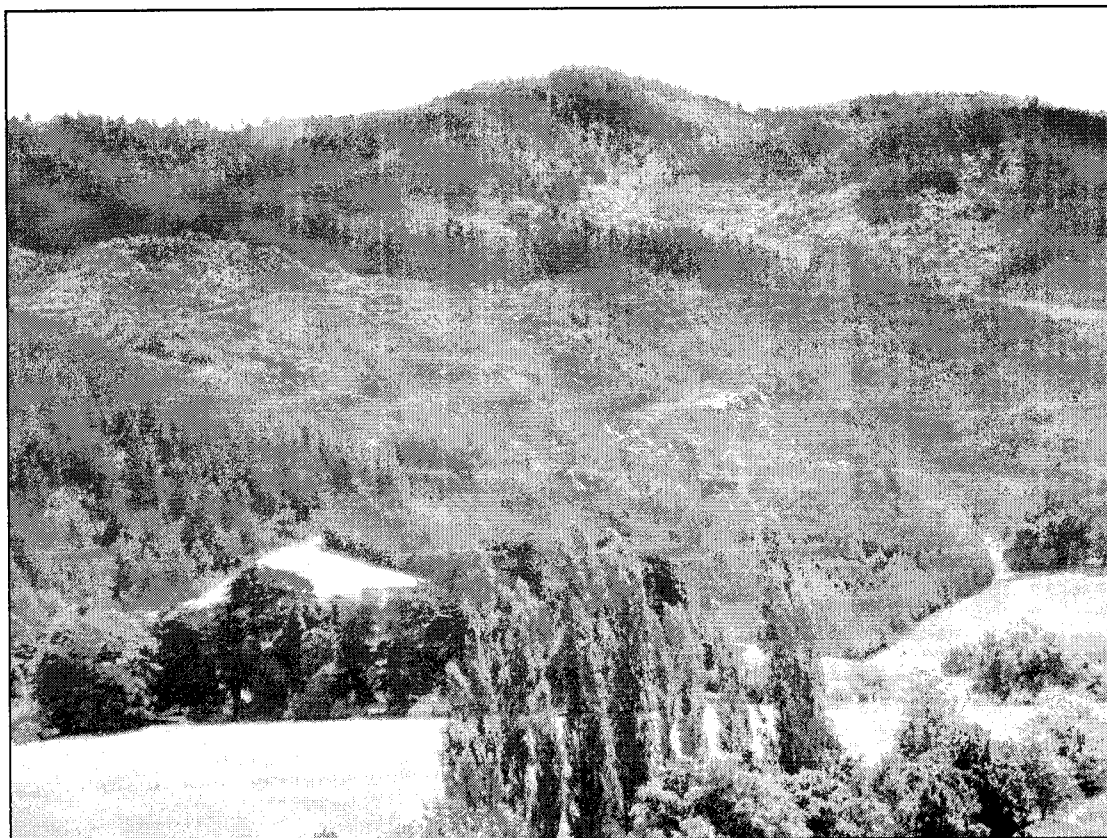


**TIMARU DISTRICT**  
**SIGNIFICANT NATURAL AREAS**  
**SURVEY**

**PATRICK PROPERTY**  
**(WAITOHI HILL)**



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

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owners:** ..... Nigel Patrick  
**Valuation Reference:** ..... 24670/177.00; 24670/175.00  
**Address:** ..... Townsend Road, Gapes Valley.  
**Location:** ..... On the lower southeast slopes of Waitohi Hill, near Gapes Valley.  
**Ecological Districts:** ..... Orari, but close to the Geraldine Ecological District.  
**TDC Land Type:** ..... Hard Rock Hills and Downs.  
**Land Environment:** ..... Q2 (Southeastern Hill Country).

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### ECOLOGICAL CONTEXT:

The property lies at the eastern (lower-altitude) boundary of the Orari Ecological District. The original vegetation of this area would have been predominantly podocarp-hardwood forest, possibly with areas of mountain beech forest. Dense podocarp-hardwood (matai-totara-kahikatea-lowland ribbonwood) forest would have occupied the lower hill country and the older terraces and flats. Kanuka forest or shrubland/scrub would have been present at recently disturbed sites, such as along the slips and streams. Wetland vegetation would have been present in poorly drained areas.

The indigenous fauna would have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area. Long-tailed bats would also have been present.

