

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

**McATAMNEY PROPERTY**



**Report prepared for the Timaru District Council by Mike Harding**



# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** .....FS & M McAtamney, Waimarie Downs Ltd and Waimarie (South Canterbury) Ltd.  
**Valuation Reference:** .....24660/079.00, 24660/088.00, 24660/081.00, 24660/077.00 and 24660/012.00.  
**Address:** .....FS McAtamney, Woodbury, RD 21, Geraldine.  
**Location:** .....Between the upper Waihi River and McLeod Stream, northwest of Woodbury.  
**Ecological Districts:** .....Orari and Geraldine ecological districts.  
**TDC Land Types:** .....Hard Rock Hills and Downs and Soft Rock Hills and Downs.  
**Land Environments:** .....Q2 (southeastern hill country) and N3 (eastern South Island .....undulating plains and hills).

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### ECOLOGICAL CONTEXT:

Areas in the foothills surrounding the upper Waihi River (above approximately 300 m altitude) lie within the Orari Ecological District. Areas on gentler lower slopes of the foothills and downlands lie within the Geraldine Ecological District. The main landforms on the property are gentle to moderately-steep hills, gentle toe slopes (downlands), and small river terraces and flats. The original vegetation of this area would have been predominantly podocarp-hardwood forest, with areas of mountain beech forest. Denser podocarp-hardwood (matai-totara-kahikatea-lowland ribbonwood) forest would have occupied older terraces and flats, and tall kanuka-kowhai forest would have been present on recently disturbed surfaces. Minor areas of matagouri-*Coprosma-Olearia* shrubland and small wetlands were likely to have been present on valley-floors, probably with associated areas of short tussockland. Areas above the natural timberline (900 m to 1000 m) would have supported low scattered shrubland, tall tussockland, herbfield and mossfield. The indigenous fauna would have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than are presently found in the area.

Indigenous vegetation on the property comprises some of the most diverse forest remaining in the area. Notable are remnant stands of podocarp and podocarp-hardwood forest alongside Waimarie (Stony) Stream, McLeod Stream and on nearby terraces. The extent of podocarp-hardwood forest, including regenerating forest, alongside the upper Waihi River and in Waimarie Stream is also notable. Two threatened plant species are present: a single tree of *Olearia fimbriata* (threat status: serious decline), and a small population of Canterbury tree broom (*Carmichaelia torulosa*) (range restricted). In addition, several locally-rare plant species were observed on the property, notably southern rata, mountain beech, soft tree fern, dwarf mistletoe (*Korthalsella lindsayi*) and the herb *Australina pusilla*. The property lies within the existing range of the South Canterbury population of long-tailed bat. It is also adjacent to a remnant population of blue duck in the upper Waihi River. Both these species are regarded as nationally-endangered.



#### **SIGNIFICANT AREAS ON THE PROPERTY:**

The property was surveyed as part of the District-wide survey of Significant Natural Areas during August and September 2005. Nearly all parts of the property were visited and assessed. Eighteen areas, totalling approximately 371 hectares, are regarded as significant when assessed against the District Plan criteria. Two large areas of forest and one large area of tussockland in Waimarie Stream and the upper Waihi River make up most (330 ha) of the total area. The other 15 areas are predominantly small remnants of indigenous forest on lower altitude eastern parts of the property. Some areas adjoin one another, and many are contiguous with or close to larger areas of indigenous vegetation on adjoining properties (including the Waihi Gorge and Orari Gorge scenic reserves). These 18 areas are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
626a	Glenburn Youth Camp	J37: 643-893	1	podocarp-hardwood forest
626b, c	Yates Road	J37: 639-895	3.5	podocarp-hardwood forest
624a, b	The Woods	J37: 640-890	8	podocarp forest
621	Gray Road	J37: 644-881	1.5	podocarp-hardwood forest
618		J37: 646-876	4	podocarp-hardwood forest
623		J37: 640-877	3	podocarp-hardwood forest
607a, b, c	Waihi River Terraces	J37: 635-875	6	podocarp-hardwood forest; beech forest
607d		J37: 627-881	7	podocarp-hardwood forest
31a, b	Waimarie Stream	J37: 605-890	120	podocarp forest; podocarp-hardwood forest
31c	Upper Waimarie Stream	J37: 585-935	150	tall tussockland, herbfield, mossfield
712d, e	Waihi River	J37: 585-900	60	hardwood forest with some podocarps
712f	Upper Waihi River	J37: 567-928	7	hardwood forest with podocarps; scrub

Areas of indigenous vegetation and/or habitat on the property that are identified as Significant Natural Areas (above) are illustrated on the attached maps and described in greater detail on the Area Inspection Forms that form part of this report. Note that the boundaries of the larger areas 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 (criterion vii, page B19). Areas are subject to confirmation by Council after regarding the matters listed under Final Considerations (pages B19-B20).

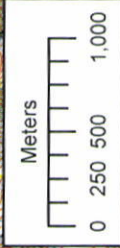
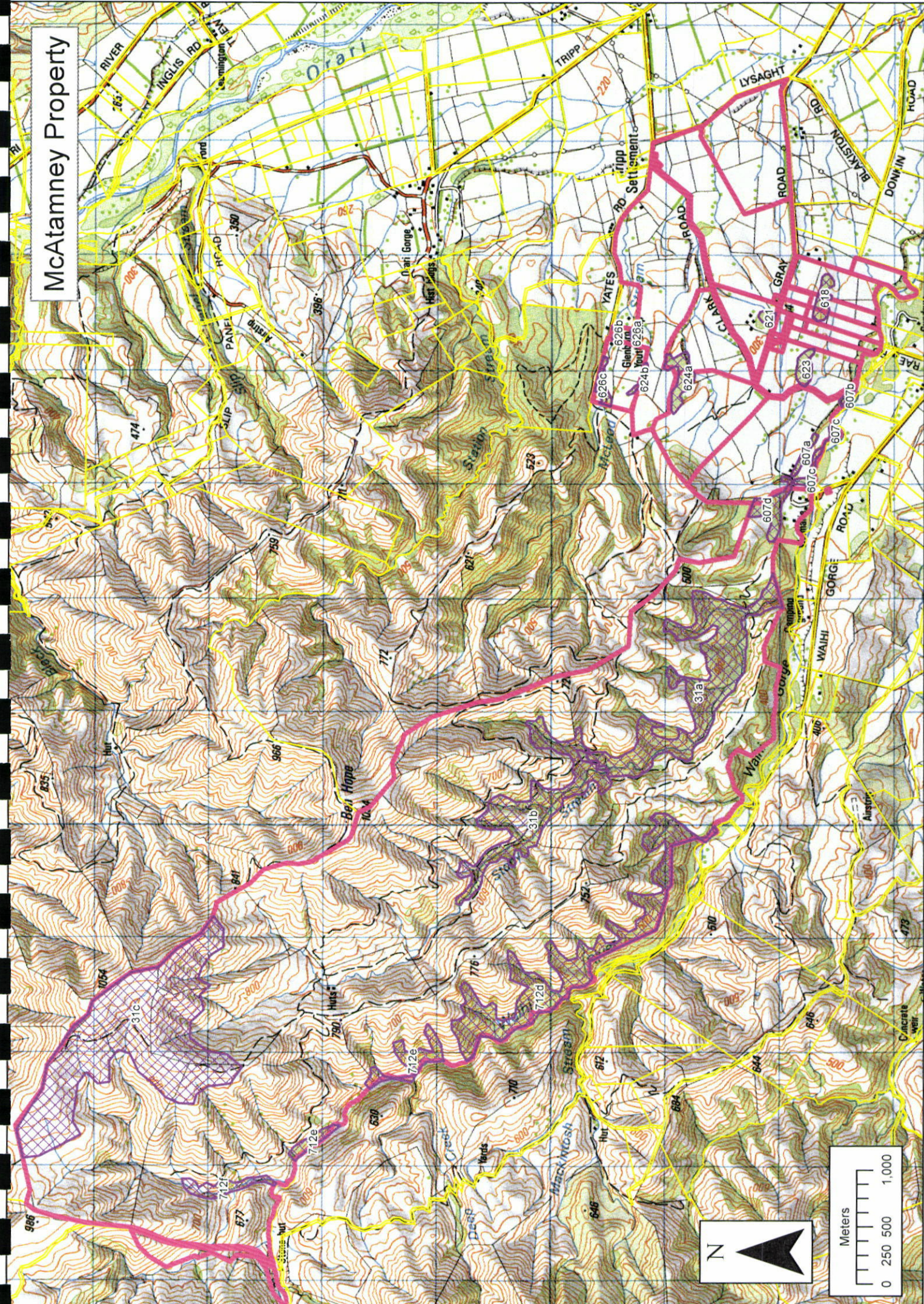
The implication of an area being listed as a Significant Natural Area (SNA) is that consent is required from Council for clearance by any means (including burning and spraying with herbicides) or over-planting of these areas. To assist with the protection and management of any SNA, landowners can apply 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. Failure of an area to meet the significance criteria does not necessarily mean that an area 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. Two areas are notable: the extensive areas of regenerating indigenous forest (dominated by fuchsia and wineberry) in the gullies adjoining Area 31a and Area 31b, which may regenerate into more diverse forest; and, the extensive areas of shrubland and fernland adjoining Area 31b on the southwest slopes of Ben Hope.



# McAtamney Property





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#### **SIGNIFICANT TREES ON THE PROPERTY:**

In addition to the Significant Natural Areas identified on the property, two individual trees warrant recognition as Significant Trees: a large pokaka within Area 624b and a tree daisy (*Olearia fimbriata*) within Area 712f.

##### **Pokaka (*Elaeocarpus hookerianus*)**

This tree is the largest pokaka yet observed during this survey of forest remnants in the Timaru District and is substantially larger than normal for this species. It has a trunk diameter at breast height (dbh) of 130 cm, compared with the typical trunk diameter of 60 to 70 cm for mature pokaka trees in this area. The tree is approximately 16 m tall. Pokaka trees are described in Volume I of the Flora of New Zealand as attaining a maximum height of approximately 12 m and a maximum trunk diameter of 100 cm. This tree is at map reference 2363976E-5689169N within SNA 624b in the northern part of the property near the Orari Gorge Scenic Reserve. The forest remnant is dominated by kahikatea with trunk diameters up to 120 cm. Other large pokaka trees are present, including trees with trunk diameters of 105 cm, 98 cm and 91 cm.



*Pokaka tree in SNA 624b*



**Tree daisy: *Olearia fimbriata***

This small tree is the only specimen of this threatened species of tree daisy known from this part of Canterbury. The nearest known populations of this species are south of the Waihao River and from the Tasman Valley near Mt Cook. This species is regarded as chronically threatened (serious decline). This tree has two trunks with diameters at breast height (dbh) of 21 and 24 cm, and is approximately 5 m tall. This is a typical size for a mature *Olearia fimbriata* tree. It is at map reference 2356833E-5693031N within SNA 712f in the western part of the property in the upper Waihi River valley.



