TIMARU DISTRICT

SIGNIFICANT NATURAL AREAS SURVEY

WAIHI BUSH TRUST

Report prepared for the Timaru District Council by Mike Harding
August 2008

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: ..... Waihi Bush Trust
Valuation Reference: 24660/030.00
Address: ..... Burdon Road, Woodbury, RD 21, Geraldine
Location: ..... West of Burdon Road on the south side of the Waihi River, north of Woodbury.
Ecological District: ..... Geraldine Ecological District
TDC Land Type: ..... Plains
Land Environment: ..... N2 (well drained plains)

ECOLOGICAL CONTEXT:

The property lies in the northern part of the Geraldine Ecological District, on the outwash plain of the Waihi River. The original vegetation of this area would have been predominantly podocarp-hardwood forest, dominated by totara and/or kahikatea. Other important canopy species would have been matai, narrow-leaved lacebark, lowland ribbonwood, lemonwood, broadleaf and five-finger. Tall kanuka-kowhai forest and areas of matagouri-*Coprosma-Olearia* shrubland would probably have been present on disturbed surfaces, such as recent river flats and terrace scarps. 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.

The main area of indigenous vegetation on the property is Waihi Bush, a relatively large remnant of indigenous forest with original old podocarps (totara, kahikatea and matai). Other areas of forest on the property are predominantly strongly regenerating podocarp forest dominated by totara, most of which has probably grown since the original forests were logged in the 1850s. Forest on the property is part of a more extensive area of scattered to dense totara-dominated forest which stretches from the foothills at Waihi Gorge to near Woodbury. This forest is the most extensive area of totara forest remaining on the Canterbury Plains.

One notable plant species is present on the property: the newly-discovered *Melicytus* "Waihi". The property provides habitat for two threatened bird species: kereru and rifleman (both 'gradual decline') and severally locally-rare plant species. The property lies within the existing range of the South Canterbury population of long-tailed bat (threat status: 'nationally-endangered'). Bats were recorded on the property approximately ten years ago. Also recorded from the property, but not identified, was a mossy-green coloured weta, also approximately ten years ago (David Musgrave, *pers. comm.*).

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during February 2008. Four areas of indigenous forest on the property are regarded as a Significant Natural Areas (SNAs) when assessed against the District Plan criteria.

Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
2a	Waihi Bush	J37: 662-858	15.13	podocarp-hardwood forest
580a	Matai	J37: 660-852	0.53	podocarp-hardwood forest
581c	Totara	J37: 657-852	0.27	podocarp-hardwood forest
612	Waihi River kowhai	J37: 669-856	0.41	kowhai treeland