Other areas of indigenous vegetation are present on nearby properties. The property lies close to the known range of the South Canterbury population of long-tailed bat, a nationally endangered species.

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### SIGNIFICANT AREAS ON THE PROPERTY:

Indigenous vegetation of the property was surveyed as part of the District-wide survey of Significant Natural Areas in December 2009. Two areas are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria. These SNAs are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size (ha)	Vegetation/habitat type
159a	Patrick Waitohi Hill forest	J38: 588-763	6.12	Hardwood forest
160a	Patrick Waitohi Hill kanuka forest	J38: 587-758	2.55	kanuka forest; hardwood forest

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

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

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

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**OTHER AREAS INSPECTED ON THE PROPERTY:**

Other areas of indigenous vegetation and habitat on the property were inspected. These comprise narrow modified wetland vegetation along some streams. These areas have some value as indigenous vegetation and habitat, but do not meet the significance criteria in the Timaru District Plan. Failure of these areas to meet the significance criteria does not mean that they are not important for nature conservation or the protection of indigenous biodiversity; it simply means that the areas (as assessed at this time) do not meet the criteria in the Timaru District Plan.



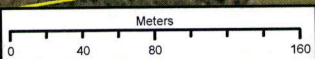
Patrick Property  
24670/177.00  
24670/175.00

Stalker Road

159a

160a

Townsend Road



1:4,000

# TIMARU DISTRICT SNA SURVEY

AREA 159a

**Area Name:** Patrick Waitohi Hill forest  
**Location (central map reference):** J38: 588-763  
**Ecological District:** Orari  
**Surveyors:** Mike Harding

**Property:** Nigel Patrick  
**Nearest Locality:** Gapes Valley  
**Area Size (ha):** 6.12      **Altitude (m):** 280-320  
**Survey Time:** 1½ hours      **Survey Date:** 04-12-09

## General Description:

This SNA lies on moderately steep south-facing slopes and on the adjoining gentler stream-side slopes at the northwest corner of the property on the lower southern slopes of Waitohi Hill. The forest is part of a larger area of indigenous vegetation that extends onto the adjoining property.

## Plant Communities:

Two main plant communities are present: kanuka forest on the gentler slopes south of the stream and hardwood forest on the steeper slopes north of the stream. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

### Kanuka forest:

The canopy of this part of the forest is dominated by kanuka, with the trunk diameters (at breast height) of most trees between 15 and 25 cm, but with the occasional larger tree (30 to 40 cm). Other canopy species are native jasmine, *Clematis forsteri* and occasional mahoe.

The forest understorey is relatively open at the lower (eastern) edge of the forest and gets progressively denser further into the forest. Dominant understorey species are *Coprosma rotundifolia* and *Coprosma rhamnoides*. Other understorey species present are mahoe, *Calystegia tuguriorum*, poroporo and *Coprosma tayloriae*.

The ground-cover at the lower eastern end is predominantly pasture grasses\* with pennywort, foxglove\*, burdock\* and black nightshade\*. Other groundcover species present further into the forest are prickly shield fern, thousand-leaved fern, *Hypolepis ambigua*, *Blechnum penna-marina*, necklace fern, *Asplenium richardii*, *Cardamine* sp., *Lagenifera* sp., hairy pennywort and seedlings of wineberry, marbleleaf, fuchsia, mahoe, lemonwood, pate, broadleaf, five-finger, *Coprosma rotundifolia*, *Coprosma rhamnoides*, Himalayan honeysuckle\* and blackberry\*. Gorse\* is present on the lower forest margin.

### Mixed hardwood forest:

The forest canopy on the south-facing slopes is dominated by lemonwood, mahoe, fuchsia and kanuka. Other canopy species are five-finger, wineberry, broadleaf, marbleleaf, lancewood, native jasmine and bush lawyer. Understorey species are *Coprosma rotundifolia*, *Coprosma rhamnoides*, *Coprosma tayloriae*, matipo, mahoe, horopito, mapou, fuchsia, lancewood, five-finger, broadleaf, lemonwood, supplejack, wheki-ponga, soft tree fern, silver fern, *Clematis forsteri*, *Calystegia tuguriorum* and bush lawyer.