*The threatened tree daisy, *Olearia fimbriata*, in SNA 712f.*



## Scientific names of species cited by common name

Common Name..... Scientific name

(\* = naturalised species)

ash*	<i>Fraxinus excelsior</i>
barberry*	<i>Berberis glaucocarpa</i>
bidibid	<i>Acaena</i> sp.
bittersweet*	<i>Solanum dulcamara</i>
blackberry*	<i>Rubus fruticosus</i>
blue tussock	<i>Poa colensoi</i>
bracken	<i>Pteridium esculentum</i>
broadleaf	<i>Griselinia littoralis</i>
broom*	<i>Cytisus scoparius</i>
browntop*	<i>Agrostis capillaris</i>
bush lawyer	<i>Rubus</i> sp. ( <i>R. cissoides</i> or <i>R. schmidelioides</i> )
bush lily	<i>Astelia</i> sp.
bush rice grass	<i>Microlaena</i> sp.
cabbage tree/ti rakau	<i>Cordyline australis</i>
Canterbury tree broom	<i>Carmichaelia torulosa</i>
Chilean flame creeper*	<i>Tropaeolum speciosum</i>
cotton daisy	<i>Celmisia spectabilis</i> var. <i>magnifica</i>
crack willow*	<i>Salix fragilis</i>
crown fern	<i>Blechnum discolor</i>
Darwin's barberry*	<i>Berberis darwinii</i>
dwarf mistletoe	<i>Korthalsella lindsayi</i>
elderberry*	<i>Sambucus nigra</i>
fescue tussock	<i>Festuca novae-zelandiae</i>
five finger	<i>Pseudopanax arboreus</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
grey willow*	<i>Salix cinerea</i>
golden spaniard	<i>Aciphylla aurea</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hawthorn*	<i>Crataegus monogyna</i>
hemlock*	<i>Conium maculatum</i>
hen and chickens fern	<i>Asplenium bulbiferum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
holly*	<i>Ilex aquifolium</i>
horopito (pepperwood)	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
inaka	<i>Dracophyllum</i> sp. ( <i>uniflorum</i> or <i>longifolium</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>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
leather-leaf fern	<i>Pyrrosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenoides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
macrocarpa*	<i>Cupressus macrocarpa</i>
mahoe (whiteywood)	<i>Melicytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
manuka	<i>Leptospermum scoparium</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>
mistletoe .....	<i>Ileostylis micranthus</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>Hieracium pilosella</i>
narrow-leaved lacebark .....	<i>Hoheria angustifolia</i>
narrow-leaved mahoe .....	<i>Melicytus lanceolatus</i>
narrow-leaved snow tussock .....	<i>Chionochloa rigida</i>
native jasmine .....	<i>Parsonsia</i> sp.
necklace fern .....	<i>Asplenium flabellifolium</i>
old man's beard* .....	<i>Clematis vitalba</i>
pate .....	<i>Schefflera digitata</i>
pohuehue .....	<i>Muehlenbeckia australis</i>
pokaka .....	<i>Elaeocarpus hookerianus</i>
poroporo .....	<i>Solanum laciniatum</i>
prickly shield fern .....	<i>Polystichum vestitum</i>
red tussock .....	<i>Chionochloa rubra</i>
scrambling fuchsia .....	<i>Fuchsia perscandens</i>
scrub pohuehue .....	<i>Muehlenbeckia complexa</i>
silver tussock .....	<i>Poa cita</i>
snowberry .....	<i>Gaultheria depressa</i>
soft rush* .....	<i>Juncus effusus</i>
soft tree fern .....	<i>Cyathea smithii</i>
southern rata .....	<i>Metrosideros umbellata</i>
sweet vernal* .....	<i>Anthoxanthum odoratum</i>
sycamore* .....	<i>Acer pseudoplatanus</i>
thousand-leaved fern .....	<i>Hypolepis millefolium</i>
toatoa .....	<i>Haloragis erecta</i>
totara .....	<i>Podocarpus totara</i>
tutsan* .....	<i>Hypericum androsaemum</i>
tutu .....	<i>Coriaria sarmentosa</i>
weeping mapou .....	<i>Myrsine divaricata</i>
white climbing rata .....	<i>Metrosideros diffusa</i>
wineberry .....	<i>Aristotelia serrata</i>
woolly moss .....	<i>Racomitrium</i> sp.
yellowwood .....	<i>Coprosma linariifolia</i>



## TIMARU DISTRICT SNA SURVEY

AREA 626a

Area Number: 626a	Area Name: Glenburn Youth Camp	Date: 16 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: windy and cool		Time Spent at Area: 1 hour

Location (central grid reference): J37: 643-893	Nearest Locality: Woodbury	
Ecological District: Geraldine	Approximate size of Area: 1 ha	Altitude: 300 m

**General description of Area:**

Relatively gentle north-facing slope above McLeod Stream and adjacent to the Glenburn Youth Camp on Yates Road.

**General description of plant communities and habitats:**

Scattered patches of hardwood trees with abundant large pokaka and kahikatea amongst rough pasture on a damp slope.

**Detailed vegetation description:**

The canopies of the forest patches are dominated by kahikatea, pokaka and narrow-leaved lacebark. Other canopy species are totara, matai, broadleaf, five finger, lancewood, lemonwood, mahoe, kaikomako, cabbage tree, bush lawyer, pohuehue and native jasmine. The main canopy trees are large, with trunk diameters (at breast height) of 50 to 90 cm for kahikatea, 35 to 75 cm for pokaka and up to 70 cm for narrow-leaved lacebark.

Understorey species are kanuka, mapou, matipo, *Coprosma rotundifolia*, *C. rigida*, horopito, narrow-leaved lacebark, *Streblus heterophyllus*, *Melicytus micranthus*, *Lophomyrtus obcordata*, rare *Neomyrtus pedunculatus*, *Melicope simplex*, white climbing rata, bush lawyer, mistletoe (on pokaka, *C. rigida* and *C. rotundifolia*), rarely *Rubus australis* (lawyer) and barberry.

The ground cover of the small forest patches is mostly bare. Species present here and on the forest-margins are foxglove, soft rush, barberry and gorse.

**Birds observed:**

Bellbird, fantail, rifleman, warbler, blackbird, magpie and spur winged plover.

**Notable flora, fauna or habitats:**

The abundance of relatively large trees of kahikatea and pokaka is notable. Also notable is the number of locally rare species that are typical of lowland forest, including *Streblus heterophyllus*, *Lophomyrtus obcordata* and *Rubus australis*. The presence of the bush lawyer *Rubus australis* is notable as this species is not recorded from the nearby Orari Gorge Scenic Reserve.

**General condition of Area:**

The forest remnant is fragmented and comprises of several small patches separated by rough pasture. Nevertheless, the main trees are relatively large and in good condition. The forest understorey and ground cover is very open, due to the small size of the forest patches and the presence of stock. The Area is affected by barberry, especially on its northwest boundary.

**Notable plant and animal pests:**

Barberry is the most significant plant pest present. It is relatively common, and almost dominant, at the northwest corner of the Area. The introduced soft rush is dominant on seepage areas through the centre of the forest remnant. Foxglove and gorse are present, but neither is likely to pose a significant threat to the forest.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The forest comprises scattered patches. It is close to the Orari Gorge Scenic Reserve across McLeod Stream and is connected to the reserve by scattered large trees. It is also relatively close to (c.50 m) scattered forest to the south and c.150 m from a much larger area of forest dominated by kahikatea further south (Area 624). Other scattered patches of forest are present on the adjoining property (Glenburn Youth Camp) and beside McLeod Stream (Area 626b and c).

**Present management and management issues:**

The most important management issue is the containment or control of barberry. Barberry could eventually displace the slower-growing native species and become the dominant understorey and forest-margin species over the forest remnant. The presence of barberry, with its bird-dispersed seeds, also poses a threat to other areas of indigenous forest in the area, including the Orari Gorge Scenic Reserve. The Area is grazed. Removal of stock would enable more vigorous regeneration of the forest understorey, though may also allow the establishment of weed species. Regular possum control is also likely to be necessary to maintain the values of the Area.

**Property Owner Comment:**



<b>ASSESSMENT (against District Plan criteria):</b>		
<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	M/H	A modified example of forest typical and representative of the ecological district.
Rarity	M	The area supports populations of several species that are locally rare.
Diversity and pattern	M	Relatively diverse, though the ground cover is less diverse than originally present.
Distinctiveness/special features	M	Provides locally important forest-bird habitat; supports good numbers of large kakikatea and pokaka.
<b>Other Criteria</b>		
Size/shape	M	Small size and good shape, but vulnerable to the effects of introduced barberry.
Connectivity	M/H	Effectively linked to a protected area (Orari Gorge Scenic Reserve) and helps connect other areas (Area 624) to the reserve. Part of a network of forest-bird habitat.
Long-term Sustainability	M	Modified by grazing and the presence of barberry; ongoing control required to sustain the indigenous forest values.
SNA (yes/no):	YES	
<b>Final Consideration (of other matters, Section D, page B-19):</b>		
The Area has been protected informally by the landowner. The health of the forest remnant will depend on some control of barberry. The proximity of the Area to Orari Gorge Scenic Reserve increases its ecological value.		

**Discussion:**

The Area easily meets the District Plan criteria for a Significant Natural Area because it is typical and partly representative of the indigenous vegetation in this part of the ecological district. It supports large podocarps (kahikatea, totara and matai) and a number of rare plant species, provides locally important bird habitat, and is linked to an existing protected area.



## TIMARU DISTRICT SNA SURVEY

## AREA 626 b and c

Area Number: 626 b and c	Area Name: Yates Road	Date: 20 September 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: cloudy, windy and cold (snow on ground)		Time Spent at Area: 2 hours

Location (central grid reference): J37: 639-895	Nearest Locality: Woodbury	
Ecological District: Geraldine	Approximate size of Area: 3.5 ha	Altitude: 270 to 300m
General description of Area: River flats on either side of McLeod Stream, upstream from the Glenburn Youth Camp and south of Yates Road.		

**General description of plant communities and habitats:**

Scattered to dense patches of riparian and river-flat podocarp-hardwood forest, in two main areas: 626b downstream from the old house site; and 626c upstream from the old house site.

**Detailed vegetation description:**Area 626b (c.0.5 ha):

Indigenous vegetation in this Area comprises scattered large trees of totara and pokaka in pasture alongside the road, and denser stands of trees alongside the stream. Dominant canopy species alongside the stream are totara, kahikatea, kanuka and kowhai. Other canopy species are narrow-leaved lacebark, matai, matipo, five finger, marbleleaf and mapou.

The forest understorey is relatively open and dominated by *Melicope simplex* and barberry, with *Coprosma rotundifolia*, *C. crassifolia*, fuchsia, wineberry, horopito, mahoe and lemonwood.

The ground is largely bare, with occasional *Blechnum fluviatile*.

Barberry and *Coprosma propinqua* are present on the forest margin.

Individual trees in the area are quite large. One totara has a trunk diameter of 118 cm, and one pokaka has a trunk diameter of 73 cm.

One large totara tree near the old homestead appears to be "weeping totara"; a local variant of lowland totara.

Area 626c (c.3 ha):

Indigenous vegetation in this Area comprises a strip of forest on river-flats on the north side of the stream at its downstream (east) end and on both sides of the stream at the upstream (west) end. A vehicle track runs through the forest. Dominant canopy trees are kahikatea, narrow-leaved lacebark, kowhai and locally sycamore.

Other canopy species are kanuka, mahoe, broadleaf, mapou, lemonwood, lancewood, marbleleaf, pokaka, totara, pohuehue and bush lawyer.

The forest understorey is relatively open. Dominant species are *Coprosma rotundifolia*, horopito and *Melicope simplex*, with fuchsia, mahoe, *Neomyrtus pedunculatus*, *Melicytus micranthus*, *Coprosma rhamnoides*, native jasmine and leather-leaf fern.

The ground is largely bare but there are quite extensive patches of *Hydrocotyle novaezeelandiae* and the uncommon herb, *Australina pusilla*. Other species are necklace fern, hen and chickens fern, *Asplenium hookerianum*, prickly shield fern, *Polystichum richardii*, *Blechnum penna-marina*, *B. fluviatile*, hound's tongue fern, *Schizeilema trifoliolatum*, bidibid and *Urtica australis*.

Species present mostly on the forest margin are matipo, *Coprosma propinqua*, pohuehue, gooseberry and elderberry.

Additional species present on the stream banks are wineberry and pate.

Barberry is present in the understorey, especially at the downstream end of the Area. Sycamore is present, and occasionally dominant, in the central part of the Area.

**Birds observed:**

Bellbird, silvereye, rifleman, kereru, fantail and blackbird.

**Notable flora, fauna or habitats:**

The most notable feature of the Area is that it is a relatively large area of forest on a lowland river floodplain; a forest type that is substantially depleted in the Area. The dominance of kahikatea and narrow-leaved lacebark, the presence of understorey shrubs such as *Melicytus micranthus* and *Neomyrtus pedunculatus*, and the abundance of *Australina pusilla* are characteristic of this forest type.

**General condition of Area:**

The forest canopy over most parts of the Area is in good condition. However, Area 626b is confined to a narrow strip along the stream, and Area 626c is compromised by the presence of sycamore. The forest canopy and understorey are very open.

**Notable plant and animal pests:**

Sycamore is the most obvious plant pest present. It is common in the central part of Area 626c, both in the canopy and understorey. If left uncontrolled, sycamore could eventually become a dominant canopy tree throughout the forest.



Barberry is present in both forest patches.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The upper forest patch (Area 626c) has a relatively good shape and is protected on one side by a fenced road boundary and buffered on the other side by the stream along part of its boundary. The lower patch (Area 626b) is relatively narrow, though buffered to some extent by the stream. The Area lies across the road from a large area of protected forest (Orari Gorge Scenic Reserve) and close to Area 626a and Area 624.

**Present management and management issues:**

Control or containment of sycamore is the most pressing management issue. Control or containment of barberry is also an important management issue. Protection of the forest understorey would be desirable, as it would encourage the establishment and growth of a greater range of subcanopy species typical of lowland forest on recent (river-flat) soils.

