

**TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY**

SHALLARD PROPERTY



**Report prepared for Timaru District Council by Mike Harding
December 2012**

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Neil Shallard
Valuation References: 24810/001.00
Address: 489 Rockwood Road, RD, Pleasant Point
Location: On eastern slopes of the Brothers Range.
Ecological District: Geraldine Ecological District.
TDC Land Type: Hard Rock Hills and Downs.
Land Environment: mostly E3.1a (Central Dry Foothills).

ECOLOGICAL CONTEXT:

The property lies on the eastern slopes of the Brothers Range and at the boundary of Geraldine and Fairlie ecological districts. The original vegetation of this area would have been predominantly podocarp-hardwood forest, with localized areas of kowhai-kanuka forest on rocky slopes and at disturbed sites. The indigenous fauna would probably 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 is confined to incised steep-sided valleys. It comprises core areas of indigenous hardwood forest with podocarps (totara, matai and kahikatea) and surrounding areas of regenerating hardwood and kanuka forest. These areas of forest lie near to other native forest on adjacent properties and make a valuable contribution to forest bird habitat in the wider area.

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas during June and July 2012. Seven areas of native forest, totalling approximately 30 hectares, are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria. These SNAs are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size (ha)	Vegetation/habitat type
360b	Shallard southeast gully forest	J38: 442-674	10.6	Podocarp-hardwood forest
360e		J38: 449-678	0.3	Hardwood forest
576a	Shallard western valley forest	J38: 435-680	10.2	Podocarp hardwood forest
577a	Shallard middle gully forest	J38: 440-680	0.5	Podocarp-hardwood forest
577b	Shallard middle gully forest	J38: 438-678	1.3	Podocarp-hardwood forest
578a	Shallard northeast gully	J38: 450-685	5.7	Podocarp-hardwood forest
578b	Shallard northern gully	J38: 4470686	1.9	Hardwood forest

These SNAs are illustrated on the attached aerial photograph 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 which 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, 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.

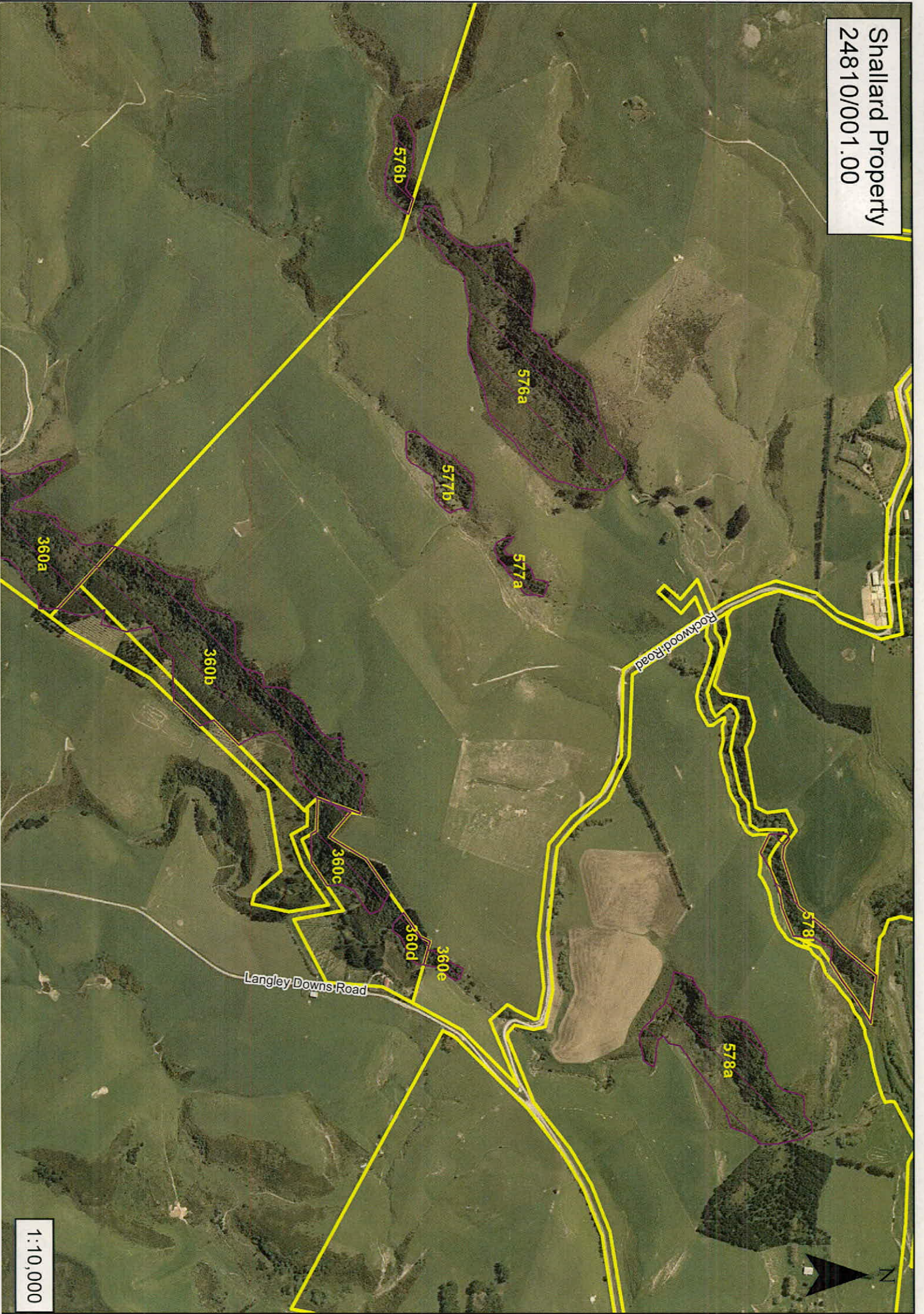
OTHER AREAS INSPECTED ON THE PROPERTY:

Other vegetation inspected on the property was the gorse- and broom-dominated scrub that is present on steep faces adjacent to some SNAs and on the steep face adjacent to the Opihi River terrace. There is some indigenous vegetation and habitat at these sites, but it does not presently meet the significance criteria in the Timaru District Plan. This does not mean that these areas are not important for the protection of indigenous biodiversity; it simply means that they do not (as assessed at this time) meet the criteria in the Timaru District Plan. If left undisturbed, native forest is likely to regenerate through this scrub.



