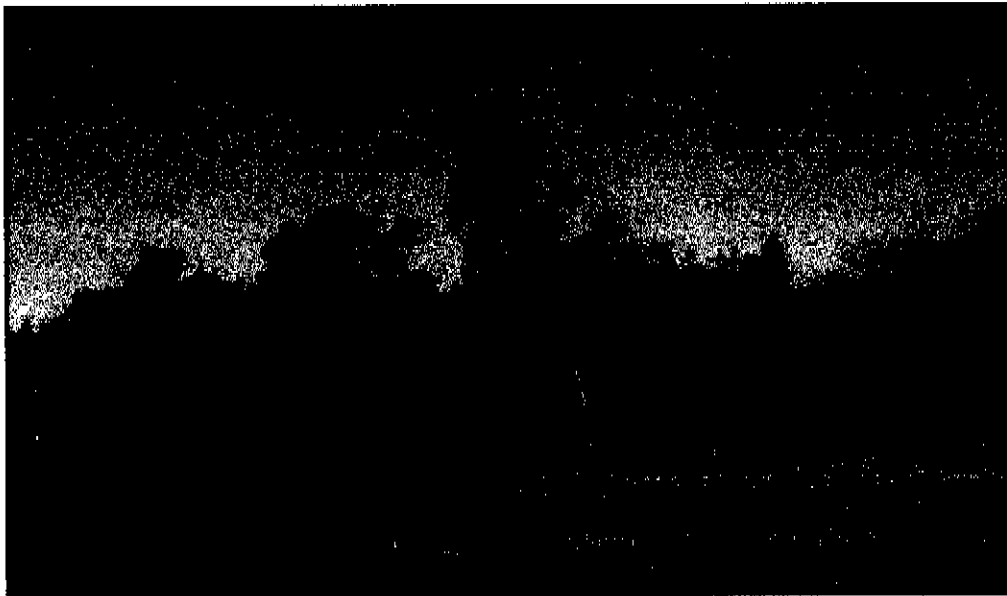




TIMARU DISTRICT

**SIGNIFICANT NATURAL AREAS
SURVEY**

**MACKAY PROPERTY
PARKHURST**



**Report prepared for the Timaru District Council by Mike Harding
December 2008**

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Hamish and Anna Mackay (Parkhurst)
Valuation Reference: 24660/083.00
Address: Burdon Road, Woodbury, RD 21, Geraldine
Location: West of Burdon Road on the north side of the Waihi River, north of Woodbury.
Ecological District:..... Geraldine Ecological District
TDC Land Type:..... Plains
Land Environment: N2 (well drained plains)

ECOLOGICAL CONTEXT:

The property lies in the northern part of the Geraldine Ecological District, on the outwash plain of the Waihi River. The original vegetation of this area would have been predominantly podocarp-hardwood forest, dominated by totara and/or kahikatea. Other important canopy species would have been matai, narrow-leaved lacebark, lowland ribbonwood, lemonwood, broadleaf and five-finger. Tall kanuka-kowhai forest and areas of matagouri-*Coprosma-Olecria* shrubland would probably have been present on disturbed surfaces, such as recent river flats and terrace scarps. The indigenous fauna would originally have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area.

Two main areas of indigenous vegetation are present on the property, representing a remnant of the original podocarp-hardwood forest and a stand of younger podocarp-hardwood forest. Forest on the property is part of a more extensive area of scattered to dense totara-dominated forest which stretches from the foothills at Waihi Gorge to near Woodbury. This forest is the most extensive area of totara forest remaining on the Canterbury Plains. One notable species is present on the property: the threatened pirita/white mistletoe (*Tupeia antarctica*). The property provides habitat for one threatened bird species, kereru, and probably provides habitat for another, rifleman (both 'gradual decline') and severally locally-uncommon plant species. The property lies within the existing range of the South Canterbury population of long-tailed bat (threat status: 'nationally-endangered').

SIGNIFICANT AREAS ON THE PROPERTY:

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

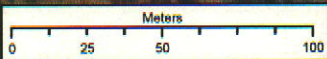
Area No.	Area Name	Central grid reference	Aprox. size(ha)	Vegetation/habitat type
2b	Waihi River Forest	J37: 662-861	0.92	podocarp-hardwood forest
614a	Parkhurst Forest	J37: 663-863	0.45	podocarp-hardwood forest
614b	Parkhurst Treeland	J37: 662-864	1.73	podocarp-hardwood treeland

These SNAs are illustrated on the attached aerial photograph and described in greater detail in this report. These areas meet the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19) though will require some management to ensure that they are 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. This does not normally prevent clearance to avoid shading of buildings or the maintenance of tracks and fences. To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. It is expected that SNAs will eventually be listed in the District Plan. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.