**Property Owner Comment:**

**ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	A modified example of the river-flat forest originally present in the ecological district.
Rarity	M/H	Supports a large healthy population of the rare herb, <i>Australina pusilla</i> .
Diversity and pattern	M	A diverse range of species, though species diversity is probably reduced from that originally present.
Distinctiveness/special features	M/H	The location of the forest on river-flats adjacent to a scenic reserve is a special feature.
<b>Other Criteria</b>		
Size/shape	M/H	Moderate size and reasonable shape.
Connectivity	M/H	Adjoins (across Yates Road) formally-protected forest along more than 25% of its boundary.
Long-term Sustainability	L/M	Active management (especially sycamore control) will be required to maintain its ecological values.
<b>SNA (yes/no):</b>	<b>YES</b>	

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

The Area has been informally protected by the landowner. Its location at the corner of the property means that it could be fenced from grazing relatively easily. Continued use of the vehicle track through the Area should not compromise its values.

**Discussion:**

The Area easily meets the District Plan criteria for a Significant Natural Area. Its most important features are the dominance of podocarps (notably kahikatea), its location on a river-flat, the presence of a large population of a rare species (*Australina pusilla*) and its location adjacent to a larger area of formally-protected forest.



## TIMARU DISTRICT SNA SURVEY

## AREA 624a and b

Area Number: 624a and b	Area Name: The Woods	Date: 16 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: windy and cool	Time Spent at Area: 4 hours	

Location (central grid reference): J37: 640-890		Nearest Locality: Woodbury	
Ecological District: Geraldine	Approximate size of Area: 8 ha		Altitude: 300 m

**General description of Area:**

Two areas of forest on a broad gently-sloping ridge and in adjoining small gullies. The northern patch is above McLeod Stream across the valley from the Orari Gorge Scenic Reserve on Yates Road. The other patch lies further south overlooking a small stream that flows east to Clark Road.

**General description of plant communities and habitats:**

Both forest patches are dominated by podocarps (predominantly kahikatea), with numerous large pokaka and narrow-leaved lacebark. The patches occupy the edges of a broad ridge or remnant terrace and the sides of small gullies that drain the terrace. There are an impressive number of large kahikatea trees in the Area, especially in the southern patch. The patches are separated by an open paddock on the ridge crest.

**Detailed vegetation description:**Terrace surface in southern patch of forest (Area 624a):

The main stand of forest on the terrace is dominated by kahikatea and pokaka. Trunk diameters of the large kahikatea are between 70 and 120 cm; and of large pokaka between 75 and 105 cm. Other important canopy species are lemonwood, narrow-leaved mahoe, broadleaf, matai, totara, lancewood, mahoe, kanuka, narrow-leaved lacebark, mapou, cabbage tree, native jasmine and pohuehue.

The forest understorey is relatively open. Common understorey species are horopito, *Coprosma rotundifolia*, *Neomyrtus pedunculatus*, *Melicytus micranthus* and fuchsia. Other species present in the understorey are bush lawyer, weeping mapou, lemonwood, marbleleaf, broadleaf, yellowwood, matipo, mapou, leather-leaf fern, *Melicope simplex*, *Coprosma rigida*, white climbing rata and narrow-leaved mahoe.

Ground-cover species are prickly shield fern, *Blechnum penna-marina*, *Hypolepis ambigua*, necklace fern, bittersweet, male fern and in localised areas kahikatea seedlings, kowhai seedlings, hen and chickens fern, *Asplenium appendiculatum*, *Blechnum fluviatile*, *B. minus*, bidibid, *Clematis marata* and *Cardamine* sp.

Other species occasionally present on the forest margin are *Coprosma propinqua*, *C. rigida*, poroporo, gorse, broom, Himalayan honeysuckle, blackberry, elderberry and hemlock.

Terrace edge/gully side in southern patch of forest (Area 624a):

Parts of the forest on steeper slopes at the terrace edge are dominated by five finger, mahoe, mapou, fuchsia and pohuehue. Other canopy species are lancewood, bush lawyer, wineberry, lemonwood, cabbage tree and broadleaf. Kahikatea and narrow-leaved lacebark are locally common in gully-heads.

Common understorey species on the slopes are *Neomyrtus pedunculatus*, *Coprosma rhamnoides*, pate, wineberry, horopito, marbleleaf, fuchsia, mapou, yellowwood and koromiko.

Common ground-cover species are hound's tongue fern, hen and chickens fern, *Leptopteris hymenophylloides* and bush lily. Other ground-cover species are *Hypolepis ambigua*, kiokio, mountain kiokio, *B. procerum*, *B. chambersii*, *B. vulcanicum*, *B. fluviatile*, *B. minus*, *Nertera* sp., *Hydrocotyle novae-zeelandiae*, necklace fern, *Asplenium hookerianum*, *Libertia ixioides* and prickly shield fern.

Northern patch of forest (Area 624b) (c.1.5 ha):

This stand of forest is dominated by kahikatea. Other canopy trees are pokaka, broadleaf, lancewood, lemonwood and totara. One pokaka has a trunk diameter of 130 cm. Additional canopy species at the western end of this patch are kanuka, mapou, narrow-leaved lacebark, bush lawyer and pohuehue.

The forest understorey is very open. Occasionally present are mapou, *Coprosma crassifolia*, *C. rigida*, white climbing rata, leather-leaf fern, bush lawyer, *Neomyrtus pedunculatus*, weeping mapou and pohuehue. Mistletoe (*Ileostylis micranthus*) is present on weeping mapou. Dwarf mistletoe (*Korthalsella lindsayi*) is present on *C. crassifolia*. Additional understorey species present at the western end are horopito, *Coprosma rhamnoides* and poroporo.

The ground cover is mostly pasture.

**Birds observed:**

Warbler, rifleman, bellbird, fantail, blackbird and thrush.

**Notable flora, fauna or habitats:**

The abundance and size of kahikatea trees in both forest patches are especially notable. These may comprise the best stands of kahikatea remaining in the ecological district. Also notable are the abundance and size of pokaka trees, including one tree with a trunk diameter of 130 cm. The diversity of the forest understorey is notable, including the abundance of



several typically lowland forest species that are relatively uncommon in the district, including *Neomyrtus pedunculatus* and *Melicytus micranthus*. The presence of dwarf mistletoe (*Korthalsella lindsayi*) is notable, as this species is rare in the district and is not recorded from the nearby Orari Gorge Scenic Reserve. Other locally-rare species present are kiokio (*Blechnum novae-zealandiae*), *Clematis marata*, *Libertia ixioides* and yellowwood (*Coprosma linariifolia*). The diversity of ground-cover species, especially ferns, on the steep bank at the southeast corner of Area 624a is notable. Thirteen fern species, including seven *Blechnum* species, are present in one small area of steep shaded bank, most of which is inaccessible to cattle.

#### General condition of Area:

The forest canopy of the Area, and especially the southern patch, is in relatively good condition. The forest understorey is relatively open, especially in the northern patch. The forest structure is more intact on the steeper slopes at the southern edge of the Area, though this area supports fewer tall canopy trees. All of the Area, except some steep banks, is accessible to stock. The forest lacks any significant woody weeds, though barberry is present a short distance to the north and could easily establish in the Area through bird-dispersal of its fleshy fruits.

#### Notable plant and animal pests:

No significant woody weeds were observed within the forest. A number of weed species are present at the forest margins, though none pose a significant threat, except perhaps elderberry. Herbaceous weeds within the forest, such as hemlock and male fern are unlikely to become dominant.

#### Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):

The area comprises two parts separated by approximately 150 m of open pasture. The northern patch of forest is very close to Area 626a, which is connected by scattered trees to the Orari Gorge Scenic Reserve. The northern patch lies approximately 350 m from the reserve. Neither patch is fenced, though there are fences along some boundaries. Both patches are narrow in shape, though together they form a relatively large area of forest (c.7-8 ha).

#### Present management and management issues:

The most important issue is the encouragement of regeneration of canopy species. At present, only localised regeneration of canopy species is occurring in the relatively open understorey. This stand of forest is one of the best examples (if not the best example) of forest that is representative of the vegetation originally present at such sites in the ecological district. The long term survival of the remnant will depend on successful regeneration of canopy species. Excluding grazing animals, monitoring to enable early control of any woody weeds, and continued possum control are likely to be important.

#### Property Owner Comment:

#### ASSESSMENT (against District Plan criteria):

Primary Criteria	Rank	Notes
Representativeness	H	One of the best examples, if not the best example, of indigenous forest representative of the ecological district.
Rarity	M	Supports populations of locally-rare species including dwarf mistletoe.
Diversity and pattern	M/H	Supports a very diverse fern flora, and a typically diverse range of understorey shrubs.
Distinctiveness/special features	M/H	The abundance and size of kahikatea and pokaka trees are special features. The forest is likely to provide important habitat for birds and possibly for long-tailed bat.
<b>Other Criteria</b>		
Size/shape	M/H	The Area is moderate in size, though narrow in shape. It could easily be further protected from activities on adjoining lands.
Connectivity	M	The Area is close to, and partly connected to, a much larger area of forest in Orari Gorge Scenic Reserve.
Long-term Sustainability	M	The ecological values of the Area are likely to persist if significant threats are managed.
SNA (yes/no):	YES	

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

The Area has been protected informally by the landowner. This Area provides one of the best opportunities to protect a forest remnant representative of the original lowland vegetation in the district.

#### Discussion:

This Area easily meets the District Plan criteria for a Significant Natural Area. Its important characteristics are the abundance and size of the canopy trees (especially kahikatea and pokaka), the presence of locally-rare species, the diversity of the understorey vegetation and fern flora, the extent to which the forest is representative of the original vegetation, the likely value of the area as bird (and possibly long-tailed bat) habitat, and the proximity of the Area to Orari Gorge Scenic Reserve.





*Area 624a*



*Area 624b*



## TIMARU DISTRICT SNA SURVEY

AREA 621

Area Number: 621	Area Name: Gray Road	Date: 16 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: calm and cool		Time Spent at Area: 2 hours

Location (central grid reference): J37: 644-881	Nearest Locality: Woodbury
Ecological District: Geraldine	Approximate size of Area: 1.5 ha
	Altitude: 290 m

**General description of Area:**

The head of two small gullies on a broad gently-sloping ridge on the north side of Gray Road, adjacent to pasture and farm buildings.

**General description of plant communities and habitats:**

A small remnant of podocarp-hardwood forest dominated by kahikatea, totara, narrow-leaved lacebark, fuchsia, holly and sycamore. The forest remnant comprises two parts separated by a narrow strip of rough pasture.

**Detailed vegetation description:**

The forest canopy is dominated by narrow-leaved lacebark, kahikatea, totara, holly and sycamore. Other canopy species are lemonwood, lancewood, broadleaf, mahoe, narrow-leaved mahoe, five finger, wineberry, marbleleaf, mapou, pokaka, kowhai, cabbage tree, bush lawyer, pohuehue, native jasmine and rarely lowland ribbonwood. Understorey species are horopito, fuchsia, matipo, *Coprosma rotundifolia*, *C. crassifolia*, *C. rhamnoides*, kahikatea, *Melicytus micranthus*, pate, *Melicope simplex*, marbleleaf and white climbing rata.

Ground cover species are prickly shield fern, *Hypolepis ambigua*, mountain kiokio, *Blechnum penna-marina*, *B. fluviatile*, hen and chickens fern, *Asplenium hookerianum*, *A. richardii*, leather-leaf fern and *Hydrocotyle novae-zeelandiae*.

Other species present mostly on the forest margin are *Coprosma parviflora* (sp. 't'), *C. rigida*, *C. propinqua*, bush lawyer, *Calystegia tuguriorum*, holly, soft rush, foxglove, gorse and blackberry.

Large exotic trees, mostly macrocarpa, are present at the western edge of the forest remnant.

**Birds observed:**

Warbler, fantail, bellbird, thrush, blackbird and magpie.

**Notable flora, fauna or habitats:**

The presence of a number of typically-lowland forest species is notable. These are lowland ribbonwood, pokaka and *Melicytus micranthus*. The relative abundance of kahikatea, including the presence of young trees in the centre of the forest remnant, is notable. The location of the forest remnant over small springs at the gully-heads is an interesting feature.

**General condition of Area:**

The forest is a reasonable condition. It is modified by the presence of holly and sycamore, both of which are dominant in places. Areas in the centre of the forest remnant, especially around the small springs, are in better condition. The native climber, pohuehue, is smothering trees at the forest margins.

**Notable plant and animal pests:**

Holly and sycamore are the most important plant pests present in the Area. Both are dominant in places, and holly is especially dominant at the forest margins. Other introduced plants present are mostly confined to the forest margins and do not pose a significant threat.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is not connected to other areas of indigenous forest, though is close to two slightly larger patches of forest approximately 300 m to the south. The forest remnant has a relatively good shape and is buffered from developed paddocks by a stock-proof fence. Parts of the forest occupy damper ground which may provide some protection against drought or fire.

