

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Mt Peel Holdings Limited and Waikari Hills (1989) Limited.
Valuation Reference: 24640/023.00 and 24640/022.00.
Address: Mt Peel Station Ltd, Peel Forest, RD 20, Geraldine.
Location: The northeast slopes of the Mt Peel/Tara Haoa Range, west of the Rangitata River, north of Peel Forest settlement.
Ecological Districts: Orari and High Plains ecological districts.
TDC Land Types: Hard Rock Hills and Downs and Plains.
Land Environments: Q2 (southeastern hill country), E1 and E3 (central dry foothills) and N2 (eastern South Island plains).

ECOLOGICAL CONTEXT:

Most parts of the property, on the slopes of the Mt Peel Range and associated foothills, lie within the Orari Ecological District. Areas on the gentler terraces associated with the Rangitata River lie within or on the boundary of the High Plains Ecological District. The main landforms on the property are moderately-steep hill slopes, gentle toe slopes, incised stream valleys and river terraces and flats. The original vegetation of lowland and montane parts of this area would have been predominantly podocarp-hardwood forest, possibly 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 (above 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 is presently found in the area.

Indigenous vegetation on the property complements the more extensive stands in the nearby Peel Forest Scenic Reserve and, together, comprises the largest area of lower-altitude podocarp-hardwood forest remaining in the District. Notable are remnant stands of podocarp-hardwood forest on the main terraces of the Rangitata River and in the associated incised gullies. Also notable are the size of some of the older podocarp trees, including a matai tree with a trunk diameter of 140 cm, totara (100 cm) and kahikatea (140 cm). One threatened plant species is present: Canterbury tree broom (*Carmichaelia torulosa*) (threat status: range restricted). In addition, several locally-uncommon plant species were observed on the property: *Streblus heterophyllus*, *Lophomyrtus obcordata*, *Coprosma areolata*, *Hebe amplexicaulis*, *Melicytus* "blondin", *Einadia allanii*, *Hypolepis rufobarbata*, *Lastreopsis glabella*, a large population of the herb *Australina pusilla* and the largest known population of prostrate kowhai in the District. Kereru (threat status: gradual decline) are present throughout the property and rifleman (gradual decline) were observed at several locations. The mature trees and relatively large patches of forest provide good habitat for these species and other forest birds. The property lies close to the existing range (Peel Forest) of the South Canterbury population of long-tailed bat. It is also adjoins habitat (in Lynn Stream) supporting a remnant population of blue duck. Both these species are regarded as nationally-endangered.

SIGNIFICANT NATURAL AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during August and November 2006. Nearly all parts of the property were visited and assessed. Twenty areas, totalling approximately 382 hectares, are regarded as significant when assessed against the District Plan criteria. Three higher-altitude areas in Parson Stream (Area 28b) and above the natural timberline on the Mt Peel Range-Coal Hill (areas 719a and b) make up a large part (204 ha) of the total area. The other 16 areas are predominantly small remnants of indigenous forest on lower altitude parts of the property. Some areas adjoin one another, and many are contiguous with or close to larger areas of indigenous vegetation that have been protected as public conservation land through the tenure review of Mt Peel and Waikari Hills pastoral leases. These 20 areas are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
26a,b	Chapmans Creek	J37: 665-092	29.6	Hardwood forest
27a	Church Gully	J37: 682-063	31.1	Podocarp-hardwood forest; kanuka forest
27b		J37: 685-067	6.2	Podocarp-hardwood forest; treeland
27c		J37: 675-069	2.3	Hardwood forest
28a,c,d	Lynn Stream		8.7	Hardwood forest
28b	Parson Stream	J37: 655-068	100.2	Hardwood forest; fernland; inaka scrub
666a	Middle Southern Spur	J37: 692-031	9.2	Hardwood forest
666c	Lower Southern Spur	J37: 692-037	10.4	Podocarp-hardwood forest
669b	Mid Rangitata Terrace		4.3	Podocarp-hardwood forest
670	North Rangitata Terrace	J37: 696-042	4.2	Podocarp-hardwood forest
673a		J37: 684-077	12.3	Podocarp-hardwood forest
673b		J37: 680-073	14.8	Podocarp-hardwood forest
714	Nth Branch Raules Gully	J36: 670-112	29.5	Hardwood forest
717	Boundary Stream	J36: 670-143	2.7	Scrub; shrubland; rockland
718	Upper Raules Gully	J36: 646-106	12.8	Hardwood forest; scrub
719a	Coal Hill	J36: 612-130	56	Tussockland; shrubland
719b	Mt Peel Range	J36: 642-095	47.6	Tussockland; shrubland

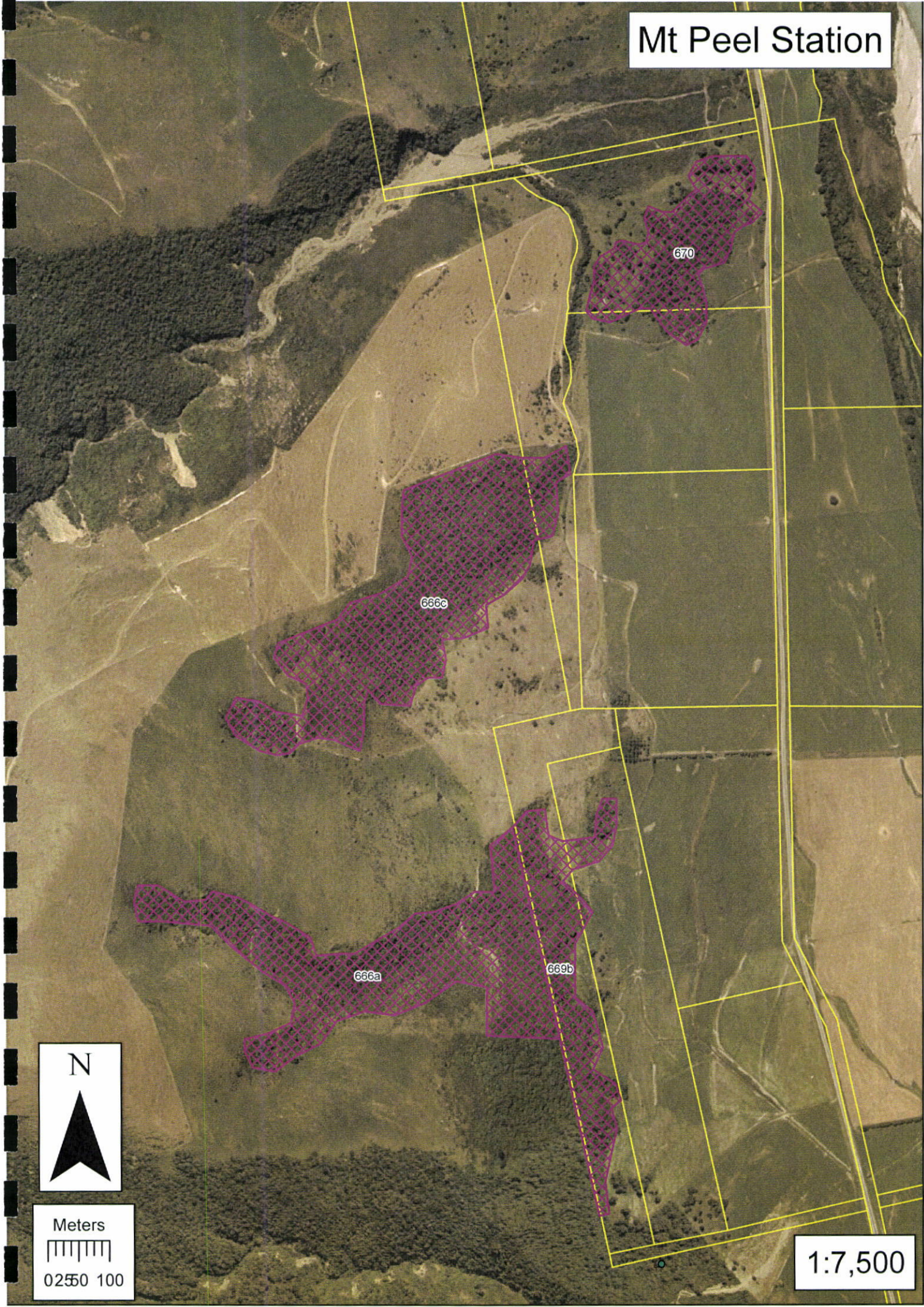
Areas of indigenous vegetation and/or habitat on the property that are identified as Significant Natural Areas (SNAs) are illustrated on the attached aerial photographs and described in greater detail on the Area Inspection Forms in this report. Note that the boundaries of the SNAs are indicative, rather 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). 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 the area. 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 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. Some of these areas have considerable potential value and, if left alone, may eventually become significant.

Mt Peel Station

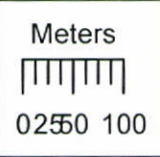


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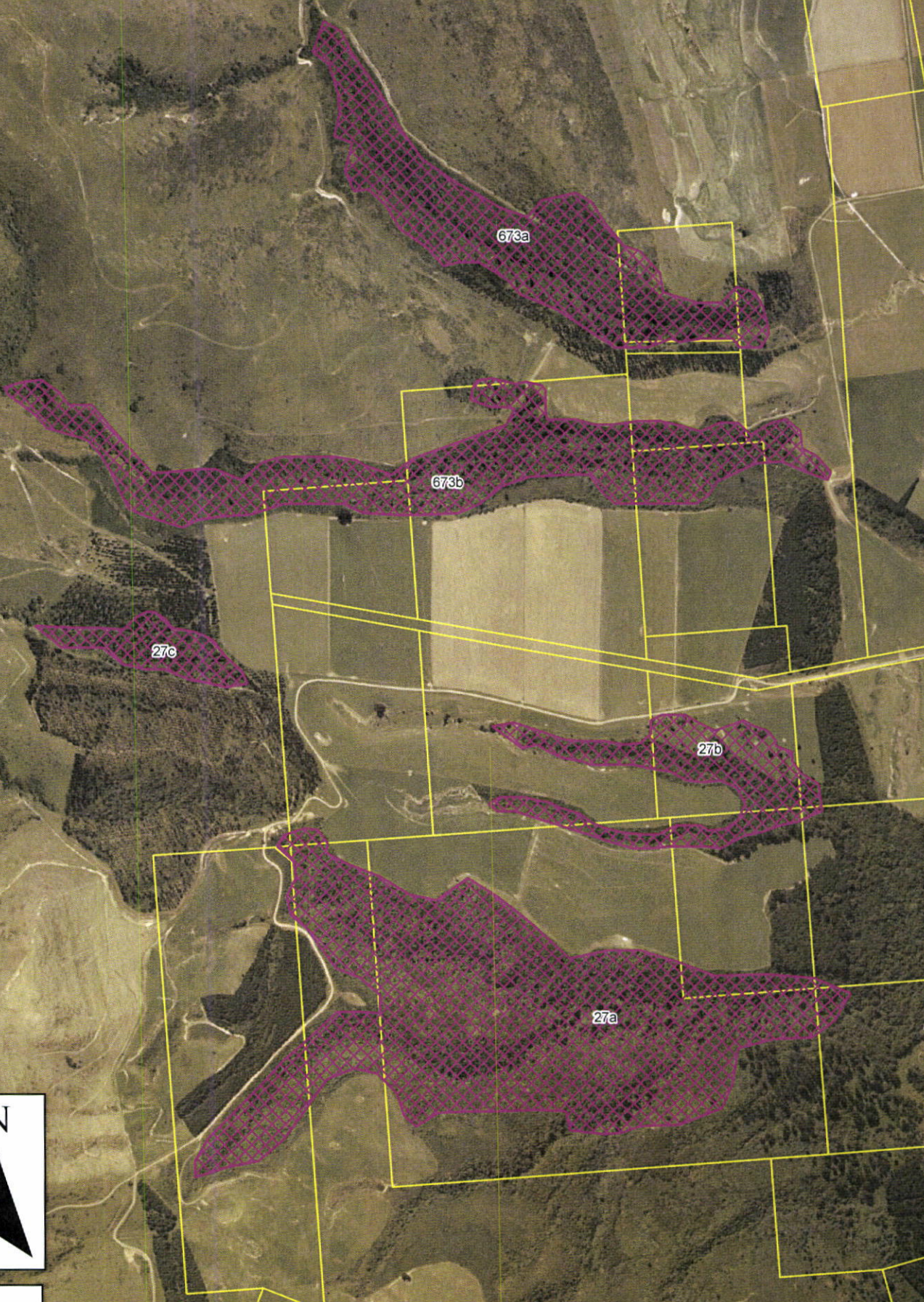
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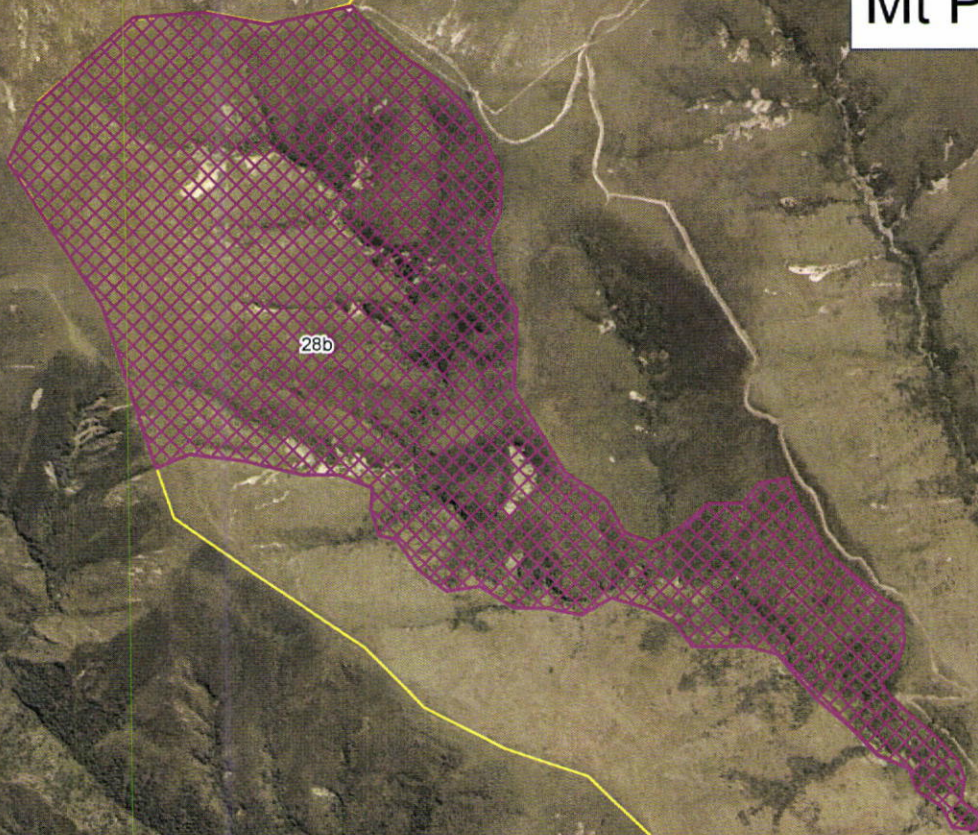
Mt Peel Station



