

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

HAMILTON PROPERTY
(WAIHI GORGE)



Report prepared for the Timaru District Council by Mike Harding
December 2007

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owners: Noelene Hamilton
Valuation Reference: 24660/143.00
Address: 18 Sealy St, Timaru.
Location: On the south side of the Waihi River, in the foothills northwest of Woodbury.
Ecological Districts: Orari (though near the boundary of Geraldine Ecological District).
TDC Land Type: Hard Rock Hills and Downs.
Land Environments: Q2 (southeastern hill country).

ECOLOGICAL CONTEXT:

The property lies within the Orari Ecological District, though the terraces alongside the Waihi River have affinities with the Geraldine Ecological District. The main landforms on the property are small river terraces and moderately steep hill-slopes. The original vegetation of this area would have been predominantly podocarp-hardwood forest. Denser podocarp-hardwood (matai-totara-kahikatea-lowland ribbonwood) forest would have occupied older terraces and flats, tall kanuka-kowhai forest would have been present on recently disturbed surfaces and terrace scarps, and podocarp-hardwood (matai-totara) forest present on hill-slopes. 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.

Indigenous vegetation on the property comprises regenerating podocarp-hardwood forest (with remnant trees) on the higher terrace and hill-slope and areas of kanuka forest on the lower terrace and upper hill slopes. The property is quite close to other remnants of indigenous forest along the Waihi River and in the surrounding foothills. The property lies within the known range of the South Canterbury population of long-tailed bat, a nationally endangered species.

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during October 2007. All parts of the property were visited and assessed. Two areas are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria.

Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
594a	Hamilton Forest Remnant	J37: 611-876	6.6	podocarp-hardwood forest and kanuka forest
611a	Hamilton Kanuka Forest	J37: 612-878	1.9	kanuka forest

These SNAs are illustrated on the attached aerial photograph and described in greater detail in this report. Note that the boundaries of the areas are indicative, rather than precise. These SNAs 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). SNAs 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 an 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. SNAs will eventually be listed in the District Plan. 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 vegetation and habitat on the property were inspected but are not 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 it is not important for nature conservation or the protection of indigenous biodiversity; it simply means that the area (as assessed at this time) does not meet the criteria in the Timaru District Plan. One such area on the property is the scattered indigenous vegetation on the open terrace east of the house, which contains matagouri, a kahikatea tree and a *Coprosma virescens* shrub.

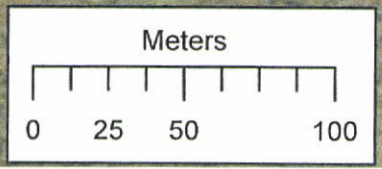
Hamilton Property
24660/143.00



611a



594a



1:2,500

TIMARU DISTRICT SNA SURVEY

AREA 594a

Area Name: Hamilton Forest Remnant
Location (central map reference): J37: 611-876
Ecological District: Orari
Surveyors: Mike Harding

Property: Hamilton
Nearest Locality: Woodbury
Area Size (ha): 6.6 Altitude (m): 320-400
Survey Time: 2½ hours Survey Date: 30-10-07

General Description:

This SNA occupies moderately steep slopes and parts of a high terrace on the south side of the Waihi River in the foothills inland from Geraldine.

Plant Communities:

Indigenous plant communities within this SNA are remnant podocarp-hardwood forest on the terrace and lower slopes and kanuka forest on the upper slopes. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Terrace forest:

The terrace forest is dominated by tall trees of narrow-leaved lacebark, lowland ribbonwood and matai. Other canopy trees present are broadleaf, lancewood and kowhai. Trunk diameters (at breast height) of these larger trees are: narrow-leaved lacebark, 40-85cm; lowland ribbonwood, 40-65cm; matai, 65-100cm; and, broadleaf, 103cm. These trees are within areas of mown grass, planted gardens and smaller areas of denser vegetation.

Other indigenous species present in this area are lemonwood, mahoe, mapou, horopito, fuchsia, *Lophomyrtus obcordata*, weeping mapou, cabbage tree, *Melicope simplex*, *Coprosma crassifolia*, *C. propinqua*, *C. rotundifolia*, *C. rigida*, *C. rhamnoides*, mistletoe (on *C. propinqua*, *C. rotundifolia*, *C. crassifolia*, *Melicope simplex* and horopito), native jasmine, *Calystegia tuguriorum*, pohuehue, prickly shield fern, hound's tongue fern, *Pellaea rotundifolia* and rough tree fern (though this may have been planted).

Weedy naturalised species present are violet* and Chilean flame creeper*.