**Present management and management issues:**

The most important management issue is the containment or control of aggressive introduced trees, notably sycamore and holly. Both these species could eventually displace the slower-growing native species and become dominant over the forest remnant. The presence of these species, with their wind- or bird-dispersed seeds also poses a threat to other areas of indigenous forest in the area. Regular possum control is also likely to be necessary to maintain the values of the Area.

**Property Owner Comment:**



**ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	A modified example of forest typical of the ecological district.
Rarity	L/M	Supports several typically-lowland species.
Diversity and pattern	M	Relatively diverse, though probably less diverse than the forest originally present.
Distinctiveness/special features	M	Provides locally important forest-bird habitat; supports good numbers of podocarps.
<b>Other Criteria</b>		
Size/shape	M	Small size, good shape, but poorly buffered from the effects of introduced tree spread.
Connectivity	M	Isolated from other remnants, though part of a network of forest-bird habitat.
Long-term Sustainability	L/M	Modified by the dominance of sycamore and holly; ongoing control required to sustain the indigenous forest values.
<b>SNA (yes/no):</b>	<b>YES</b>	

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

The Area has been protected informally by the landowner. The health, and possibly the continued existence, of the forest remnant will depend on some control of introduced trees. It may be possible to contain the spread of holly and sycamore, though anything less than the complete removal of these species will require regular and ongoing weed control to protect the indigenous forest.

**Discussion:**

The Area only just meets the District Plan criteria for a Significant Natural Area. It is typical of the remnant indigenous vegetation in this part of the ecological district and is partly representative of the indigenous vegetation originally present in the district. It supports podocarps (kahikatea and totara) and provides locally important bird habitat. However, the Area is quite small and threatened by the presence of aggressive introduced weeds.



## TIMARU DISTRICT SNA SURVEY

AREA 618

Area Number: 618	Area Name:	Date: 12 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: fine, mild and windy	Time Spent at Area: 2½ hours	

<b>Location (central grid reference):</b> J37: 646-876		<b>Nearest Locality:</b> Woodbury	
<b>Ecological District:</b> Geraldine		<b>Approximate size of Area:</b> 4 ha	<b>Altitude:</b> 260 to 280 m
<b>General description of Area:</b> Gentle south-facing slope on rolling downlands between Gray Road and the Waihi River, with seepages and a small stream at the base of the slope.			

**General description of plant communities and habitats:**

Hardwood forest with podocarps (mostly kahikatea), sycamore and holly (especially at the northwest corner), and some open areas with rough pasture.

**Detailed vegetation description:**

The forest canopy in the northwest part of the Area is dominated by sycamore with narrow-leaved lacebark and occasional lemonwood, cabbage tree, pokaka, holly and ash. Elsewhere, narrow-leaved lacebark and kahikatea are the main canopy species, though sycamore, holly and hawthorn are occasionally present. Other canopy species present away from the northwest part are lancewood, mahoe, lemonwood, broadleaf, five finger, totara, pokaka, native jasmine, pohuehue and rare kowhai, lowland ribbonwood and matai.

The forest understorey is relatively open. Common species present are horopito, matipo, fuchsia, *Coprosma rotundifolia*, mahoe, pate, *Melicope simplex*, occasional patches of kahikatea saplings and rarely kaikomako, wineberry and *Melicytus micranthus*.

Common groundcover species are prickly shield fern, *Hypolepis ambigua*, necklace fern, *Blechnum penna-marina*, *B. fluviatile*, *Asplenium richardii*, *A. hookerianum*, *Pellaea rotundifolia*, foxglove and male fern.

Other species present mostly on the forest margin are narrow-leaved mahoe, kaikomako, marbleleaf, weeping mapou, *Coprosma propinqua*, *C. rigida*, *C. crassifolia*, pohuehue, scrub pohuehue (two clumps), native jasmine, mistletoe (on *C. rigida* and hawthorn), Himalayan honeysuckle, tutsan, blackberry, gorse, broom, mountain kiokio and rare *Neomyrtus pedunculatus*.

**Birds observed:**

Grey warbler, bellbird, fantail, blackbird, magpie and white-faced heron.

**Notable flora, fauna or habitats:**

The presence of a number of typically-lowland forest species is notable. These are the trees kaikomako, lowland ribbonwood and pokaka, and the small trees/shrubs *Melicytus micranthus* and *Neomyrtus pedunculatus*. The relative abundance of kahikatea, including the presence of young saplings, and the presence of scrub pohuehue (*Muehlenbeckia complexa*) at the forest margin are also notable.

**General condition of Area:**

The northwest part of the Area is in relatively poor condition due to the dominance of sycamore and the presence of ash, holly and hawthorn. The forest canopy over the remaining part of the Area is in better condition, though is also threatened by these invasive introduced trees. The forest understorey and ground-cover are relatively open and bare, especially in the northwest corner.

**Notable plant and animal pests:**

Sycamore is the most important plant pest present. It dominates the canopy of the northwest part of the forest. Sycamore is likely to continue to spread and dominate larger areas of the forest. Holly and ash also pose a significant threat, as both species will readily colonise open-canopied indigenous forest. Other introduced plant species are present on the forest margin, though all (except perhaps hawthorn) do not pose a significant threat to the forest. Foxglove and male fern are present within the forest, but are unlikely to become dominant.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is not connected to other areas of indigenous forest, though is close to a similar-sized patch approximately 250 m to the west. The forest remnant has a relatively good shape and is buffered from developed paddocks by a stock-proof fence. Lower (southern) parts of the forest occupy damper ground which may provide some protection against drought or fire.

**Present management and management issues:**

The most important management issue is the containment or control of aggressive introduced trees, notably sycamore,



holly, ash and hawthorn. Sycamore, in particular, could eventually displace the slower-growing native species and become the dominant canopy species over the entire forest remnant. The presence of these species, with their wind- or bird-dispersed seeds also poses a threat to other areas of indigenous forest in the area. The Area is grazed. Removal of stock would enable more vigorous regeneration of the forest understorey, though would also encourage the establishment of weed species. Regular possum control is also likely to be necessary to maintain the values of the Area.

**Property Owner Comment:**

**ASSESSMENT (against District Plan criteria):**

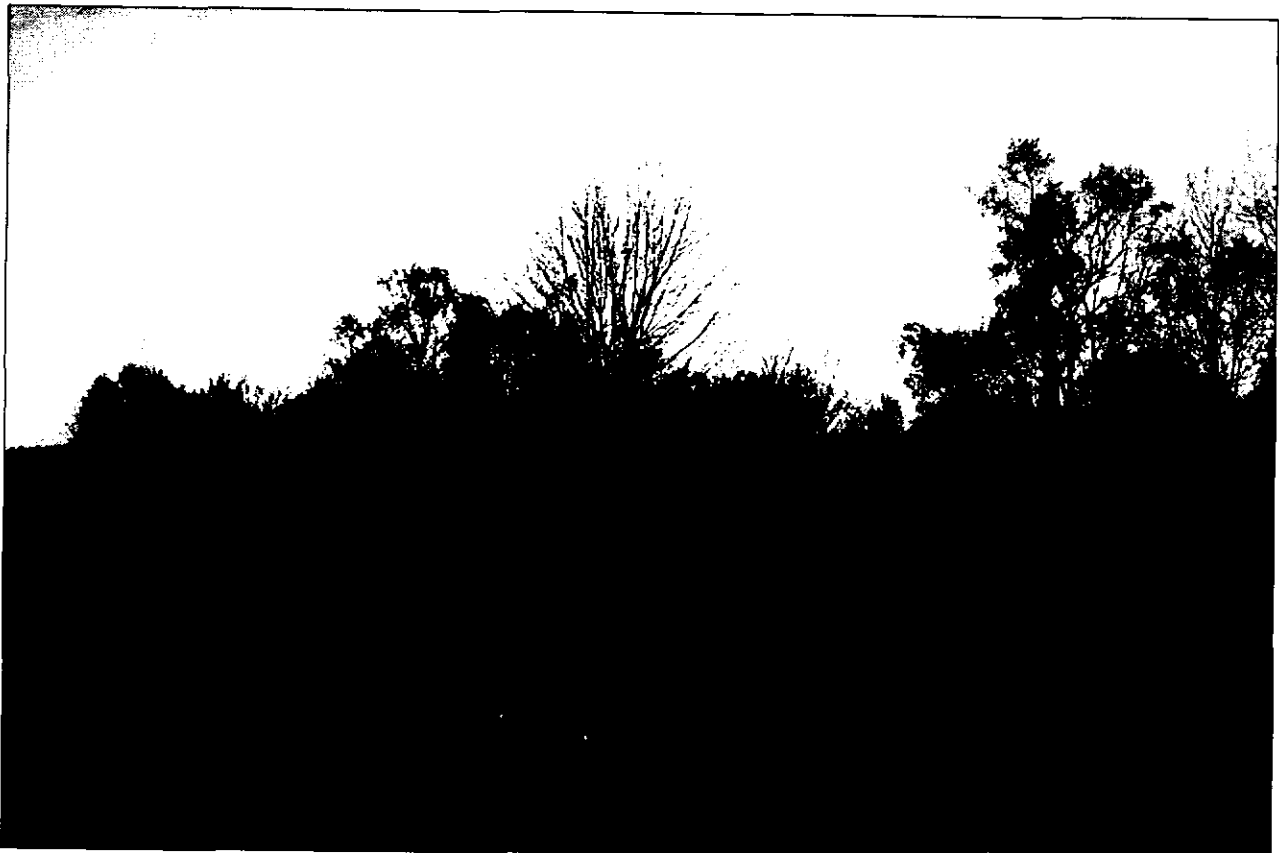
Primary Criteria	Rank	Notes
Representativeness	M/H	A modified example of forest typical of the ecological district.
Rarity	L/M	Supports several typically-lowland species.
Diversity and pattern	M	Relatively diverse, though probably less diverse than the forest originally present.
Distinctiveness/special features	M	Provides locally important forest-bird habitat; supports good numbers of kakikatea.
<b>Other Criteria</b>		
Size/shape	M/H	Moderate size, good shape, but poorly buffered from the effects of introduced tree spread.
Connectivity	M	Isolated from other remnants, though part of a network of forest-bird habitat.
Long-term Sustainability	L/M	Modified by the dominance of sycamore; ongoing control required to sustain the indigenous forest values.
SNA (yes/no):	YES	

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

The Area has been protected informally by the landowner. The health, and possibly the continued existence, of the forest remnant will depend on some control of introduced trees. It may be possible to contain the spread of sycamore, though anything less than the complete removal of sycamore will require regular and ongoing weed control to protect the indigenous forest.

**Discussion:**

The Area meets the District Plan criteria for a Significant Natural Area because it is typical of the remnant indigenous vegetation in this part of the ecological district and is partly representative of the indigenous vegetation originally present in the district. It supports podocarps (kahikatea, totara and matai) and uncommon plant species, and provides locally important bird habitat.



Area 618



## TIMARU DISTRICT SNA SURVEY

AREA 623

Area Number: 623	Area Name:	Date: 12 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: windy, cloudy, cool		Time Spent at Area: 1½ hours

Location (central grid reference): J37: 640-877		Nearest Locality: Woodbury	
Ecological District: Geraldine	Approximate size of Area: 3 ha		Altitude: 290 to 300 m

**General description of Area:**

Gentle south-facing slope on rolling downlands between Gray Road and the Waihi River, with seepages at the base of the slope.

**General description of plant communities and habitats:**

Hardwood forest with podocarps (mostly kahikatea) and some open areas with rough pasture.

**Detailed vegetation description:**

The forest canopy is dominated by kahikatea, broadleaf, lemonwood and narrow-leaved lacebark. Other canopy species are narrow-leaved mahoe, kaikomako, pokaka, marbleleaf, lancewood, pohuehue, native jasmine and rarely totara.

The forest understorey is relatively open. Common species are horopito, *Coprosma rotundifolia* and occasional patches of kahikatea saplings. Other species present in the understorey include matipo, bush lawyer, *Neomyrtus pedunculatus*, *Melicope simplex*, mapou and sycamore.

Common ground cover species are prickly shield fern, *Blechnum penna-marina*, *B. fluviatile*, *Hypolepis ambigua*, male fern, hen and chickens fern, leather-leaf fern and foxglove.

Other species present mainly on the forest margin are kanuka, cabbage tree, mahoe, wineberry, pate, fuchsia, *Coprosma propinqua*, *C. rigida*, weeping mapou, *Blechnum procerum*, hawthorn, gorse, blackberry and holly.

**Birds observed:**

Fantail, bellbird, warbler, pukeko, blackbird, goldfinch, thrush and magpie.