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Mt Peel Station



28b



28c



28d



28a



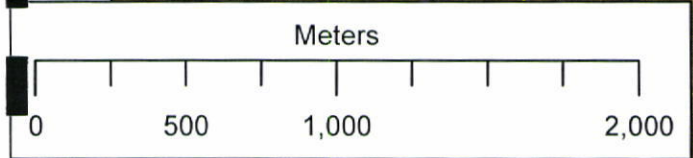
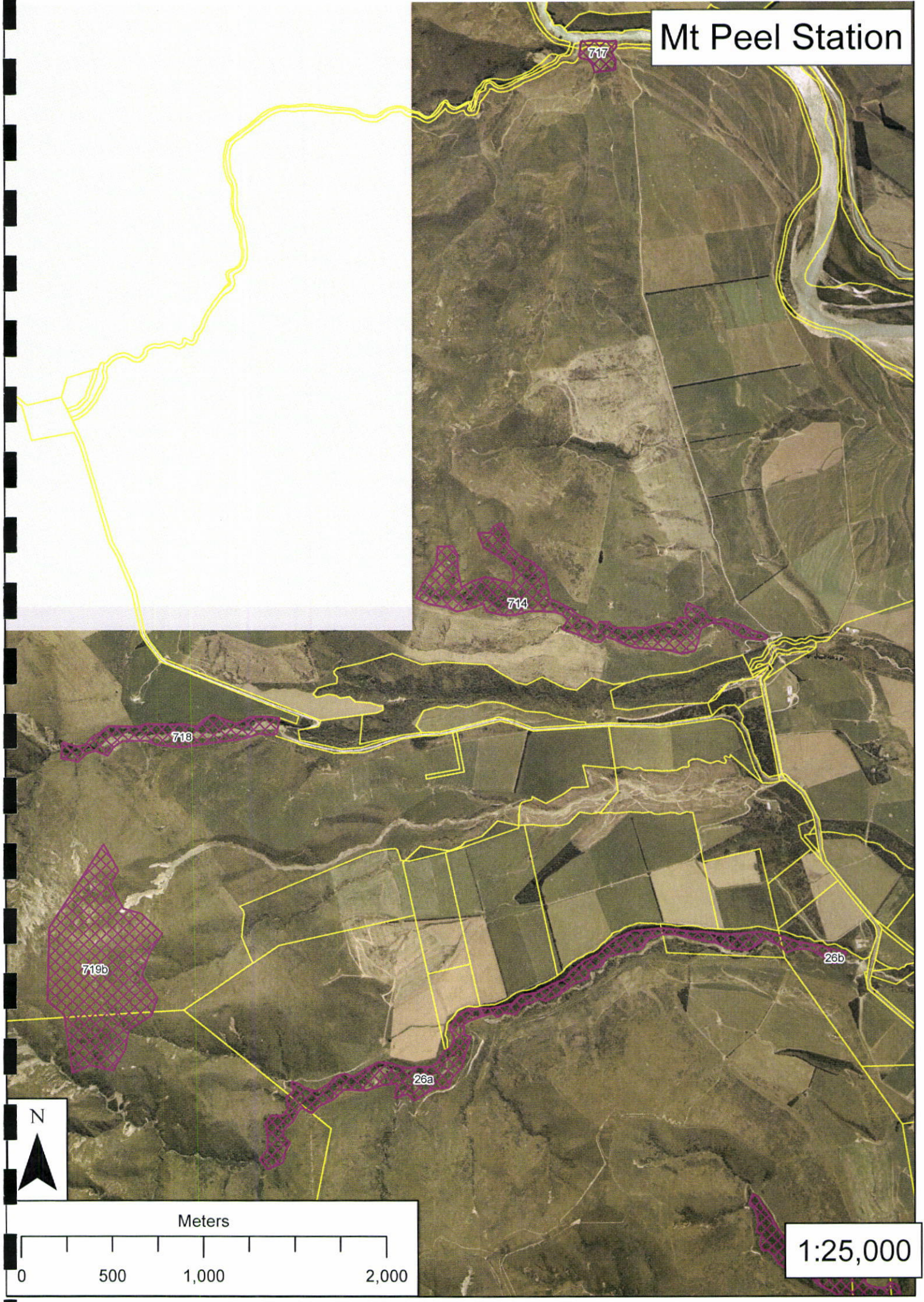
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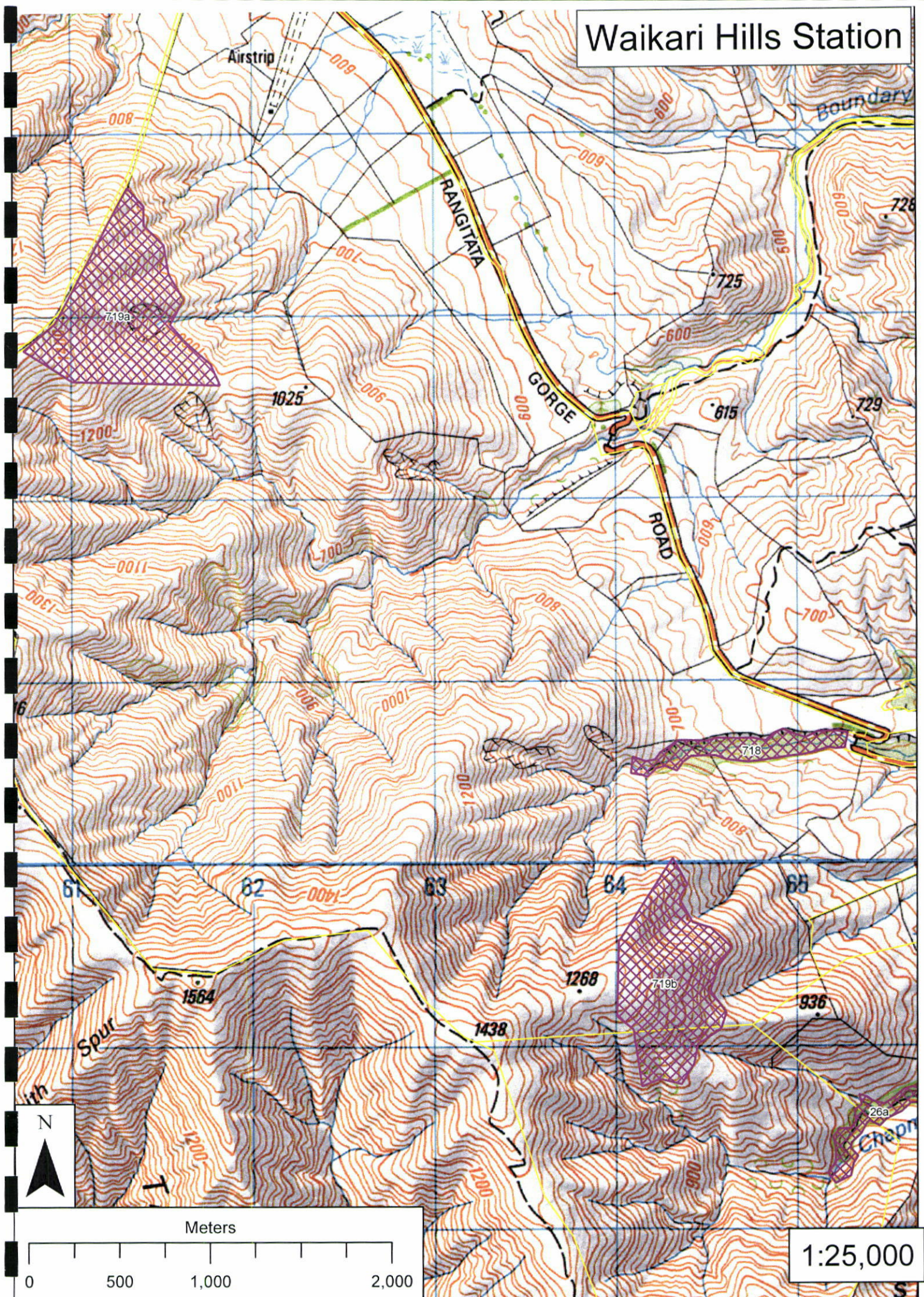
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Mt Peel Station



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Waikari Hills Station



TIMARU DISTRICT SNA SURVEY

AREA 26a and 26b

Area Name: Chapmans Creek

Location (central map reference): J37: 665-092

Ecological District: Orari

Surveyors: Mike Harding

Property: Mt Peel Station

Nearest Locality: Peel Forest

Area Size (ha): 29.6

Altitude (m): 400-660

Survey Time: 2 hours

Survey Date: 21-11-06

General Description:

This Area comprises a narrow strip of indigenous vegetation in the incised gully of Chapmans Creek on the north side of Mule Spur on the eastern flank of the Mt Peel Range. The Area provides a corridor of mostly-indigenous woody vegetation between Rangitata Gorge Road and areas on the upper slopes of the Mt Peel Range that are proposed for protection as public conservation land in the Preliminary Proposal for tenure review of Mt Peel Pastoral Lease.

Plant Communities:

The lower (eastern) part of the gully (Area 26b) is more modified; the upper (western) part of the gully (Area 26a) supports indigenous vegetation less affected by woody weeds and pohuehue. The plant communities of these areas are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Area 26a: Upper (western) gully forest:

The forest canopy is dominated by broadleaf, kowhai, mountain ribbonwood and matipo. Other canopy species present are cabbage tree, lancewood, fuchsia, five-finger, marbleleaf, pohuehue and, at two locations, Canterbury tree broom.