Broom-dominated scrub in the valley above SNA 578a.

Shallard Property
24810/001.00



1:10,000

TIMARU DISTRICT SNA SURVEY

SNA 360b

Area Name: Shallard Southeast Gully Forest
Location (central map reference): J38: 442-674
Ecological District: Geraldine
Surveyors: Mike Harding and Cathy Mountier

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 10.6 **Altitude (m):** 250-350
Survey Time: 3 hours **Survey Date:** 26-06-12

General Description:

This SNA occupies the central part of a large incised valley on the eastern flank of the Brothers Range. It is part of a larger area of native forest which extends onto adjoining properties up-valley (southwest) (SNA 360a) and down-valley (northeast) (SNA 360c). Together these SNAs form one of the larger areas of indigenous forest remaining in this part of Geraldine Ecological District.

Plant Communities:

Two main plant communities are present: podocarp-hardwood forest and kanuka forest. These plant communities are described separately below, though they overlap in places. Naturalized (exotic) species are indicated with an asterisk*.

Podocarp-hardwood forest:

Podocarp-hardwood forest is present in the valley bottom and on lower slopes, especially at damper southeast-facing sites. It represents older forest that is less modified than forest on upper slopes.

The forest canopy comprises five-finger, broadleaf, wineberry, mapou, matipo, lancewood, mahoe, lemonwood, marbleleaf, kanuka, bush lawyer, pohuehue, and occasionally narrow-leaved lacebark, lowland ribbonwood and cabbage tree, with large emergent trees of totara, matai and kowhai.



An up-valley view of SNA 360b showing kanuka forest at left and podocarp-hardwood forest in the valley bottom.

Understorey species are mapou, *Coprosma crassifolia*, *Coprosma rhamnoides*, *Coprosma rotundifolia*, yellowwood, rohutu, mahoe, weeping mapou, native jasmine and saplings of totara, kowhai, lemonwood and five-finger. Hound's tongue fern is present on tree trunks.

Ground-cover species are bush lily, prickly shield fern, common shield fern, hound's tongue fern, hen and chickens fern, necklace fern, *Asplenium appendiculatum*, button fern, mountain kiokio, *Blechnum vulcanicum*, hookgrass, pennywort, hairy pennywort, *Lagenifera* sp. and seedlings of mahoe, matai and *Coprosma* species.

Species present at damper sites are fuchsia, pate, *Blechnum chambersii*, *Blechnum fluviatile* and swamp kiokio.

Also present at one location on dry rocky slopes is a healthy population of the at-risk (declining) gossamer grass (*Anemanthele lessoniana*).

Species present on the forest margin or at forest openings in the lower valley are native convolvulus, native jasmine, pohuehue, *Clematis marata*, gooseberry*, blackberry*, bittersweet*, foxglove*, prickly shield fern, hanging spleenwort, thousand-leaved fern, *Hypolepis ambigua*, Himalayan honeysuckle*, fuchsia, elderberry*, bracken, *Coprosma rigida*, *Coprosma virescens*, koromiko, poroporo, creeping buttercup*, *Carex* sp. and a locally-uncommon river terrace herb (*Australina pusilla*). Also present at the lower end of the area are a few elm* trees.



A dense patch of gossamer grass (*Anemanthele lessoniana*); an at-risk (declining) species.

leather-leaf fern); the habitat the area provides for forest birds, including an at-risk (declining) species (rifleman); and the size of the area.

Notable Plant and Animal Pests:

Elm is the most significant plant pest present. Several trees are present at the lower end of the area and on the adjacent property (SNA 360c). Elderberry, Himalayan honeysuckle and gooseberry are also present, though these species do not pose a significant threat. Animal pests were not surveyed, though possum and deer (?) sign was observed. Upper slopes near the southeast property boundary are grazed by sheep, resulting in a relatively open forest understorey in that area.

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

This area of native forest is well buffered by its location in a steep-sided valley. It is securely fenced along almost all the northwest boundary. The southeast boundary is less well protected and is grazed. This SNA is part of a larger area of native forest extending along the valley, though forest in the lower part of the valley is more modified. It makes a very important contribution to forest bird habitat in the area.

Condition and Management Issues:

The forest in this area is mostly in very good condition. It is affected by animal browse at its southeast edge and by invasive introduced elm at its lower boundary. The most important management issues are removal or containment of the elm trees and protection of the forest from domestic and wild animals.

Property Owner Comment:

Mr Shallard has recently erected a secure fence along the northwest boundary except for a short section where damp conditions prevented fencing. A less-secure fence is present at that location.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	A good example of indigenous forest typical of the ecological district and highly representative of the original forest.
Rarity	M/H	Supports populations of two at-risk plant species, one at-risk bird species (rifleman) and four locally-uncommon plant species.
Diversity and pattern	M/H	Plant species diversity (65 indigenous vascular species) is high for this part of the ecological district.
Distinctiveness/special features	M/H	A substantial proportion of this SNA supports older forest with large old podocarp trees.
Other Criteria		
Size/shape	H	A relatively large area of forest for this part of Timaru District.
Connectivity	H	This area links other areas of native forest and provides an important core area of forest bird habitat in a part of the District where native forest is substantially depleted.
Long-term Sustainability	M/H	Some plant and animal pest control will probably 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 SNA occupies steep slopes that have very limited potential for farm development. The forest lies at the boundary of the property so access through the forest is not required for farm management. The landowner has provided informal protection for this area by excluded grazing animals and fencing the main forest boundary.

Discussion:

This area very easily meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of a large area of relatively intact (old-growth) native forest including large trees of matai and totara; populations of two at-risk plant species; populations of four locally-uncommon plant species; the habitat the area provides for forest birds, including an at-risk (declining) species (rifleman); the size of the area and its position as a link between other areas of native forest.

Kanuka forest:

Kanuka forest occupies the upper slopes of this SNA, mostly on the drier northwest-facing sites. It represents a forest community that has regenerated following earlier clearance, probably by fire.

The canopy of this forest is dominated by kanuka. Trunk diameters (at breast height) of the canopy trees range between 15 and 25cm. Other canopy or sub-canopy species are mahoe, matipo, yellowwood, lancewood, five-finger, broadleaf, bush lawyer and pohuehue.