Lower slope forest:

Taller forest on the lower slopes (beyond the lawn and gardens) has a canopy dominated variously by lowland ribbonwood, kowhai, totara, mapou and pohuehue. Other canopy species present are broadleaf, mahoe, fivefinger, lancewood, marbleleaf, narrow-leaved lacebark, pokaka, lemonwood, kanuka, hawthorn*, *Clematis foetida*, bush lawyer and native jasmine.

Dominant understorey species are *Coprosma rotundifolia* and mahoe. Other understorey species present are *Streblus heterophyllus*, *Lophomyrtus obcordata*, yellowwood, *Coprosma rigida*, *C. crassifolia*, *C. areolata*, fuchsia, shrubby mahoe and young kahikatea, matai and totara trees and saplings.

Important ground-cover species are prickly shield fern, hen and chickens fern, *Hypolepis ambigua*, *Pellaea rotundifolia*, *Blechnum fluviatile*, necklace fern, *Asplenium hookerianum*, hound's tongue fern, *Schizeilema trifoliatum*, violet* and seedlings of kowhai, cabbage tree, mahoe, lemonwood, narrow-leaved lacebark, mapou and native jasmine.

Species commonly present on the forest margin are elderberry*, fuchsia, pate, Chilean flame creeper*, *Coprosma rotundifolia*, native jasmine, *Calystegia tuguriorum*, bush lawyer, lawyer, horopito, wineberry, Himalayan honeysuckle*, periwinkle*, gooseberry*, bidibid, bracken, foxglove* and blackberry*.

Kanuka forest:

This forest occupies the mid and upper slopes, and has presumably become established following the earlier removal of the original podocarp-hardwood forest. Its canopy is dominated by kanuka trees with trunk diameters (at breast height) of 10 to 25cm. Other canopy or subcanopy species present are broadleaf, fivefinger, lemonwood, lancewood, kowhai and native jasmine.

The forest understorey is dominated by *Coprosma rhamnoides* and mapou. Other understorey species present are matipo, mahoe, cabbage tree, totara saplings, horopito, shrubby mahoe, mapou, yellowwood, *Coprosma crassifolia*, korokio, hawthorn*, Himalayan honeysuckle* and *Clematis marata*.

Ground-cover species present are necklace fern, hen and chicken's fern, hanging spleenwort, *Asplenium richardii*, *Pellaea rotundifolia*, hound's tongue fern, filmy fern, pennywort, violet* and seedlings of lemonwood, mahoe, mapou, lancewood, kowhai, broadleaf and native jasmine.

Other species present on dry rocky sites are *Coprosma propinqua*, *Asplenium appendiculatum*, leather-leaf fern, *Leptinella perpusilla* and gorse*.

This kanuka forest grades, at its upper boundary, to gorse*, blackberry* and planted pine trees at the property boundary.

Additional species present on the open grazed terrace at the northwest corner of the area are manuka, scrub pohuehue, *Melicytus* aff. *alpinus* and *Coprosma* sp. 't'. Indigenous species present outside the SNA, east of the driveway, are a few scattered plants of matagouri, a single young kahikatea tree and a single shrub of *Coprosma virescens*.

Birds/Fauna Observed:

Native birds observed during this brief inspection were kereru, grey warbler, bellbird and shining cuckoo.

Notable Flora, Fauna and Habitats:

Notable features of this SNA are the presence of tall canopy trees (including matai and totara) that are representative of the original forest cover, kereru (threat status: gradual decline), locally uncommon species (rough tree fern, *Coprosma areolata*, *Lophomyrtus obcordata* and shrubby mahoe), a diverse range of species and the contribution the area makes to fauna habitat in the area.

Notable Plant and Animal Pests:

The most important plant pests present are hawthorn, elderberry and Chilean flame creeper. Hawthorn and elderberry will probably not become much more dominant but their presence, with their bird-dispersed fruits, poses a threat to other indigenous forest remnants in the area. Chilean flame creeper poses a significant threat to the forest margins, but is notoriously difficult to control. Violet, periwinkle and Himalayan honeysuckle may pose a threat. Animal pests were not surveyed.

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

Most parts of the SNA are fenced and not grazed. The area is relatively well buffered by scrub and pines on its southern boundary and by fences on other boundaries. Forest on the drier upper slopes is vulnerable to wild fire, though the open grazed pasture on the lower boundaries provides some buffering. The SNA lies close to other areas of indigenous vegetation and habitat in the area, including Waihi Gorge Scenic Reserve (less than 250m distant), other SNAs and the Waihi River.