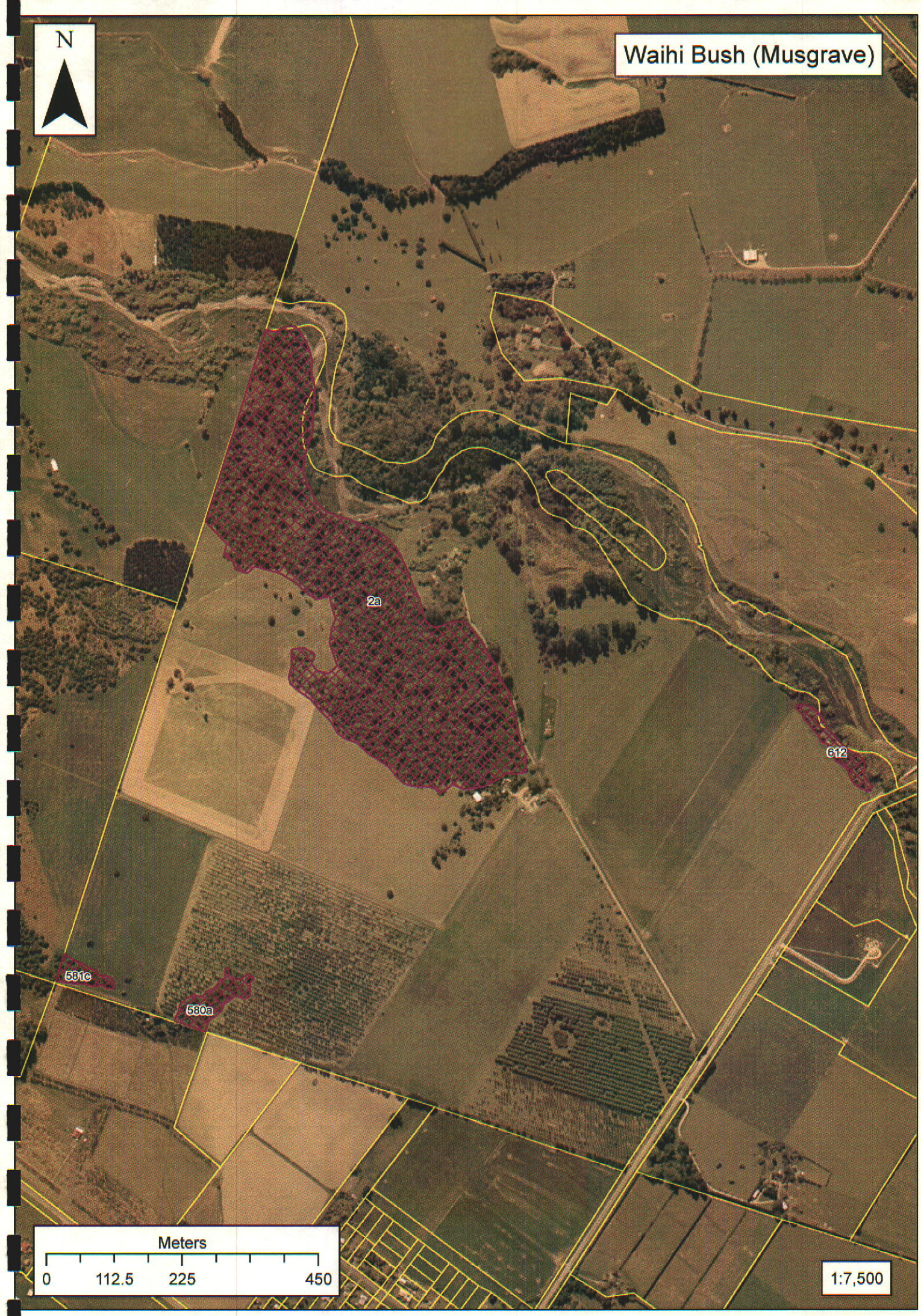
These SNAs are illustrated on the attached aerial photograph and described in greater detail in this report. These areas meet the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19) and are considered to be sustainable in the long term (criterion vii, page B19), though the smaller areas will require active management. 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. This does not normally prevent clearance to prevent shading of buildings or the maintenance of tracks and fences. To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. It is expected that 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 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 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.

The most important of these other areas of indigenous vegetation is a stand of large cabbage trees and scattered totara trees amongst large old pine trees southeast of the homestead. These trees provide useful habitat for birds. Retention and protection of these trees is desirable.


N
Waihi Bush (Musgrave)
2a
612
581c
580a
Meters
0
112.5
225
450
1:7,500

TIMARU DISTRICT SNA SURVEY

AREA 2a

Area Name: Waihi Bush
Location (central map reference): J37: 662-858
Ecological District: Geraldine
Surveyors: Mike Harding

Property: Waihi Bush Trust
Nearest Locality: Woodbury
Area Size (ha): 15.13 **Altitude (m):** 210-225
Survey Time: 7 hours **Survey Date:** 01-02-08 and 07-02-08

General Description:
Waihi Bush is a well known forest remnant protected by a QEII covenant. It is the largest remnant of indigenous forest in the Woodbury area, one of the largest in the Geraldine Ecological District and one of the few remnants of indigenous forest with large old podocarps in lowland Canterbury. While trees were logged from the forest many years ago, the remnant still supports very large old trees which pre-date human settlement of the area. It is one of the most significant areas of lowland forest in Timaru District. It lies just south of the Waihi River and just north of Woodbury.

Plant Communities:
Waihi Bush comprises remnant and regenerating podocarp-hardwood forest. It occupies three different-aged soils of at least two types: Waimakariri stony loam in the north and Mayfield silt loam in the south. The plant communities of Waihi Bush are described separately below for each of the three main soil types/ages. Naturalized (exotic) species are indicated with an asterisk*.

