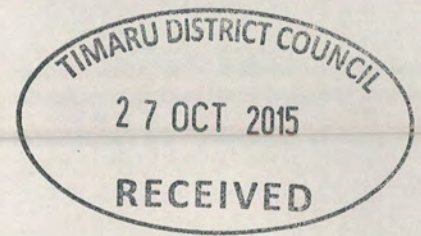


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**TIMARU DISTRICT**

**SIGNIFICANT NATURAL AREAS SURVEY**

**PEEL FOREST ESTATE**  
**(G CARR)**



**Report prepared for the Timaru District Council by Mike Harding**  
**October 2015**

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

### PROPERTY DETAILS:

**Owner:** .....Peel Forest Estate (G Carr)

**Valuation Reference:** ...24660/042.02

**Address:** .....Peel Forest Estate, RD 22, Geraldine

**Location:** .....Peel Forest, South Canterbury.

**Ecological Districts:** .....Orari/Geraldine/High Plains ecological districts.

**TDC Land Types:**.....Hard Rock Hills and Downs; Plains.

**Land Environments:** .....E3 (central dry foothills); N3 (eastern South Island plains).

### ECOLOGICAL CONTEXT:

This property lies at the base of the Tara Haoa (Mt Peel) Range in South Canterbury. It is at the boundary of Orari, Geraldine and High Plains ecological districts (McEwen, 1987). Most of the property occupies outwash terraces of Kowhai Stream (Geraldine/High Plains ecological districts); the remaining part lies on the adjacent lower hill slopes (Orari Ecological District). The plains part of the property is within the Level IV Land Environment N3.1a, and the hill-slope part is within E3.1a (Leathwick *et al*, 2003). Indigenous vegetation within the N3.1a land environment is regarded as 'acutely threatened'; that within the E3.1a 'chronically threatened' (Walker *et al*, 2006).

The original vegetation of this area would have been podocarp-hardwood forest, with large trees of kahikatea, totara and matai emergent over a hardwood canopy dominated by broadleaf, lemonwood, pokaka, lowland ribbonwood, narrow-leaved lacebark and other lowland hardwood trees. Areas of kowhai-kanuka forest may have been present alongside active stream channels. The property lies within the known distribution of the South Canterbury population of long-tailed bat, listed as a threatened (nationally critical) species (O'Donnell *et al*, 2012).

Indigenous vegetation on the property comprises young podocarp-hardwood forest on the lower hillslope and remnant podocarp-hardwood forest/treeland on the plains. This vegetation is adjacent to or near other indigenous vegetation protected within the regionally-important Peel Forest Park Scenic Reserve.

### SIGNIFICANT NATURAL AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during September 2015. Three separate areas are regarded as significant when assessed against the District Plan criteria.

Area No.	Area Name	Map ref. (NZTM)	Aprox. size(ha)	Vegetation/habitat type
663a		1459870E-5137380N	2.1	podocarp-hardwood forest/treeland
663b		1460075E-5137395N	0.2	podocarp-hardwood treeland
664b		1458800E-5137770N	3.6	podocarp-hardwood forest

These SNAs are illustrated on the aerial photograph below and described in greater detail on the SNA Survey 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 with appropriate management (criterion vii, page B19). SNAs are subject to confirmation by Council after regarding the matters listed in the District Plan (pages B19-B20). It is expected that SNAs will eventually be listed in the District Plan by way of a notified plan change.

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

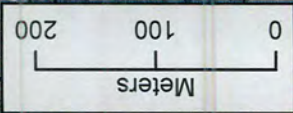
To assist with the protection and management of any SNA, such as fencing or pest control, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.

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#### **OTHER AREAS INSPECTED ON THE PROPERTY:**

Other areas of indigenous vegetation and habitat on the property were inspected but are not regarded as significant when assessed against the criteria on pages B18-B20 of the Timaru District Plan. These are either scattered old trees or denser stands of trees dominated by sycamore. Note that individual indigenous trees at plains sites are protected from clearance by existing District Plan rules.