Understorey species are *Coprosma crassifolia*, *Coprosma rhamnoides*, *Raukaua anomalus*, lancewood, mapou, poataniwha, *Helichrysum lanceolatum*, native jasmine and, on tree trunks, leather-leaf fern. At some locations regenerating totara is a common understorey and sub-canopy species. Ground-cover species are *Asplenium appendiculatum*, *Asplenium hookerianum*, hound's tongue fern, *Dichondra repens* and seedlings of totara, five-finger, native jasmine and *Coprosma* species.

A small population of the at-risk (naturally uncommon) fierce lancewood (*Pseudopanax ferox*) is present in kanuka forest near the southeast boundary of the property, at E2344192-N5667442 (NZMS260).



A sapling of fierce lancewood (*Pseudopanax ferox*); an at-risk species.

Birds/Fauna Observed:

Native birds observed during this brief survey were fantail, bellbird, rifleman, kereru and grey warbler.

Notable Flora, Fauna and Habitats:

Important features of this area are: the presence of relatively intact (old-growth) native forest including large trees of matai and totara; populations of two at-risk plant species (fierce lancewood and gossamer grass); populations of four locally-uncommon plant species (*Australina pusilla*, *Clematis marata*, rohutu and

TIMARU DISTRICT SNA SURVEY

SNA 360e

Area Name:	Property: Neil Shallard	
Location (central map reference): J38: 449-678	Nearest Locality: Raincliff	
Ecological District: Geraldine	Area Size (ha): 0.3	Altitude (m): 260-280
Surveyors: Mike Harding	Survey Time: ½ hour	Survey Date: 17-07-12

General Description:

This SNA lies on a steep east-facing slope in the valley at the southeast part of the property. It adjoins SNA 360d on the adjacent property and is part of a much larger area of native forest (SNA 360), the upper part of which lies on this property.

Plant Communities:

The main plant community present is hardwood forest, described below. Naturalized (exotic) species are indicated with an asterisk*.

The forest canopy is dominated by kowhai. Other canopy species are five-finger, fuchsia, mahoe, broadleaf, narrow-leaved lacebark, cabbage tree, mapou, matipo, yellowwood, weeping mapou, elderberry*, bush lawyer, native jasmine and pohuehue. The forest understorey was not inspected.

Ground-cover species are common shield fern, necklace fern, *Asplenium richardii*, *Asplenium appendiculatum*, hound's tongue fern, button fern, hairy pennywort, cardamine, *Einadia allanii* and seedlings of mapou and *Coprosma* species.

Additional species present at the forest margin are *Coprosma virescens*, *Coprosma crassifolia*, *Coprosma propinqua*, poataniwha, korokio, *Helichrysum lanceolatum*, mistletoe (on *Coprosma virescens* and *Coprosma crassifolia*), Himalayan honeysuckle*, broom*, foxglove*, bracken and blackberry*.



SNA 360e

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, fantail and grey warbler. Rifleman, kereru, harrier and silvereye were observed elsewhere in the larger area of forest (SNA 360).

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of native vegetation in an area where forest cover is substantially depleted, the presence of an at-risk (naturally uncommon) plant species (*Einadia allanii*), the habitat the area provides for forest birds, including an at-risk (declining) species (rifleman) and that the area is part of a larger and important area of native forest.

Notable Plant and Animal Pests:

Elderberry and Himalayan honeysuckle are the main plant pests present, though neither species poses a significant threat to the indigenous vegetation.

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

The area is unfenced but is protected from browsing animals by its steep rocky slopes. It is part of a larger area of indigenous forest.

Condition and Management Issues:

Vegetation at this site is in relatively good condition. The most important management issue is continued control of plant and animal pests.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	An example of young/regenerating indigenous forest typical of the ecological district.
Rarity	M	Supports a very healthy population of an at-risk plant species (<i>Einadia allanii</i>) and provides habitat for an at-risk (declining) bird species (rifleman) (observed nearby).
Diversity and pattern	M	Diversity is typical for young forest in this area.
Distinctiveness/special features	M	The dominance of kowhai is a notable feature.
Other Criteria		
Size/shape	M	A small but well buffered area.
Connectivity	M	Part of a larger area of indigenous vegetation.
Long-term Sustainability	M/H	Some plant and animal pest control may 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 little potential for farm development. It has been protected from clearance by the landowner.

Discussion:

This area just meets the District Plan criteria for a Significant Natural Area. Important features are the presence of native vegetation in an area where forest cover is substantially depleted, the presence of an at-risk (naturally uncommon) plant species (*Einadia allanii*), the habitat the area provides for forest birds, including an at-risk (declining) species (rifleman) and that the area is part of a larger and important area of native forest.

TIMARU DISTRICT SNA SURVEY

SNA 576a

Area Name: Shallard Western Valley Forest
Location (central map reference): J38: 435-680
Ecological District: Geraldine
Surveyors: Mike Harding and Cathy Mountier

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 10.2 **Altitude (m):** 300-380
Survey Time: 6 hours **Survey Date:** 27-06-12

General Description:

This SNA occupies a relatively large incised valley just south of the homestead. It is one of the largest areas of native forest remaining in this area and lies close to several other native forest remnants.

Plant Communities:

Two main plant communities are present: podocarp-hardwood forest and kanuka forest. These plant communities merge with one another in places, though are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Podocarp-hardwood forest:

The forest canopy comprises mahoe, mapou, lemonwood, lowland ribbonwood, broadleaf, lancewood, five-finger, wineberry, marbleleaf, cabbage tree, pohuehue, lawyer and bush lawyer, with large emergent trees of totara, matai and kahikatea. Trunk diameters (at breast height) of the larger trees are: kahikatea, 110cm; matai, 70cm; totara, 35 to 65cm; and lowland ribbonwood, 35cm. One patch of large elm* trees is present near the stream mid-valley.

The forest understorey is dominated in most places by mahoe. Other understorey species are *Coprosma crassifolia*, *Coprosma rhamnoides*, mapou, poataniwha, weeping mapou, lemonwood, matipo, yellowwood, *Raukaua anomalus*, pate, horopito and saplings of totara, matai, kowhai, lancewood and lowland ribbonwood.



The upper end of SNA 576a

Ground-cover species are prickly shield fern, hound's tongue fern, hen and chickens fern, *Asplenium hookerianum*, male fern*, bush lily, *Libertia ixioides*, *Carex solandri* and seedlings of totara, kowhai, mapou, mahoe, broadleaf, five-finger, horopito, native jasmine and *Coprosma* species.