**Notable flora, fauna or habitats:**

The presence of a number of typically-lowland forest species is notable. These are kaikomako, pokaka and *Neomyrtus pedunculatus*. The relative abundance of kahikatea, including the presence of young saplings is notable.

**General condition of Area:**

The area is in relatively good condition. The forest canopy is intact, though the forest understorey and ground cover are relatively open. Sycamore, holly and hawthorn are present, though not yet dominant.

**Notable plant and animal pests:**

Sycamore is the most important plant pest present. Sycamore can invade and eventually dominate indigenous forest remnants. Holly and hawthorn are present and also pose a threat. Other plant pest, such as gorse and blackberry, are largely confined to the forest margin. Foxglove and male fern are present within the forest, though these species do not pose a significant threat. Larger stands of sycamore, holly and ash are present in the vicinity and pose an ongoing threat to the Area.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is not connected to other areas of indigenous forest, though is close to a similar-sized patch approximately 250 m to the east. The forest remnant has a relatively good shape and is buffered from developed paddocks along its southern boundary by a stock-proof fence. Lower (southern) parts of the forest occupy damper ground which may provide some protection against drought or fire.

**Present management and management issues:**

The most important management issue is the removal of aggressive introduced trees, notably sycamore, holly and hawthorn. Sycamore, in particular, could eventually displace the slower-growing native species and become much more dominant. The presence of these species, with their wind- or bird-dispersed seeds also poses a threat to other areas of indigenous forest in the area. Ongoing monitoring would be required to prevent the re-establishment of woody weeds. The Area is grazed. Removal of stock would enable more vigorous regeneration of the forest understorey, though would also encourage the establishment of weed species. Regular possum control is also likely to be necessary to maintain the values of the Area.

**Property Owner Comment:**



**ASSESSMENT (against District Plan criteria):**

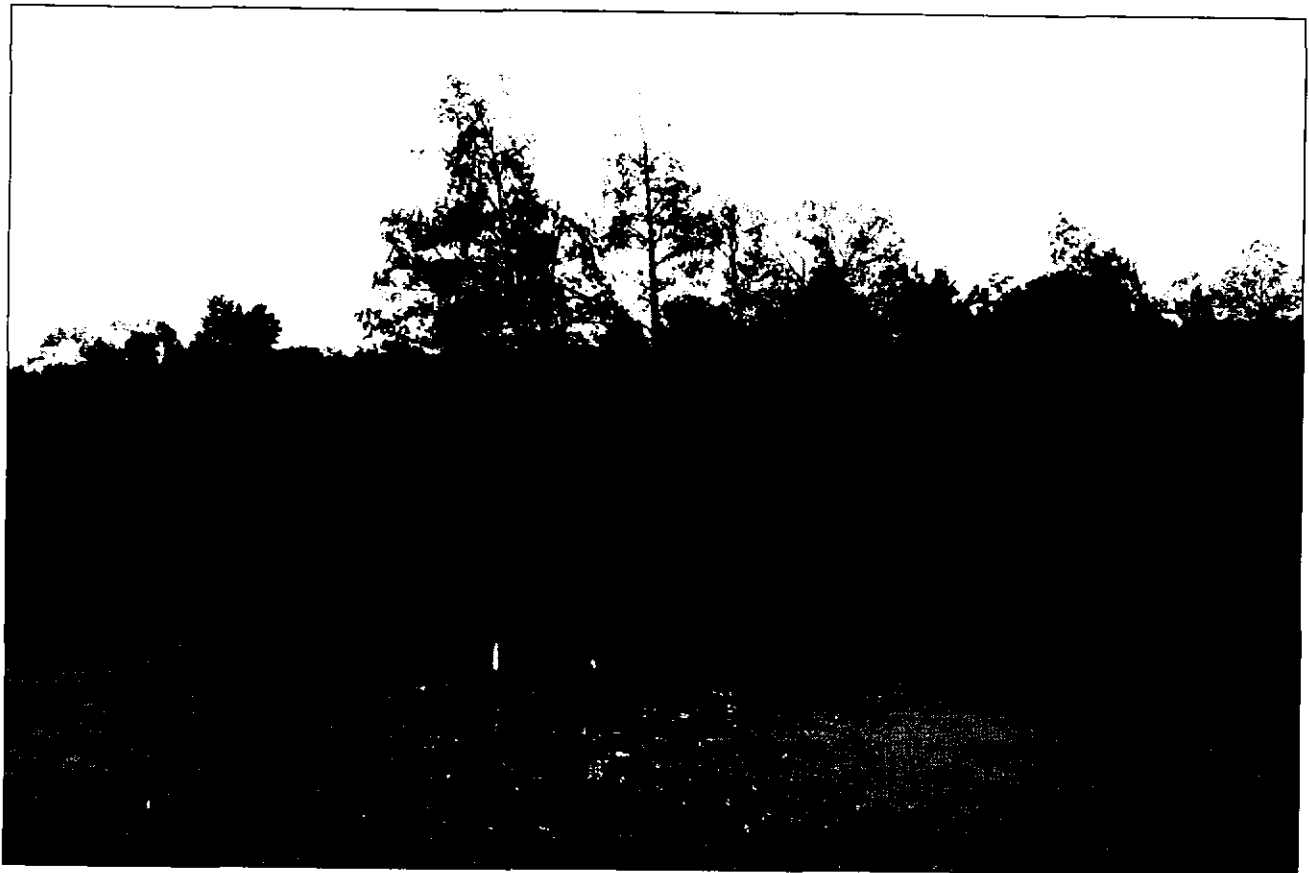
Primary Criteria	Rank	Notes
Representativeness	M/H	A modified example of forest typical of the ecological district.
Rarity	L/M	Supports several typically-lowland species.
Diversity and pattern	M	Relatively diverse, though probably less diverse than forest originally present.
Distinctiveness/special features	M	Provides locally important forest-bird habitat; supports good numbers of kakikatea.
<b>Other Criteria</b>		
Size/shape	M/H	Moderate size, good shape, but poorly buffered from the effects of introduced tree spread.
Connectivity	M	Isolated from other remnants, though part of a network of forest-bird habitat.
Long-term Sustainability	M	Modified by the presence of woody weeds; ongoing control required to sustain the indigenous forest values.
SNA (yes/no):	YES	

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

The Area has been protected informally by the landowner. The health, and possibly the continued existence, of the forest remnant will depend on some control of introduced trees. It should be possible to remove the main woody weeds (sycamore, holly and hawthorn), though anything less than the complete removal of sycamore will require regular and ongoing weed control to protect the indigenous forest.

**Discussion:**

The Area meets the District Plan criteria for a Significant Natural Area because it is typical of the remnant indigenous vegetation in this part of the ecological district and is partly representative of the indigenous vegetation originally present in the district. It supports podocarps (kahikatea and totara) and provides locally important bird habitat.



Area 623



## TIMARU DISTRICT SNA SURVEY

## AREA 607a, b and c

Area Number: 607a, b and c	Area Name: Waihi River terraces	Date: 19 August 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: partly cloudy, cool		Time Spent at Area: 4½ hours

Location (central grid reference): J37: 635-875	Nearest Locality: Woodbury	
Ecological District: Geraldine	Approximate size of Area: 6 ha	Altitude: 260 to 300 m
General description of Area: Terrace scarps and flats on the north side of the Waihi River, east (downstream) from the homestead.		

**General description of plant communities and habitats:**

Indigenous forest is present in three main areas. At the western end a narrow strip of hardwood forest with some podocarps is present on the terrace scarp above the main open terrace east of the homestead (Area 607a). Further east a small patch of beech forest, and associated podocarp-hardwood forest, is present on a steep terrace scarp above the Waihi River (Area 607b). These areas are linked by low-stature mixed indigenous and exotic vegetation along the terrace scarp. Closer to the river is scattered riparian and river-flat forest (Area 607c).

**Detailed vegetation description:**Western terrace scarp (Area 607a) (c.2 ha):

This narrow strip of forest is dominated by fuchsia, wineberry, bush lawyer and pohuehue. Other canopy species are totara, kahikatea, narrow-leaved lacebark, marbleleaf, five finger, mapou, broadleaf, matipo and native jasmine.

The forest understorey is relatively open in most places. Common species are horopito, *Coprosma rotundifolia*, marbleleaf, narrow-leaved mahoe, poroporo and mahoe. Holly is occasionally present in the understorey. One damp area at the eastern end of the forest has a good stand of kahikatea saplings, a single matai tree, pokaka, *Neomyrtus pedunculatus* and weeping mapou.

Ground cover species are prickly shield fern, mahoe, *Blechnum fluviatile*, *B. chambersii*, *B. penna-marina*, *B. procerum*, *Hypolepis ambigua*, necklace fern, *Asplenium hookerianum* and foxglove.

Species present on the forest margin are kanuka, bracken, elderberry, Chilean flame creeper and old man's beard.

Eastern terrace scarp (Area 607b) (c.1 ha)

This patch of forest is dominated by two clumps of mountain/black beech trees. The western patch comprises seven trees with trunk diameters between 17 and 58 cm. The eastern patch comprises six trees with trunk diameters between 50 and 96 cm.

Other canopy species at and between these two patches of beech trees are totara, kahikatea, kowhai, lemonwood, narrow-leaved lacebark, cabbage tree and sycamore.

Understorey species are mahoe, matipo, mapou, bush lawyer, totara, lancewood, narrow-leaved mahoe, five finger, broadleaf, fuchsia, cabbage tree, sycamore, *Coprosma crassifolia*, *C. rhamnoides*, *C. rigida*, *Melicope simplex*, *Neomyrtus pedunculatus*, *Melicytus micranthus*, horopito, white climbing rata and one young matai tree.

Ground cover species are hound's tongue fern, necklace fern, *Asplenium appendiculatum*, male fern and foxglove.

Species present mostly on the forest margin are broom, gorse, poroporo, blackberry and bracken.

The river flat below the patches of beech forest is dominated by tall sycamore trees, with occasional young totara, elderberry, blackberry and prickly shield fern. Additional species on the lower bank are hen and chickens fern, pate, *Blechnum chambersii*, *Leptopteris hymenophylloides*, bush lily and Chilean flame creeper.

Riparian and river-flat forest beside the Waihi River (Area 607c) (c.3 ha):

This comprises a narrow strip of forest on the terrace scarp closest to the Waihi River, either side of the small stream that flows into the Waihi just east of the homestead, and forest downstream alongside the Waihi River.

Forest canopy species alongside the small stream are fuchsia, wineberry, mahoe, narrow-leaved lacebark, kanuka, pokaka, lancewood, marbleleaf, bush lawyer, native jasmine and pohuehue. Also present in places are totara, matai and kahikatea. Old man's beard is present in at least one location (this vine was cut and treated with herbicide).

Understorey species are pate, mahoe, mapou, *Coprosma rotundifolia*, *C. rhamnoides*, *C. crassifolia*, *Melicope simplex*, narrow-leaved lacebark, horopito, narrow-leaved mahoe, five finger, yellowwood, fuchsia and a small area of young kahikatea.

Ground cover species are prickly shield fern, *Blechnum fluviatile*, *B. chambersii*, *B. penna-marina*, hen and chickens fern, *Asplenium richardii*, *Leptopteris hymenophylloides*, hound's tongue fern, *Hydrocotyle novae-zeelandiae* and bush lily.

Other species present mostly on the forest margin are korokio, broom, blackberry, elderberry and Chilean flame creeper.

At the eastern end of the terrace scarp, totara is relatively common. Also present there are kowhai, cabbage tree, wineberry, lemonwood, fuchsia, broadleaf, horopito, lancewood, five finger, weeping mapou, matipo, mapou, marbleleaf, sycamore, bush lawyer, native jasmine, pohuehue, *Coprosma crassifolia*, *C. rigida*, *C. rotundifolia* and prickly shield fern.

On the river flat adjacent to the forest are scattered trees of narrow-leaved lacebark, matai, kaikomako, lowland ribbonwood, totara, ash and elderberry. Old man's beard is present in this area. One large vine of old man's beard on a totara tree was cut and treated with herbicide.



An area dominated by exotic trees (sycamore, crack willow and ash) is present on a recent river flat in the bend of the river, just east of the terrace-scarp forest. Totara is also present in the forest canopy, and common in the understorey. Other species present are kowhai, cabbage tree, *Melicope simplex*, lancewood, weeping mapou, *Coprosma rigida*, *C. rotundifolia*, kaikomako, prickly shield fern, *Blechnum fluviatile*, *B. chambersii*, *B. penna-marina*, male fern, blackberry and one young matai tree.

**Birds observed:**

Bellbird, rifleman, kereru, warbler, fantail, silvereve, goldfinch, magpie, California quail, thrush and blackbird.

