risk (declining) species (rifleman), its role buffering the stream and its proximity to other areas of indigenous vegetation.

Area Name: Upper Waihi River	Property: Saddle Peak (Blakely Pacific)
Location (central map reference): J37: 576-915	Nearest Locality: Woodbury
Ecological District: Orari	Area Size (ha): ? Altitude (m): 480-560
Surveyors: Mike Harding	Survey Time: 1½ hours Survey Date: 29-01-13

General Description:

This SNA lies on moderately steep east-facing slopes of the upper Waihi River valley, just above the confluence of Deep Creek. It includes a valley floor terrace which is in places open and grassy, and the steep rocky terrace edge beside the river.

Plant Communities:

Two main plant communities are present: hardwood forest and scrub/shrubland. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest occupies the steeper slopes and parts of the terrace edge. The forest canopy is dominated by broadleaf, kowhai and mountain ribbonwood. Other canopy species are three-finger, five-finger, matipo, cabbage tree, mountain akeake, Himalayan honeysuckle*, fuchsia, pohuehue, native convolvulus, bush lawyer and, less commonly, lancewood, yellowwood and marbleleaf. One large mountain totara tree is present at the terrace edge.

Understorey and ground-cover species are kowhai, broadleaf, mountain ribbonwood, matipo, weeping mapou, fuchsia, prickly shield fern, hound's tongue fern, *Blechnum penna-marina*, bush lily, hairy pennywort, wall lettuce*, bidibid and seedlings of broadleaf, weeping mapou and *Coprosma* species.

Shrubland/scrub at the forest margin and elsewhere on the terrace is dominated by *Coprosma propinqua*, *Coprosma rigida* and mountain wineberry. Other species present are weeping mapou, koromiko, hybrid wineberry, korokio, *Melicytus* "Blondin", native broom, bush snowberry, matagouri, scrambling fuchsia, broom*, thousand-leaved fern, bracken, narrow-leaved snow-tussock, gooseberry*, lawyer, scrub pohuehue, *Clematis marata* and native jasmine.

A distinct plant community is present on the river banks. Important species are grey willow*, mountain akeake, korokio, *Coprosma rugosa*, bush snowberry, tutu and lotus*. Other species present are koromiko, *Coprosma propinqua*, *Coprosma robusta* x *propinqua*, native broom, mountain kiokio, inaka, mountain wineberry, mountain flax, broom*, oxeye daisy*, *Helichrysum bellidioides* and selfheal*.

Additional species present on rocky streamside slopes and bluffs are *Hebe traversii*, porcupine shrub, hound's tongue fern, *Asplenium richardii*, *Asplenium trichomanes*, *Asplenium appendiculatum*, necklace fern, hanging spleenwort, *Blechnum chambersii*, filmy fern, *Cystopteris tasmanica*, button fern, *Parahebe lyallii*, *Epilobium nummularifolium*, *Epilobium chlorifolium*, mouse-ear hawkweed*, blue tussock, harebell, *Wahlenbergia gracilis*, creeping pohuehue, *Raoulia glabra*, patotara, bidibid and hookgrass.

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, silvereye, fantail, rifleman, grey warbler, welcome swallow and harrier hawk. Also likely to be present are tomtit, kereru (NZ pigeon) and karearea (NZ falcon). The adjacent Waihi River supported blue duck till recently and still provides suitable habitat for this nationally vulnerable species.

Notable Flora, Fauna and Habitats:

Important features of this area are the habitat the area provides for forest birds including rifleman (a declining species), the presence of several locally uncommon species (*Cystopteris tasmanica*, filmy fern, *Meliccytus* “Blondin”, *Parahebe lyallii* and *Wahlenbergia gracilis*), its role in buffering the Waihi River and its proximity to other areas of indigenous forest.

Notable Plant and Animal Pests:

Grey willow and broom are the most important plant pests present, both of which threaten to further invade streamside and open parts of the SNA. Animal pests were not surveyed. However, pig rooting and tracking is widespread and extensive, with large areas turned over by pigs especially on the terrace.