Mackay
24660/083.00



1:2,500

TIMARU DISTRICT SNA SURVEY

AREA 2b

Area Name: Waihi River Forest	Property: Parkhurst (Hamish and Anna Mackay)
Location (central map reference): J37: 662-861	Nearest Locality: Woodbury
Ecological District: Geraldine	Area Size (ha): 0.92 Altitude (m): 210-220
Surveyors: Mike Harding	Survey Time: 2 hours Survey Date: 20-08-08

General Description:

This SNA is a dense stand of mixed indigenous and exotic forest on a low terrace of the Waihi River, upstream of Burdon Road near Woodbury. The SNA lies partly on the property and partly on adjoining unallocated (riverbed) land.

Plant Communities:

The main plant community is totara-sycamore forest, described in detail below. Naturalized (exotic) species are indicated with an asterisk*.

The canopy of this forest is dominated by sycamore*, totara and kowhai. Trunk diameters (at breast height) of the larger totara trees are between 70 and 90 cm. The larger kowhai trees have trunk diameters between 50 and 60 cm. Other canopy species present are matai, crack willow*, wincherry, lemonwood, narrow-leaved lacebark, lancewood, Douglas fir*, oak* and one very large walnut* tree. Denser stands of Douglas fir* and radiata pine* trees are present adjacent to the area.

Species commonly present in the forest understorey are mahoe, pate, kaikomako, *Melicope simplex*, rohutu, *Coprosma rotundifolia*, *Coprosma rubra*, *Coprosma crassifolia*, native jasmine, pohuehue and saplings of totara, matai and kahikatea. Less common understorey species are lemonwood, mapou, shrubby mahoe, fuchsia, weeping mapou, lancewood, spindle tree*, tutsan*, barberry*, Chilean flamer creeper* and cherry laurel*.

Ground-cover species present are prickly shield fern, hen and chickens fern, *Asplenium appendiculatum*, *Asplenium hookerianum*, *Asplenium richardii*, *Pellaea rotundifolia*, hound's tongue fern, violet*, stinking iris*, male fern*, seedlings of kowhai and dense patches of moss.

Species that are generally confined to or more dominant at the northeast edge of the area are: lowland ribbonwood saplings, matipo, cherry plum*, barberry*, elderberry*, Khasia berry*, ivy*, old man's beard*, blackberry*, stinking iris*, periwinkle*, necklacc fern and an introduced buttercup* (*Ranunculus ficarii* ssp *ficariiformis*).

Additional species present at the river margin are five-finger, *Helichrysum lanceolatum*, bush lily, a sedge (*Carex* sp.), hookgrass (*Uncinia* sp.) and *Libertia ixioides*.

Birds/Fauna Observed:

Native birds observed during this brief inspection were grey warbler, kereru/NZ pigeon, harrier, fantail, bellbird and kingfisher.

Notable Flora, Fauna and Habitats:

Notable features of this SNA are the presence and dominance of podocarps (totara, matai and kahikatea), the habitat it provides for threatened animal species (kereru, probably rifleman and possibly long-tailed bat), the abundance of the locally-uncommon understorey shrub *Coprosma rubra*, the presence of other locally uncommon species (*Helichrysum lanceolatum*, *Libertia ixioides* and hookgrass), the location of the area adjacent to the larger Waihi Bush forest remnant across the Waihi River, the riparian protection the forest provides and the contribution the area makes to the network of forest bird habitat in the Woodbury-Waihi area.

Notable Plant and Animal Pests:

Sycamore, crack willow, old man's beard and Douglas fir are the most important plant pests present. These four species are present in the forest canopy and are dominant in the forest stands adjacent to the area. Oak and walnut trees are also present, though these are less likely to spread. Other important plant pests present

are barberry, cherry laurel, stinking iris, Khasia berry, periwinkle and ivy. These weeds are more common at the northeast edge of the area. Animal pests were not surveyed.

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

This area of forest is largely surrounded by stands of exotic trees, predominantly sycamore, Douglas fir, radiata pine and crack willow. It adjoins the Waihi River along one boundary. It is unfenced but lies within a larger area of riparian forest that is not grazed by domestic stock. The Waihi River separates the area from the regionally-important Waihi Bush forest remnant (SNA 2a).