**Notable flora, fauna or habitats:**

The presence of podocarps in both forest patches is notable. The presence of beech trees in the eastern patch (Area 607b) is notable, as beech forest occurs as only a few small stands in this area. These areas have relatively diverse understories due, at least in part, to their presence on steeper damper slopes that are less accessible to stock. These forest remnants and the more modified vegetation between them, form a strip of habitat complementing the habitat in the adjacent Waihi River. The Area is close to areas of blue duck habitat upstream and is within the known range of long-tailed bat in South Canterbury.

**General condition of Area:**

The forest in the Area is modified by the presence of several aggressive introduced plants, and compromised by the long narrow shape of each patch. However, it still supports podocarps, including podocarp regeneration, and a relatively diverse range of understorey species.

**Notable plant and animal pests:**

Old man's beard, sycamore and ash are the most important plant pests in the area. Chilean flame creeper, holly and crack willow are also present. Old man's beard is present at several locations and poses a significant threat to the forest and to other areas of indigenous forest nearby. Two large old man's beard vines were cut and treated with herbicide during the survey, though considerably greater effort would be required to eliminate old man's beard from the area. Sycamore is dominant alongside the river and has the ability to establish within other areas of forest. Holly and ash also pose a significant threat, though neither is as widespread as sycamore.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The forest patches are generally long and narrow, though buffered to some extent by their location on steep slopes. Both 607a and 607b are fenced on their upper boundaries and some parts of each patch appear little affected by grazing animals. The forests are close to quite extensive patches of podocarp (totara-dominated) forest across the Waihi River and are close to more extensive areas of forest on the foothills further west.

**Present management and management issues:**

Weed control is the most important concern. However, the extent of the infestations on adjoining areas, notably along the Waihi River, mean that the long term control of some weeds (such as sycamore) may be very difficult to achieve.

**Property Owner Comment:**

**ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	Modified examples of forest typical (and partly representative) of the ecological district (podocarp-hardwood forest and beech forest)
Rarity	M	Supports species that are locally uncommon (mountain beech and yellowwood).
Diversity and pattern	M	A diverse range of species, though probably less diverse than the forests originally present.
Distinctiveness/special features	M/H	Area 607b supports beech forest near its distributional limit in Canterbury.
<b>Other Criteria</b>		
Size/shape	L/M	The forest patches are small and have a poor shape, but are reasonably well buffered.
Connectivity	M	The forest patches are connected to each other by mixed woody vegetation and adjoin more extensive areas of forest to the west.
Long-term Sustainability	L/M	Introduced plants, notably sycamore and old man's beard pose a significant threat to the area.
SNA (yes/no):	YES	

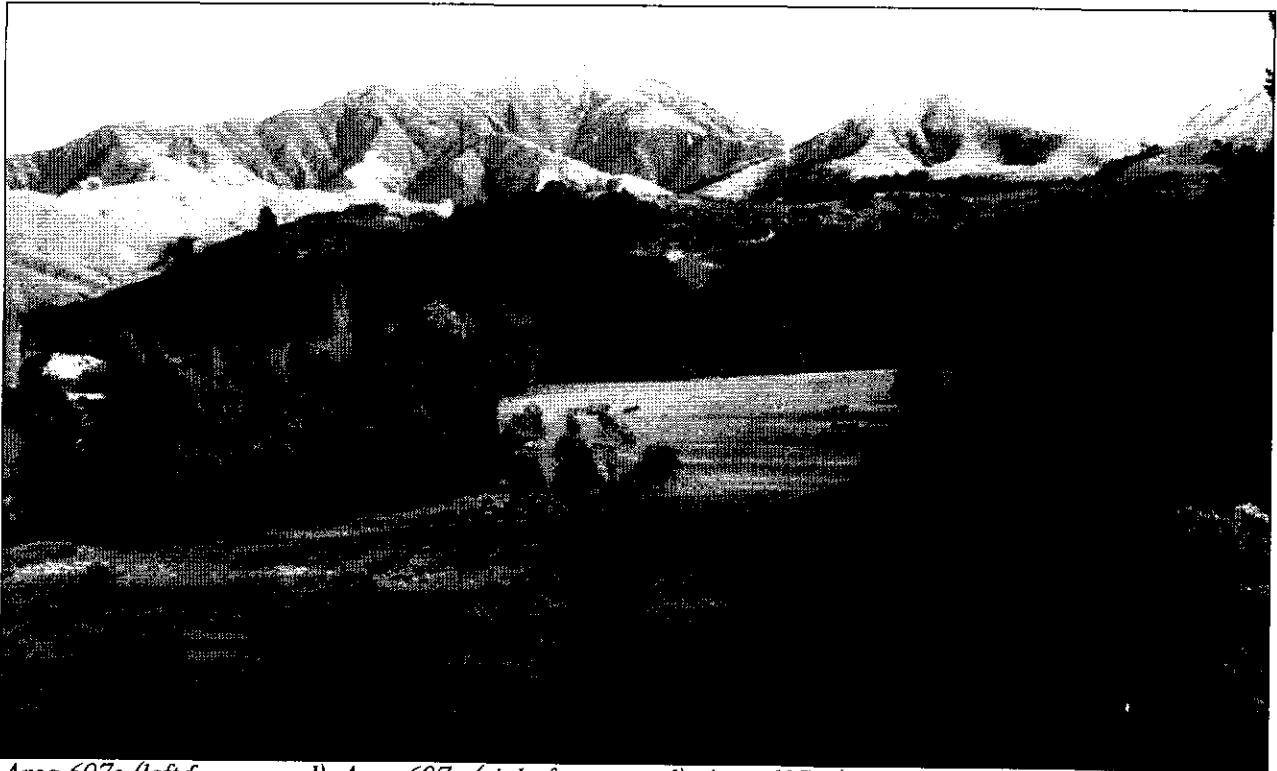
**Final Consideration (of other matters, Section D, page B-19):**

The Area has been protected informally by the landowner. The health, and possibly the continued existence, of the forest remnant will depend on some control of introduced plants. It may be possible to contain the spread of sycamore, though anything less than the complete removal of sycamore from the area will require regular and ongoing weed control to protect the indigenous forest. It should be possible to remove old man's beard from the area, though a concerted effort would be required to achieve this. Parts of the Area are already protected from grazing by fences and the adjoining riverbed.



**Discussion:**

The Area meets the District Plan criteria for a Significant Natural Area because it is typical of the remnant indigenous vegetation in this part of the ecological district and is partly representative of the indigenous vegetation originally present in the district. It supports podocarps (kahikatea, totara and matai) and beech trees, and is linked to more extensive areas of forest to the west. Its size, shape and the presence of aggressive introduced weeds make its long term viability uncertain.



*Area 607c (left foreground), Area 607a (right foreground), Area 607d (right background) and Waihi Gorge Scenic Reserve (left background)*



*Beech trees in Area 607b*



## TIMARU DISTRICT SNA SURVEY

AREA 607d

Area Number: 607d	Area Name:	Date: 16 September 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: cloudy and cool	Time Spent at Area: 1½ hours	

Location (central grid reference): J37: 627-881		Nearest Locality: Woodbury	
Ecological District: Geraldine/Orari	Approximate size of Area: 7 ha		Altitude: 300 to 330 m
General description of Area: A small terrace at the base of the foothills and the adjoining south-facing terrace scarp lying just north of the homestead.			

**General description of plant communities and habitats:**

Podocarp-hardwood forest, with denser podocarps (predominantly kahikatea) on the terrace surface.

**Detailed vegetation description:**Terrace scarp:

The forest on the terrace scarp is dominated by lemonwood, fuchsia, wineberry and pohuehue. Other canopy species are kanuka, narrow-leaved mahoe, narrow-leaved lacebark, lancewood, kowhai and occasional kahikatea. Important understorey species are prickly shield fern, pate, *Coprosma rotundifolia*, mahoe, mapou, bush lawyer, *Blechnum fluviatile*, *B. chambersii* and bush lily. Totara and kanuka are common at the top of the scarp. A small grove of approximately four soft tree ferns are present in a shallow gully at the top of the scarp. Chilean flame creeper is common along the forest margin.

Terrace surface:

The forest on the terrace surface is dominated by kahikatea, lemonwood, broadleaf and pokaka. Other canopy species are narrow-leaved lacebark, lancewood, totara and bush lawyer. One matai, one large ash tree and abundant pohuehue are present at the eastern edge of the forest remnant.

Important understorey species are white climbing rata, horopito, *Melicactus micranthus*, kahikatea, *Coprosma rotundifolia* and *C. rhamnoides*. Other understorey species present are pokaka, *Coprosma crassifolia*, mapou, matipo, mahoe, fuchsia, native jasmine, *Melicope simplex*, wineberry, *Neomyrtus pedunculatus* and hanging spleenwort. Ground cover species are white climbing rata, prickly shield fern, crown fern, *Leptopteris hymenophylloides*, *Asplenium hookerianum*, *Blechnum montanum*, *B. fluviatile*, hound's tongue fern and bush rice grass.

**Birds observed:**

Bellbird, rifleman, blackbird and magpie.

**Notable flora, fauna or habitats:**

The presence and relative abundance of kahikatea, and the presence of other podocarps (totara and matai) are notable features. There are not many examples of terrace podocarp-hardwood forest remaining in the district. Also notable is the presence of soft tree fern (*Cyathea smithii*). This species is rare in the district and does not appear to have been recorded from the nearby Waihi Gorge Scenic Reserve. Two other locally-rare species are present: hanging spleenwort (*Asplenium flaccidum*) and crown fern (*Blechnum discolor*).

**General condition of Area:**

The forest is in reasonably good condition. The understorey is fairly open but the canopy is mostly intact. There is good regeneration of kahikatea in parts of the terrace forest.

**Notable plant and animal pests:**

Ash and Chilean flame creeper are the most important plant pests noted during the inspection. It would be easy to remove the ash tree. Control of Chilean flame creeper is more problematic. There are infestations of old man's beard and sycamore near the Area.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is part of a larger block of forest extending onto the adjoining property. It is also linked to Area 607a along the terrace scarp and to the Waihi Gorge Scenic Reserve to the southwest across a farm track. The forest has a relatively good shape and is buffered by its position on and above the south-facing terrace scarp.

**Present management and management issues:**

The most important management issues are the monitoring and control of plant pests (ash and Chilean flame creeper, and possibly sycamore and old man's beard) and protection of the small grove of tree ferns.

**Property Owner Comment:**



**ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of the vegetation originally present in the area.
Rarity	M	Locally-rare species (soft tree fern, hanging spleenwort and crown fern) are present.
Diversity and pattern	M	A relatively diverse range of species, though probably less diverse than the forest originally present.
Distinctiveness/special features	M	Terrace podocarp forest is a special feature; the large podocarp trees provide locally important habitat for birds and possibly long-tailed bats.
<b>Other Criteria</b>		
Size/shape	M/H	A moderate-sized area of forest with a good shape and relatively well buffered.
Connectivity	M/H	The Area links other areas of indigenous forest including Waihi Gorge Scenic Reserve.
Long-term Sustainability	M/H	The Area is partly modified but fairly resilient and likely to persist with little intervention.
SNA (yes/no):	YES	

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

The Area has been informally protected by the landowner. It lies in a strategic position between the two main parts of the farm, though access is already available along vehicle tracks around the Area.

**Discussion:**

This Area easily meets the District Plan criteria for a Significant Natural Area because it is at least partly representative of the original vegetation in the area, provides good forest bird habitat, links other areas of forest and contains locally-rare plant species.



## TIMARU DISTRICT SNA SURVEY

## AREA 31a and b

Area Number: 31a and b	Area Name: Waimarie (Stony) Stream	Date: 14 and 16 September 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: Fine and mild	Time Spent at Area: 7 hours	

Location (central grid reference): J37: 605-890	Nearest Locality: Woodbury	
Ecological District: Orari	Approximate size of Area: 120 ha	Altitude: 320 to 600 m
<b>General description of Area:</b> The main valley and larger tributary valleys of Waimarie (Stony) Stream (a tributary of the Waihi River) in the foothills of the Four Peaks Range.		

**General description of plant communities and habitats:**

Extensive hardwood and podocarp-hardwood forest, including large stands of podocarp-dominated forest on the main valley floor and larger areas of regenerating podocarp-hardwood forest in tributary valleys. Two small patches of beech forest in the mid valley.

**Detailed vegetation description:**Lower valley floor (podocarp-dominated) forests (Area 31a):

The main terraces and lower slopes in the main valley support relatively dense podocarp forest. This forest grades upslope to a hardwood dominated forest with scattered podocarps.