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.



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Carr (Peel Forest Estate)  
24660/042.02



<b>Area Name:</b>	<b>Property:</b> Peel Forest Estate (Carr)		
<b>Ecological District:</b> Geraldine/High Plains	<b>Nearest Locality:</b> Peel Forest		
<b>663a: Central map ref. (NZTM):</b> 1459870E-5137380N	<b>Area Size (ha):</b> 2.1	<b>Altitude (m):</b> 280	
<b>663b: Central map ref. (NZTM):</b> 1460075E-5137395N	<b>Area Size (ha):</b> 0.2	<b>Altitude (m):</b> 280	
<b>Surveyors:</b> Mike Harding	<b>Survey Time:</b> 1 hour	<b>Survey Date:</b> 08-09-15	

### General Description:

This SNA comprises two patches of remnant indigenous forest and treeland (scattered trees) on and adjacent to a terrace scarp and small stream. It lies at the eastern part of the property adjacent to Peel Forest Road.

### Plant Communities:

These two patches support podocarp-hardwood forest and treeland, with some exotic species (marked below with an asterisk\*). Dominant trees are totara and kahikatea. Other canopy or emergent species are matai, kanuka, broadleaf, pokaka, lowland ribbonwood, narrow-leaved lacebark, lancewood, kaikomako, narrow-leaved mahoe, sycamore\*, hawthorn\*, lawyer, bush lawyer, pohuehue and native jasmine. Trunk diameters (at breast height) of the larger trees are: totara, 240cm; and pokaka, 67cm.

The forest understorey is open and the grazed ground-cover is in most places dominated by pasture grasses\*. Plant species present are kaikomako, elderberry\*, *Coprosma crassifolia*, *Coprosma rotundifolia*, poataniwha, weeping mapou, fuchsia, Himalayan honeysuckle\* (uncommon), *Clematis foetida*, leather-leaf fern, mistletoe and foxglove\*.



*Large pokaka (foreground) and totara trees at SNA 663a*

### Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, kereru, paradise shelduck and pukeko.

### Notable Flora, Fauna and Habitats:

Important features are the number and size of the old trees, notably the podocarps totara and kahikatea, and the habitat the site provides for forest birds. The larger trees are likely to be hundreds of years' old, representing old growth forest that pre-dates European settlement.

**Notable Plant and Animal Pests:**

Sycamore is the most important plant pest present. This invasive species can over-top and smother indigenous forest, as it has just south of the site. Hawthorn and elderberry also pose a threat, though are unlikely to become dominant. Animal pests were not surveyed, though possums are most likely present.

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

The boundaries of these two patches have been drawn to include the denser patches of indigenous trees. The SNA lies close to other patches of indigenous forest and treeland on the terrace and to the regionally-important Peel Forest Park Scenic Reserve. Vegetation at the site is not fenced from grazing and is not well buffered.

**Condition and Management**

The canopy trees appear in good condition. The forest understorey is depleted and the forest floor is dominated by pasture. Important management issues are the removal of exotic trees (especially sycamore) and regeneration of canopy species.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

Primary Criteria	Rank	Notes
Representativeness	M	Good examples of remnant canopy forest and treeland, though the forest is substantially depleted and only moderately representative of that originally present.
Rarity	H	Indigenous vegetation in an acutely-threatened Land Environment; remnant old-growth forest is now very rare in lowland Canterbury; may provide habitat for a threatened (nationally critical) species (long-tailed bat).
Diversity and pattern	L/M	Plant species diversity is relatively low and substantially reduced from that originally present.
Distinctiveness/special features	M	The large size of the canopy trees is a notable feature.
<b>Other Criteria</b>		
Size/shape	H	A large site for the Geraldine/High Plains ecological districts.
Connectivity	M	Lies close to other areas of indigenous vegetation, including the regionally-important Peel Forest Park Scenic Reserve.
Long-term Sustainability	L/M	Regeneration or planting of indigenous trees will be necessary to maintain ecological values in the long term. The forest has good potential for restoration.