Condition and Management Issues:

Most parts of the forest are in good condition. Forest margins are affected by some naturalised weedy species and by the native climbing pohuehue (*Muehlenbeckia*). Dieback of adult mahoe was observed, though this may have been prompted by natural events (presumably cold winters). Continued removal of hawthorn and elderberry would benefit the area and containment of periwinkle would be a useful precaution. Monitoring to detect and remove any colonising plants of old man's beard or Darwin's barberry would be very worthwhile. Infestations of these species are present nearby and both pose a significant threat to indigenous forest.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of forest typical of the ecological district and containing canopy species representative of the original vegetation.
Rarity	M/H	Provides good habitat for kereru (threat status: gradual decline), especially the kowhai trees, potential habitat for long-tailed bat, and supports several plant species that are uncommon in the Orari Ecological District.
Diversity and pattern	M/H	A diverse range of species is present.
Distinctiveness/special features	M	The presence of large old canopy species, including matai and totara, is a notable feature. A number of lowland ribbonwood trees are present.
Other Criteria		
Size/shape	M	A relatively small area, but with a good shape and quite well buffered.
Connectivity	M	The area lies very close to other areas of indigenous vegetation and habitat and makes an important contribution to the vegetation and habitat in the Waihi River valley.
Long-term Sustainability	M	A relatively resilient area in which the ecological values will persist in the long term with minimal management.

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

This area has been informally protected and cared for by the landowner for many years. It adds considerable amenity value to the property and is clearly visible from Waihi Gorge Road.

Discussion:

This area easily meets the District Plan criteria for a Significant Natural Area (SNA). Its main attributes are the presence of tall canopy trees representative of the original forest cover, kereru, four locally uncommon plant species, a diverse range of species and the contribution the area makes to fauna habitat in the area.

TIMARU DISTRICT SNA SURVEY

AREA 611a

Area Name: Hamilton kanuka forest

Location (central map reference): J37: 612-878

Ecological District: Orari

Surveyors: Mike Harding

Property: Hamilton

Nearest Locality: Woodbury

Area Size (ha): 1.9

Altitude (m): 310

Survey Time: 1 hour

Survey Date: 30-10-07

General Description:

The SNA occupies a low terrace adjacent to the Waihi River in the foothills inland from Woodbury.

Plant Communities:

The SNA supports kanuka forest and a small area of podocarp-hardwood forest. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Kanuka forest:

This area of forest covers most of the SNA, occupying the low terrace alongside the Waihi River and a small part of the adjacent terrace nearer the road. It is dominated by tall kanuka trees. These trees are mostly multi-trunked, with trunk diameters (at breast height) generally between 10 and 20cm, and occasionally as large as 40cm. Other canopy species present are manuka (mostly near the river), kowhai, hawthorn*, pohuehue and native jasmine.

The forest understorey is mostly open. Understorey species occasionally present are kowhai, *Coprosma propinqua*, *C. rigida*, lawyer and mistletoe (on kanuka and *Coprosma propinqua*).

The ground-cover of the forest is dominated by pasture grasses. Also present are foxglove*, rushes (*Juncus* sp.), violet*, nettle* and pennywort.

In one area, at the downstream end of the SNA, is a denser patch of vegetation. Additional species present here are fivefinger, lancewood, fuchsia, *Coprosma rhamnoides*, necklace fern, *Asplenium richardii*, *A. hookerianum*, prickly shield fern and creeping pohuehue.

Scattered vegetation is present on the higher terrace nearer the road. Species present here are kanuka, matagouri, *Coprosma rigida*, *C. rugosa*, *Meliccytus* sp. (probably *Meliccytus* 'blondin') and mistletoe (on *Coprosma rigida*).

Podocarp-hardwood forest:

A small area of mixed forest is present on and around a stony terrace riser at the up-valley (west) end of the SNA. Canopy species present here are totara, lowland ribbonwood, kowhai, lancewood, hawthorn* and pohuehue. The lowland ribbonwood tree has a trunk diameter of 65cm.

Understorey species are fuchsia, horopito, *Coprosma rotundifolia*, *C. crassifolia*, plum*, Himalayan honeysuckle*, bush lawyer, native jasmine and gooseberry*.

Ground-cover species present are necklace fern, foxglove*, violet*, Chilean flame creeper* and self-sown potato*.

Birds/Fauna Observed:

Native birds observed during this brief inspection were bellbirds.