Additional species present at damper sites, mostly along the stream, are *Blechnum fluviatile*, *Blechnum chambersii*, *Hypolepis ambigua*, male fern*, pennywort, sedge (*Carex* sp.), and the locally uncommon herb *Australina pusilla*.

On steep shaded slopes in the lower valley a lower stature forest community is present. It is dominated by fuchsia, wineberry, mahoe, Himalayan honeysuckle*, elderberry*, bush lawyer and pohuehue. Understorey species are mahoe, pate, wineberry, *Coprosma rotundifolia*, blackberry* and pohuehue. Other species present within the forest are prickly shield fern, hen and chickens fern and seedlings of broadleaf, mahoe and mapou.

Kanuka forest:

Kanuka is the main canopy tree in this forest. Trunk diameters (at breast height) of the canopy trees range between 15 and 30cm. Other canopy species are totara, lancewood, matipo, lemonwood, mapou, mahoe, yellowwood, five-finger, native jasmine, bush lawyer and pohuehue.

On drier (northwest-facing) slopes the at-risk (naturally uncommon) fierce lancewood (*Pseudopanax ferox*) is present and in places dominant in the forest canopy. The population of fierce lancewood at this location exceeds 100 adult trees. Also present in this community are *Parsonsia capsularis*, leafless lawyer, scrub pohuehue and abundant *Coprosma virescens*.



Kanuka forest on the upper northwest-facing slopes of SNA 576a

On damper slopes the forest understorey is dominated by mapou. Other understorey species are mahoe, five-finger, lancewood, *Coprosma rhamnoides*, *Coprosma rotundifolia*, poataniwha, pate, kowhai and occasionally horopito and laurel*.

On drier slopes the forest understorey supports mapou, *Coprosma crassifolia*, *Coprosma rhamnoides*, *Coprosma virescens*, five-finger, lancewood, fierce lancewood, lemonwood, matipo, yellowwood, korokio, *Helichrysum lanceolatum*, weeping mapou, *Raukaua anomalus*, mistletoe (on yellowwood and totara), *Melicytus* 'blondin' and saplings of totara.

Ground-cover species on damper slopes are hen and chickens fern, *Asplenium lyallii*, *Asplenium richardii*, common shield fern, button fern, hound's tongue fern, *Libertia ixioides*, hookgrass, and seedlings of mahoe, kowhai, native jasmine and *Coprosma* species.

The groundcover on drier slopes is dominated by hound's tongue fern. Other species present are button fern, necklace fern, hanging spleenwort, *Asplenium appendiculatum* and seedlings of totara, fierce lancewood, matipo and *Coprosma* species.



A large kahikatea tree at the centre of SNA 576a

Species present on the forest margin or at forest openings are matipo, mountain akeake (uncommon), *Coprosma crassifolia*, *Coprosma tayloriae*, koromiko, poroporo, scrub pohuehue, elderberry*, broom*, gorse*, blackberry*, black nightshade*, bracken and foxglove*.

Additional species present at the lower end of the area, at the forest margin, are periwinkle* and trees of ash* and elm*.

Birds/Fauna Observed:

Native birds observed during this survey were bellbird, grey warbler, fantail, silvereye, rifleman, kereru and harrier.

Notable Flora, Fauna and Habitats:

Important features of this area are that it is a relatively extensive area of old-growth forest supporting old podocarp trees (totara, matai and kahikatea) and a very large population of an at-risk (naturally uncommon) plant species (fierce lancewood). It also provides habitat for an at-risk (declining) bird species (rifleman) and five locally-uncommon plant species (*Australina pusilla*, kahikatea, *Libertia ixioides*, *Melicytus* 'blondin' and leafless lawyer). Plant species diversity is high (61 indigenous vascular species) and a range of plant communities is present. The area makes a valuable contribution to forest bird habitat and biodiversity protection in a part of Timaru District where native forest is substantially depleted.



Fierce lancewood (Pseudopanax ferox) seedlings at SNA 576a

Notable Plant and Animal Pests:

The most important plant pests are laurel and elm. Laurel is present at several locations, presumably from bird-dispersed seed. Elm is present mid-valley and also at the lower end of the area, near the site of the old homestead. Other plant pests, such as elderberry, Himalayan honeysuckle, gorse and broom, are present but do not pose a significant threat to the native forest. Animal pests were not surveyed, though a possum was seen.

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

This SNA is well buffered by its location in a deep steep-sided valley and well protected by secure fences along its boundaries. It adjoins a smaller area of regenerating forest on the adjacent property at its up-valley (southwest) end. It lies close to a number of other native forest remnants in nearby valleys.

Condition and Management Issues:

The most important management issue is removal of the large elm trees. Laurel trees also pose a threat, but control of those scattered trees would be more difficult. Control of wild animals, especially possums, is also important.

Property Owner Comment:

Mr Shallard advises that he has long valued the area and ensured that regenerating forest at its margins was not targeted during spraying operations. He has provided protection for the area by providing secure boundary fences and excluding stock.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	A very good example of indigenous forest typical of the ecological district and highly representative of that originally present in the area.
Rarity	H	Supports a very large and healthy population of an at-risk (naturally uncommon) plant species (fierce lancewood); provides good habitat for an at-risk (declining) bird species (rifleman); supports populations of five locally uncommon plant species.
Diversity and pattern	M/H	Plant species diversity is relatively high.
Distinctiveness/special features	M/H	Contains good sequences of plant communities, from dry to damp sites and old growth to younger forest.
Other Criteria		
Size/shape	H	A large, well buffered and well protected area.
Connectivity	M	Adjoins a smaller area upstream and makes an important contribution to the network of forest bird habitat in the area.
Long-term Sustainability	M/H	Some plant and animal pest control 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):

Most parts of this area occupy steep slopes that have very limited potential for farm development. The area is securely fenced and access through the area is difficult. The landowner has deliberately set aside this area from farming operations.

Discussion:

This area easily meets the District Plan criteria for a Significant Natural Area. Important features of the area are: the diversity of plant species; the presence of old-growth forest supporting old podocarp trees (totara, matai and kahikatea); a very large population of an at-risk (naturally uncommon) plant species (fierce lancewood); habitat for an at-risk (declining) bird species (rifleman) and five locally-uncommon plant species; and the contribution the area makes to forest bird habitat and biodiversity protection in a part of Timaru District where native forest is substantially depleted.