**Property Owner Comment:**

Mr Carr intends to protect the trunks of the larger trees from grazing animals.

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

Trees within this SNA have been informally protected by the landowner. It is grazed as part of larger paddocks, affecting the forest understorey and forest regeneration. The small scarp and stream upon which the SNA is located limit its potential for further farm development. The trees presumably provide important shade and shelter for farm animals.

**Discussion:**

This area of forest and treeland easily meets the District Plan criteria for a Significant Natural Area (SNA). The presence of old-growth forest with large trees is significant. The habitat the area provides for forest birds and its location near Peel Forest Park Scenic Reserve are notable features. Old-growth indigenous forest is now very rare in lowland Canterbury.

**Area Name:**

Ecological District: Orari/Geraldine

Central map ref. (NZTM): 1458815E-5137770N

Surveyors: Mike Harding

**Property:** Peel Forest Estate (Carr)**Nearest Locality:** Blandswood**Area Size (ha):** 3.6**Altitude (m):** 320-340**Survey Time:** 1½ hours**Survey Date:** 08-09-15**General Description:**

This SNA lies on the lower southern slopes of Little Mount Peel adjacent to the settlement of Blandswood. It is at the northwest corner of the property and comprises indigenous forest that is contiguous with that protected in Peel Forest Park Scenic Reserve.

**Plant Communities:**

This SNA supports regenerating indigenous podocarp-hardwood forest with a few larger remnant podocarp trees (totara and kahikatea) along streams at the forest edge. This vegetation is described below with naturalized (exotic) species indicated by an asterisk\*.

Forest canopy species present are mahoe, broadleaf, marbleleaf, wineberry, five-finger, matipo, lemonwood, kanuka, kaikomako, pokaka, native jasmine, pohuehue and bush lawyer. Emergent from the forest canopy in places are trees of narrow-leaved lacebark and young kahikatea.

Common understorey species are wheki-ponga, *Coprosma rotundifolia* and horopito. Other species present are pate, soft tree fern, lancewood, five-finger, *Neomyrtus pedunculata*, pokaka, weeping mapou, mahoe, marbleleaf, kaikomako, turepo, shrubby mahoe, *Raukawa simplex*, poataniwha, *Coprosma rhamnoides*, Khasia berry\* (uncommon), bush lawyer, clematis and saplings of totara and kahikatea. Species present on tree trunks, especially tree fern trunks, are white climbing rata, hound's tongue fern, leather-leaf fern, hanging spleenwort, *Hymenophyllum demissum*, *Tmesipteris elongata*, Chilean flame creeper\* (uncommon) and the hanging moss *Weymouthia* sp.

The forest floor is in most places dominated by prickly shield fern or crown fern. Other plant species are *Blechnum fluviatile*, *Blechnum chambersii*, *Blechnum procerum*, hound's tongue fern, *Leptopteris hymenophylloides*, hen and chickens fern, bush lily, bush rice grass, hookgrass and seedlings of wineberry, mahoe, *Coprosma rotundifolia*, horopito, broadleaf, mapou, totara, kahikatea and native jasmine.

Plant species present at the forest margin are totara, kahikatea, kanuka, hawthorn\*, cabbage tree, fuchsia, *Coprosma rotundifolia*, *Coprosma rhamnoides*, *Coprosma propinqua*, *Coprosma tayloriae*, bush lawyer, gorse\*, Khasia berry\*, soft rush\*, *Blechnum penna-marina* and bidibid.



SNA 664b (foreground) with Peel Forest Park Scenic Reserve beyond.

### Birds/Fauna Observed:

Native birds observed during this brief survey were fantail, grey warbler, bellbird and rifleman. Other birds likely to be present are kereru (NZ pigeon), brown creeper, silvereye, tomtit, welcome swallow and possibly karearea (eastern falcon).