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

This area is buffered to some extent by its location on steeper rocky slopes, though the parts of the area on the river terrace are more vulnerable to disturbance. It adjoins SNAs 712h and 712g downstream and SNA 712e across the Waihi River.

Condition and Management Issues:

The most important management issues are control of feral pigs, grey willow and broom.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest typical of this part of the ecological district and containing a representative range of plant species.
Rarity	M	Provides habitat for an at risk (declining) bird species (rifleman); protects potential river habitat of a nationally vulnerable species (blue duck); and supports populations of locally uncommon plant species.
Diversity and pattern	M	Plant species diversity is moderate and probably reduced from that originally present.
Distinctiveness/special features	M	The diverse and healthy riparian vegetation is a special feature.
Other Criteria		
Size/shape	M	A moderate-sized area that is partially buffered and has a good shape.
Connectivity	M/H	Adjoins or lies close to other areas of indigenous vegetation.
Long-term Sustainability	M/H	Some plant and animal pest control is likely to 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 set aside from plantation forestry by the owners. Parts of the area on the main terrace have potential for development but access would be difficult.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the habitat the area provides for forest birds including rifleman (a declining species), the presence of five locally uncommon species, its role in buffering the Waihi River and its proximity to other areas of indigenous forest.

TIMARU DISTRICT SNA SURVEY

SNAs 715a, b and c

Area Name: Saddle Peak	Property: Saddle Peak (Blakely Pacific)
Ecological District: Orari	Nearest Locality: Woodbury
SNA 715a: Location (central map ref.): J37: 563-886	Area Size (ha): ? Altitude (m): 550-650
SNA 715b: Location (central map ref.): J37: 561-894	Area Size (ha): ? Altitude (m): 650-700
SNA 715c: Location (central map ref.): J37: 560-898	Area Size (ha): ? Altitude (m): 650-800
Surveyors: Mike Harding	Survey Time: 6 hours Survey Date: 17-10-13

General Description:

These three SNAs lie in small valleys on the upper north-facing slopes of Waihi Peak, on the Saddle Peak property. They are described together here because they support similar plant communities and habitats. All three lie on relatively steep slopes, adjoin plantation forests at their lower margins and inaka (*Dracophyllum*) scrub at their upper margins.

Plant Communities:

The main plant community present at these SNAs is hardwood forest, described below. Special features of each SNA are then described separately. Naturalized (exotic) species are indicated with an asterisk*.

The canopy of the hardwood forest is dominated by broadleaf and three-finger. Other canopy species are kowhai, fuchsia, mountain ribbonwood, lancewood, marbleleaf, cabbage tree, narrow-leaved mahoe, matipo, five-finger, wineberry, yellowwood, weeping mapou, pohuehue, clematis and bush lawyer. Occasional emergent trees of totara are present at SNAs 715a and 715b. Totara is more common at SNA 715c.

Understorey plant species are horopito, koromiko, pate, mapou, *Coprosma rhamnoides*, *Coprosma rigida*, *Coprosma rotundifolia*, *Coprosma dumosa*, weeping mapou, bush lawyer and saplings of mountain ribbonwood, narrow-leaved mahoe, three finger and totara. Less commonly present are mountain tree fern (SNA 715a) and poataniwha (SNA 715a). Species present on tree trunks are hound's tongue fern, hanging spleenwort and (at SNA 715c) *Huperzia varia*.

Prickly shield fern forms the dominant ground cover in all forest patches. Other species commonly present are bush lily, mountain kiokio, *Blechnum fluviatile*, *Blechnum penna marina*, *Blechnum chambersii*, hen and chickens fern, *Asplenium richardii*, hound's tongue fern, sedge (*Carex* sp.), nettle, wall lettuce*, pennywort, cardamine and seedlings of broadleaf, lemonwood and *Coprosma* species. Less commonly present are *Pratia angulata*, button fern, *Libertia ixioides* (SNA 715a), necklace fern, *Asplenium hookerianum* and male fern*.