Condition and Management Issues:

Exotic trees are a prominent component of this SNA and several other naturalized species are present in the forest understorey. Nevertheless, the forest has a relatively diverse range of indigenous species, including species that are generally confined to recent alluvial surfaces, notably *Coprosma rubra* and kaikomako. The forest is probably not very old, as indicated by the size of the canopy totara trees, the absence of kahikatea in the forest canopy (it is present only as saplings) and the property boundary. The property boundary indicates that at least part of the forest may have been riverbed at the time of survey, no longer than approximately 150 years ago. The most important management issue is the containment or removal of aggressive introduced plants, especially sycamore, barberry, old man's beard and ivy.

Property Owner Comment:

This area is not grazed. The property owners are interested in better protection of the remnant.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation typical of the ecological district and to a considerable extent representative of the original vegetation.
Rarity	M/H	Forest of this type is now rare in Canterbury. It provides habitat for threatened bird species (kereru and probably rifleman), potential habitat for long-tailed bat, and supports four locally-uncommon plant species.
Diversity and pattern	M	A relatively diverse range of species is present, though species diversity is probably less than that originally present and is compromised to some extent by the presence of exotic species.
Distinctiveness/special features	M	This is a good example of young indigenous forest on a recent alluvial surface.
Other Criteria		
Size/shape	M	A relatively small area, but with a good shape and well buffered.
Connectivity	M/H	Adjoins SNA 2a across the Waihi River and is an important part of the network of fauna habitat in the area.
Long-term Sustainability	M	Some management, notably weed control, will be required to maintain the ecological values of the SNA in the long term.

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

This area of forest has been informally protected by the current and former landowners. It is fenced from the farm paddocks and does not appear to have been grazed by domestic stock for many years. Its location on a low terrace, which partly lies outside the property boundary, limits its potential for development.

Discussion:

This area very easily meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence and dominance of podocarps (totara, matai and kahikatea), the abundance of the locally-uncommon understorey shrub *Coprosma rubra*, the presence of other locally uncommon plant species, the habitat it provides for threatened animal species, the location of the area adjacent to the larger Waihi Bush forest remnant across the Waihi River, the riparian protection the forest provides and the contribution the area makes to the network of forest bird habitat in the Woodbury-Waihi area.

TIMARU DISTRICT SNA SURVEY

AREA 614

Area Name: Parkhurst Forest and Treeland	Property: Parkhurst (Hamish and Anna Mackay)
Ecological District: Geraldine	Nearest Locality: Woodbury
Area 614a: Location (central map ref.): J37: 663-863	Area Size (ha): 0.45 Altitude (m): 215
Area 614b: Location (central map ref.): J37: 662-864	Area Size (ha): 1.73 Altitude (m): 215-220
Surveyors: Mike Harding	Survey Time: 1 hour Survey Date: 20-08-08

General Description:

This SNA comprises two contiguous areas of indigenous forest and treeland on a terrace of the Waihi River, upstream of Burdon Road near Woodbury. They are grouped together here because they are both remnants of the indigenous podocarp-hardwood forest that was originally present at the site.

Plant Communities:

Two main indigenous plant communities are present: podocarp-hardwood forest and podocarp-hardwood treeland. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Forest Remnant (SNA 614a):

This area comprises a small patch of mixed indigenous and exotic trees at the edge of an old orchard. Canopy species are kowhai, totara, narrow-leaved lacebark, sycamore*, oak*, broadleaf, lancewood, plum*, native jasmine, pohuehue and old man's beard*. Trunk diameters (at breast height) of the larger trees are kowhai: 40 to 60 cm; narrow-leaved lacebark: 50 to 70 cm; and lancewood: 26 cm.

Species present in the open understorey are elderberry*, barberry*, spindle tree*, *Coprosma rotundifolia*, *Coprosma propinqua* and *Coprosma crassifolia*.

The ground-cover is dominated by pasture grasses and large patches of stinking iris*. Other species present are black nightshade*, burdock* and blackberry*.

Treeland (SNA 614b):

This area comprises scattered clumps and individual specimens of mature indigenous trees in pasture just west of the homestead. Trees present (with trunk diameters in brackets) are: totara (70-90); broadleaf (90-105); narrow-leaved lacebark (65-75), lowland ribbonwood (70-80) and matai.

Other indigenous species present are horopito, large bushes of *Coprosma crassifolia*, mistletoe (on totara) and piritā/white mistletoe (on *Coprosma crassifolia*).

Birds/Fauna Observed:

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

Notable Flora, Fauna and Habitats:

Notable features of this SNA are the presence of large mature indigenous trees that are probably remnants of original forest, the presence of chronically threatened (gradual decline) bird species (kereru/NZ pigeon), the presence of the chronically threatened (gradual decline) white mistletoe (*Lupeia antarctica*), the habitat the area provides for native birds and possibly long-tailed bat, and the contribution the area makes to the network of fauna habitat in the area.