Northern part of Waihi Bush (recent Waimakariri soils):
This northern corner of Waihi Bush covers a low terrace adjacent to the Waihi River, including the forest around and west of a spring-fed pool (the 'Magic Pool'). The most obvious difference between this and other parts of Waihi Bush is the absence of large old podocarp trees, indicating that the forest here is younger.

The forest is dominated by totara trees emergent over a canopy of matai, kowhai, lowland ribbonwood, wineberry, broadleaf, five-finger, *Clematis foetida* and pohuehue. Trunk diameters at breast height (dbh) of the totara trees range between 50 and 90cm.
The forest subcanopy and understorey are dominated by mahoe and mapou. Other understorey species present are *Lophomyrtus obcordata*, shrubby mahoe, poataniwha, lemonwood, matipo, fuchsia, wineberry, horopito, pate, *Coprosma crassifolia*, *C. rotundifolia*, *C. rubra* and saplings of matai.
Groundcover species present are hen and chickens fern, hound's tongue fern, prickly shield fern, *Asplenium richardii*, necklace fern, *Pellaea rotundifolia*, bush lily, *Libertia ixioides*, sedge (*Carex* sp.), stinking iris*, bittersweet* and seedlings of kowhai, mapou and native jasmine.
Other species present at damper sites, such as around the Magic Pool are marbleleaf, mountain kiokio, *Blechnum chambersii* and seedlings of sycamore*.
Additional species present on the forest margin along the Waihi River are sycamore*, crack willow*, spindle tree*, *Calystegia tuguriorum*, blackberry*, black nightshade*, Chilean flame creeper*, gorse* and broom*.
Additional species on the northwest boundary of the forest along the fenced property boundary are barberry*, old man's beard*, elderberry*, sycamore*, cherry plum*, blackberry*, bracken and *Clematis marata*.
One old man's beard* seedling was observed (and removed) from the forest floor.

Additional species present in the part of the forest at or near the western boundary are emergent kahikatea (dbh: 110cm), cabbage tree, lancewood, Chilean flame creeper*, male fern* and seedlings of kaikomako.

Areas where the forest canopy is absent support dense tangled patches of low vegetation dominated by pohuehue, blackberry* and Chilean flame creeper*. Other species present in these open areas are bracken, prickly shield fern, male fern*, elderberry*, bittersweet* and occasionally saplings of sycamore*.

Central part of Waihi Bush (older Waimakariri soils):
This central part of Waihi Bush comprises areas of intact canopy with emergent trees interspersed with areas of low-stature broken-canopy vegetation. This mosaic of vegetation is apparently due in places to the effects of snow damage and in other places to the removal of patches of sycamore trees several years ago.

The forest canopy is dominated by totara, mahoe, lemonwood, broadleaf, lowland ribbonwood and kaikomako, with emergent kahikatea, matai and totara. The larger kahikatea trees have trunk diameters between 100 and 120cm; the larger matai trunk diameters are between 90 and 117cm; while the totara trunk diameters are generally smaller.
Other canopy or subcanopy trees are wineberry, narrow-leaved lacebark, *Lophomyrtus obcordata*, kowhai, five-finger, lancewood, cabbage tree and pohuehue.
The forest understorey is generally dominated by mahoe and frequently shrubby mahoe. Other understorey species present are *Coprosma rotundifolia*, *C. rubra*, *C. rigida*, *C. crassifolia*, lemonwood, lowland ribbonwood, wineberry, kowhai, broadleaf, pate, horopito, mapou, weeping mapou, matipo, poataniwha, fuchsia, spindle tree*, cherry plum*, elderberry*, Chilean flame creeper*, native jasmine, *Clematis foetida*, *C. marata*, leather-leaf fern, rarely narrow-leaved mahoe, and saplings of totara, matai and kahikatea.
Groundcover species are prickly shield fern, hen and chickens fern, hound's tongue fern, necklace fern, *Asplenium appendiculatum*, *Pellaea rotundifolia*, bush lily, bittersweet*, stinking iris*, male fern*, hookgrass (*Uncinia* sp.), moss, hairy pennywort, and seedlings of kaikomako, kowhai, mahoe, horopito, native jasmine and occasionally old man's beard*, rowan*, sycamore*, ash* and barberry*.

Forest openings are dominated by pohuehue, Chilean flame creeper* and blackberry*. Other species present in openings are pate, elderberry* and *Calystegia tuguriorum*.