Species commonly present at forest margins or at openings within the forest are Himalayan honeysuckle*, mountain akeake, *Coprosma dumosa*, *Coprosma propinqua*, *Coprosma rugosa*, *Coprosma rigida*, *Olearia arborescens*, inaka, scrambling fuchsia, bush snowberry, *Hebe rakaiensis*, bush lawyer, scrub pohuehue, tutu, mountain flax, bracken, *Hypolepis ambigua*, narrow-leaved snow-tussock, foxglove* and bidibid.

Additional species present at open damp sites are bog rush, rautahi, tauhinu, Maori onion, soft rush*, *Olearia bullata* and *Aciphylla scott-thomsonii*.

Birds/Fauna Observed:

Native birds observed during this survey were bellbird, grey warbler, rifleman, fantail, kereru, brown creeper, tomtit and silvereeye. Other species likely to be present are harrier and kerearea/NZ falcon.

Notable Flora, Fauna and Habitats:

Important features of these areas are the presence of podocarp (totara) trees and saplings, locally uncommon plant species (mountain tree fern, *Hebe rakaiaensis* and *Huperzia varia*), the habitat they provide for forest birds, including an at risk species (rifleman) and the healthy forest re-growth at their upper margins.



SNA 715a



SNA 715c

Notable Plant and Animal Pests:

Himalayan honeysuckle is the only significant plant pest present, though this does not pose a major threat. Sign of feral pig, deer and possum was observed and was, in places, common.

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

These three SNAs adjoin plantation forest at their lower boundaries and extend down along stream sides into that plantation forest. At their upper boundaries, they grade to dense inaka scrub and regenerating forest. The areas lie close to other patches of native forest in adjacent valleys. All three SNAs are well buffered.

Condition and Management Issues:

The forest canopy at each area is in relatively good condition. Understorey vegetation is more depleted, presumably from the effects of wild animals. The most important management issue is wild animal control, notably of feral pig, deer and possum.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	Good examples of hardwood forest with podocarps (totara) typical of the ecological district.
Rarity	M	Provides habitat for an at risk (declining) species (rifleman) and probably provides habitat for a threatened (nationally vulnerable) species (karearea/falcon).
Diversity and pattern	M	Plant species diversity is probably lower than that originally present.
Distinctiveness/special features	L/M	Healthy regeneration at upper forest margins is a special feature.
Other Criteria		
Size/shape	M	Relatively small areas, but well buffered.
Connectivity	M	Linked to higher altitude indigenous plant communities and close to other areas of indigenous forest.
Long-term Sustainability	M/H	Animal pest control is 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 three areas of indigenous forest have been set aside from plantation forestry. Their locations on steep shady slopes limit their potential for development.

Discussion:

These areas meet the District Plan criteria for a Significant Natural Area. Important features of the areas are the presence of podocarp (totara) trees and saplings, locally uncommon plant species (mountain tree fern, *Hebe rakaiensis* and *Huperzia varia*), the habitat they provide for forest birds, including an at risk species (rifleman) and the healthy forest re-growth at their upper margins.