Understorey species are matipo, kowhai, pate, wineberry, horopito, mapou, weeping mapou, *Coprosma rigida*, *C. rhamnoides*, *C. rotundifolia*, *Helichrysum lanceolatum*, porcupine shrub, bush lawyer, *Calystegia tuguriorum* and native jasmine.

Ground-cover species are bush lily, prickly shield fern, *Polystichum richardii*, thousand-leaved fern, kiokio, mountain kiokio, hen and chickens fern, necklace fern, *Asplenium hookerianum*, *A. richardii*, *Blechnum penna-marina*, *B. chambersii*, *B. fluviatile*, hound's tongue fern, *Cystopteris tasmanica*, pennywort, *Pterostylis* sp. and hookgrass.

Additional species present on the forest margin and/or beside the creek are matagouri, broom*, gorse*, *Coprosma propinqua*, *C. rugosa*, mountain akeake, koromiko, mountain wineberry, native broom, bush snowberry, scrambling fuchsia, lawyer, scrub pohuehue, toatoa, mountain flax, golden speargrass, Himalayan honeysuckle*, tutu, bracken, grey willow*, *Lotus* sp.*, bidibid and *Epilobium melanocaulon*.

Area 26b: Lower (eastern) gully forest:

This narrow strip of forest has a canopy extensively covered by the indigenous climbing pohuehue. Canopy trees beneath or emergent from the pohuehue are kowhai, lemonwood, lowland ribbonwood, narrow-leaved lacebark, broadleaf, lancewood, fuchsia and matipo. The Area supports some very tall trees of lowland ribbonwood, narrow-leaved lacebark and kowhai.

The margins of the forest, along the stream, are dominated by broom*, with occasional *Coprosma propinqua* and weeping mapou and scattered wilding pine* and Douglas fir* trees. A pine shelterbelt is present at the terrace edge on the northern side of the Area.

Birds/Fauna Observed:

Indigenous birds observed were bellbird and grey warbler.

Notable Flora, Fauna and Habitats:

The presence of Canterbury tree broom and the length of the valley covered by indigenous vegetation are notable features of the Area.

Notable Plant and Animal Pests:

The indigenous climber, pohuehue, poses the greatest threat to the Area, especially to the tall forest in Area 26b where it is dominant in the forest canopy. Wilding trees of pine and Douglas fir, and grey willow, also pose a threat.

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

The Area is long and thin, though buffered to some extent by its location along an incised creek. Parts of the boundary are fenced, though the Area is grazed. The Area does not adjoin other areas of indigenous vegetation except at its upper end, though it does form a corridor of woody vegetation in an otherwise modified landscape.

Condition and Management Issues:

The lower part of the area (Area 26b) is in relatively poor condition, with a canopy partly smothered by pohuehue and margins affected by woody weeds, notably broom. The upper part of the Area (Area 26a) is in better condition, though would benefit from weed control (grey willow) and the exclusion of stock.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**Area 26a**

Primary Criteria	Rank	Notes
Representativeness	M	A modified example of indigenous forest typical of the ecological district.
Rarity	M	Supports a population of Canterbury tree broom (threat status: range restricted). Provides habitat for kereru.
Diversity and pattern	M	Species diversity is less than that originally present.
Distinctiveness/special features	M	Is part of a corridor of indigenous woody vegetation between the slopes of the Mt Peel Range and the Rangitata Valley.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is partly buffered.
Connectivity	M	Adjoins (soon to be) protected land at its upper boundary and provides a low-altitude extension to indigenous habitats in that area.
Long-term Sustainability	M	Some conservation management will probably be required to maintain its ecological values.

Area 26b

Primary Criteria	Rank	Notes
Representativeness	M	A modified example of indigenous forest typical of the ecological district.
Rarity	L/M	No rare plant species observed. Provides habitat for kereru.
Diversity and pattern	L/M	Species diversity is considerably less than that originally present.
Distinctiveness/special features	M	Is part of a corridor of indigenous woody vegetation between the slopes of the Mt Peel Range and the Rangitata Valley.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is partly buffered.
Connectivity	M	Adjoins Area 26a at its upper boundary and provides a low-altitude extension to indigenous habitats in that area.
Long-term Sustainability	L/M	Considerable conservation management will be required to maintain its ecological values.

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

This Area has been informally protected by its location in an incised gully, limiting its potential for development. The forest of Area 26b is threatened by the smothering pohuehue, though the main values are likely to persist with limited management, especially within Area 26a. No additional resources are required to implement effective protection, though control of pohuehue, wilding pines and grey willow and exclusion of stock would benefit the Area.

Discussion:

Area 26a easily meets the District Plan criteria for a Significant Natural Area; Area 26b also meets the criteria. Its main attributes are its size, the presence of Canterbury tree broom, the habitat it provides and its role as a corridor of indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 27a

Area Name: Church Gully

Location (central map reference): J37: 682-063

Ecological District: Orari

Surveyors: Mike Harding

Property: Mt Peel Station

Nearest Locality: Peel Forest

Area Size (ha): 31.1

Altitude (m): 340-500

Survey Time: 2 hours

Survey Date: 15-11-06

General Description:

This Area covers a large incised gully on the lower eastern flanks of the Mt Peel Range, just behind (west of) the Mt Peel Station farm buildings.

Plant Communities:

Tall remnant podocarp (kahikatea-totara) forest and associated hardwood forest dominate the lower gully. Regenerating hardwood forest is present on the upper sides of the gully, grading to low kanuka forest, hardwood scrub and exotic scrub on the upper southern gully side. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Podocarp-hardwood forest:

Tall old kahikatea, totara and matai trees are present in the lower gully, with occasional trees present on the gully sides. A large dense patch of younger kahikatea is present on the gully floor at the lower (east) end of the Area. Occasional sycamore* and ash* trees are also present in the lower gully. Two large matai trees on the gully side have a trunk diameters of approximately 100 cm each.

Other canopy species in this older forest (predominantly on the south-facing slopes) are lemonwood, mahoe, kowhai, lancewood, narrow-leaved lacebark, broadleaf, cabbage tree and pohuehue.

Dominant understorey species are mapou, mahoe, *Coprosma rotundifolia* and *Streblus heterophyllus*.

Also present in the understorey are kowhai, Darwin's barberry*, *Calystegia tuguriorum*, elderberry*, *Coprosma propinqua*, *C. rhamnoides*, *C. areolata*, horopito, *Melicope simplex*, bush lawyer, koromiko, Himalayan honeysuckle*, wineberry, marbleleaf, five-finger, fuchsia, scrambling fuchsia, pate, matipo and native jasmine.

Important ground-cover species are prickly shield fern, *Polystichum richardii*, hen and chickens fern, *Asplenium richardii*, *A. hookerianum*, *Hypolepis ambigua*, hound's tongue fern, *Pellaea rotundifolia*, *Lasteopsis glabella*, *Blechnum chambersii*, *B. fluviatile*, Darwin's barberry*, *Carex* sp. and, in places, seedlings of matai and kahikatea.

Also present near the stream are bush lily, pennywort, *Leptopteris hymenophylloides*, the uncommon fern *Hypolepis rufobarbata*, thousand-leaved fern, *Blechnum penna-marina*, foxglove* and a small patch of ivy*. Species common at or near the forest margin are broom*, gorse*, barberry*, Darwin's barberry*, hemlock*, weeping mapou, *Coprosma crassifolia* and pohuehue.

Kanuka-hardwood forest:

This forest is present on the lower north-facing slopes of the gully. The forest canopy is dominated by kanuka and mapou. The larger kanuka have trunk diameters of approximately 40 cm. Other canopy species present are pokaka, kowhai, lemonwood, broadleaf, matipo and lancewood.

The forest understorey is dominated by mahoe, *Coprosma rhamnoides*, horopito and, in places, Darwin's barberry*. Other understorey species present are yellowwood, marbleleaf, *Streblus heterophyllus*, *Coprosma rotundifolia*, *C. crassifolia*, five-finger, lancewood, wineberry, matipo, mapou, bush lawyer, *Clematis paniculata*, barberry* and occasionally matai and totara.

Important ground-cover species are *Polystichum richardii*, hound's tongue fern, hen and chickens fern, necklace fern, *Asplenium appendiculatum*, *A. hookerianum*, Darwin's barberry*, *Carex* sp. and, in places, abundant seedlings of kahikatea and less-commonly matai.

Exotic scrub:

The kanuka-hardwood forest described above, grades upslope on the southern side of the Area to a low dense scrub dominated by broom*. Other important species in the community are gorse*, Darwin's barberry* and barberry*. Also present, and occasionally emergent, are matipo, mapou, lancewood, mahoe, *Coprosma rhamnoides*, five-finger and lemonwood. Indigenous ground-cover species occasionally present are hound's tongue fern and necklace fern.

Regenerating hardwood forest:

The upper reaches of the gully, towards the western end of the Area, are dominated by low-canopied regenerating hardwood forest with occasional larger emergent trees. Important species in this community are matipo, broadleaf, lemonwood, cabbage tree, lancewood, kanuka, wineberry, kowhai and pohuehue. Species common at or near the forest margin are broom*, gorse*, Darwin's barberry*, bracken, Himalayan honeysuckle*, *Coprosma propinqua*, *Olearia bullata*, pohuehue and, in the northern branch of the gully near the road, several small sycamore* trees.

Birds/Fauna Observed:

Rifleman, grey warbler, kereru, fantail, bellbird, silvereye and shining cuckoo were observed. A falcon was observed flying over the area.

Notable Flora, Fauna and Habitats:

The size and abundance of kahikatea, totara and matai trees are notable features of the area. The larger trees are likely to be several hundred years old and therefore representative of the original forest in the area. Two matai trees have trunk diameters of c. 100 cm, which is large for South Canterbury. Several species that are uncommon in the Orari Ecological District are present, including pokaka, the small trees *Streblus heterophyllus* and *Coprosma areolata*, and the ferns *Hypolepis rufobarbata* and *Lastreopsis glabella*.

Notable Plant and Animal Pests:

Darwin's barberry, barberry, sycamore, ash and elderberry are the most important plant pests observed in the Area. Sycamore probably poses the greatest threat to indigenous plant communities in the Area, as it readily establishes within closed-canopy forest and can easily overtop and suppress indigenous forest. Sycamore appears to be common at the lower (down-valley) end of the Area and is also present at the upper edge of the Area. Darwin's barberry is already well established within the forest, especially on the drier north-facing slopes within the kanuka forest and broom scrub. Sign of possums, deer and pigs was observed in the Area.

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

The Area is very well buffered by its location in a steep-sided incised gully. The north and west boundaries of the Area are fenced. The east (down-valley) boundary adjoins dense tall exotic forest. The southern boundary grades to exotic (broom-dominated) scrub. The Area is close to other podocarp forest remnants in similar (though smaller) gullies to the north.

Condition and Management Issues:

The central part of the Area is in relatively good condition. The understorey is healthy, though in places quite open as a result of wild animal browsing and tracking. Darwin's barberry and elderberry appear to be present throughout, though are not dominant within the taller forest. The Area is well protected from domestic stock by deer-fences and/or dense exotic forest or scrub. Plant and animal pest control are the most important management issues, though eradication of the more aggressive naturalized species would be difficult.

Property Owner Comment:

The owners would like to extend an existing vehicle track across the gentler slopes on the south side of this Area, to provide recreational access to this part of the forest. This area is dominated by exotic scrub with regenerating indigenous species. The SNA boundary is down-slope (north) of this proposed track.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	A good example of the forest originally present in the area.
Rarity	M/H	Supports a very healthy population of the locally uncommon <i>Streblus heterophyllus</i> , and several other locally uncommon species.
Diversity and pattern	M/H	Species diversity is probably similar to that originally present.
Distinctiveness/special features	M/H	Provides very good habitat for kereru and other forest birds. May provide habitat for long-tailed bat.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is very well buffered.
Connectivity	M	Not connected to other areas of indigenous vegetation, but is part of a network of habitat in the area.
Long-term Sustainability	M	Relatively resilient, though threatened by plant pests, notably sycamore.

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

This Area has been informally protected by its location in a deeply-incised gully, limiting its potential for development. The Area is threatened by plant pests, notably sycamore, though its main values are likely to persist with limited management. No additional resources are required to implement effective protection, though control of aggressive weeds (sycamore, ash and Darwin's barberry) would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are its size, the presence of large stands of mature and regenerating podocarps (predominantly kahikatea) and the extent of habitat that it provides.