### Notable Flora, Fauna and Habitats:

Notable features of this SNA are the: presence of indigenous vegetation in a chronically-threatened Land Environment; presence of podocarps (totara and kahikatea), including old trees at the forest edge; diversity of plant species (54 vascular species); presence of locally uncommon plant species (*Hymenophyllum demissum*, bush rice grass, shrubby mahoe, *Raukawa simplex* and *Tmesipteris elongata*); habitat it provides for forest birds; and that the forest is contiguous with a regionally-important protected area (Peel Forest Park Scenic Reserve).

### Notable Plant and Animal Pests:

The most important plant pest present is Khasia berry (*Cotoneaster simonsii*), as this species is shade-tolerant and can colonize intact indigenous forest. Other naturalized species present (gorse, hawthorn and Chilean flame creeper) do not pose a significant threat to the forest. Animal pests were not surveyed, though sign of possums and deer was observed.

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

The core part of this area is partly fenced. This fence appears to be part of an old deer-trap, with a holding pen on the adjacent farmland. The forest is relatively well buffered by its location on a damp south-facing slope and by the extensive area of protected forest which it adjoins. The tongues of forest alongside the small streams below the site are important as they include older podocarp trees and help buffer the streams. Forest at this site is contiguous with and effectively part of the adjacent Peel Forest Park Scenic Reserve.

### Condition and Management

Forest at the site is in relatively good condition. It is regenerating strongly and has a good mix of understorey species. It is affected at its margin by plant pests (notably Khasia berry) and at parts of its understorey by deer browse and tracking. Important management issues are removal of Khasia berry and continued control or containment of wild animals (notable possums and deer) and stock (especially cattle and deer).

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### ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of regenerating indigenous forest typical of that present in this part of Timaru District and representative of the original vegetation of the ecological district.
Rarity	M/H	Indigenous vegetation in a chronically-threatened Land Environment; presence of five locally uncommon plant species.
Diversity and pattern	M/H	Plant species diversity is relatively high for a small site (54 indigenous vascular species).
Distinctiveness/special features	M	The presence of stream-terrace vegetation at the centre of the site is notable, as it supports a distinct understorey plant community including shrubby mahoe.
Other Criteria		
Size/shape	M/H	A small to moderate-sized site for this location, but the core area has a good shape and is well buffered.
Connectivity	M/H	Adjoins a regionally-important protected area along at least half its boundary.
Long-term Sustainability	M/H	Some plant and animal pest control (and protection from grazing) will be required to maintain ecological values in the long term.

### 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 the adjacent Peel Forest Park Scenic Reserve. Lower slopes have some potential for farm development. It lies at the corner of the property and does not provide access to other areas of farmland.



**Discussion:**

This area very easily meets the District Plan criteria for a Significant Natural Area (SNA). Important values are its location in a chronically-threatened land environment and adjacent to a regionally-important protected area. It provides habitat for forest birds and has podocarp trees and locally uncommon plant species.