The forest canopy of the terrace forest is dominated by kahikatea with totara (lowland and mountain), matai, lancewood and narrow-leaved lacebark. Other canopy species, mostly nearer the river, are broadleaf, kowhai, marbleleaf, fuchsia, mapou, narrow-leaved mahoe and five finger.

Important understorey species in the main terrace forest are kahikatea, horopito, *Coprosma rotundifolia*, *C. rhamnoides*, wineberry, fuchsia, *Melicope simplex*, kaikomako, weeping mapou and bush lawyer.

Ground cover species are prickly shield fern, *Blechnum penna marina*, *B. fluviatile*, mahoe, *Urtica australis*, hound's tongue fern, *Hydrocotyle novaezeelandiae* and moss.

A significant infestation of Darwin's barberry is present along the forest edge at the lower-valley (eastern) end of the Area, near the Waihi Gorge Scenic Reserve.

Tributary stream (regenerating hardwood) forests (Area 31a):

Extensive areas of low hardwood forest are present in the tributary valleys. The forest canopy is dominated by fuchsia, wineberry, five finger, mapou, broadleaf, lancewood, lemonwood, matipo, mahoe, narrow-leaved mahoe and marbleleaf, with scattered totara, mountain totara, kahikatea, cabbage tree and occasional matai.

Important understorey species are horopito, fuchsia, *Coprosma rotundifolia*, *C. rhamnoides*, pate and bush lawyer.

Ground cover species are prickly shield fern, hound's tongue fern, mahoe, hen and chickens fern, necklace fern, *Asplenium hookerianum*, *A. richardii*, mountain kiokio, *Blechnum penna-marina*, *B. chambersii*, *B. fluviatile*, filmy fern, *Urtica australis* and bush lily.

Species commonly present on the forest margins are *Coprosma propinqua*, *Coprosma* sp. 't', *C. rigida*, *C. rugosa*, *C. crassifolia*, lancewood, bush lawyer, pohuehue, bracken, manuka, kanuka, matipo, cabbage tree, tutu, *Calystegia tuguriorum*, *Gaultheria antipoda* and occasionally *Olearia bullata*, Himalayan honeysuckle, broom and gorse. Chilean flame creeper is present in the eastern part of the Area.

Mid-valley (podocarp-hardwood and beech) forests (Area 31a):

Additional species present in podocarp-hardwood forest along the river gorge in the central valley are mountain tree fern, *Lycopodium varium*, *L. scariosum*, pate, *Asplenium appendiculatum*, *Blechnum chambersii*, *B. colensoi*, *Leptopteris hymenophylloides*, *Polystichum richardii*, *Coprosma crassifolia*, *C. rubra*, bush rice grass and a small population of the rare herb *Australina pusilla*.

Scattered small southern rata trees are present on the rocky sides of the gorge.

Two patches of mountain beech forest are present. One patch, comprising approximately 30 trees with trunk diameters averaging 100 cm is present on the slopes of a rocky knoll between two tributaries of the stream. The other patch, comprising only two or three trees, is present on the south side of the river gorge just below the confluence of the stream tributaries. Other species present in the beech forest are marbleleaf, bush lawyer, horopito, mapou, *Coprosma rhamnoides*, *C. crassifolia*, prickly shield fern, hound's tongue fern and necklace fern.

Upper valley riparian (podocarp-hardwood) forest (Area 31b) (c.50 ha):

A strip of forest is present along both sides of the river in the mid to upper valley. This forest is dominated by mountain totara and hardwoods, and grades upslope to hardwood forest and scrub.

Important canopy species are mountain totara, broadleaf, cabbage tree, lancewood and kowhai. Other canopy species are five finger, matipo, mapou, narrow-leaved mahoe, mountain akeake, kanuka, marbleleaf and fuchsia.

Understorey species are yellowwood, weeping mapou, mapou, bush lawyer, *Gaultheria antipoda*, koromiko, fuchsia and horopito.



Ground cover species are prickly shield fern, bush lily, mountain kiokio, *B. penna marina*, *B. fluviale*, *B. procerum*, *B. vulcanicum*, hen and chickens fern, *Asplenium richardii* and hound's tongue fern. Species present mostly on the forest margin are inaka, Himalayan honeysuckle, *Coprosma rugosa*, *C. propinqua* and mountain ribbonwood.

**Birds observed:**

Bellbird, rifleman, grey warbler, silvereye, tomtit, kereru, fantail, welcome swallow, chaffinch, blackbird, song thrush and California quail.

**Notable flora, fauna or habitats:**

The extent of forest habitat, especially the extent of relatively dense podocarp forest in the lower valley, is the most notable feature. The presence of beech forest (two small patches) and southern rata trees is also notable. The Area supports a number of species that are rare in the district, including southern rata, mountain tree fern, *Australina pusilla*, *Lycopodium varium*, *Blechnum colensoi* and *Coprosma rubra*.

**General condition of Area:**

The main parts of the forest, on the valley-floor and along the stream, are in good condition. Areas of regenerating hardwood forest on the lower slopes are more open. Canopy species are regenerating well in most parts of the forest, with the exception of the patches of beech forest. Some areas of forest along the more incised parts of the stream are in very good condition.

**Notable plant and animal pests:**

The most important plant pest present is Darwin's barberry. This forms a relatively extensive infestation along the forest margin at the southern end of the Area, adjoining Waihi Gorge Scenic Reserve. Chilean flame creeper is present though not common in the eastern part of the Area. Scattered plants of gorse, broom and Himalayan honeysuckle are present at some forest margins, though these species do not pose a significant threat to the indigenous forest.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The boundaries of the Area encompass the main stands of indigenous forest. Areas of younger or more modified forest adjoin the Area along some boundaries. The Area is large, well buffered by its location along the bottom of the valley and has a relatively good shape. It adjoins the Waihi Gorge Scenic Reserve at its southern boundary, and is linked to other areas of indigenous forest in the vicinity by scattered patches of indigenous forest and scrub. Fences are present along some forest boundaries, though generally do not provide protection from stock.

**Present management and management issues:**

The most important management issues are the continued control of animals pests (notably possums) and the removal or containment of the infestation of Darwin's barberry. Additional fencing to prevent stock access (especially cattle) at strategic locations would assist in the protection of the forest understorey.

**Property Owner Comment:**

**ASSESSMENT (against District Plan criteria):**

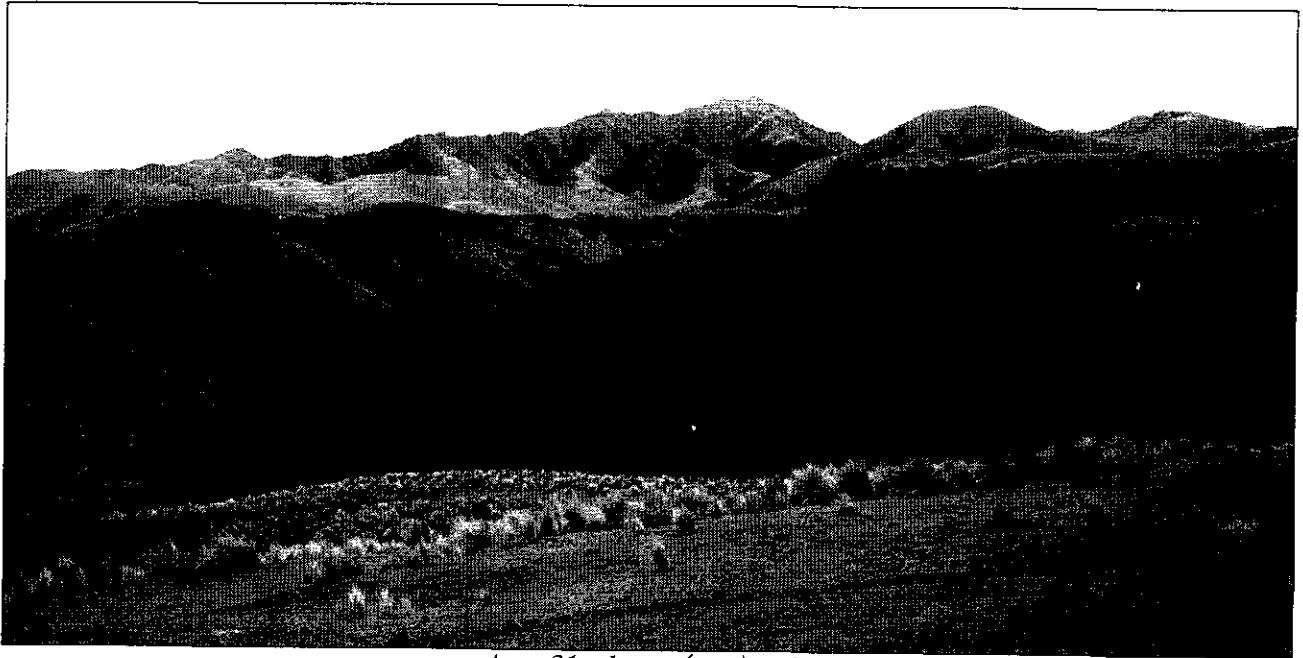
Primary Criteria	Rank	Notes
Representativeness	H	A very good example of the indigenous vegetation that was originally present in the ecological district.
Rarity	M/H	Supports several species that are locally rare: southern rata, <i>Australina pusilla</i> , <i>Lycopodium varium</i> , <i>Blechnum colensoi</i> , mountain tree fern and <i>Coprosma rubra</i> .
Diversity and pattern	M/H	A range of vegetation and habitat types are present; species diversity is probably similar to that originally present.
Distinctiveness/special features	M/H	The Area is within or near to the present range of blue duck and long-tailed bat (both nationally endangered species) and provides suitable habitat for these species. It is one of the largest forest remnants in the area.
<b>Other Criteria</b>		
Size/shape	H	The Area is large.
Connectivity	M	Adjoins a protected area (Waihi Gorge Scenic Reserve) and is close to other areas of indigenous forest.
Long-term Sustainability	M/H	Forest in the Area is relatively resilient and will persist with minimal management.
<b>SNA (yes/no):</b>	<b>YES</b>	

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

The Area has been protected informally by the landowners. Development of the core parts of the Area would be difficult due to its location along an incised stream. Existing uses such as the vehicle tracks that traverse the area would not be affected by its listing as an SNA.



**Discussion:** The Area very easily meets the District Plan criteria for a Significant Natural Area. Its key features are its size, the extent to which it is representative of the original vegetation, the presence of relatively dense stands of podocarps, the presence of a number of locally rare plant species, and its actual or potential habitat for birds and possibly bats. The Area is one of the most valuable areas inspected so far in the District-wide SNA survey, and is likely to be one of the most important remnants of indigenous forest in the ecological district.



*Area 31a, lower (east) end*



*Area 31b, with stand of beech trees in foreground*



## TIMARU DISTRICT SNA SURVEY

## AREA 31c

Area Number: 31c	Area Name: Upper Waimarie Stream	Date: 14 September 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: fine and cool	Time Spent at Area: 1½ hours	

Location (central grid reference): J37:585-935	Nearest Locality: Woodbury	
Ecological District: Orari	Approximate size of Area: 150 ha	Altitude: 900 to 1050m
General description of Area: Upper slopes and broad ridge crest at the head of Waimarie (Stony) Stream, above approximately 900m.		

**General description of plant communities and habitats:**

Tall tussockland, herbfield and mossfield.

**Detailed vegetation description:**

The predominant vegetation within the Area is tall tussock. Red tussock is dominant on the ridge crest and gentler slopes and narrow-leaved snow tussock is present on steeper slopes. Mossfield is present on exposed rocky ridges and areas of pasture are present at gentler sheltered sites on lower ridges.

Tall tussock typically forms a cover of 60-70%. Intertussock vegetation is dominated by pasture grasses, cotton daisy and moss. Other species present, usually where tussock cover is sparser, are fescue tussock, golden spaniard, inaka, *Raoulia subsericea*, woolly moss, *Polytrichum juniperinum*, *Leucopogon fraseri*, *Kelleria dieffenbachii*, *Euphrasia* sp., *Pentachondra pumila*, *Pimelea oreophila* and mouse-ear hawkweed.

Damp areas support patches of *Carex coriacea* and rushes (*Juncus* sp.).

Mossfield communities on exposed ridges are dominated by woolly moss and cotton daisy. Also present are fescue tussock, narrow-leaved snow tussock, inaka, snowberry, *Blechnum penna-marina*, blue tussock, browntop, sweet vernal, *Leucopogon fraseri* and *Polytrichum juniperinum*.

These plant communities grade downslope (below 900m) to pasture with scattered narrow-leaved snow tussock, fescue tussock, silver tussock, prickly shield fern, golden spaniard, inaka and *Coprosma propinqua*.