Condition and Management Issues:

The gully forests are in relatively poor condition. They are long and narrow and dominated in places by woody weeds. The treeland is a highly modified remnant of the original terrace forest. It has an understorey of pasture and will not survive beyond the life of the existing trees unless the understorey is managed to permit the regeneration of canopy species.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A depleted example of indigenous forest, though still supporting a good number of species representative of the original forest of the area.
Rarity	M	No rare plant species were observed. Provides good habitat for kereru.
Diversity and pattern	L/M	Species diversity is probably less than that originally present in the area.
Distinctiveness/special features	M	The number and size of the podocarp (especially kahikatea) trees is a special feature. Podocarps are uncommon on terrace sites in the District.
Other Criteria		
Size/shape	M/H	Moderate-sized and well buffered, but a poor shape.
Connectivity	M	Connected via exotic forest to other indigenous forest remnants. Part of a network of forest habitat in the area.
Long-term Sustainability	L/M	Active management will be required to maintain ecological values.

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

The forested part of this Area has been informally protected by its location in a deeply-incised gully system, limiting its potential for development. This part of the Area is threatened by plant pests, notably sycamore, and some weed control will probably be necessary to protect its main values in the long term. The terrace treeland occupies productive pasture, though the presence of the large trees does not prevent grazing.

Discussion:

The Area meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of large mature podocarps (predominantly kahikatea) and the habitat that it provides for species such as kereru.

TIMARU DISTRICT SNA SURVEY

AREA 27c

Area Name:	Property: Mt Peel Station		
Location (central map reference): J37: 675-069	Nearest Locality: Peel Forest		
Ecological District: Orari	Area Size (ha): 2.3	Altitude (m): 470-520	
Surveyors: Mike Harding	Survey Time: ½ hour	Survey Date: 15-11-06	

General Description:

This Area covers the south-facing slopes above a small gully at the upper end of the main terrace west of Mt Peel Station homestead, and west of Area 27b. It adjoins a planted stand of pine trees on its northern boundary.

Plant Communities:

The Area supports hardwood forest with a single kahikatea tree. This plant community is described below. Naturalized (exotic) species are indicated with an asterisk*.

The forest canopy is dominated by lowland ribbonwood, lemonwood, narrow-leaved lacebark, wineberry and fuchsia. Other canopy species are kowhai, kahikatea (one tree), mapou, lancewood and mountain ribbonwood.

Species present in the forest understorey are fuchsia, horopito, lowland ribbonwood, mahoe, marbleleaf, *Melicope simplex*, native jasmine, bush lawyer, *Coprosma rotundifolia* and elderberry*.

Ground-cover species are *Polystichum richardii*, thousand-leaved fern, *Blechnum fluviatile*, hen and chickens fern, *Asplenium richardii*, hound's tongue fern, pennywort and Darwin's barberry* seedlings.

Additional species on the forest margin are pohuehue, weeping mapou, koromiko, *Coprosma rigida*, *C. propinqua*, mistletoe (on *C. propinqua*), prickly shield fern, lawyer, *Calystegia tuguriorum* and Himalayan honeysuckle*.

Birds/Fauna Observed:

Bellbirds were observed in the forest.

Notable Flora, Fauna and Habitats:

The size and number of the lowland ribbonwood trees, and the presence of kahikatea, are notable features.

Notable Plant and Animal Pests:

Elderberry and Darwin's barberry (seedlings) are the main plant pests present. Neither are dominant at present.

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

The Area is buffered on its lower (southern boundary) by a small stream and on its northern boundary by an exotic plantation. It is not fenced. It is not connected to other areas of indigenous forest, though several important indigenous forest remnants are present in the area.

Condition and Management Issues:

The forest is in relatively good condition, though the forest understorey is grazed and open. Some weed control may be necessary to protect the ecological values of the Area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A good example of regenerating hardwood forest, with species (including kahikatea) representative of the original forest of the area.
Rarity	L/M	No rare species were observed, though the forest is likely to provide habitat for kereru.
Diversity and pattern	L/M	Species diversity is probably less than that originally present.
Distinctiveness/special features	M	The abundance of large lowland ribbonwood trees, and the presence of kahikatea are notable.
Other Criteria		
Size/shape	M	A small remnant with a good shape and well buffered.
Connectivity	M	Forms part of a network of forest habitat in the area.
Long-term Sustainability	M	The ecological values are likely to persist with minimal conservation management.

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

This Area has been informally protected by the landowner. Its presence on a relatively steep slope by a stream limits the potential for development of the Area. No additional resources are required to implement effective protection, though removal of stock and control of aggressive weeds (elderberry and Darwin's barberry) would benefit the Area.

Discussion:

The Area meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of mature lowland ribbonwood and kahikatea, and the habitat it provides for species such as kereru.

TIMARU DISTRICT SNA SURVEY

AREAS 28a, 28c and 28d

Area Name: Lynn Stream
Location (central map reference): *see below*
Ecological District: Orari
Surveyors: Mike Harding

Property: Mt Peel Station
Nearest Locality: Peel Forest
Area Size (ha): *see below* **Altitude (m):** *see below*
Survey Time: *see below* **Survey Date:** *see below*

General Description:

These three small areas all lie on the boundary of a much larger area, encompassing Lynn Stream, which is proposed for protection as public conservation land in the Preliminary Proposal for tenure review of Mt Peel Pastoral Lease. They are ecologically part of the Lynn Stream area, though appear to lie, at least partly, within the area proposed as private land. The three areas are described separately below.

Plant Communities:

All three areas support hardwood forest. Naturalized (exotic) species are indicated with an asterisk*.

Area 28a

(central grid ref.: J37: 670-039; size: 0.79 ha; altitude: 600 m; survey time: ½ hour; survey date: 11-08-06). This Area supports hardwood forest. Dominant species are broadleaf, narrow-leaved lacebark, lancewood and five-finger. Southern rata is present at about the lower boundary of the Area.

Area 28c

(central grid ref.: J37: 658-053; size: 5.21 ha; altitude: 550 m; survey time: ¼ hour; survey date: 18-08-06) This Area supports hardwood forest dominated by broadleaf. Other species present are mountain totara, marbleleaf, fuchsia, mountain ribbonwood, kowhai, matipo, bush lawyer, mountain akeake, lancewood, yellowwood, *Coprosma propinqua*, *C. rigida* and prickly shield fern.

Area 28d

(central grid ref.: J37: 668-052; size: 2.68 ha; altitude: 500 m; survey date: 18-08-06) This Area was not inspected closely. It supports well established hardwood forest.

Birds/Fauna Observed:

Indigenous birds observed were kereru and tomtit (both in Area 28c).

Notable Flora, Fauna and Habitats:

The most important feature of each of these three areas is that they form part of a much larger ecologically-important area of intact indigenous forest in Lynn Stream. Lynn Stream provides habitat for the nationally-endangered blue duck, and may provide habitat for long-tailed bat.

Notable Plant and Animal Pests:

No notable plant or animal pests were observed during the brief inspections.

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

Each of these three Areas lies on or about the boundary of an area in Lynn Stream which is proposed for protection as public conservation land. While each area is small, each is part of a much larger area. The Areas may be affected by fencing or tracking associated with the tenure review of Mt Peel Pastoral Lease.

Condition and Management Issues:

All three Areas appear to be in relatively good condition.

Property Owner Comment:

The boundaries of these SNAs, as originally marked in the draft report, include areas that have become public conservation land through tenure review. The boundaries have been altered but are still approximate, as the new property boundaries are not yet recorded on Council's electronic (GIS) maps.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	The Areas contain good examples of indigenous vegetation typical of the ecological district and include species representative of the original vegetation.
Rarity	M	No rare species were observed. The Areas provide habitat for kereru and are part of a catchment which provides habitat for blue duck.
Diversity and pattern	M	Species and habitats are probably slightly less diverse than those originally present.
Distinctiveness/special features	M	The Areas are part of a much larger area of relatively intact and soon-to-be protected indigenous forest.
Other Criteria		
Size/shape	M	Each Area is small but each has a good shape and is relatively well buffered.
Connectivity	M/H	Each Area adjoins a (soon to be) protected area along at least 25% of its boundary.
Long-term Sustainability	M/H	Little if any conservation management will be required for the maintenance of ecological values.

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

Each of these three Areas may be affected by tracking and/or fencing associated with the tenure review of Mt Peel Pastoral Lease.

Discussion:

These Areas easily meet the District Plan criteria for a Significant Natural Area. Their main attributes are the presence of mature hardwood trees and their location adjoining a much larger area of indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 28b

Area Name: Parson Stream

Location (central map reference): J37: 655-068

Ecological District: Orari

Surveyors: Mike Harding

Property: Mt Peel Station

Nearest Locality: Peel Forest

Area Size (ha): 100.2

Altitude (m): 550-1200

Survey Time: 2½ hours

Survey Date: 18-08-06

General Description:

The Area covers the upper part of the main western tributary of Parson Stream, including the south-facing slopes of the western tributary down to the confluence with the other main tributary of Parson Stream. It comprises moderately-steep to steep slopes with predominantly southern and eastern aspects.

Plant Communities:

The Area supports regenerating hardwood forest with mountain totara trees at lower altitudes in the main valley, grading on shady slopes to fernland and inaka shrubland, on dry slopes to *Coprosma propinqua* shrubland, and on upper slopes to tall tussockland and inaka scrub. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest: The main areas of forest in the valley are dominated by broadleaf. Other canopy species are cabbage tree, lancewood, kowhai, marbleleaf, mountain totara/totara, mountain ribbonwood and matipo. Understorey species are fuchsia, horopito, mountain akeake, mapou, weeping mapou, three-finger, yellowwood, bush lawyer, native jasmine, bush lily, prickly shield fern, *Blechnum fluviatile* and near the stream *Coprosma rugosa*.

Species present on the forest margin are *Coprosma propinqua*, *C. rigida*, bush snowberry, manuka, mountain flax, *Calystegia tuguriorum*, cotton daisy, bracken, foxglove*, burdock* (rare) and dead (sprayed) gorse*.

Fernland: The shady (south-facing) lower-altitude slopes are dominated by mountain kiokio, mountain akeake, mountain flax and inaka. Broadleaf, lancewood and mountain ribbonwood are emergent through this low-stature community on lower slopes. On upper slopes this fernland community grades to inaka/turpentine shrub shrubland and tall tussockland.

***Coprosma* shrubland:** This community is dominated by *Coprosma propinqua*. Other canopy species are *Coprosma rigida*, matagouri, porcupine shrub, mountain wineberry, horopito, weeping mapou, native broom, lawyer, *Olearia bullata*, bush lawyer and native jasmine.

Also present are mountain flax, golden speargrass, *Calystegia tuguriorum*, bracken, prickly shield fern, necklace fern, *Asplenium appendiculatum*, *Cheilanthes humulis*, mountain kiokio, *Blechnum penna-marina* and broom*.

Denser areas of shrubland support emergent cabbage tree, lancewood, kowhai, broadleaf, matipo and marbleleaf.

Inaka scrub: This community is dominated by inaka and turpentine shrub. Other important species are cotton daisy, narrow-leaved snow-tussock, mountain flax and mountain kiokio. Also present are fescue tussock, wire moss, snowberry, patotara, *Leucopogon suaveolens*, mouse-ear hawkweed*, browntop*, *Lycopodium fastigiatum*, golden speargrass, *Myrsine nummularifolia*, *Gaultheria crassa*, *Coprosma cheesemanii* and *Hebe odora*.

At higher altitudes, on the crest of Mule Spur, dominant species are turpentine shrub, narrow-leaved snow-tussock, cotton daisy, woolly moss and *Pentachondra pumila*. Other species present are blue tussock, *Anisotome aromatica*, *Myrsine nummularifolia*, snowberry, *Gaultheria crassa*, *Hebe pinguifolia*, red woodrush, golden speargrass, *Raoulia subsericea*, patotara, *Helichrysum filicaule* and *Celmisia discolor*.

Birds/Fauna Observed:

Indigenous birds observed were bellbird, rifleman and grey warbler, though conditions were generally unfavourable for bird observations.

Notable Flora, Fauna and Habitats:

The most notable features of the Area are the extent of the altitudinal range of the indigenous vegetation, the size of the area and the presence of totara.

Notable Plant and Animal Pests:

Broom is the most important plant pest observed. Gorse has been present (only dead plants were observed) and burdock was observed at one location near the end of the existing vehicle track in the valley. Pig rooting and possum sign were observed.