Notable Plant and Animal Pests:

Plant pests (other than horehound and nettle) are absent, primarily because the area is grazed. Animal pests were not surveyed.

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

The boundaries of this area are approximate and intended to encompass the main patches of trees. The denser patch of trees (SNA 614a) adjoins dense exotic forest (with some indigenous species) to the southwest and is linked, by this forest, to another stand of indigenous forest (SNA 2b). Otherwise, the area is unfenced and poorly buffered.

Condition and Management Issues:

The denser stand of indigenous trees (SNA 614a) has an understorey and ground-cover dominated by exotic species (notably stinking iris) and pasture grasses. Similarly, the ground-cover of the area of treeland (SNA 614b) is dominated by pasture. The long-term survival of indigenous vegetation in this SNA will require active management, including the establishment or assisted restoration of indigenous canopy species.

Property Owner Comment:

The landowners value this area and are interested in restoration.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A depleted example of the original indigenous forest.
Rarity	M/H	Provides habitat for kereru (gradual decline) and supports a threatened (gradual decline) plant species that is very uncommon in the ecological district: white mistletoe (<i>Tupeia antarctica</i>).
Diversity and pattern	L/M	Species diversity is low and is much reduced from that originally present.
Distinctiveness/special features	M	The size (and presumed age) of the larger indigenous trees is a notable feature.
Other Criteria		
Size/shape	M	A small to moderate sized area with a reasonable shape but poorly buffered.
Connectivity	M	Lies close to a regionally-important forest remnant (SNA 2) and is an important part of the network of fauna habitat in the area.
Long-term Sustainability	L/M	Active management will be required to maintain the ecological values in the long term.

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

The trees within this area have been informally protected by the current and previous owners. The existing grazing use is not limited by the presence of the trees, though further pasture development may be constrained. The trees are an attractive feature of the property and provide useful shelter and shade for stock.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of large mature indigenous trees that are probably remnants of original forest, the presence of chronically threatened (gradual decline) bird species (kereru/NZ pigeon), the presence of the chronically threatened (gradual decline) white mistletoe (*Tupeia antarctica*), the habitat the area provides for native birds and possibly long-tailed bat, and the contribution the area makes to the network of fauna habitat in the area.

Scientific names of species cited by common name in this report

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

Common Name	Scientific name
(* = naturalised species)	
barberry*	<i>Berberis glaucocarpa</i>
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
broadleaf	<i>Griselinia littoralis</i>
burdock*	<i>Arctium minus</i>
bush lily	<i>Astelia</i> sp.
cherry laurel*	<i>Prunus laurocerasus</i>
cherry plum*	<i>Prunus cerasifera</i>
Chilean flame creeper*	<i>Tropaeolum speciosum</i>
crack willow*	<i>Salix fragilis</i>
Douglas fir/oregon*	<i>Pseudotsuga menziesii</i>
elderberry*	<i>Sambucus nigra</i>
five-finger	<i>Pseudopanax arboreus</i>
fuchsia	<i>Fuchsia excorticata</i>
hen and chickens fern	<i>Asplenium bulbiferum</i>
horehound*	<i>Marrubium vulgare</i>
horopito/pepperwood	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
ivy*	<i>Hedera helix</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>
lemonwood	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mus</i>
mapou	<i>Myrsine australis</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mistletoe	<i>Ileostylis micranthus</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
native jasmine	<i>Parsonsia</i> sp.
necklace fern	<i>Asplenium flabellifolium</i>
nettle*	<i>Urtica</i> sp.
oak*	<i>Quercus</i> sp.
old man's beard*	<i>Clematis vitalba</i>
pate	<i>Schefflera digitata</i>
periwinkle*	<i>Vinca major</i>
pirita/white mistletoe	<i>Tupeia antarctica</i>
plum*	<i>Prunus</i> sp.
pohuehue	<i>Muehlenbeckia australis</i>
prickly shield fern	<i>Polystichum vestitum</i>
radiata pine*	<i>Pinus radiata</i>
rohutu	<i>Lophomyrtus obcordata</i>
shrubby mahoe	<i>Melicytus micranthus</i>
spindle tree*	<i>Euonymus europaeus</i>
stinking iris*	<i>Iris foetidissima</i>
sycamore*	<i>Acer pseudoplatanus</i>

totara	<i>Podocarpus totara</i>
tutsan*	<i>Hypericum androsaemum</i>
violet*	<i>Viola odorata</i>
walnut*	<i>Juglans regia</i>
weeping mapou	<i>Myrsine divaricata</i>
wincherry	<i>Aristotelia serrata</i>