A small patch of scrub in the valley, outside the Area and just above the hut, is dominated by the uncommon shrub daisy *Olearia bullata*. However, this area of vegetation is too small and isolated to be regarded as significant under the District Plan.

**Birds observed:**

Skylark and California quail.

**Notable flora, fauna or habitats:**

The condition and extent of the tall tussockland is the most notable feature of the Area. This plant community is likely to be representative of the vegetation originally present in the area.

**General condition of Area:**

The Area is in relatively good condition. Intertussock vegetation (ground-cover species) is predominantly introduced grasses in some areas, but the tall tussock cover is more than 50% over most parts of the Area.

**Notable plant and animal pests:**

No significant plant or animal pests were observed. Mouse-ear hawkweed is present, but nowhere dominant.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The northwest boundary of the Area is the fenced property boundary. Other boundaries are not fenced. The area is protected and buffered to some extent by its high altitude. Similar plant communities are present at high altitude on the adjoining property.

**Present management and management issues:**

The main management issue is protection of the tall tussock communities from intensive grazing and/or burning.

**Property Owner Comment:****ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	A modified example of the vegetation originally present, and a good example of indigenous vegetation typical of the ecological district.
Rarity	L	No rare species were observed.
Diversity and pattern	M	A typically diverse range of low-alpine communities, though species diversity is



		probably reduced from that originally present.
Distinctiveness/special features	M	A relatively intact sequence of indigenous vegetation and habitat.
<b>Other Criteria</b>		
Size/shape	H	The Area is large.
Connectivity	M	The Area adjoins other areas of similar vegetation on adjoining properties.
Long-term Sustainability	M/H	Plant communities in the Area are likely to persist with little intervention, provided they are not damaged by fire or intensive grazing. Monitoring to prevent the establishment of woody weeds would be desirable.
SNA (yes/no):	YES	
<b>Final Consideration (of other matters, Section D, page B-19):</b>		
The ecological values of the Area have persisted under the present grazing management. Any intensification of land use may affect the indigenous plant communities. If managed sensitively, the ecological values are likely to improve, provided introduced woody weeds do not become established.		

**Discussion:**

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main features are that the vegetation is representative of the original vegetation of the area, the size of the Area, and the presence of similar plant communities on adjoining properties.



*Area 31c*



## TIMARU DISTRICT SNA SURVEY

## AREA 712d and e

<b>Area Number:</b> 712d and e	<b>Area Name:</b> Waihi River	<b>Date:</b> 9 September 2005
<b>Property:</b> McAtamney	<b>Surveyors:</b> Mike Harding	
<b>Weather Conditions:</b> low cloud and cool		<b>Time Spent at Area:</b> 6 hours

<b>Location (central grid reference):</b> J37: 585-900	<b>Nearest Locality:</b> Woodbury	
<b>Ecological District:</b> Orari	<b>Approximate size of Area:</b> 60ha	<b>Altitude:</b> 400 to 500m
<b>General description of Area:</b> Moderately-steep to steep slopes on the north side of the upper Waihi River.		

**General description of plant communities and habitats:**  
Predominantly hardwood forest with scattered podocarps (totara).

**Detailed vegetation description:**

Dense forest, supporting scattered totara, is present along the lower slopes near the river. This forest grades upslope to lower-stature hardwood forest and, higher upslope, to open regenerating hardwood forest, scrub and fernland.

The main forest canopy is dominated by broadleaf, cabbage tree, five finger, kowhai and fuchsia.

Other canopy species are narrow-leaved mahoe, mapou, lancewood, wineberry, matipo, marbleleaf, mountain ribbonwood and totara.

Understorey and forest margin species are Himalayan honeysuckle, pate, weeping mapou, kanuka, mountain akeake, *O. arborescens*, yellowwood, *Coprosma rugosa*, *C. rhamnoides*, *C. sp. 't'*, *C. rigida*, *C. propinqua*, tutu, koromiko, inaka, *Clematis marata*, bush lawyer, mountain flax, *Gaultheria antipoda*, *Melicytus* aff. *alpinus*, mountain wineberry, korokio, pohuehue, scrub pohuehue, bracken, narrow-leaved snow tussock and *Chionochloa conspicua*.

Ground-cover species are prickly shield fern, hound's tongue fern, necklace fern, *Asplenium richardii*, mountain kiokio, *Blechnum chambersii*, *B. penna marina*, *Ctenopteris heterophylla*, thousand-leaved fern, bush lily and *Hydrocotyle* sp.

Approximately ten Canterbury tree broom (*Carmichaelia torulosa*) trees are present near the river just above the confluence of Mackintosh Stream. A single Canterbury pink broom tree is present just below the confluence of Deep Creek.

**Birds observed:**

Grey warbler, bellbird, fantail, tomtit, rifleman, brown creeper, welcome swallow, paradise shelduck, spur winged plover, blackbird and chaffinch. Blue duck droppings were observed along the Waihi River upstream from the confluence of Deep Creek.

**Notable flora, fauna or habitats:**

The presence of the threatened (range restricted) Canterbury tree broom and scattered totara are notable features. Several locally-rare species are present: *Clematis marata*, *Olearia arborescens* and *Ctenopteris heterophylla*. The presence of blue duck (indicated by droppings) in the Waihi River adjoining the Area is also notable.

**General condition of Area:**

Forest over most parts of the Area is in good condition. The forest cover is generally older, taller and denser nearer the river.

**Notable plant and animal pests:**

Scattered trees of grey willow are present along the riverbed adjoining the Area. Gooseberry is present at scattered locations near the river above the confluence of Deep Creek. Himalayan honeysuckle is present, though only common at the lower end of the Area.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is long and narrow, with narrow tongues of vegetation stretching up side gullies. However, it adjoins the Waihi Gorge Scenic Reserve or the Waihi River along its long southwest boundary and is buffered by its location on relatively steep south-facing slopes. Areas of similar vegetation are present across the Waihi River on the adjoining property.

**Present management and management issues:**

The Area has been protected by its location on steep damp slopes. Woody weeds present in the vicinity (Himalayan honeysuckle, gooseberry and grey willow) are unlikely to pose a significant threat to the Area.

**Property Owner Comment:****ASSESSMENT (against District Plan criteria):**



Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of that remaining in the ecological district, and containing elements of the original vegetation.
Rarity	M/H	The Area contains a good population of a species at risk nationally (Canterbury tree broom) and several locally-rare species.
Diversity and pattern	M	A relatively diverse area, though species diversity is probably reduced from that originally present.
Distinctiveness/special features	M/H	The Area adjoins an area utilised by blue duck and probably provides riparian habitat for this nationally endangered species.
<b>Other Criteria</b>		
Size/shape	M/H	A moderate to large area.
Connectivity	M/H	Adjoins a protected area (Waihi Gorge Scenic Reserve) and adjoins and links other areas of indigenous vegetation and habitat.
Long-term Sustainability	M/H	The ecological values of the Area are likely to persist with little intervention.
SNA (yes/no):	YES	

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

The Area has been informally protected by the landowners and by its location on steep inaccessible slopes. Protection of areas of indigenous vegetation alongside the Waihi River will benefit populations of the threatened Canterbury tree broom and blue duck.

**Discussion:**

The Area very easily meets the District Plan criteria for a Significant Natural Area. Its main features are that the vegetation is typical of the area and at least partly representative of the original vegetation, the size of the Area, the presence of a threatened plant species, the habitat that it potentially provides for blue duck, and that it adjoins and links other areas of indigenous vegetation including that protected within Waihi Gorge Scenic Reserve.



*Area 712d*



## TIMARU DISTRICT SNA SURVEY

AREA 712f

Area Number: 712f	Area Name: Upper Waihi River	Date: 9 September 2005
Property: McAtamney	Surveyors: Mike Harding	
Weather Conditions: misty and cool		Time Spent at Area: 1 hour

Location (central grid reference): J37: 567-928	Nearest Locality: Woodbury	
Ecological District: Orari	Approximate size of Area: 7 ha	Altitude: 500 to 620m
General description of Area: Lower slopes alongside a small upper tributary of the Waihi River.		

**General description of plant communities and habitats:**

Hardwood forest with podocarps (mountain totara), scrub and shrubland.

**Detailed vegetation description:**

Areas of scattered forest alongside the lower reaches of the stream, where it is incised in a small gorge, are dominated by mountain totara, broadleaf and five finger. Also common are mountain ribbonwood, cabbage tree, matipo, marbleleaf, kowhai, fuchsia, mountain akeake, koromiko, bush lawyer, *Gaultheria antipoda*, mountain kiokio, *Blechnum penna-marina* and *B. fluviatile*. This forest community grades upslope to a lower scrubby community dominated by mountain flax, tutu, prickly shield fern, bush lawyer, scrambling fuchsia, *Coprosma propinqua*, *C. rugosa*, cotton daisy and narrow-leaved snow tussock.

Scrub and scattered trees are present on lower slopes upstream, mostly mountain ribbonwood, broadleaf, fuchsia, mountain akeake and *Coprosma propinqua*. Shrubland is present on adjoining slopes, including one isolated tree of the threatened tree daisy *Olearia fimbriata*.

Further upstream, on a damp terrace at the northern end of the Area, is a patch of tree daisy scrub dominated by *Olearia bullata*, *Coprosma propinqua*, *C. rugosa* and *C. rugosa* X *C. intertexta* hybrids.

**Birds observed:**

Welcome swallow, grey warbler, rifleman, tomtit, skylark and chaffinch. Blue duck droppings were observed in the Waihi River at the southern end of the Area.

**Notable flora, fauna or habitats:**

The most notable feature of the Area is the presence of the threatened (serious decline) tree daisy *Olearia fimbriata*. Only one tree was observed, though it is relatively large (c. 5m high, with two trunks with diameters of 21 and 24 cm). This species has not previously been recorded from South Canterbury (except for plants in the Tasman Valley near Mt Cook).

Also notable is the patch of dense *Olearia bullata* scrub just upstream from the *Olearia fimbriata* tree. This species has a scattered presence in the area and was until recently considered threatened.

The presence of blue duck nearby in the Waihi River is notable. It is likely that blue duck would at least occasionally use this tributary of the river.

**General condition of Area:**

Indigenous vegetation of the Area is in relatively good condition. The remnants are small, but actively regenerating along the stream. The streamside vegetation provides good habitat for blue duck. The *Olearia fimbriata* tree is isolated in rough pasture. No seedlings were observed, and young plants would be unlikely to survive grazing.

**Notable plant and animal pests:**

No significant pests were observed, though possums are undoubtedly present.

**Boundaries: (buffering, fencing, adjoining plant communities/habitat etc.):**

The Area is long and narrow. It is not fenced, but is protected to some extent by its location on steeper slopes and banks alongside the stream. Plant communities grade upslope to scattered scrub, shrubland and pasture, and downstream to scattered indigenous vegetation along the Waihi River (linking it to Area 712e).

**Present management and management issues:**

The most important management issue is the protection of *Olearia fimbriata*. The single tree is healthy and appears unaffected by grazing, but no seedlings or young plants are present. Active management, and perhaps restrictions on grazing, may be required to ensure the long-term survival of *Olearia fimbriata* at this site.

The area of *Olearia bullata* scrub at the north end of the Area is vulnerable as existing fences could concentrate grazing pressure in this area.

**Property Owner Comment:**



**ASSESSMENT (against District Plan criteria):**

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of the ecological district, and containing components (e.g. mountain totara, <i>Olearia fimbriata</i> ) of the original vegetation.
Rarity	M/H	<i>Olearia fimbriata</i> is a chronically threatened species (serious decline).
Diversity and pattern	M	A diverse range of plant communities is present, though species diversity is probably less than that originally present.
Distinctiveness/special features	M/H	The stream within the Area almost certainly provides habitat for blue duck (a nationally endangered species).
<b>Other Criteria</b>		
Size/shape	M/H	Moderate size, well buffered, though poor shape.
Connectivity	M	The Area is linked along the Waihi River to other areas of indigenous vegetation.
Long-term Sustainability	M	Most indigenous vegetation in the Area will persist (and improve) with little management. Active management may be required for the long-term survival of <i>Olearia fimbriata</i> in the Area.
SNA (yes/no):	YES	

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

The Area has been protected informally by the landowner. The Area should be considered as part of a broken sequence of vegetation (and blue duck habitat) along the Waihi River and its tributaries.

**Discussion:**

The Area easily meets the District Plan criteria for a Significant Natural Area. Its important features are the presence of a threatened plant species (*Olearia fimbriata*), the presence of podocarps (mountain totara) and the presence of habitat for a threatened bird species (blue duck). It may be more appropriate to list the single *Olearia fimbriata* tree as a "Significant Tree", as well as part of a Significant Natural Area



*Olearia fimbriata* tree at the edge of Area 712f