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

The Area adjoins, along its north and west boundaries, an area proposed for protection as public conservation land in the Preliminary Proposal for tenure review of Mt Peel Pastoral Lease. This boundary is fenced, and a new fence is proposed for that boundary. A vehicle track is present on the spur on the eastern boundary of the area and up the valley floor. A new extended vehicle track is proposed through the edge of the Area in the main valley and along the boundary of the Area on the ridge crest. The Area is large and well buffered.

Condition and Management Issues:

The Area appears in relatively good condition, with rapidly regenerating indigenous plant communities. Control of gorse, broom, pigs and possums may be required to protect the ecological values of the Area. Construction of proposed vehicle tracks will involve the removal of indigenous vegetation on and just within the boundaries of the Area.

Property Owner Comment:

The boundaries of this area as proposed in the draft report included areas of over-sown grassland that are grazed by domestic animals. The boundaries of the area have been adjusted accordingly.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of the ecological district, including components representative of the original vegetation (hardwood forest with totara and inaka scrub and tussockland at higher altitudes).
Rarity	M	Rifleman (threat status: gradual decline) are present. No other rare species observed, though the Area is likely to provide some habitat for kereru and falcon.
Diversity and pattern	M	Species diversity at higher altitudes is similar to that originally present, though reduced at lower altitudes.
Distinctiveness/special features	M/H	A large area supporting continuous indigenous vegetation over an altitudinal range of more than 600 m.
Other Criteria		
Size/shape	H	The Area is large.
Connectivity	M/H	Adjoins a (soon to be) protected area along approximately half its boundary.
Long-term Sustainability	M/H	Little active conservation management is required to protect the ecological values of the Area.

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

This Area has been informally protected by the landowner and is ecologically part of a much larger area of indigenous vegetation. No additional resources are required to implement effective protection, though removal of stock and control of broom, gorse, possums and pigs would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are the extent of the altitudinal range of the indigenous vegetation, the size of the Area, the diversity of the plant communities and the presence of totara, the presence of rifleman and its location adjoining a much larger area of indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 666a

Area Name: Middle Southern Spur
Location (central map reference): J37: 692-031
Ecological District: Orari
Surveyors: Mike Harding

Property: Mount Peel Station
Nearest Locality: Peel Forest
Area Size (ha): 9.2 **Altitude (M):** 360-600
Survey Time: 1½ hours **Survey Date:** 11-08-06

General Description:

A small gully and associated east-facing hill slopes on the lower flanks of the Mt Peel Range, just west of Rangitata Gorge Road on the southern (down-valley) part of the property.

Plant Communities:

The Area supports regenerating hardwood forest and associated scrub, with a single totara tree. This plant community is described below. A scattered remnant of tall podocarp (totara-kahikatea) forest adjoins the Area at the base of the slope. Naturalized (exotic) species are indicated with an asterisk*.

The hardwood forest on the lower slope and in the small gully is dominated by five-finger, kowhai, marbleleaf, broadleaf, lemonwood, lancewood and mahoe. Higher in the gully, fuchsia is more common. Other canopy species present are mapou, matipo, cabbage tree, narrow-leaved lacebark, emergent lowland ribbonwood trees on the lower slopes and a single totara tree on the upper slopes.

The forest understorey is dominated by *Coprosma rotundifolia*. Also present within the forest are bush lawyer, horopito, Himalayan honeysuckle* and, in the gully, pate, wineberry and scrambling fuchsia. Important ground-cover species are prickly shield fern, *Polystichum richardii*, *Blechnum fluviatile*, *B. chambersii*, *B. penna-marina*, *Pellaea rotundifolia*, *Asplenium hookerianum*, hen and chickens fern, necklace fern, hound's tongue fern, bidibid, male fern* and seedlings of mahoe.

Additional species present on or near the forest margins are *Coprosma rigida*, *C. propinqua*, *C. sp. "t"*, weeping mapou, native jasmine, lawyer, pohuehue, *Calystegia tuguriorum*, bracken, elderberry*, Darwin's barberry*, broom*, foxglove* and horehound*.

Birds/Fauna Observed:

Indigenous birds observed were bellbird, grey warbler and rifleman.

Notable Flora, Fauna and Habitats:

The presence of rifleman (threat status: gradual decline), the size of the Area and its location near other areas of indigenous forest are notable features. The area is clearly visible from Rangitata Gorge Road.

Notable Plant and Animal Pests:

Darwin's barberry is the most important plant pest observed. It is relatively common on the margins of the area, notably within the scrub on the gully sides. Darwin's barberry poses a significant threat as its fruit are readily spread by birds and its seedlings are shade tolerant, allowing it to easily become established within forest. A clump of elderberry trees is present at the upper margin of the Area at the head of the gully, and smaller elderberry trees are occasionally present in the forest. Elderberry fruits are readily spread by birds. Himalayan honeysuckle and broom are present, but do not pose a significant threat to closed-canopy forest.

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

The Area adjoins, along its southern boundary, an area of hardwood forest and scrub that is proposed for protection in the Preliminary Proposal for tenure review of Mt Peel Pastoral Lease. The boundaries of the Area are unfenced.

Condition and Management Issues:

Parts of the forest understorey are very open, presumably due at least in part to the presence of cattle. Exclusion of cattle, along with wild animal (especially possum) control, would be beneficial for the forest understorey and for forest regeneration. A new fence is proposed, though it appears that this fence would not exclude stock from the upper part of the Area (the gully forest). Darwin's barberry poses a significant threat to this area of forest and to areas of forest and scrub nearby. Ideally, this weed should be removed, though complete eradication would probably be difficult to achieve.

Property Owner Comment:

The lower parts of this area have become public conservation land through tenure review. These new property boundaries are not yet present on Council's electronic (GIS) maps.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A modified example of forest typical of that remaining in the ecological district, though with canopy species (notably totara) which are representative of the original vegetation.
Rarity	M	Rifleman (threat status: gradual decline) are present. Provides habitat for kereru.
Diversity and pattern	L/M	Species and habitats in the Area are less diverse than those originally present.
Distinctiveness/special features	L/M	The size of the Area and presence of totara are special features.
Other Criteria		
Size/shape	M/H	A moderate-sized Area that is relatively well buffered.
Connectivity	M	Adjoins a proposed protected area along its southern boundary.
Long-term Sustainability	M	The Area is modified, but relatively resilient. Its values could be maintained with management.

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

This Area has been informally protected by its location on steeper slopes and in a narrow gully, limiting its potential for development. The Area is threatened by plant pests, notably Darwin's barberry, though its main values are likely to persist with limited management. No additional resources are required to implement effective protection, though fencing of the Area from stock and control of aggressive weeds (Darwin's barberry) would benefit the Area.

Discussion:

The Area meets the District Plan criteria for a Significant Natural Area. Its main attributes are its size, the presence of totara trees, and its location adjacent to an area already proposed for protection.

TIMARU DISTRICT SNA SURVEY

AREA 666c

Area Name: Lower Southern Spur
Location (central map reference): J37: 692-037
Ecological District: Orari
Surveyors: Mike Harding

Property: Mt Peel Station
Nearest Locality: Peel Forest
Area Size (ha): 10.4 **Altitude (m):** 300-500
Survey Time: ½ hour **Survey Date:** 25-11-06

General Description:

This Area covers the lower east-facing slopes of the main spur on the southern part of the property.

Plant Communities:

The Area supports dense regenerating hardwood forest with emergent podocarps (kahikatea and totara) on the lower slopes, grading upslope to areas of lower-stature hardwood forest and broom* scrub. This Area was not inspected closely; instead it was viewed from the road and adjoining areas through binoculars.

Hardwood forest in the Area is dominated by broadleaf, kowhai, mahoe, lancewood, lowland ribbonwood, narrow-leaved lacebark, cabbage tree, kahikatea and totara. Pohuehue and elderberry* are present in patches at the lower margin of the Area and broom* scrub is present above the main patch of hardwood forest. Scattered lowland ribbonwood trees are present in pasture on the southern (down-valley) side of the Area. Smaller patches of low-stature hardwood forest are present on upper slopes. (An asterisk* indicates a naturalized (exotic) species).

Notable Flora, Fauna and Habitats:

The presence of podocarps, including young kahikatea and totara, and the extent of the regenerating forest community are notable features.

Notable Plant and Animal Pests:

Broom and elderberry are visible in the area. The relatively large patch of broom present does not pose a threat to the existing forest, but may hinder further spread of indigenous vegetation. The presence of elderberry with its bird-dispersed fruits, threatens this and other areas of indigenous vegetation. The native climber, pohuehue, is smothering the forest canopy on the lower margin of the Area.

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

The Area does not adjoin other areas of indigenous vegetation, but is close to other Significant Natural Areas (666a, 669b and 670). Parts of its boundary appear fenced and it is relatively well buffered by its location.

Condition and Management Issues:

Containment of broom and the removal or containment of elderberry are important management issues.

Property Owner Comment:

This area is now largely fenced. Pohuehue is a problem in this area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of forest typical of the ecological district, with tree species representative of the original vegetation (kahikatea and totara).
Rarity	L/M	No rare species observed. Likely to provide suitable habitat for kereru.
Diversity and pattern	M	Species diversity is probably less than that originally present.
Distinctiveness/special features	M	Supports podocarp trees (kahikatea and totara) and provides potential habitat for long-tailed bat.
Other Criteria		
Size/shape	M/H	A moderate-sized area with a good shape and some buffering.
Connectivity	M	Does not adjoin other protected areas but forms part of a network of forest habitat.
Long-term Sustainability	M	Some conservation management will be required to maintain the ecological values of the Area.

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

This Area has been informally protected by the landowner and is ecologically part of a network of forest habitat in the area. Containment or control of woody weeds may be necessary to effectively protect the ecological values of the Area. The Area is clearly visible from Rangitata Gorge Road.

Discussion:

The Area meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of podocarps (kahikatea and totara), the extent of the area, the habitat it provides for species such as kereru and possibly long-tailed bat, and its location as part of a network of areas of indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 669b

Area Name: Middle Rangitata Terrace
Location (central map reference): J37: 695-030
Ecological District: Orari-High Plains
Surveyors: Mike Harding

Property: Mt Peel Station
Nearest Locality: Peel Forest
Area Size (ha): 4.3 **Altitude (m):** 300-360
Survey Time: 1 hour **Survey Date:** 21-11-06

General Description:

This Area covers scattered patches of indigenous forest at the edge of the terrace and toe of the hill slopes, just west of Rangitata Gorge Road. It represents a northern extension of Area 669a and a lower-altitude extension of Area 666a.

Plant Communities:

The Area supports remnant and regenerating podocarp-hardwood forest. This plant community is described below. Naturalized (exotic) species are indicated with an asterisk*.

The main canopy species present are kahikatea, totara, marbleleaf, lancewood, mahoe, wineberry, kowhai, lemonwood, five-finger, pokaka and narrow-leaved lacebark. One large kahikatea tree has a trunk diameter of 130 cm. One large pokaka tree has a trunk diameter of 65 cm.

Understorey species present are *Coprosma rotundifolia*, *C. crassifolia*, horopito, pate, fuchsia, matipo, mapou, *Lophomyrtus obcordata*, Darwin's barberry* and kahikatea saplings.

Important ground-cover species are prickly shield fern, hen and chickens fern, *Blechnum penna-marina*, *B. fluviatile*, *B. chambersii*, *B. minus*, hound's tongue fern, *Pellaea rotundifolia*, male fern, *Urtica incisa* and *Pterostylis* sp.

Additional species on the forest margin and between the forest patches are *Coprosma propinqua*, cabbage tree, pohuehue, *Clematis foetida*, *Calystegia tuguriorum*, kanuka, weeping mapou, elderberry*, Himalayan honeysuckle*, lawyer, foxglove*, broom* and thousand-leaved fern.

Birds/Fauna Observed:

Indigenous birds observed were bellbird and rifleman.

Notable Flora, Fauna and Habitats:

The older totara and kahikatea trees are notable. They are remnants of the original forest in the area, provide a seed source for the regeneration of podocarp forest and probably provide useful food resources and roost/nest sites for birds and possibly bats. The area is clearly visible from Rangitata Gorge Road. One threatened species (rifleman, threat status: gradual decline) and one locally uncommon species (*Lophomyrtus obcordata*) are present in the Area.

Notable Plant and Animal Pests:

Darwin's barberry and elderberry are the most important plant pests present. These species pose a significant threat as their fruit are readily spread by birds. Himalayan honeysuckle and broom are present, but do not pose a significant threat to closed-canopy forest.