Additional species present on the fenced forest margin are *Coprosma propinqua*, lawyer, barberry*, cherry laurel*, old man's beard*, elderberry*, gorse*, *Calystegia tuguriorum*, bidibid (*Acaena* sp.), mistletoe (on *Coprosma crassifolia*) and, at the western corner of the forest, a few plants of the newly-discovered *Melicytus* "Waihi".

Southern part of Waihi Bush (on Mayfield soils):
This southern part of Waihi Bush is characterised by very large old podocarps emergent over a very patchy forest canopy. The patches of low-stature vegetation between the taller canopied vegetation probably arise from the same influences as for the central part of the forest: snow damage and clearance of sycamore. This part of the forest supports most of the larger trees; trees that are hundreds, if not over a thousand, years old.

The emergent trees that dominate this part of the forest are tall with large trunk diameters: kahikatea 80 to 120cm; totara 150 to 220cm; and matai 80 to 100cm.
Other canopy and subcanopy species present are lemonwood, mahoe, lowland ribbonwood, narrow-leaved lacebark, kowhai, mapou, kaikomako, wineberry, cabbage tree, yellowwood and pohuehue.
The forest understorey is in most parts dominated by mahoe and shrubby mahoe. Other understorey species are *Coprosma crassifolia*, *C. rotundifolia*, *C. propinqua*, *C. rhamnoides*, poataniwha, lemonwood, kaikomako, lowland ribbonwood, mapou, horopito, pate, narrow-leaved mahoe, five-finger, lancewood, elderberry*, cherry plum*, *Clematis marata*, bush lawyer and in places saplings of matai.
Groundcover species present are hen and chickens fern, *Asplenium richardii*, hound's tongue fern, prickly shield fern, *Pellaea rotundifolia*, leather-leaf fern, bush lily, black nightshade*, bittersweet*, *Cardamine* sp., pennywort, hairy pennywort, moss, one patch of ivy* and seedlings of mahoe, shrubby mahoe, kowhai, native jasmine, cabbage tree and occasionally sycamore*.

Low stature vegetation is dominated by Chilean flame creeper*, pohuehue and blackberry*. Other species present are *Calystegia tuguriorum*, bracken, fuchsia, elderberry*, *Hypolepis ambigua*, prickly shield fern and male fern*.

Additional weed species present at the forest margin are a few plants of holly* and a patch of lesser periwinkle* near the start of the walking track.

Other species recorded as present on Brian Molloy's 1978 species list, but not recorded during this survey, are pokaka, *Neomyrtus pedunculata*, *Clematis paniculata* and *Dicksonia fibrosa*.

Birds/Fauna Observed:
Native birds observed during this inspection were grey warbler, bellbird, rifleman, fantail, kereru, kingfisher and harrier. Other native species that have been recorded are silvereye, brown creeper, karearea/falcon, shining cuckoo and, several years ago, tui.

Notable Flora, Fauna and Habitats:
Notable features of Waihi Bush are the presence and abundance of large old podocarps, the presence of a diverse range of indigenous species on different soil types, the presence of threatened species (kereru, rifleman, *Melicytus* "Waihi"), the habitat it provides for forest birds and possibly bats, its size and the important contribution it makes to the network of fauna habitat in the area.

Notable Plant and Animal Pests:
The most obvious and dominant plant pest present is the climbing Chilean flame creeper. Sycamore was previously common, but was largely removed by a control programme some years ago. Sycamore is still present, but only as saplings and seedlings and mostly in areas of low-stature vegetation. Other important woody weeds are barberry (mostly on the western forest margin), elderberry (throughout), holly (on the northeast margin), spindle tree, cherry plum, rowan, ash, cherry laurel and old man's beard (mostly scattered on western margin). Important herbaceous weeds are one patch of lesser periwinkle, one patch of ivy, stinking iris, bittersweet, black nightshade and male fern. Animal pests were not surveyed.

Boundaries (buffering, fencing, adjoining plant communities and habitats):
Waihi Bush is a relatively large patch of forest with a good shape for protection and management. It is fenced and formally protected by a QEII covenant. It has been protected for many years. It lies close to other smaller areas of indigenous vegetation.