TIMARU DISTRICT SNA SURVEY

SNAs 577a and 577b

Area Name: Shallard Middle Gully Forest
Ecological District: Geraldine
AREA : Location (central map ref.): J38: 440-680
AREA : Location (central map ref.): J38: 438-678
Surveyors: Mike Harding and Cathy Mountier

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 0.5 **Altitude (m):** 300-340
Area Size (ha): 1.3 **Altitude (m):** 350-380
Survey Time: 1½ hours **Survey Date:** 26-06-12

General Description:

These two SNAs lie in a small valley between two larger valleys with native forest on the property (SNA 360b and SNA 576a). They occupy steep slopes at incised parts of the valley and are separated by a gentler section of valley floor with pasture.

Plant Communities:

The main plant community present at these SNAs is podocarp-hardwood forest. This plant community is described separately for each area below. Naturalized (exotic) species are indicated with an asterisk*.

SNA 577a:

Species that make up the forest canopy of most of this area are kanuka, matipo, broadleaf, five-finger, lancewood, mahoe, mapou, wineberry, cabbage tree, native jasmine, bush lawyer and pohuehue, with emergent trees of totara. On steep damp slopes a lower-stature plant community is dominated by Himalayan honeysuckle*, fuchsia, pohuehue, bush lawyer and prickly shield fern.

The small part of the forest understorey inspected is relatively open with scattered plants of mahoe, *Coprosma crassifolia*, kowhai and korokio. Species present on the forest floor are necklace fern, hanging spleenwort, *Asplenium appendiculatum*, button fern, hound's tongue fern, cardamine, foxglove* and seedlings of *Coprosma crassifolia*, broadleaf, totara and cabbage tree. Plant species at damper sites are pate, elderberry*, bush lily, *Hypolepis ambigua*, *Blechnum fluviatile*, male fern* and sedge (*Carex* sp.).



SNA 577a

Species present at the forest margin are *Coprosma crassifolia*, korokio, koromiko, lemonwood, gorse* (sprayed), broom* (uncommon), poroporo, *Dichondra repens*, bush lawyer and native convolvulus. Two species of mistletoe are present on *Coprosma crassifolia* shrubs: *Ileostylis micranthus* and dwarf mistletoe (*Korthalsella lindsayi*). Three large radiata pine* trees are also present at the forest margin.

SNA 577b:

The canopy of this upper area of forest comprises totara, five-finger, matipo, mahoe, lemonwood, broadleaf, lancewood, mapou, kowhai, kanuka, cabbage tree, native jasmine, pohuehue and bush lawyer, with emergent trees of totara and narrow-leaved lacebark. The forest understorey was not inspected. Steep shady faces support a lower-stature forest dominated by fuchsia, pate, pohuehue, Himalayan honeysuckle*, wineberry and young narrow-leaved lacebark.

Species present at the forest margin are weeping mapou, *Coprosma tayloriae*, *Coprosma propinqua*, *Coprosma rhamnoides*, *Coprosma rotundifolia*, yellowwood, poataniwha, poroporo, korokio, *Melicytus* 'blondin', bush lawyer, scrub pohuehue, elderberry*, gorse*, black nightshade*, foxglove*, woolly mullein*, necklace fern, common shield fern, *Dichondra repens* and pennywort.



SNA 577b

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, fantail, silvereve and welcome swallow.

Notable Flora, Fauna and Habitats:

Important features of these two areas are the presence of native forest with podocarp trees (totara), the habitat the area provides for forest birds (probably including rifleman: an at-risk species), the presence of two

locally-uncommon plant species (dwarf mistletoe and *Melicytus* 'blondin'), and their proximity to other areas of native forest.

Notable Plant and Animal Pests:

Himalayan honeysuckle and elderberry are present, though these species do not pose a significant threat to the forest. A few scattered plants of gorse and broom are present at the forest margins. Animal pests were not surveyed.

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

These two patches of native forest are buffered by their locations in steep-sided sections of the valley. They are not fenced but most parts of the forests are not readily accessible to stock. They lie quite close to other important areas of native forest, notably SNA 360b and SNA 576a.

Condition and Management Issues:

These forest patches appear in relatively good condition. The effects of animal browse are evident at the forest margins, though only at locations accessible to stock. The most important management issue is probably continued protection from the effects of browsing animals, including possums.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	Good examples of young forest typical of the ecological district and containing representative canopy species, notably totara.
Rarity	L/M	These forest patches support two locally uncommon plant species and probably provide habitat for an at-risk (declining) bird species (rifleman).
Diversity and pattern	M	Plant species diversity is moderate, though the forest understorey was not inspected closely.
Distinctiveness/special features	M	The presence of healthy stands of totara is notable.
Other Criteria		
Size/shape	M	Small to moderate-sized areas that are well buffered.
Connectivity	M	Not connected to other areas of forest, but part of a network of forest bird habitat in the area.
Long-term Sustainability	M/H	Some animal pest control may be required to maintain ecological values in the long term.

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

These areas occupy steep slopes that have very limited potential for farm development. The landowner has provided informal protection for these areas by avoiding clearance.

Discussion:

These areas meet the District Plan criteria for a Significant Natural Area. Important features of the areas are the presence of native forest with podocarp trees (totara), the habitat the area provides for forest birds (probably including rifleman: an at-risk species), the presence of two locally-uncommon plant species (dwarf mistletoe and *Melicytus* 'blondin'), and their proximity to other areas of native forest.

TIMARU DISTRICT SNA SURVEY

SNAs 577a and 577b

Area Name: Shallard Middle Gully Forest
Ecological District: Geraldine
AREA : Location (central map ref.): J38: 440-680
AREA : Location (central map ref.): J38: 438-678
Surveyors: Mike Harding and Cathy Mountier

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 0.5 **Altitude (m):** 300-340
Area Size (ha): 1.3 **Altitude (m):** 350-380
Survey Time: 1½ hours **Survey Date:** 26-06-12

General Description:

These two SNAs lie in a small valley between two larger valleys with native forest on the property (SNA 360b and SNA 576a). They occupy steep slopes at incised parts of the valley and are separated by a gentler section of valley floor with pasture.

Plant Communities:

The main plant community present at these SNAs is podocarp-hardwood forest. This plant community is described separately for each area below. Naturalized (exotic) species are indicated with an asterisk*.