Ground-cover species present are mountain kiokio, crown fern, *Blechnum chambersii*, *Blechnum procerum*, *Blechnum fluviatile*, hard fern, hound's tongue fern, hen and chicken's fern, prickly shield fern, filmy fern, *Leptopteris hymenophylloides*, bush lily, poroporo, bidibid, *Uncinia* sp., *Carex* sp. and seedlings of fuchsia, wineberry, marbleleaf, kanuka, mahoe, mapou, five-finger, lemonwood, horopito, *Coprosma rotundifolia*, native jasmine and blackberry\*.

Additional species present on the forest margin or in forest openings are koromiko, pohuehue, gorse\*, elderberry\*, tutsan\* Himalayan honeysuckle\*, hawthorn\* and wire moss.

Additional species present near the stream are a single kahikatea tree (trunk diameter 41 cm), pate, *Blechnum fluviatile*, *Blechnum penna-marina*, thousand-leaved fern, *Hypolepis ambigua*, *Leptopteris hymenophylloides*, *Calystegia tuguriorum*, pennywort, *Lagenifera* sp., *Carex* sp. and Himalayan honeysuckle\*. Common alder\* trees are present at the lower (eastern) end of the site.

## Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, rifleman, shining cuckoo and kereru (NZ pigeon).

**Notable Flora, Fauna and Habitats:**

Important features of this area are the presence of a podocarp (kahikatea) tree, locally uncommon plant species (wheki-ponga, soft tree fern, silver fern and supplejack), habitat for an at-risk bird species (rifleman), good quality forest bird habitat and the contribution the area makes to fauna habitat in the wider area.

**Notable Plant and Animal Pests:**

Hawthorn and elderberry were the only significant plant pests observed; though both species are uncommon. Common alder trees are emergent from the forest at the lower end of the area, though are not spreading (Nigel Patrick, *pers. comm.*). Animal pests were not surveyed, though pigs and possums are likely to be present.

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

The area is buffered by its location on a damp south-facing slope and by other areas of indigenous vegetation on upper slopes (on the adjacent property). It is linked by regenerating or low-stature vegetation to other areas of indigenous vegetation on Waitohi Hill.

**Condition and Management Issues:**

The forest is in good condition, with a diverse range of indigenous plant species. Monitoring of woody weeds, such as common alder and hawthorn, and control of animal pests, such as pigs and possums, are likely to be necessary to retain the ecological values of the area in the long term.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of regenerating indigenous forest typical of the ecological district and containing species representative of the original forest canopy, notably kahikatea.
Rarity	M	Supports four locally uncommon plant species and provides good habitat for forest birds, including at-risk species (rifleman).
Diversity and pattern	M	A relatively diverse forest community with two main vegetation types and streamside species.
Distinctiveness/special features	M	The presence of podocarps (kahikatea) and three species of tree fern are notable features.
<b>Other Criteria</b>		
Size/shape	M/H	A moderate-sized area with a good shape and well buffered.
Connectivity	M	Part of a network of fauna habitat in the area; adjoins other indigenous forest.
Long-term Sustainability	M	Some plant and animal pest control is probably required to maintain the ecological values in the long term.

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

This SNA has been informally protected by the landowner. It has limited potential for farm development.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of a podocarp (kahikatea) tree, locally uncommon plant species (wheki-ponga, soft tree fern, silver fern and supplejack), habitat for an at-risk bird species (rifleman), good quality forest bird habitat and the contribution the area makes to fauna habitat in the wider area.

# TIMARU DISTRICT SNA SURVEY

AREA 160a

**Area Name:** Patrick Waitohi Hill kanuka forest  
**Location (central map reference):** J38: 587-758  
**Ecological District:** Orari  
**Surveyors:** Mike Harding

**Property:** Nigel Patrick  
**Nearest Locality:** Gapes Valley  
**Area Size (ha):** 2.55      **Altitude (m):** 240-300  
**Survey Time:** 2 hours      **Survey Date:** 04-12-09

## General Description:

This SNA lies on a moderately steep southwest-facing slope at the western boundary of the property on the lower southern slopes of Waitohi Hill. It adjoins a pine plantation on the upper (northeast) boundary.

## Plant Communities:

Two main plant communities are present: kanuka forest at the southeast end and mixed hardwood forest at the northwest end. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

### Kanuka forest:

The forest canopy here is dominated by kanuka, with trunk diameters (at breast height) of the larger trees between 20 and 25 cm. Other canopy species present are fuchsia, mahoe, mapou, marbleleaf, native jasmine, clematis, bush lawyer and pohuehue.