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

The Area adjoins, along its western boundary, an area of hardwood forest and scrub that is proposed for protection in the Preliminary Proposal for tenure review of Mt Peel Pastoral Lease. The Area also adjoins other SNAs: Area 666a and Area 669a. The boundaries of the Area are unfenced.

Condition and Management Issues:

The Area is in reasonably good condition, though is affected by stock and has in most places a relatively open understorey. Protection from stock and invasive weeds (such as Darwin's barberry, elderberry and sycamore) would encourage regeneration of the forest.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of forest typical of that remaining in the ecological district, and with canopy species (notably kahikatea and totara) representative of the original vegetation.
Rarity	M	Mature podocarp trees in the Area provide habitat for kereru (NZ pigeon) and possibly long-tailed bat. Rifleman (threat status: gradual decline) and the locally-uncommon <i>Lophomyrtus obcordata</i> are present.
Diversity and pattern	M	Species and habitats in the Area are probably less diverse than those originally present.
Distinctiveness/special features	M	The presence of large old podocarp trees and the prominence of the site from Rangitata Gorge Road are special features.
Other Criteria		
Size/shape	M/H	A small area for the Orari ED, but large for the High Plains ED. A poor shape and not well buffered.
Connectivity	M	Adjoins a (soon to be) protected area along its western boundary.
Long-term Sustainability	M	The Area is modified, but relatively resilient. Its values could be maintained with management.

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

This Area has been informally protected by its location and by the presence of small streams and seepages, limiting its potential for development. The Area is threatened by plant pests, notably Darwin's barberry, though its main values are likely to persist with limited management. No additional resources are required to implement effective protection, though fencing of the Area from stock and control of aggressive weeds (Darwin's barberry) would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of totara and kahikatea trees, the presence of threatened and uncommon species, the habitat it provides for kereru (and possibly long-tailed bat) and its location adjacent to an area already proposed for protection.

TIMARU DISTRICT SNA SURVEY

AREA 670

Area Name: North Rangitata Terrace
Location (central map reference): J37: 696-042
Ecological District: Orari-High Plains
Surveyors: Mike Harding

Property: Mt Peel Station
Nearest Locality: Peel Forest
Area Size (ha): 4.2 **Altitude (m):** 290
Survey Time: 1 hour **Survey Date:** 21-11-06

General Description:

The Area is located on a terrace of the Rangitata River just down-valley from Lynn Stream, alongside Rangitata Gorge Road. It includes areas of permanently wet ground alongside a small stream at the southern edge of the Area and areas of dry free-draining stream gravels in the northern part of the Area.

Plant Communities:

The main plant community comprises a remnant of podocarp forest, with kahikatea, totara and lowland ribbonwood emergent over a canopy of hardwood species. Scattered trees are present over pasture on the northern side of the Area. The main plant community is described below. Naturalized (exotic) species are indicated with an asterisk*.

The forest remnant is dominated by large kahikatea, totara and lowland ribbonwood trees which stand above a forest canopy dominated by broadleaf and pohuehue. Other canopy species present are matai, kowhai, lancewood, matipo, marbleleaf, pokaka and a single ash* tree.

Dominant understorey species are horopito and *Coprosma rotundifolia*. Also present in the understorey are fuchsia, weeping mapou, mapou, *Coprosma rubra*, *Coprosma pseudociliata*, *Streblus heterophyllus*, yellowwood, kaikomako, *Melicope simplex*, lawyer, *Clematis* sp., native jasmine, bittersweet*, elderberry* and sycamore*.

Important ground-cover species are pennywort and the rare herb *Australina pusilla*, both species forming extensive mats in some parts of the forest. Sycamore* seedlings are common in the northern part of the forest.

Other ground-cover species are hound's tongue fern, leather-leaf fern, *Blechnum fluviatile*, *B. penna-marina*, hen and chickens fern, necklace fern, prickly shield fern, *Polystichum richardii*, *Hypolepis ambigua*, *Pellaea rotundifolia*, male fern*, bidibid, *Carex* sp., Darwin's barberry*, orchids (*Corybas macranthus* and *Pterostylis* sp.), *Schizeilema trifoliolatum* and seedlings of mahoe and kahikatea.

Species more dominant in the wetter southern part of the forest are pate, *Blechnum minus*, *Blechnum chambersii* and thousand-leaved fern.

Also present on the forest margin are cabbage tree, *Coprosma propinqua*, *C. crassifolia*, *C. rigida*, *Olearia bullata*, *Calystegia tuguriorum*, Himalayan honeysuckle* and, at the northern margin, hemlock*, hawthorn*, gooseberry* and single bush of the newly discovered *Melicytus* "Waihi".

Birds/Fauna Observed:

Indigenous birds observed were bellbird, kereru, grey warbler and rifleman.

Notable Flora, Fauna and Habitats:

The size and abundance of kahikatea, totara and lowland ribbonwood trees are notable. These species are representative of lowland forests in this area and the larger specimens may pre-date European settlement. One totara tree has a trunk diameter (at breast height) of almost one metre. The presence of *Melicytus* "Waihi" and the presence and abundance of the rare herb, *Australina pusilla*, are also notable. An interesting feature of the southern part of the forest is the presence of a permanent stream flowing across the forest floor. Kahikatea and a number of other species tolerant of wet conditions are dominant in this area.

Notable Plant and Animal Pests:

Sycamore is the most important plant pest present. A few small trees are present in the understorey and numerous seedlings are present and especially common in the northern part of the forest. This species has the potential to become dominant, thereby altering the character and ecological integrity of the forest remnant. Ash and Darwin's barberry pose a potential threat, though only one ash tree was observed and Darwin's barberry is present only as seedlings and small bushes. The forest understorey is trampled and damaged in places by cattle.

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

The forest remnant is not fenced from adjoining pasture. It is buffered to some extent along its southern boundary by a stream flowing along an excavated channel, and along part of its eastern boundary by the roadside fence. Other small areas of remnant and regenerating podocarp-hardwood forest are present along the toe of the hill slopes a short distance southwest of the Area.

Condition and Management Issues:

The forest is presently grazed. Cattle are causing damage to the forest understorey and ground-cover. Control of sycamore is the most pressing management issue. Removal of the large ash tree and Darwin's barberry seedlings would also be desirable.

Property Owner Comment:

The owners are interested in the further protection of this area of forest, by fencing, restricting grazing, removing weeds (especially sycamore) and possibly protecting the forest from small introduced mammals.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	A good, albeit small, example of the forest originally present in the area.
Rarity	M/H	Supports a very healthy population of the rare herb <i>Australina pusilla</i> .
Diversity and pattern	M	Species and habitat diversity are probably less than that originally present.
Distinctiveness/special features	M/H	The abundance of kahikatea is a special feature. The forest provides habitat for kereru and other forest birds, and may provide habitat for long-tailed bat.
Other Criteria		
Size/shape	M/H	The forest remnant is large for the High Plains Ecological District and, although it has a good shape, it is not presently well buffered.
Connectivity	M	It is isolated from other areas of forest, but forms an important part of a network of low-altitude forest habitat in the area.
Long-term Sustainability	M	Some conservation management (notably weed control) will be required to maintain the ecological values of the Area.

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

This Area has been informally protected by the landowner. The presence of the stream limits the potential for development of the southern part of the Area. The Area is threatened by plant pests, notably sycamore, though its main values are likely to persist with limited management. No additional resources are required to implement effective protection, though removal of stock and control of aggressive weeds (sycamore, ash and Darwin's barberry) would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of mature and regenerating podocarps (predominantly kahikatea), the extent to which it is representative of the original forest of the area, the habitat it provides for species such as kereru, and the presence of a large healthy population of the forest-floor herb *Australina pusilla*.

TIMARU DISTRICT SNA SURVEY

AREA 673a

Area Name:	Property: Mt Peel Station
Location (central map reference): J37: 684-077	Nearest Locality: Peel Forest
Ecological District: Orari	Area Size (ha): 12.3 Altitude (m): 400-550
Surveyors: Mike Harding	Survey Time: ½ hours Survey Date: 15-11-06

General Description:

This area covers an incised gully at the northern end of the main terrace west of Mt Peel Station homestead, just north of Area 673b.

Plant Communities:

This Area was not surveyed in detail, but was assessed by viewing it from its southern boundary. It supports similar vegetation to the gully forest in Area 673b, comprising podocarp-hardwood forest including relatively extensive stands of podocarps (mainly kahikatea) in the lower gully and regenerating hardwood forest in the upper (western) part of the gully.

Notable Flora, Fauna and Habitats:

The presence and abundance of podocarps (notably kahikatea) and the extent of the forest habitat are notable features of the Area.

Notable Plant and Animal Pests:

Elderberry, Darwin's barberry and sycamore are likely to be the most important plant pests present.

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

The gully forest is fenced and well buffered by its position.

Condition and Management Issues:

The forest remnant appears to be in relatively good condition. Control of plant and animal pests will probably be necessary to maintain the ecological values of the Area.

Property Owner Comment:

The upper end of this area is grazed by deer.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest typical of the ecological district containing a good population of species (notably kahikatea) originally present in the forests of the area.
Rarity	M	Provides good habitat for kereru.
Diversity and pattern	M	Species and habitat diversity is probably slightly reduced from that originally present.
Distinctiveness/special features	M	The presence of kahikatea is a special feature. The area provides good potential habitat for long-tailed bat (present nearby at Peel Forest).
Other Criteria		
Size/shape	M/H	A moderate-sized area that is well buffered.
Connectivity	M	Not connected to other areas of indigenous forest but forms part of a network of forest habitat in the area.
Long-term Sustainability	M	The ecological values of most parts of the Area are likely to persist with minimal management.

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

This Area has been informally protected by its location in an incised gully, limiting its potential for development. The forest of the Area is probably threatened by plant pests, notably Darwin's barberry, sycamore and elderberry, though the main values are likely to persist with limited management. No additional resources are required to implement effective protection, though control of aggressive weeds would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are its size, the presence of large stands of podocarps (predominantly kahikatea) and the extent of habitat that it provides.

TIMARU DISTRICT SNA SURVEY

AREA 673b

Area Name:

Location (central map reference): J37: 680-073

Ecological District: Orari

Surveyors: Mike Harding

Property: Mt Peel Station

Nearest Locality: Peel Forest

Area Size (ha): 14.8

Altitude (m): 380-500

Survey Time: 2½ hours

Survey Date: 15-11-06

General Description:

This area covers an incised gully and small parts of the associated terrace at the northern end of the main terrace west of Mt Peel Station homestead.

Plant Communities:

The main indigenous plant community in the gully is hardwood forest, with an area of podocarps (kahikatea and totara) in the lower gully. A remnant of podocarp-hardwood forest is present on the terrace. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Upper (western) gully forest:

The forest canopy in this part of the Area is dominated by broadleaf, marbleleaf and lancewood. Other species present are narrow-leaved lacebark, fuchsia, kowhai, mapou, matipo, mahoe, cabbage tree, five-finger, wineberry, mountain ribbonwood, *Melicope simplex*, elderberry*, bush lily, prickly shield fern, *Polystichum richardii*, thousand-leaved fern, *Blechnum vulcanicum*, *B. fluviatile*, mountain kiokio, hound's tongue fern, *Asplenium hookerianum* and hen and chickens fern.

Additional species on the forest margin are horopito, bush lawyer, weeping mapou, *Coprosma* sp. 't', *C. propinqua*, *C. rugosa*, native broom, mountain akeake, koromiko, scrambling fuchsia, bush snowberry, pohuehue, native jasmine, tutu and male fern*.

Lower (eastern) gully forest:

Canopy species in this part of the Area are five-finger, totara, kahikatea, mapou, mahoe, lancewood, kowhai, lemonwood, narrow-leaved lacebark and cabbage tree. A large patch of kahikatea, including a good stand of regenerating ("pole") kahikatea is present in the central part of the gully.

Other species present are wineberry, matipo, *Coprosma crassifolia*, *C. rhamnoides*, fuchsia, elderberry*, bush lawyer, prickly shield fern, hound's tongue fern, necklace fern and *Asplenium appendiculatum*.

Additional species on the forest margin are gorse*, broom*, mountain akeake, koromiko and Darwin's barberry*.

Terrace forest:

This part of the Area comprises a small remnant of podocarp-hardwood forest surrounded by pasture.