Condition and Management Issues:
Waihi Bush is in relatively good condition. Over most of the bush, weeds are not common. Areas of broken canopy are suffering from the smothering effects of the native climber pohuehue, the exotic Chilean flame creeper and blackberry. Weeds that pose the greatest threat are sycamore, old man's beard, cherry plum, ivy and Chilean flame creeper. Unfortunately Chilean flame creeper is very difficult to control. The native pohuehue is also having a dramatic effect on the forest margin and in areas of low stature vegetation. Some control of this species may help forest recovery and survival. While blackberry is dominant in places, its presence should not prevent the regeneration of native species.

Property Owner Comment:
The Magic Pool, in the northern part of the forest, has been cleansed by a Maori representative and named "Te Puna Ora O Waihi". An eel was observed in the pool at this time.

Approximately ten years ago, a firewood contractor found several individuals of an unusual mossy-green coloured weta in old pine logs near the western boundary of the forest. This weta has not been recorded again, despite searches by the Musgraves and by local DOC staff. Long-tailed bats were recorded in the forest approximately ten years ago.

In an assessment of the forest some years ago, botanist Brian Molly concluded that the forest may have been milled from either side and that the central portion may have escaped the effects of logging. Only one saw-pit has been located in the forest.

A study by Lincoln University scientists[1] assessed food selection by kereru and bellbird in the forest during 1998. The authors found that although exotic species comprised only 4.3% of the total basal (trunk) area in the forest, they comprised 19.8% and 8.6% of feeding observations for kereru and bellbird respectively. However, the authors concluded that, given the diversity of native plant species present in the forest, removal of exotic plants is unlikely to limit the food resources available for kereru or bellbird during autumn and winter.

[1] Food selection by kereru and bellbird in a modified forest remnant, South Canterbury, New Zealand. A.R. Ridley, K-J Wilson, G.H Stewart. Ecology and Entomology Group, Soil, Plant and Ecological Sciences Division, Lincoln University. *Unpublished Research Paper*.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	**H**	A good, if not the best, example of the original vegetation of this part of the ecological district.
Rarity	**H**	Provides very good habitat for two threatened (gradual decline) species: kereru and rifleman. Provides excellent habitat for long-tailed bat (nationally endangered). Supports a small population of the newly-discovered *Melicytus* "Waihi". Forest of this type and condition is now rare in lowland Canterbury.
Diversity and pattern	**M/H**	Species diversity is greater than in most other remaining examples of this forest type and probably similar to that originally present.
Distinctiveness/special features	**H**	The best lowland forest remnant on an alluvial surface in the Geraldine Ecological District and one of the best remnants of lowland forest in Canterbury.
Other Criteria		
Size/shape	**H**	A large area for the ecological district and a good shape for protection and management.
Connectivity	**M/H**	Lies close to other smaller areas of indigenous forest (including SNA 2a across the Waihi River), provides an ecologically viable link between these areas and makes a very important contribution to the network of fauna habitat in the area.
Long-term Sustainability	**M/H**	Will require some ongoing management (weed and pest control) to maintain its ecological values in the long term.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):
Waihi Bush has been managed and protected by three generations of the Musgrave family and more recently formally protected by a QEII covenant. The landowners have spent considerable time and effort managing the forest to maintain its ecological values and have received public assistance recently for the control of sycamore. Waihi Bush is a very attractive feature of the property and an asset to the district. It has ecological importance beyond the district as a relatively intact example of lowland indigenous forest.

Discussion:
Waihi Bush very easily meets the District Plan criteria for a significant natural area. It is one of the most important forest remnants in Timaru District. Notable features are the presence and abundance of large old podocarps, the presence of a diverse range of indigenous species on different soil types, the presence of threatened species (kereru, rifleman, *Melicytus* "Waihi"), the habitat it provides for forest birds and possibly bats, its size and the important contribution it makes to the network of fauna habitat in the area.

TIMARU DISTRICT SNA SURVEY AREA 580a

Area Name: Matai
Location (central map reference): J37: 660-852
Ecological District: Geraldine
Surveyors: Mike Harding
Property: Waihi Bush Trust
Nearest Locality: Woodbury
Area Size (ha): 0.53 **Altitude (m):** 215
Survey Time: 20 mins **Survey Date:** 01-02-08

General Description:

This SNA is a small patch of podocarp-hardwood forest within a plantation of poplar trees near the southwest corner of the property. It lies close to a larger area of indigenous forest (SNA 581) on this property and the adjoining property.