SNA 577a:

Species that make up the forest canopy of most of this area are kanuka, matipo, broadleaf, five-finger, lancewood, mahoe, mapou, wineberry, cabbage tree, native jasmine, bush lawyer and pohuehue, with emergent trees of totara. On steep damp slopes a lower-stature plant community is dominated by Himalayan honeysuckle*, fuchsia, pohuehue, bush lawyer and prickly shield fern.

The small part of the forest understorey inspected is relatively open with scattered plants of mahoe, *Coprosma crassifolia*, kowhai and korokio. Species present on the forest floor are necklace fern, hanging spleenwort, *Asplenium appendiculatum*, button fern, hound's tongue fern, cardamine, foxglove* and seedlings of *Coprosma crassifolia*, broadleaf, totara and cabbage tree. Plant species at damper sites are pate, elderberry*, bush lily, *Hypolepis ambigua*, *Blechnum fluviatile*, male fern* and sedge (*Carex* sp.).



SNA 577a

Species present at the forest margin are *Coprosma crassifolia*, korokio, koromiko, lemonwood, gorse* (sprayed), broom* (uncommon), poroporo, *Dichondra repens*, bush lawyer and native convolvulus. Two species of mistletoe are present on *Coprosma crassifolia* shrubs: *Ileostylis micranthus* and dwarf mistletoe (*Korthalsella lindsayi*). Three large radiata pine* trees are also present at the forest margin.

SNA 577b:

The canopy of this upper area of forest comprises totara, five-finger, matipo, mahoe, lemonwood, broadleaf, lancewood, mapou, kowhai, kanuka, cabbage tree, native jasmine, pohuehue and bush lawyer, with emergent trees of totara and narrow-leaved lacebark. The forest understorey was not inspected. Steep shady faces support a lower-stature forest dominated by fuchsia, pate, pohuehue, Himalayan honeysuckle*, wineberry and young narrow-leaved lacebark.

Species present at the forest margin are weeping mapou, *Coprosma tayloriae*, *Coprosma propinqua*, *Coprosma rhamnoides*, *Coprosma rotundifolia*, yellowwood, poataniwha, poroporo, korokio, *Melicytus* 'blondin', bush lawyer, scrub pohuehue, elderberry*, gorse*, black nightshade*, foxglove*, woolly mullein*, necklace fern, common shield fern, *Dichondra repens* and pennywort.



SNA 577b

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, fantail, silvereye and welcome swallow.

Notable Flora, Fauna and Habitats:

Important features of these two areas are the presence of native forest with podocarp trees (totara), the habitat the area provides for forest birds (probably including rifleman: an at-risk species), the presence of two

locally-uncommon plant species (dwarf mistletoe and *Melicytus* 'blondin'), and their proximity to other areas of native forest.

Notable Plant and Animal Pests:

Himalayan honeysuckle and elderberry are present, though these species do not pose a significant threat to the forest. A few scattered plants of gorse and broom are present at the forest margins. Animal pests were not surveyed.

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

These two patches of native forest are buffered by their locations in steep-sided sections of the valley. They are not fenced but most parts of the forests are not readily accessible to stock. They lie quite close to other important areas of native forest, notably SNA 360b and SNA 576a.

Condition and Management Issues:

These forest patches appear in relatively good condition. The effects of animal browse are evident at the forest margins, though only at locations accessible to stock. The most important management issue is probably continued protection from the effects of browsing animals, including possums.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	Good examples of young forest typical of the ecological district and containing representative canopy species, notably totara.
Rarity	L/M	These forest patches support two locally uncommon plant species and probably provide habitat for an at-risk (declining) bird species (rifleman).
Diversity and pattern	M	Plant species diversity is moderate, though the forest understorey was not inspected closely.
Distinctiveness/special features	M	The presence of healthy stands of totara is notable.
Other Criteria		
Size/shape	M	Small to moderate-sized areas that are well buffered.
Connectivity	M	Not connected to other areas of forest, but part of a network of forest bird habitat in the area.
Long-term Sustainability	M/H	Some animal pest control may be required to maintain ecological values in the long term.

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

These areas occupy steep slopes that have very limited potential for farm development. The landowner has provided informal protection for these areas by avoiding clearance.

Discussion:

These areas meet the District Plan criteria for a Significant Natural Area. Important features of the areas are the presence of native forest with podocarp trees (totara), the habitat the area provides for forest birds (probably including rifleman: an at-risk species), the presence of two locally-uncommon plant species (dwarf mistletoe and *Melicytus* 'blondin'), and their proximity to other areas of native forest.

TIMARU DISTRICT SNA SURVEY

SNA 578a

Area Name: Shallard Northeast Gully
Location (central map reference): J38: 450-685
Ecological District: Geraldine
Surveyors: Mike Harding

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 5.7 **Altitude (m):** 200-250
Survey Time: 2 hours **Survey Date:** 17-07-12