Remnant indigenous species present are kahikatea, totara, narrow-leaved lacebark, broadleaf and pokaka.

Other species present are matipo, mapou, *Streblus heterophyllus*, mahoe, *Coprosma rotundifolia*, *Olearia bullata*, pohuehue and elderberry*.

One large pokaka tree has a trunk diameter (at breast height) of 82 cm.

Birds/Fauna Observed:

Kereru and bellbird were observed in the Area.

Notable Flora, Fauna and Habitats:

The presence and abundance of podocarps (notably kahikatea) and the extent of the forest habitat are notable features of the Area. The presence of *Streblus heterophyllus* and the size of one pokaka on the terrace are also notable.

Notable Plant and Animal Pests:

Elderberry and Darwin's barberry are the most important plant pests present. Sycamore is present in forests adjoining the Area.

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

The gully forest is fenced and well buffered by its position. The area of terrace forest is unfenced, grazed and vulnerable to disturbance. Part of the understorey of the terrace forest has been recently cleared by machinery.

Condition and Management Issues:

The main forest remnant in the gully is in good condition. The terrace forest is more modified. Control of plant and animal pests will probably be necessary to maintain the ecological values of the Area. Ideally, the small area of terrace forest should be protected from further disturbance, including grazing.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous forest typical of the ecological district containing a good population of species originally present in the forests of the area (notably kahikatea).
Rarity	M	Supports a locally-uncommon species, <i>Streblus heterophyllus</i> , and provides good habitat for kereru.
Diversity and pattern	M	Species and habitat diversity is probably slightly reduced from that originally present.
Distinctiveness/special features	M/H	The extent and health of kahikatea is a special feature. The area provides good potential habitat for long-tailed bat (present nearby at Peel Forest).
<hr/> Other Criteria <hr/>		
Size/shape	M/H	A moderate-sized area that is well buffered.
Connectivity	M	Not connected to other areas of indigenous forest but forms part of a network of forest habitat in the area.
Long-term Sustainability	M	The ecological values of most parts of the Area are likely to persist with minimal management.

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

This Area has been informally protected by its location in a deeply-incised gully, limiting its potential for development. The gully forest of the Area is threatened by plant pests, notably Darwin's barberry and elderberry, though its main values are likely to persist with limited management. The terrace forest part of the Area is more vulnerable. No additional resources are required to implement effective protection, though control of aggressive weeds (including sycamore if it becomes established) and exclusion of stock from the terrace forest would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are its size, the presence of large stands of mature and regenerating podocarps (predominantly kahikatea), the presence of *Streblus heterophyllus* and the extent of habitat that it provides.

TIMARU DISTRICT SNA SURVEY

AREA 714

Area Name: North Branch Raules Gully
Location (central map reference): J36: 670-112
Ecological District: Orari
Surveyors: Mike Harding

Property: Waikari Hills
Nearest Locality: Peel Forest
Area Size (ha): 29.5 **Altitude (m):** 400-750
Survey Time: 2 hours **Survey Date:** 04-08-06

General Description:

This Area covers a small gully on the south side of Hill 'M', forming a northern tributary of Raules Gully. The lower reaches of the gully are incised into a terrace; the upper tributary gullies are broader and steeper and support indigenous vegetation to an altitude of approximately 750 m.

Plant Communities:

The lower (eastern) part of the gully supports hardwood forest with a single totara tree, grading to scrub on the south side of the gully. The upper (western) part of the Area supports regenerating hardwood forest in the gullies, grading to shrubland and tussockland on adjoining slopes. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest in lower gully:

The forest canopy in the gully is dominated by kowhai, broadleaf, matipo and five-finger. Other canopy species are lancewood, mapou, wineberry, cabbage tree and a single totara tree. A large old multi-stemmed lancewood tree, with trunk diameters of 33, 41 and 41 cm, is present at the northeast corner of the area. Understorey species present are fuchsia, pate, mahoe, *Coprosma rotundifolia*, *C. propinqua* and native jasmine. Important ground-cover species are prickly shield fern and bush lily. Other ground-cover species present are *Blechnum penna-marina*, *Polystichum richardii*, mountain kiokio, *B. fluviatile*, *B. chambersii*, hen and chickens fern, hound's tongue fern, *Cystopteris tasmanica*, *Corybas* sp. and pennywort. Additional species on the forest margin are mountain akeake, *Olearia arborescens*, tutu, *Coprosma* sp. 't', koromiko, *Calystegia tuguriorum* and Himalayan honeysuckle*

Scrub on south side of lower gully:

This plant community is dominated in places by matagouri, *Olearia bullata* and *Coprosma propinqua*, and in others by a sparser shrubland with shrubs and rough pasture. Other species present are kowhai, cabbage tree, matipo, five-finger, *Coprosma* sp. 't', native broom, mountain flax, bush snowberry, porcupine shrub, bracken, patotara, fescue tussock, silver tussock, cotton daisy, scrub pohuehue, lawyer, hound's tongue fern, necklace fern, *Asplenium appendiculatum*, *A. hookerianum*, *Oxalis* sp., creeping pohuehue, narrow-leaved snow-tussock and occasional gorse* and broom*.

Hardwood forest in upper gullies:

Forest in this part of the Area comprises patches of vegetation largely confined to stream sides and steeper slopes. Important species are kowhai, broadleaf, matipo, lancewood, mapou, fuchsia, wineberry, marbleleaf, pate, bush lawyer and, in the upper gullies, mountain ribbonwood. Additional species present on the forest margin are *Coprosma propinqua*, *C. rugosa*, *C.* sp. 't', mountain akeake, *Olearia arborescens*, koromiko, bush snowberry, Himalayan honeysuckle*, tutu, mountain flax, scrambling fuchsia, lawyer, mountain kiokio, prickly shield fern, necklace fern, cotton daisy and narrow-leaved snow-tussock.

Upper slopes:

Forests in the gullies grade to shrubland and tussockland on the upper slopes. These plant communities are dominated by narrow-leaved snow-tussock (with a canopy cover of 50-60%). Other important species present are bracken, cotton daisy, golden speargrass, silver tussock, fescue tussock, tutu, bush lawyer, mountain kiokio and, at rocky sites, bush snowberry, porcupine shrub, hound's tongue fern, necklace fern, *Asplenium appendiculatum*, *Blechnum penna-marina* and *Scleranthus uniflorus*.

Birds/Fauna Observed:

Indigenous birds observed were grey warbler, bellbird and pipit.

Notable Flora, Fauna and Habitats:

Notable features of the Area are the extent of remnant and regenerating hardwood forest, the presence of totara, and the altitudinal range of the indigenous vegetation cover.

Notable Plant and Animal Pests:

Broom, gorse and Himalayan honeysuckle are present along the lower boundaries. Of these species, broom poses the most significant threat to indigenous vegetation in the Area, notably the low-stature tussockland.

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

The Area is buffered by its location in incised or sheltered gullies. The lower (eastern) part of the Area is fenced. The Area lies close to Raules Gully Scenic Reserve.

Condition and Management Issues:

Indigenous vegetation in the Area is in relatively good condition. Indigenous plant communities on the forest margins and upper slopes are seral (induced) plant communities which, if protected from disturbance, will regenerate naturally to indigenous forest.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A depleted example of indigenous vegetation typical of the ecological district, though with species (such as totara) that are representative of the original forest.
Rarity	M	No rare plant species observed. Is likely to provide habitat for kereru and falcon.
Diversity and pattern	M	A diverse range of plant communities and indigenous species are present. Diversity is probably slightly reduced from its original state.
Distinctiveness/special features	M	The presence of totara is notable. The altitudinal range of indigenous vegetation in the Area is a special feature.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is reasonably well buffered.
Connectivity	M	The Area is very close to Raules Gully Scenic Reserve.
Long-term Sustainability	M	The ecological values of the Area are resilient and could be sustained and improved with little management effort.

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

This Area has been informally protected by its location in an incised and/or sheltered gully, protecting it from disturbance and limiting its potential for development. The upper slopes of the Area could be developed, though the steepness of the area would limit the extent to which they could be developed. No additional resources are required to implement effective protection, though control of broom and exclusion of stock would benefit the Area.

Discussion:

The Area meets the District Plan criteria for a Significant Natural Area. Its main attributes are its size, the presence of totara, the habitat it provides, its location near Raules Gully Scenic Reserve and the altitudinal range of the indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 717

Area Name: Boundary Stream

Location (central map reference): J36: 670-143

Ecological District: Orari

Surveyors: Mike Harding

Property: Waikari Hills

Nearest Locality: Peel Forest

Area Size (ha): 2.7

Altitude (m): 400-460

Survey Time: 1 hour

Survey Date: 21-11-06

General Description:

The Area comprises a steep rocky slope and bluff, and an associated small terrace at the confluence Boundary Stream and the Rangitata River, at the downstream end of the Rangitata Gorge.

Plant Communities:

The terrace supports scrub and shrubland. The steeper rocky slopes and bluffs above the terrace support open rockland, sparse shrubland and depleted pasture. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Terrace scrub:

Dominant species in this scrub are *Coprosma propinqua*, matagouri and, in places, prostrate kowhai. Other species present are *Coprosma rigida*, porcupine shrub (*Melicytus* "blondin"), scrub pohuehue, pohuehue, lawyer, *Calystegia tuguriorum*, *Clematis quadribracteolata*, native jasmine, broom*, sweet brier*, fescue tussock, bracken and occasional emergent broadleaf, cabbage tree and kowhai.

Rockland and shrubland:

Dominant species in this sparsely-vegetated community are *Coprosma propinqua* and prostrate kowhai. Other species present on the steep rocky slopes below the bluffs are matagouri, korokio, cabbage tree, broadleaf, porcupine shrub, lawyer, *Calystegia tuguriorum*, scrub pohuehue, native jasmine, patotara, bracken, woolly mullein*, mouse-ear hawkweed* and other pasture species. Species present on the rock bluffs are prostrate kowhai, porcupine shrub, native broom, mountain akeake, *Vittadinia australis*, *Helichrysum intermedium*, *Einadia allanii*, *Asplenium appendiculatum*, *Gnaphalium* sp., and patotara.

Birds/Fauna Observed:

Indigenous birds observed were bellbird and grey warbler. Skinks were observed on the rocky slopes at the base of the bluffs.

Notable Flora, Fauna and Habitats:

The most notable feature of the Area is the presence of prostrate kowhai. This comprises the largest known population of this locally-uncommon species in the District. The Area also supports other locally-uncommon species: *Einadia allanii* on the bluffs and *Melicytus* "blondin" on the terrace.

Notable Plant and Animal Pests:

Broom is the most important plant pest present. It poses a threat to the low-stature plant communities on the rocky slopes and bluffs.

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

Most parts of the Area are buffered by their location on steep slopes. The part of the Area on the terrace is partly protected by precipitous (fenced) slopes falling to the Rangitata River and Boundary Stream.

Condition and Management Issues:

Plant communities in the Area are in good condition and reasonably well protected from the effects of activities on adjoining land.

Property Owner Comment:

This area is not heavily grazed. It provides access to an old abseil site.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of such sites in the ecological district and, on the steeper, slopes highly representative of the original vegetation in the area.
Rarity	M/H	The Area supports the largest known population of the locally-uncommon prostrate kowhai in the District. The Area also supports other locally-uncommon species: <i>Einadia allanii</i> on the bluffs and <i>Melicytus</i> "blondin" on the terrace.
Diversity and pattern	M	A relatively diverse range of habitats and species, though species diversity is probably less than that originally present.
Distinctiveness/special features	M	The Area comprises one of the more prominent rocky bluffs in the area and one of the best vegetated terrace sites. It provides good habitat for lizards.
Other Criteria		
Size/shape	M	A small area but well-shaped area that is well buffered.
Connectivity	M	Isolated from other protected areas, but is part of a larger area of indigenous vegetation and habitat on the steep sides of the Rangitata Gorge.
Long-term Sustainability	M/H	Indigenous species and habitats are resilient and likely to persist with little management intervention.

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

This Area is informally protected by its location on steep slopes and adjacent to bluffs, limiting its potential for development. The terrace part of the Area could be developed, though it is a very small area. No additional resources are required to implement effective protection, though control of broom and exclusion of stock would benefit the Area.