Plant Communities:

The indigenous vegetation of this SNA comprises scattered to clumped canopy trees over pasture, with scattered understorey shrubs. Totara is the dominant canopy species. Other indigenous species present are matai, narrow-leaved lacebark, lawyer, pohuehue and mistletoe. *Coprosma crassifolia, Melicope simplex*, elderberry* and barberry* are present in the understorey. Silvereye and bellbird were observed during this brief inspection. Two kahikatea trees are present in a contiguous area of forest just across the property boundary. The area is surrounded by planted poplar trees.

Notable Flora, Fauna and Habitats:

Important features of this area of forest are the presence of podocarps (totara and matai) in the forest canopy, its position close to a larger area of similar forest and the contribution the forest makes to the network of fauna habitat in this area.

Notable Plant and Animal Pests:

Barberry and elderberry were the only introduced woody species observed. These species, especially barberry, could become more dominant; though pose little threat to the forest canopy. The smothering effect of the native climber pohuehue may pose a threat. The presence of pasture grasses and grazing animals will affect the forest understorey and the regeneration of canopy species.

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

The SNA is relatively small, though it is contiguous with a smaller area of similar forest on the adjoining property and lies close to larger areas of indigenous forest. It is grazed and surrounded by planted poplar trees.

Condition and Management Issues:

The forest canopy is in relatively good condition, though the absence of regenerating canopy species in the understorey will affect the long term survival of the forest. Barberry is the most important plant pest present. A number of important plant pests (including old man's beard) are present nearby.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest that is typical of this part of the ecological district.
Rarity	M	No rare species were observed, though the forest provides habitat for threatened (gradual decline) species: kereru and rifleman.
Diversity and pattern	L/M	Species diversity is less than typically present in this forest type.
Distinctiveness/special features	M	Though small, the forest is part of an area of regionally important lowland indigenous forest in Canterbury.
Other Criteria		
Size/shape	M	A small area, though close to a larger area of similar forest and partially buffered by planted poplar trees.
Connectivity	M	Part of a network of fauna habitat in the Woodbury-Waihi Gorge area.
Long-term Sustainability	L/M	Active management will be required for the long term survival of this forest.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):
This area of forest has been deliberately retained by the landowners. Retention of this area of forest precludes development of this area (such as plantation forestry), though it covers only a small part of the property.

Discussion:
This area meets the District Plan criteria for a Significant Natural Area. Although small, it is part of one of the most valuable areas of indigenous forest in Timaru District. Notable features are the presence of podocarps (totara and matai) in the forest canopy, its position close to a larger area of similar forest and the contribution the forest makes to the network of fauna habitat in this area.

TIMARU DISTRICT SNA SURVEY — AREA 581c

Area Name: Totara
Location (central map reference): J37: 657-852
Ecological District: Geraldine
Surveyors: Mike Harding
Property: Waihi Bush Trust
Nearest Locality: Woodbury
Area Size (ha): 0.27 **Altitude (m):** 215
Survey Time: 15 mins **Survey Date:** 01-02-08

General Description:
This SNA is a small patch of podocarp-hardwood forest at the southwest corner of the property. It is contiguous with a larger area of indigenous forest (SNA 581b) on the adjoining property.

Plant Communities:
This area was only inspected briefly from the adjacent paddock, as a large herd of curious cattle were present.

The indigenous vegetation of this SNA comprises a moderately dense stand of canopy trees over pasture, with scattered understorey shrubs. Totara is the dominant canopy species. Other indigenous species observed are matai, narrow-leaved lacebark, broadleaf, cabbage tree, bush lawyer, pohuehue and mistletoe. Weeping mapou is present in the understorey. Small clumps of gorse* are present near the forest margin.

Notable Flora, Fauna and Habitats:
Important features of this area of forest are the presence of podocarps (totara and matai) in the forest canopy, its position as part of a larger area of similar forest and the contribution the forest makes to the network of fauna habitat in this area.

Notable Plant and Animal Pests:
Gorse was the only introduced woody species observed; this poses little threat to the forest community. The smothering effect of the native climber pohuehue may pose a threat. The presence of pasture grasses and grazing animals will affect the forest understorey and the regeneration of canopy species.

Boundaries (buffering, fencing, adjoining plant communities and habitats):
The SNA is relatively small, though it is contiguous with a larger area of similar forest on adjoining properties. It is grazed, though fenced along two boundaries.