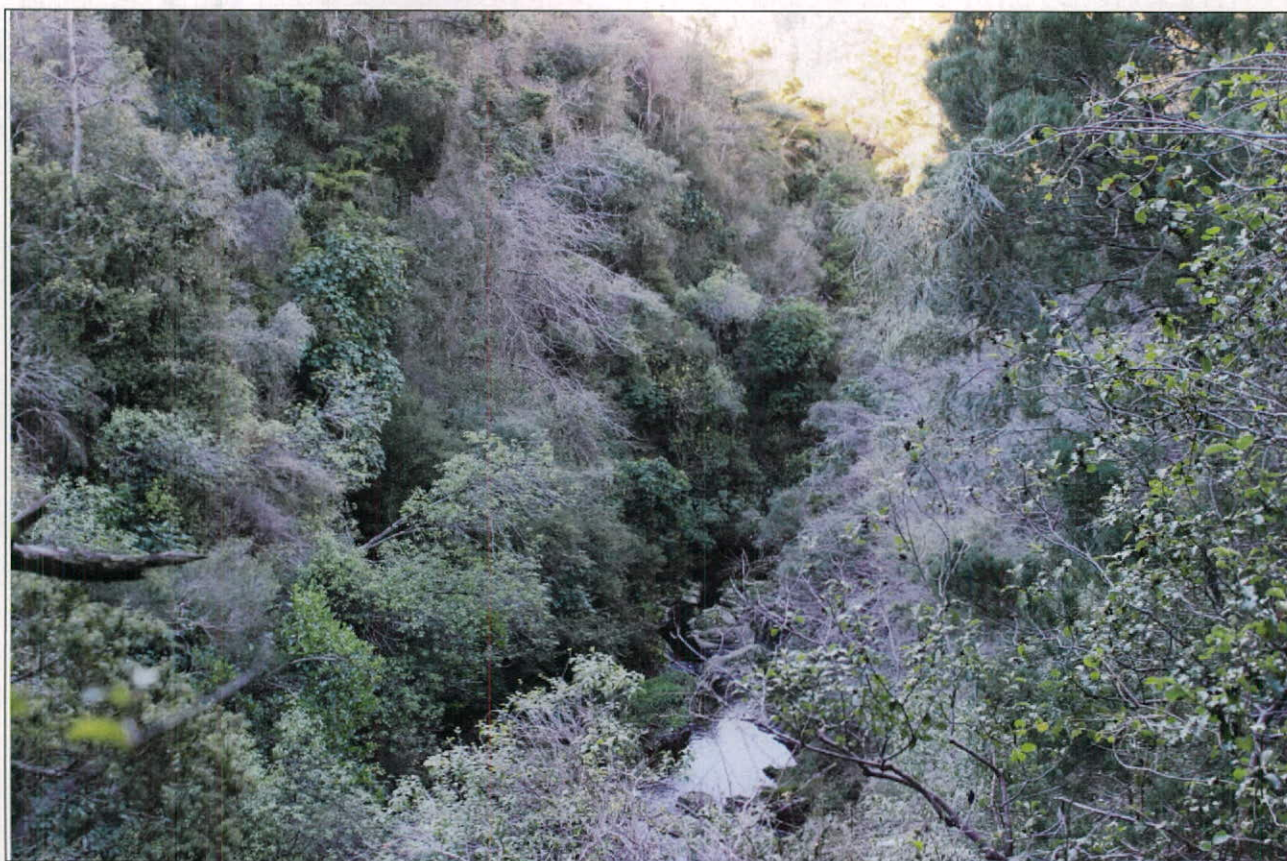
General Description:

This SNA occupies steep slopes of a deeply-incised gully near the northeast corner of the property. It borders a low terrace of the Opihi River at its lower boundary. The stream flowing through the SNA drops steeply and has several waterfalls. Parts of the area are very steep and access is difficult, so the site was inspected closely at only a few accessible locations.

Plant Communities:

The main plant community present is podocarp-hardwood forest, described below. Naturalized (exotic) species are indicated with an asterisk*.

The forest canopy comprises five-finger, broadleaf, lancewood, kowhai, kanuka, matipo, lemonwood, mapou, cabbage tree, pohuehue, bush lawyer and emergent trees of totara and matai. Kanuka is frequently dominant at the forest margin. A population of the at-risk (naturally uncommon) fierce lancewood (*Pseudopanax ferox*) is present on a rocky spur. Tall poplar* trees are present beside the stream at the lower end of the area.



Streamside forest at the central part of SNA 578a.

Understorey species are *Helichrysum lanceolatum*, *Coprosma crassifolia*, *Coprosma rhamnoides*, yellowwood, weeping mapou, mapou, matipo, korokio, *Melicytus* 'blondin', native jasmine, bush lawyer, and occasionally fierce lancewood.

Species commonly present on the rocky forest floor are necklace fern, hound's tongue fern, leather-leaf fern, *Einadia allanii* and, at least one location, turutu (*Dianella nigra*).

Species present on the forest margin are matipo, *Melicytus* 'blondin', *Coprosma virescens*, *Coprosma crassifolia*, *Coprosma propinqua*, dwarf mistletoe (on *Coprosma crassifolia* and yellowwood), native jasmine, pohuehue, scrub pohuehue, gorse*, broom*, Himalayan honeysuckle*, blackberry* and Khasia berry*.

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, fantail, kereru and harrier. The rocky substrate is likely to provide good lizard habitat.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of podocarps (totara and matai), populations of at-risk (naturally uncommon) plant species (*Einadia allanii* and *Pseudopanax ferox*), populations of locally uncommon plant species (turutu, dwarf mistletoe, *Melicytus* 'blondin' and leather-leaf fern), the habitat the area provides for forest birds and probably lizards, and its location near to other areas of native forest.



Leather-leaf fern, hound's tongue fern and turutu on the rocky forest floor of SNA 578a.

Notable Plant and Animal Pests:

Khasia berry (*Cotoneaster simonsii*) is the most important plant pest observed. This species can dominate low forest and its fruits are readily spread by birds. Other naturalized plants observed, such as gorse, broom and Himalayan honeysuckle, do not pose a significant threat to the native forest. Animal pests were not surveyed.

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

The core part of this SNA is well protected by steep slopes. It lies close to other areas of native forest (SNA 578b and SNA 360). It is linked to SNA 360 by a stream and scattered native vegetation.

Condition and Management Issues:

The most important management issue is control of Khasia berry. However, that may be a difficult task at this steep inaccessible site. Other issues are protection of the upstream and southeast margins of the area from stock.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	The core part of the area supports a good example of indigenous forest representative of the ecological district.
Rarity	M/H	Supports populations of two at-risk plant species and four locally-uncommon plant species.
Diversity and pattern	M	Plant species diversity is moderate, though not all parts of the site were inspected closely.
Distinctiveness/special features	M/H	The steep gorge with waterfalls and bluffs is a special feature. The presence of older podocarp trees is also notable.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is well buffered by its location.
Connectivity	M	Lies close to other areas of indigenous forest, forming part of a network of forest bird habitat.
Long-term Sustainability	M/H	Some plant and animal pest control may be required to maintain ecological values in the long term.

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

The steep slopes of the area have very little potential for farm development. The landowner has protected the area from clearance.

Discussion:

This area easily meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of podocarps (totara and matai), populations of two at-risk (naturally uncommon) plant species, populations of four locally uncommon species, the habitat the area provides for forest birds and probably lizards, its location near to other areas of native forest and its spectacular bluffs and waterfalls.