Notable Flora, Fauna and Habitats:

Notable features of this SNA are the presence of forest canopy species representative of the original river terrace vegetation, especially kanuka, kowhai, lowland ribbonwood, totara and five-finger, and the contribution the vegetation provides to riparian (river-side) habitat and buffering.

Notable Plant and Animal Pests:

The most important plant pests present are hawthorn, plum and Chilean flame creeper. The first two species have bird-dispersed fruits, so their presence threatens this and other indigenous vegetation in the area.

Chilean flame creeper is present elsewhere in this area. It can climb and smother vegetation. The native climber pohuehue (*Muehlenbeckia*) also climbs and smothers vegetation, especially forest margin trees.

Animal pests were not surveyed.

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

The area is unfenced and is grazed. It is buffered to some extent by the river on one boundary and a low terrace riser on the opposite boundary. It adjoins other similar areas of indigenous vegetation up-valley (west) and down-valley (east), and is close to indigenous vegetation across the river in Waihi Gorge Scenic Reserve and across the road in Area 594a. The Waihi River provides good habitat for blue duck, though blue ducks presently appear to be confined to the upper valley.

Condition and Management Issues:

The forest canopy is in good condition. The forest understorey is open and grazed. Important management issues are the control of introduced plants such as hawthorn and plum, and the effects of grazing on the forest understorey.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of the forest that was originally present at such sites in the ecological district.
Rarity	M	No rare species are present, though the forest may provide some habitat for kereru (threat status: gradual decline). This forest type is now relatively uncommon in the district.
Diversity and pattern	L/M	Species diversity is substantially reduced.
Distinctiveness/special features	M	This forest provides useful riparian protection and buffering.
Other Criteria		
Size/shape	M	A small area that is relatively well buffered.
Connectivity	M/H	The forest forms an ecologically-viable link between areas of forest upstream and downstream, and lies close to protected indigenous forest in Waihi Gorge Scenic Reserve.
Long-term Sustainability	M	Some management will be required to maintain the ecological values in the long term.

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

The area has been informally protected by the landowner. It adds amenity value to the property and provides shade and shelter for stock.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Its main attributes are presence of forest canopy species representative of the original river terrace vegetation, the contribution the vegetation provides to riparian (river-side) habitat and buffering and its proximity to other areas of indigenous vegetation which collectively provide important fauna habitat.

Scientific names of species cited by common name

Common Name	Scientific name
(* = naturalised species)	
bidibid	<i>Acaena</i> sp.
blackberry*	<i>Rubus fruticosus</i>
bracken	<i>Pteridium esculentum</i>
broadleaf	<i>Griselinia littoralis</i>
bush lawyer	<i>Rubus cissoides</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Chilean flame creeper*	<i>Tropaeolum speciosum</i>
creeping buttercup*	<i>Ranunculus repens</i>
creeping pohuehue	<i>Muehlenbeckia axillaris</i>
Darwin's barberry*	<i>Berberis darwinii</i>
elderberry*	<i>Sambucus nigra</i>
filmy fern	<i>Hymenophyllum</i> sp.
fivefinger	<i>Pseudopanax arboreus</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hawthorn*	<i>Crataegus monogyna</i>
hen and chickens fern	<i>Asplenium bulbiferum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
horopito/pepperwood	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
kanuka	<i>Kunzea ericoides</i>
korokio	<i>Corokia cotoneaster</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
leather-leaf fern	<i>Pyrrhosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
manuka	<i>Leptospermum scoparium</i>
mapou	<i>Myrsine australis</i>
marbleleaf/putaputaweta	<i>Carpodetus serratus</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mistletoe	<i>Ileostylis micranthus</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
native jasmine	<i>Parsonsia</i> sp.
necklace fern	<i>Asplenium flabellifolium</i>
nettle*	<i>Urtica</i> sp.
old man's beard*	<i>Clematis vitalba</i>
pate	<i>Schefflera digitata</i>
pennywort	<i>Hydrocotyle</i> sp.
periwinkle*	<i>Vinca major</i>
pohuehue	<i>Muehlenbeckia australis</i>
pokaka	<i>Elaeocarpus hookerianus</i>
prickly shield fern	<i>Polystichum vestitum</i>
rough tree fern	<i>Dicksonia squarrosa</i>
scrub pohuehue	<i>Muehlenbeckia complexa</i>
shrubby mahoe	<i>Melicytus micranthus</i>

totara	<i>Podocarpus totara</i>
violet*	<i>Viola odorata</i>
weeping mapou	<i>Myrsine divaricata</i>
wineberry	<i>Aristotelia serrata</i>
yellowwood.....	<i>Coprosma linariifolia</i>