Discussion:

The Area very easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are the presence of locally-uncommon species, notably a large population of prostrate kowhai, the habitat it provides for lizards, and the extent of the rock bluff habitat and indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 718

Area Name: Upper Raules Gully
Location (central map reference): J36: 646-106
Ecological District: Orari
Surveyors: Mike Harding

Property: Waikari Hills
Nearest Locality: Peel Forest
Area Size (ha): 12.8 **Altitude (m):** 580-720
Survey Time: 1 hour **Survey Date:** 25-11-06

General Description:

This area covers indigenous vegetation alongside the section of Raules Gully upstream (west) of Raules Gully Scenic Reserve, to the base of the steeper eastern slopes of the Mt Peel Range.

Plant Communities:

The northern side of the stream supports patches of forest and associated scrub. The south side of the stream supports scrub and shrubland. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Northern side of the stream:

Areas of forest here are dominated by broadleaf and mountain ribbonwood. Other species present in or associated with the forest are lawyer, mountain wineberry, pohuehue, lancewood, five-finger, fuchsia, matipo, mountain akeake, koromiko, matagouri, scrub pohuehue, *Coprosma rugosa*, porcupine shrub (*Melicytus* "blondin"), turpentine shrub, elderberry*, bush lily, toatoa, narrow-leaved snow-tussock, tutu, prickly shield fern, thousand-leaved fern, *Cystopteris tasmanica*, *Blechnum penna-marina*, *Helichrysum bellidioides*, pennywort, bidibid, foxglove*, broom*, cotton daisy and golden speargrass.

Southern side of the stream:

Areas of shrubland and scrub here are dominated by *Coprosma propinqua*, *C. rugosa*, mountain wineberry and pohuehue, with some emergent broadleaf and mountain ribbonwood. Other species present are matagouri, lawyer, native broom, *Olearia bullata*, *Coprosma rigida*, native jasmine, Himalayan honeysuckle*, rowan*, prickly shield fern, male fern*, *Blechnum minus*, *B. penna-marina*, tutu, bracken and bidibid.

Birds/Fauna Observed:

Indigenous birds observed were silvereye and grey warbler.

Notable Flora, Fauna and Habitats:

Notable features of the Area are the density and health of the stream-side vegetation and that the Area connects indigenous vegetation in Raules Gully Scenic Reserve with indigenous vegetation (tussockland) within an area proposed for protection as public conservation land in the Preliminary Proposal for tenure review of Waikari Hills Pastoral Lease. The presence of the locally-uncommon *Melicytus* "blondin" is also notable.

Notable Plant and Animal Pests:

Rowan, elderberry and broom are the most significant plant pests present.

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

The Area is partly buffered by its location along a slightly-incised streambed. The northern terrace edge is fenced, though the Area is grazed. It adjoins other indigenous plant communities at its upstream and downstream boundaries.

Condition and Management Issues:

Indigenous vegetation in the Area is in relatively good condition, though is damaged by stock in places. Greater protection of the Area would considerably enhance its value as a corridor of indigenous vegetation and habitat.

Property Owner Comment:

A large part of this area lies within the marginal strip. The landowner intends to plant trees along the northern boundary of the lower part of the area. An unusual ribbonwood is present near the road bridge.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A depleted example of indigenous vegetation typical of the ecological district. Contains species (such as broadleaf and mountain ribbonwood) that are representative of the original vegetation.
Rarity	M	A locally-uncommon plant (<i>Melicytus</i> sp.) is present. Provides habitat for kereru and falcon.
Diversity and pattern	M	Species diversity is probably reduced from that originally present.
Distinctiveness/special features	M	Provides riparian protection and habitat adjoining and linking other areas of indigenous vegetation.
Other Criteria		
Size/shape	M	A moderate-sized area but is not very well buffered and does not have a very good shape.
Connectivity	M/H	Forms an ecologically-viable link between other areas of indigenous vegetation and habitat.
Long-term Sustainability	M	Resilient to change, though would benefit from conservation management.

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

This Area has been informally protected by its location in a shallow gully, protecting it from disturbance and limiting its potential for development. The Area could be developed, though the unstable nature of the stream would limit the extent to which it could be developed. No additional resources are required to implement effective protection, though removal of rowan and elderberry, control of broom and exclusion of stock would benefit the Area.

Discussion:

The Area easily meets the District Plan criteria for a Significant Natural Area. Its main attributes are its location alongside a stream and its role as a corridor linking two other areas of protected indigenous vegetation.

TIMARU DISTRICT SNA SURVEY

AREA 719a and b

Area Name: Coal Hill-Mt Peel Range
Location (central map reference): *see below*
Ecological District: Orari
Surveyors: Mike Harding

Property: Waikari Hills
Nearest Locality: Peel Forest
Area Size (ha): *see below* **Altitude (m):** 1000+
Survey Time: 2 hours **Survey Date:** 25-11-06

General Description:

These two areas cover the higher-altitude slopes of the Coal Hill-Mt Peel Range that are proposed for freehold tenure in the Preliminary Proposal for tenure review of Waikari Hills Pastoral Lease. The areas comprise the slopes above an altitude of approximately 1000 m, areas within which the existing indigenous vegetation is probably largely representative of the original vegetation. Only one area (Area 719b) was surveyed in detail; it is assumed that the vegetation in both areas 719a and 719b is similar.

Plant Communities:

The Area supports tussockland-shrubland. This plant community is described below for Area 719b. Naturalized (exotic) species are indicated with an asterisk*.

Area 719b:

(central grid reference: J37: 642-095; size: 47.6 ha; altitude: 1000-1250 m)

The tussockland-shrubland community within this Area is dominated by narrow-leaved snow-tussock and turpentine shrub.

Other important species are cotton daisy, *Myrsine nummularia*, *Pentachondra pumila*, blue tussock, woolly moss and other moss species.

Also present are matagouri, *Hebe lycopodioides*, *Gaultheria crassa*, snowberry, golden speargrass, *Coprosma perpusilla*, *Celmisia angustifolia*, *C. gracilentia*, comb sedge, *Raoulia subsericea*, *Carmichaelia monroi*, *Brachyscome* sp., red woodrush, *Pimelea oreophila*, *Anisotome flexuosa*, *Kelleria dieffenbachii*, *Gentiana* sp. and catsear*.

Additional species on rocky sites at lower altitudes are *Anisotome aromatica*, *Exocarpus bidwillii*, *Coprosma cheesemanii*, *Pimelea traversii*, *Gonocarpus micranthus* and *Hebe amplexicaulis*.

Area 719a:

(central grid reference: J36: 612-130; size: 56 ha; altitude: 1000-1500 m)

This Area was not surveyed.

Birds/Fauna Observed:

Black-backed gull.

Notable Flora, Fauna and Habitats:

The presence of *Hebe amplexicaulis* (threat status: range restricted) is notable.

Notable Plant and Animal Pests:

Scattered infestations of broom are present on slopes below the Area.

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

The lower boundaries of both areas follow the 1000 m contour and are unfenced. The upper boundaries adjoin areas proposed for protection as public conservation land in the Preliminary Proposal for tenure review of Waikari Hills Pastoral Lease.

Condition and Management Issues:

The plant communities in Area 719b are in relatively good condition. There is good tall tussock cover and good regeneration of turpentine shrub. This Area would benefit from the exclusion of stock.

Property Owner Comment:

No development is proposed above 3,000 feet (i.e. development will be below these areas).

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Area 719a

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of the ecological district and probably largely representative of the original vegetation.
Rarity		Not known; the Area was not surveyed.
Diversity and pattern	M/H	Species diversity is probably similar to that originally present.
Distinctiveness/special features	L/M	The Area forms part of an altitudinal sequence of indigenous vegetation.
Other Criteria		
Size/shape	M	A moderate-sized area with a good shape, but not well buffered.
Connectivity	M/H	Adjoins other areas of (soon to be) formally protected indigenous vegetation.
Long-term Sustainability	M	The ecological values of the Area are likely to persist with minimal conservation management.

Area 719b

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of the ecological district and probably largely representative of the original vegetation.
Rarity	M	The locally-endemic <i>Hebe amplexicaulis</i> (threat status: range restricted) is present at lower altitudes.
Diversity and pattern	M/H	Species diversity is probably similar to that originally present.
Distinctiveness/special features	L/M	The Area forms part of an altitudinal sequence of indigenous vegetation.
Other Criteria		
Size/shape	M	A moderate-sized area with a good shape, but not well buffered.
Connectivity	M/H	Adjoins other areas of (soon to be) formally protected indigenous vegetation.
Long-term Sustainability	M	The ecological values of the Area are likely to persist with minimal conservation management.

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

Both parts of the Area have potential for development, though the altitude and steepness of the areas limits their development potential. Similar adjoining areas are proposed for protection as part of the tenure review of Waikari Hills Pastoral Lease. The lower altitude boundary of the Area is placed at the altitude above which indigenous trees were probably not originally present.

Discussion:

Area 719b easily meets the District Plan criteria for a Significant Natural Area and it is assumed that Area 719a is similar in character and therefore also meets the criteria. Its main attributes are the presence of representative indigenous vegetation and its location adjoining a larger area of (soon-to-be) protected indigenous vegetation.

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>
burdock*	<i>Arctium minus</i>
bush lawyer	<i>Rubus cissoides</i>
bush lily	<i>Astelia</i> sp.
bush snowberry	<i>Gaultheria antipoda</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Canterbury tree broom	<i>Carmichaelia torulosa</i>
catsear*	<i>Hypochoeris radicata</i>
comb sedge	<i>Oreobolus pectinatus</i>
cotton daisy	<i>Celmisia spectabilis</i> var. <i>magnifica</i>
creeping buttercup*	<i>Ranunculus repens</i>
Darwin's barberry*	<i>Berberis darwinii</i>
Douglas fir*	<i>Pseudotsuga menziesii</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 speargrass	<i>Aciphylla aurea</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hard fern	<i>Paesia scaberula</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>
horehound*	<i>Marrubium vulgare</i>
hookgrass	<i>Uncinia</i> sp.
horopito/pepperwood	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
inaka	<i>Dracophyllum longifolium</i>
ivy*	<i>Hedera helix</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
kaikomako	<i>Pennantia corymbosa</i>
kanuka	<i>Kunzea ericoides</i>
kiokio	<i>Blechnum novae-zelandiae</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
leafless lawyer	<i>Rubus squarrosus</i>
leather-leaf fern	<i>Pyrrosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>

mahoe/whiteywood	<i>Melicytus ramiflorus</i>
maidenhair fern	<i>Adiantum cunninghamii</i>
male fern*	<i>Dryopteris filix-mas</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>
mountain akeake	<i>Olearia avicenniifolia</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 wineberry	<i>Aristotelia fruticosa</i>
mouse-ear hawkweed*	<i>Hieracium pilosella</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
narrow-leaved snow-tussock	<i>Chionochloa rigida</i>
native broom	<i>Carmichaelia aff. australis</i>
native jasmine	<i>Parsonsia sp.</i>
necklace fern	<i>Asplenium flabellifolium</i>
nettle*	<i>Urtica sp.</i>
pate	<i>Schefflera digitata</i>
patotara	<i>Leucopogon fraseri</i>
pennywort	<i>Hydrocotyle sp.</i>
pohuehue	<i>Muehlenbeckia australis</i>
pokaka	<i>Elaeocarpus hookerianus</i>
porcupine shrub	<i>Melicytus alpinus</i>
prickly shield fern	<i>Polystichum vestitum</i>
prostrate kowhai	<i>Sophora prostrata</i>
red woodrush	<i>Luzula rufa</i>
rowan*	<i>Sorbus aucuparia</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>
southern rata	<i>Metrosideros umbellata</i>
swamp kiokio	<i>Blechnum minus</i>
sweet brier*	<i>Rosa rubiginosa</i>
sycamore*	<i>Acer pseudoplatanus</i>
tauhinu	<i>Ozothamnus leptophyllus</i>
thousand-leaved fern	<i>Hypolepis millefolium</i>
three-finger	<i>Pseudopanax colensoi</i>
toatoa	<i>Haloragis erecta</i>
totara	<i>Podocarpus totara</i>
turpentine shrub	<i>Dracophyllum uniflorum</i>
tutu	<i>Coriaria sarmentosa</i>
weeping mapou	<i>Myrsine divaricata</i>
wineberry	<i>Aristotelia serrata</i>
wire moss	<i>Polytrichum juniperinum</i>
woolly moss	<i>Racomitrium sp.</i>
woolly mullein*	<i>Verbascum thapsus</i>
yellowwood	<i>Coprosma linariifolia</i>
Yorkshire fog*	<i>Holcus lanatus</i>