The forest understorey is dominated by *Coprosma rhamnoides* and *Coprosma rotundifolia*. Other understorey species are mahoe, pate, lancewood, matipo, *Coprosma tayloriae* and *Clematis forsteri*. Ground cover species are hairy pennywort, necklace fern, *Asplenium richardii*, *Asplenium hookerianum*, common shield fern, bidibid, *Cardamine* sp. and seedlings of mahoe, native jasmine, five-finger, broadleaf, matipo, lancewood, mapou, wineberry, hawthorn\* and blackberry\*.

Species commonly present at the forest margin or in forest openings are *Coprosma rotundifolia*, matipo, lemonwood, poroporo, *Hypolepis ambigua*, *Blechnum fluviatile*, foxglove\* and burdock\*.

### Mixed hardwood forest:

The canopy of this western part of the forest is dominated by mahoe, lemonwood and five-finger. Other canopy species are fuchsia, matipo, marbleleaf, broadleaf, kanuka and occasional narrow-leaved lacebark. Understorey species are *Coprosma rotundifolia*, *Coprosma rhamnoides*, mahoe, five-finger, lemonwood, matipo, koromiko, clematis, pohuehue, native jasmine and bush lawyer.

Groundcover species present are hen and chickens fern, mountain kiokio, *Blechnum chambersii*, *Blechnum fluviatile*, necklace fern, *Asplenium hookerianum*, hound's tongue fern, prickly shield fern, bush lily, *Libertia ixioides*, *Carex* sp., foxglove\* and seedlings of mahoe, mapou, five-finger and *Coprosma rotundifolia*. Other species present at the forest margin or in forest openings are poroporo and Himalayan honeysuckle\*.

Additional canopy species present along the stream (adjacent to both forest types) are kahikatea (two trees with trunk diameters of 39 and 63 cm), wineberry and lancewood.

Additional understorey and groundcover species along the stream are kaikomako, horopito, turepo, cabbage tree, tutsan\*, crown fern, *Blechnum penna-marina*, *Pellaea rotundifolia*, thousand-leaved fern, *Hypolepis rufobarbata*, male fern\*, hookgrass and pennywort.

Additional species present on the lower forest margin are *Coprosma propinqua*, gorse\*, elderberry\*, scrub pohuehue, *Calystegia tuguriorum* and, at the southeast end, an unidentified exotic climber.

## Birds/Fauna Observed:

Native birds observed during this brief survey were kereru (NZ pigeon), fantail, shining cuckoo, grey warbler and bellbird.

## Notable Flora, Fauna and Habitats:

Important features of this area are the diversity of plant species, the presence of podocarp (kahikatea) trees, locally uncommon plant species (*Libertia ixioides* and *Hypolepis rufobarbata*), good quality forest bird habitat and the contribution the area makes to the network of fauna habitat in the wider area.

**Notable Plant and Animal Pests:**

The area is relatively free of invasive plant pests. A single hawthorn seedling was observed (and removed) from within the forest. Small elderberry bushes are present near the stream. An unidentified exotic climber is present at the lower (southeast) end of the area where it is smothering shrubs on the forest margin though is apparently not spreading (Nigel Patrick, *pers. comm.*). Animal pests were not surveyed, though pig rooting was observed, notably along the stream at the western end of the area.

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

This area of forest is buffered along its upper margin by a pine plantation. It is fenced along the other boundaries, though the fence at the western (property) boundary does not appear animal (pig) proof. The forest community extends, in a more depleted form, up the small gully on the adjoining property.

**Condition and Management Issues:**

The forest is in good condition, with a relatively healthy understorey and good diversity of understorey and ground cover plant species. The main management issues are protection of the area from browsing animals, especially pigs and possums, and removal or monitoring of the smothering vine at the lower edge of the area.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	<b>M/H</b>	A good example of regenerating indigenous forest typical of the ecological district and containing species representative of the original forest canopy, notably kahikatea.
Rarity	<b>L/M</b>	Supports two locally uncommon plant species and provides good habitat for forest birds.
Diversity and pattern	<b>M</b>	A relatively diverse forest community with two main vegetation types and streamside species.
Distinctiveness/special features	<b>M</b>	The presence of podocarps (kahikatea) is a notable feature.
<b>Other Criteria</b>		
Size/shape	<b>M</b>	A small area though with a good shape and well buffered.
Connectivity	<b>M</b>	Part of a network of fauna habitat in the area.
Long-term Sustainability	<b>M</b>	Some plant and animal pest control is probably required to maintain the ecological values in the long term.