Einadia allanii at SNA 578a

TIMARU DISTRICT SNA SURVEY

SNA 578b

Area Name: Shallard Northern Gully
Location (central map reference): J38: 447-686
Ecological District: Geraldine
Surveyors: Mike Harding

Property: Neil Shallard
Nearest Locality: Raincliff
Area Size (ha): 1.9 **Altitude (m):** 200-250
Survey Time: 1 hour **Survey Date:** 17-07-12

General Description:

This SNA lies in a small deeply-incised gully at the northern part of the property. This narrow site forms the lower end of a small valley and adjoins a terrace of the Opihi River at its lower (northern) boundary. It lies quite close to native forest in an adjacent gully (SNA 578a).

Plant Communities:

The main plant community present is hardwood forest with totara. This plant community is described below. Naturalized (exotic) species are indicated with an asterisk*.

The forest canopy is dominated by matipo and pohuehue. Other canopy species are totara, kowhai, five-finger, lancewood, mapou, wineberry, fuchsia, bush lawyer and native jasmine. Several large lowland ribbonwood trees are present at the up-valley end of the area.

Exotic trees become dominant at the up-valley (southwest) end of the area. Species present are crack willow*, elm*, ash*, radiata pine*, laurel* and sycamore*.

The forest understorey was not inspected closely. Species present are *Coprosma rotundifolia* and kowhai. Ground-cover species are prickly shield fern, hound's tongue fern and male fern*.

Species present on the forest margin are *Coprosma crassifolia*, elderberry*, broom*, Himalayan honeysuckle*, Khasia berry*, bracken, blackberry* and foxglove*.



The upper part of SNA 578b showing the increasing dominance upstream of exotic trees.

Birds/Fauna Observed:

Native birds observed during this brief survey were grey warbler and bellbird.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of native forest with podocarp trees (totara), the tall lowland ribbonwood trees, the habitat the area provides for forest birds and its proximity to other areas of native forest.

Notable Plant and Animal Pests:

A number of invasive naturalized species are present, notably sycamore, ash, laurel and Khasia berry, presumably because the area lies downstream from an early site of human occupation. These trees are increasingly dominant upstream from the SNA. Animal pests were not surveyed.

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

The lower part of this SNA is well protected by steep rocky slopes. Upper parts are less well buffered and are affected by exotic trees. The southeast boundary of the area is not fenced. The proposed upstream boundary of this SNA is somewhat arbitrary, being the transition from forest dominated by native species (including lowland ribbonwood) to forest dominated by exotic trees.

Condition and Management Issues:

Plant pest control is the main management issue. If not controlled, exotic trees are likely to eventually dominate most of this SNA.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	An example of forest typical of the ecological district and containing species representative of the original vegetation, notably totara and lowland ribbonwood.
Rarity	L/M	No rare or locally uncommon species were observed, though the area was not inspected closely.
Diversity and pattern	M	Plant species diversity is moderate and typical of similar areas of native forest.
Distinctiveness/special features	M	The steep slopes with bluffs and a high waterfall at the lower end of the area are notable.
Other Criteria		
Size/shape	M	A small to moderate-sized area that is well buffered at its lower end.
Connectivity	M	Lies close to other areas of native forest and is a useful part of the network of forest bird habitat in the area.
Long-term Sustainability	L/M	Control of exotic trees at and adjacent to the site will be necessary to maintain ecological values in the long term.

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

Most parts of this area have little potential for farm development. The landowner has protected upper parts from clearance.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of native forest with podocarp trees (totara), the tall lowland ribbonwood trees, the habitat the area provides for forest birds and its proximity to other areas of native forest.

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)	
ash*	<i>Fraxinus excelsior</i>
Australian sheep's bur*	<i>Acaena agnipila</i>
bittersweet*	<i>Solanum dulcamara</i>
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
bracken	<i>Pteridium esculentum</i>
broadleaf	<i>Griselinia littoralis</i>
broom*	<i>Cytisus scoparius</i>
bush lawyer	<i>Rubus cissoides</i>
bush lily	<i>Astelia fragrans</i>
button fern	<i>Pellaea rotundifolia</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
cardamine	<i>Cardamine debilis</i>
common shield fern	<i>Polystichum richardii</i>
crack willow*	<i>Salix fragilis</i>
creeping buttercup*	<i>Ranunculus repens</i>
dwarf mistletoe	<i>Korthalsella lindsayi</i>
elderberry*	<i>Sambucus nigra</i>
elm*	<i>Ulmus xhollandica</i>
fierce lancewood	<i>Pseudopanax ferox</i>
five-finger	<i>Pseudopanax arboreus</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
gossamer grass	<i>Anemanthele lessoniana</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hen and chickens fern	<i>Asplenium gracillimum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
hookgrass	<i>Uncinia sp.</i>
horopito/pepperwood	<i>Pseudowintera colorata</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
kanuka	<i>Kunzea ericoides</i>
Khasia berry*	<i>Cotoneaster simonsii</i>
korokio	<i>Corokia cotoneaster</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
laurel*	<i>Prunus laurocerasus</i>
lawyer	<i>Rubus schmidelioides</i>
leafless lawyer	<i>Rubus squarrosus</i>
leather-leaf fern	<i>Pyrrhosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe/whiteywood	<i>Melicactus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</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>

mountain akeake	<i>Olearia avicenniifolia</i>
mountain kiokio	<i>Blechnum montanum</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
native convolvulus	<i>Calystegia tuguriorum</i>
native jasmine	<i>Parsonsia</i> sp.
necklace fern	<i>Asplenium flabellifolium</i>
pate	<i>Schefflera digitata</i>
pennywort	<i>Hydrocotyle</i> sp.
periwinkle*	<i>Vinca major</i>
poataniwha	<i>Melicope simplex</i>
pohuehue	<i>Muehlenbeckia australis</i>
poplar*	<i>Populus</i> sp.
poroporo	<i>Solanum laciniatum</i>
prickly shield fern	<i>Polystichum vestitum</i>
radiata pine*	<i>Pinus radiata</i>
rohutu	<i>Lophomyrtus obcordata</i>
scrub pohuehue	<i>Muehlenbeckia complexa</i>
swamp kiokio	<i>Blechnum minus</i>
sycamore*	<i>Acer pseudoplatanus</i>
thousand-leaved fern	<i>Hypolepis millefolium</i>
totara	<i>Podocarpus totara</i>
turutu	<i>Dianella nigra</i>
weeping mapou	<i>Myrsine divaricata</i>
wineberry	<i>Aristotelia serrata</i>
woolly mullein*	<i>Verbascum thapsus</i>
yellowwood	<i>Coprosma linariifolia</i>