*Forest interior, SNA 664b*

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

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

Common Name .....	Scientific name
(* = naturalised species)	
bidibid .....	<i>Acaena</i> sp.
broadleaf .....	<i>Griselinia littoralis</i>
bush lawyer .....	<i>Rubus cissoides</i>
bush lily .....	<i>Astelia fragrans</i>
bush rice grass .....	<i>Microlaena avenacea</i>
cabbage tree/ti rakau .....	<i>Cordyline australis</i>
Chilean flame creeper* .....	<i>Tropaeolum speciosum</i>
clematis .....	<i>Clematis paniculata</i>
crown fern .....	<i>Blechnum discolor</i>
elderberry* .....	<i>Sambucus nigra</i>
five-finger .....	<i>Pseudopanax arboreus</i>
foxglove* .....	<i>Digitalis purpurea</i>
fuchsia .....	<i>Fuchsia excorticata</i>
gorse* .....	<i>Ulex europaeus</i>
hanging spleenwort .....	<i>Asplenium flaccidum</i>
hawthorn* .....	<i>Crataegus monogyna</i>
hen and chickens fern .....	<i>Asplenium gracillimum</i>
Himalayan honeysuckle* .....	<i>Leycesteria formosa</i>
hookgrass .....	<i>Uncinia</i> sp.
horopito/pepperwood .....	<i>Pseudowintera colorata</i>
hound's tongue fern .....	<i>Microsorium pustulatum</i>
kahikatea/white pine .....	<i>Dacrycarpus dacrydioides</i>
kaikomako .....	<i>Pennantia corymbosa</i>
kanuka .....	<i>Kunzea ericoides</i>
Khasia berry* .....	<i>Cotoneaster simonsii</i>
kowhai .....	<i>Sophora microphylla</i>
lancewood .....	<i>Pseudopanax crassifolius</i>
lawyer .....	<i>Rubus schmidelioides</i>
leather-leaf fern .....	<i>Pyrrhosia eleagnifolia</i>
lemonwood .....	<i>Pittosporum eugenioides</i>
lowland ribbonwood .....	<i>Plagianthus regius</i>
mahoe/whiteywood .....	<i>Melicytus ramiflorus</i>
mapou .....	<i>Myrsine australis</i>
marbleleaf/putaputaweta .....	<i>Carpodetus serratus</i>
matai/black pine .....	<i>Prumnopitys taxifolia</i>
matipo/kohuhu .....	<i>Pittosporum tenuifolium</i>
mistletoe .....	<i>Ileostylis micranthus</i>
narrow-leaved lacebark .....	<i>Hoheria angustifolia</i>
narrow-leaved mahoe .....	<i>Melicytus lanceolatus</i>
native jasmine .....	<i>Parsonsia heterophylla</i>
pate .....	<i>Schefflera digitata</i>
poataniwha .....	<i>Melicope simplex</i>
pohuehue .....	<i>Muehlenbeckia australis</i>
pokaka .....	<i>Elaeocarpus hookerianus</i>
prickly shield fern .....	<i>Polystichum vestitum</i>
shrubby mahoe .....	<i>Melicytus micranthus</i>
soft rush* .....	<i>Juncus effusus</i>
soft tree fern .....	<i>Cyathea smithii</i>
sycamore* .....	<i>Acer pseudoplatanus</i>
totara .....	<i>Podocarpus totara</i>
turepo .....	<i>Streblus heterophyllus</i>
weeping mapou .....	<i>Myrsine divaricata</i>
wheki-ponga .....	<i>Dicksonia fibrosa</i>

white climbing rata.....	<i>Metrosideros diffusa</i>
wineberry .....	<i>Aristotelia serrata</i>

**References Cited**

Leathwick, J.; Wilson, G.; Rutledge, D.; Wardle, P.; Morgan, F.; Johnston, K.; McLeod, M.; Kirkpatrick, R. 2003. *Land Environments of New Zealand*. David Bateman, Auckland. 184p.

McEwen, W.M. (editor) 1987. Ecological regions and districts of New Zealand, third revised edition (Sheet 4). *New Zealand Biological Resources Centre Publication No.5*. Department of Conservation, Wellington, 1987.

O'Donnell, C.F.J.; Christie, J.E.; Lloyd, B.; Parsons, S.; Hitchmough, R.A. 2012. Conservation status of New Zealand bats 2012. *New Zealand Threat Classification Series 6*. Department of Conservation, Wellington.

Walker, S.; Price, R.; Rutledge, D.; Stephens, R.T.T.; Lee, W.G. 2006. Recent loss of indigenous cover in New Zealand. *NZ Journal of Ecology* 30: 169-177.



*Tmesipteris elongata* on a tree fern trunk, SNA 664b