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)	
bidibid	<i>Acaena</i> sp.
bittersweet*	<i>Solanum dulcamara</i>
blue tussock	<i>Poa colensoi</i>
blue wheat grass	<i>Elymus solandri</i>
bog rush	<i>Schoenus pauciflorus</i>
bracken	<i>Pteridium esculentum</i>
broadleaf	<i>Griselinia littoralis</i>
broom*	<i>Cytisus scoparius</i>
bush lawyer	<i>Rubus cissoides</i>
bush lily	<i>Astelia fragrans</i>
bush snowberry	<i>Gaultheria antipoda</i>
buttercup	<i>Ranunculus</i> sp.
button fern	<i>Pellaea rotundifolia</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Canterbury tree broom	<i>Carmichaelia torulosa</i>
cardamine	<i>Cardamine debilis</i>
clematis	<i>Clematis paniculata</i>
common shield fern	<i>Polystichum richardii</i>
cotton daisy	<i>Celmisia spectabilis</i> var. <i>magnifica</i>
creeping buttercup*	<i>Ranunculus repens</i>
creeping pohuehue	<i>Muehlenbeckia axillaris</i>
danthonia	<i>Rytidosperma</i> sp.
fescue tussock	<i>Festuca novae-zelandiae</i>
filmy fern	<i>Hymenophyllum</i> sp.
five-finger	<i>Pseudopanax arboreus</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
golden speargrass	<i>Aciphylla aurea</i>
gooseberry*	<i>Ribes uva-crispa</i>
grey willow*	<i>Salix cinerea</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
harebell	<i>Wahlenbergia albomarginata</i>
hen and chickens fern	<i>Asplenium gracillimum</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>
inaka	<i>Dracophyllum longifolium</i>
korokio	<i>Corokia cotoneaster</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
leather-leaf fern	<i>Pyrrhosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenioides</i>
lotus*	<i>Lotus pedunculatus</i>
mahoe/whiteywood	<i>Meliccytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
Maori onion	<i>Bulbinella angustifolia</i>
mapou	<i>Myrsine australis</i>
marbleleaf/putaputaweta	<i>Carpodetus serratus</i>
matagouri	<i>Discaria toumatou</i>

matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu.....	<i>Pittosporum tenuifolium</i>
mountain akeake.....	<i>Olearia avicenniifolia</i>
mountain beech	<i>Nothofagus solandri</i> var. <i>cliffortioides</i>
mountain flax.....	<i>Phormium cookianum</i>
mountain kiokio.....	<i>Blechnum montanum</i>
mountain ribbonwood.....	<i>Hoheria lyallii</i>
mountain totara/Hall's totara.....	<i>Podocarpus hallii</i>
mountain tree fern	<i>Cyathea colensoi</i>
mountain wineberry.....	<i>Aristotelia fruticosa</i>
mouse-ear hawkweed*	<i>Pilosella officinarum</i>
narrow-leaved mahoe	<i>Melicytus lanceolatus</i>
narrow-leaved snow-tussock	<i>Chionochloa rigida</i>
native broom.....	<i>Carmichaelia</i> aff. <i>australis</i>
native convolvulus.....	<i>Calystegia tuguriorum</i>
native jasmine.....	<i>Parsonsia</i> sp.
necklace fern	<i>Asplenium flabellifolium</i>
nettle	<i>Urtica incisa</i>
oxeye daisy*	<i>Leucanthemum vulgare</i>
pate	<i>Schefflera digitata</i>
patotara.....	<i>Leucopogon fraseri</i>
pennywort.....	<i>Hydrocotyle</i> sp.
poataniwha	<i>Melicope simplex</i>
pohuehue	<i>Muehlenbeckia australis</i>
porcupine shrub	<i>Melicytus alpinus</i>
prickly shield fern.....	<i>Polystichum vestitum</i>
rautahi.....	<i>Carex coriacea</i>
scrambling broom.....	<i>Carmichaelia kirkii</i>
scrambling fuchsia.....	<i>Fuchsia perscandens</i>
scrub pohuehue.....	<i>Muehlenbeckia complexa</i>
sedge.....	<i>Carex</i> sp.
selfheal*	<i>Prunella vulgaris</i>
soft rush*.....	<i>Juncus effusus</i>
southern rata	<i>Metrosideros umbellata</i>
star lily.....	<i>Arthropodium candidum</i>
tauhinu.....	<i>Ozothamnus leptophyllus</i>
thousand-leaved fern	<i>Hypolepis millefolium</i>
three-finger.....	<i>Pseudopanax colensoi</i>
toatoa	<i>Haloragis erecta</i>
toetoe.....	<i>Cortaderia richardii</i>
totara.....	<i>Podocarpus totara</i>
tutu	<i>Coriaria sarmentosa</i>
wall lettuce*	<i>Mycelis muralis</i>
weeping mapou	<i>Myrsine divaricata</i>
wineberry.....	<i>Aristotelia serrata</i>
yellowwood.....	<i>Coprosma linariifolia</i>