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

This SNA has been fenced and informally protected by the landowner. It has limited potential for farm development.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the diversity of plant species, the presence of podocarp (kahikatea) trees, locally uncommon plant species, good quality forest bird habitat and the contribution the area makes to the network of fauna habitat in the wider area.



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

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

Common Name .....	Scientific name
(* = naturalised species)	
bidibid .....	<i>Acaena</i> sp.
blackberry* .....	<i>Rubus fruticosus</i>
black nightshade* .....	<i>Solanum nigrum</i>
broadleaf .....	<i>Griselinia littoralis</i>
burdock* .....	<i>Arctium minus</i>
bush lawyer .....	<i>Rubus cissoides</i>
bush lily .....	<i>Astelia</i> sp.
cabbage tree/ti rakau .....	<i>Cordyline australis</i>
clematis .....	<i>Clematis paniculata</i>
common alder* .....	<i>Alnus glutinosa</i>
common shield fern .....	<i>Polystichum richardii</i>
crown fern .....	<i>Blechnum discolor</i>
elderberry* .....	<i>Sambucus nigra</i>
filmy fern .....	<i>Hymenophyllum</i> sp.
five-finger .....	<i>Pseudopanax arboreus</i>
foxglove* .....	<i>Digitalis purpurea</i>
fuchsia .....	<i>Fuchsia excorticata</i>
gorse* .....	<i>Ulex europaeus</i>
hairy pennywort .....	<i>Hydrocotyle moschata</i>
hard fern .....	<i>Paesia scaberula</i>
hawthorn* .....	<i>Crataegus monogyna</i>
hen and chickens fern .....	<i>Asplenium bulbiferum</i>
Himalayan honeysuckle* .....	<i>Leycesteria formosa</i>
hookgrass .....	<i>Uncinia</i> sp.
horopito/pepperwood .....	<i>Pseudowintera colorata</i>
hound's tongue fern .....	<i>Microsorium pustulatum</i>
kahikatea/white pine .....	<i>Dacrycarpus dacrydioides</i>
kaikomako .....	<i>Pennantia corymbosa</i>
kanuka .....	<i>Kunzea ericoides</i>
koromiko .....	<i>Hebe salicifolia</i>
lancewood .....	<i>Pseudopanax crassifolius</i>
lemonwood .....	<i>Pittosporum eugenioides</i>
lowland ribbonwood .....	<i>Plagianthus regius</i>
mahoe/whiteywood .....	<i>Meliclytus ramiflorus</i>
male fern* .....	<i>Dryopteris filix-mas</i>
mapou .....	<i>Myrsine australis</i>
marbleleaf/putaputaweta .....	<i>Carpodetus serratus</i>
matai/black pine .....	<i>Prumnopitys taxifolia</i>
matipo/kohuhu .....	<i>Pittosporum tenuifolium</i>
mountain beech .....	<i>Nothofagus solandri</i> var. <i>cliffortioides</i>
mountain kiokio .....	<i>Blechnum montanum</i>
narrow-leaved lacebark .....	<i>Hoheria angustifolia</i>
native jasmine .....	<i>Parsonsia</i> sp.
necklace fern .....	<i>Asplenium flabellifolium</i>
pate .....	<i>Schefflera digitata</i>
pennywort .....	<i>Hydrocotyle</i> sp.
pohuehue .....	<i>Muehlenbeckia australis</i>
poroporo .....	<i>Solanum laciniatum</i>
prickly shield fern .....	<i>Polystichum vestitum</i>
scrub pohuehue .....	<i>Muehlenbeckia complexa</i>
silver fern .....	<i>Cyathea dealbata</i>
soft tree fern .....	<i>Cyathea smithii</i>
supplejack .....	<i>Ripogonum scandens</i>

thousand-leaved fern .....	<i>Hypolepis millefolium</i>
totara .....	<i>Podocarpus totara</i>
turepo .....	<i>Streblus heterophyllus</i>
tutsan* .....	<i>Hypericum androsaemum</i>
wheki-ponga.....	<i>Dicksonia fibrosa</i>
wineberry .....	<i>Aristolelia serrata</i>
wire moss .....	<i>Polytrichum juniperinum</i>