Condition and Management Issues:
The forest canopy is in relatively good condition, though the absence of regenerating canopy species in the understorey will affect the long term survival of the forest. No aggressive introduced plants were observed. A number of important plant pests (including old man's beard and barberry) are present nearby.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest that is typical of this part of the ecological district.
Rarity	M	No rare species were observed, though the forest provides habitat for threatened (gradual decline) species: kereru and rifleman.
Diversity and pattern	L/M	Species diversity is less than typically present in this forest type.
Distinctiveness/special features	M	Though small, the forest is part of an area of regionally important lowland indigenous forest in Canterbury.
Other Criteria		
Size/shape	M	A small area though linked to a larger area of similar forest and partially buffered by its location at the corner of the property.
Connectivity	M	Part of a network of fauna habitat in the Woodbury-Waihi Gorge area.
Long-term Sustainability	L/M	Active management would be required for the long term survival of this forest.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):
This area of forest has been deliberately retained by the landowners. Retention of this area of forest would preclude development of this area, though it covers only a small part of the property.

Discussion:
This area meets the District Plan criteria for a Significant Natural Area. Although small, it is part of one of the most valuable areas of indigenous forest in Timaru District. Notable features are the presence of podocarps (totara and matai) in the forest canopy, its position as part of a larger area of similar forest and the contribution the forest makes to the network of fauna habitat in this area.

North side of Area 581c

TIMARU DISTRICT SNA SURVEY AREA 612

Area Name: Waihi River Kowhai Treeland
Location (central map reference): J37: 669-856
Ecological District: Geraldine
Surveyors: Mike Harding

Property: Waihi Bush Trust
Nearest Locality: Woodbury
Area Size (ha): 0.41 **Altitude (m):** 200
Survey Time: ½ hour **Survey Date:** 07-02-08

General Description:
This SNA is a narrow strip of kowhai treeland at the property boundary alongside the Waihi River.

Plant Communities:
The indigenous vegetation of this SNA comprises evenly-spaced mature kowhai trees over pasture. Many of the trees are multi-trunked and some have splits or cavities. Trunk diameters (at breast height) range between 30 and 73cm; though most trunks are between 30 and 55cm.

Several cabbage trees are present amongst the kowhai. Trunk diameters of the cabbage trees range between 16 and 45cm. A single tall kanuka tree is present. The only other indigenous species present is pohuehue in some tree canopies, though it is not dominant. Several elderberry* trees are present.

The treeland understorey is dominated by pasture grasses. Other notable species present are burdock*, hemlock* and thistles*. Vegetation on the adjoining river berm is dominated by crack willow*, poplar*, elderberry*, blackberry*, gorse* and broom*.

Notable Flora, Fauna and Habitats:
Important features of this area of forest are the number of mature kowhai trees, the seasonal food resource these trees provide for kereru and bellbird and the contribution the forest makes to the network of fauna habitat in this area.

Notable Plant and Animal Pests:
Elderberry is the only introduced woody species observed within the kowhai treeland. A number of other weedy species are present in or adjacent to the treeland, but these species pose little threat to the treeland canopy. The native climber pohuehue may pose a threat if it becomes more dominant. The presence of pasture grasses and grazing animals will affect regeneration of kowhai.

Boundaries (buffering, fencing, adjoining plant communities and habitats):
This SNA is relatively small, though it is in effect buffered by tall exotic vegetation along the Waihi River. It is close to larger areas of indigenous forest (Area 2a). The area is fenced along the river boundary and grazed as part of a larger paddock.

Condition and Management Issues:
The kowhai and cabbage trees are in good condition, though the absence of young kowhai will affect the long term survival of the forest. The trunks of the cabbage trees have been affected by cattle. Elderberry is the most important plant pest present.

Property Owner Comment:
Hemlock has been controlled in this area. Interested in encouraging regeneration of indigenous species.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A depleted example of riparian kowhai forest; a good example of kowhai treeland.
Rarity	M	No rare species were observed, though kereru (gradual decline) utilise the forest. Kowhai treeland is a rare community in this part of the ecological district.
Diversity and pattern	L/M	Species diversity is less than typically present in this forest type.
Distinctiveness/special features	M/H	The kowhai trees provide a very important seasonal food resource for kereru. This is one of the best examples of kowhai treeland in the area.
Other Criteria		
Size/shape	M	A small area, though close to larger areas of indigenous forest and partially buffered by exotic trees along the river.
Connectivity	M	Part of a network of fauna habitat in the Woodbury-Waihi Gorge area.
Long-term Sustainability	L/M	Active management would be required for the long term survival of this treeland.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):
This area of treeland has been deliberately retained by the landowners. Retention of this area of treeland precludes development of this area (such as plantation forestry), though it covers only a small part of the property.

Discussion:
This area meets the District Plan criteria for a Significant Natural Area. Although small, it is unusual and is ecologically part of one of the most valuable areas of indigenous forest in Timaru District. Notable features are the number of mature kowhai trees, the seasonal food resource these trees provide for kereru and the contribution the forest makes to the network of fauna habitat in this area.

Northwest end of Area 612

Scientific names of species cited by common name

Common Name (* = naturalised species)	Scientific name
ash*	*Fraxinus excelsior*
barberry*	*Berberis glaucocarpa*
bay laurel*	*Laurus nobilis*
bittersweet*	*Solanum dulcamara*
blackberry*	*Rubus fruticosus*
black nightshade*	*Solanum nigrum*
bracken	*Pteridium esculentum*
broadleaf	*Griselinia littoralis*
broom*	*Cytisus scoparius*
burdock*	*Arctium minus*
bush lawyer	*Rubus cissoides*
bush lily	*Astelia* sp.
cabbage tree/ti rakau	*Cordyline australis*
cherry laurel*	*Prunus laurocerasus*
cherry plum*	*Prunus cerasifera*
Chilean flame creeper*	*Tropaeolum speciosum*
crack willow*	*Salix fragilis*
elderberry*	*Sambucus nigra*
five-finger	*Pseudopanax arboreus*
fuchsia	*Fuchsia excorticata*
gorse*	*Ulex europaeus*
hairy pennywort	*Hydrocotyle moschata*
hemlock*	*Conium maculatum*
hen and chickens fern	*Asplenium bulbiferum*
holly*	*Ilex aquifolium*
horopito/pepperwood	*Pseudowintera colorata*
hound's tongue fern	*Microsorum pustulatum*
ivy*	*Hedera helix*
kahikatea/white pine	*Dacrycarpus dacrydioides*
kaikomako	*Pennantia corymbosa*
kanuka	*Kunzea ericoides*
kowhai	*Sophora microphylla*
lacebark	*Hoheria sexstylosa*
lancewood	*Pseudopanax crassifolius*
lawyer	*Rubus schmidelioides*
leather-leaf fern	*Pyrrosia eleagnifolia*
lemonwood	*Pittosporum eugenioides*
lesser periwinkle*	Vinca minor
lowland ribbonwood	*Plagianthus regius*
mahoe/whiteywood	*Melicytus ramiflorus*
male fern*	*Dryopteris filix-mas*
mapou	*Myrsine australis*
marbleleaf/putaputaweta	*Carpodetus serratus*
matagouri	*Discaria toumatou*
matai/black pine	*Prumnopitys taxifolia*
matipo/kohuhu	*Pittosporum tenuifolium*
mistletoe	*Ileostylis micranthus*
mountain kiokio	*Blechnum montanum*
narrow-leaved lacebark	*Hoheria angustifolia*
narrow-leaved mahoe	*Melicytus lanceolatus*
native jasmine	*Parsonsia* sp.
necklace fern	*Asplenium flabellifolium*
old man's beard*	*Clematis vitalba*
pate	*Schefflera digitata*

pennywort	*Hydrocotyle* sp.
poataniwha	*Melicope simplex*
pohuehue	*Muehlenbeckia australis*
pokaka	*Elaeocarpus hookerianus*
poplar*	*Populus* sp.
prickly shield fern	*Polystichum vestitum*
rowan*	*Sorbus aucuparia*
shrubby mahoe	*Melicytus micranthus*
spindle tree*	*Euonymus europaeus*
stinking iris*	*Iris foetidissima*
sycamore*	*Acer pseudoplatanus*
totara	*Podocarpus totara*
weeping mapou	*Myrsine divaricata*
wineberry	*Aristotelia serrata*
yellowwood	*Coprosma linariifolia*