

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

PEEL FOREST OUTDOOR
PURSUIITS CENTRE



Report prepared for Timaru District Council by Mike Harding
August 2010

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Peel Forest Outdoor Pursuits Centre
Valuation References: 24640/043.04
Address: Clarke Flat, Peel Forest
Location: Between Peel Forest Park Scenic Reserve and Rangitata River,
Peel Forest.
Ecological District: High Plains Ecological District.
TDC Land Type: Plains.
Land Environment: N3 (eastern South Island undulating plains and hills).

ECOLOGICAL CONTEXT:

The property lies on a gently sloping terrace and adjacent terrace scarp of the Rangitata River at Peel Forest. It lies at the boundary of Geraldine, Orari, Low Plains and High Plains ecological districts, though has characteristics most representative of the High Plains Ecological District. The original vegetation of this area would have been predominantly podocarp-hardwood forest, with localized areas of kowhai-kanuka forest and shrubland and wetlands alongside active stream channels. Minor areas of matagouri-*Coprosma-Olearia* shrubland were likely to have been present on recently disturbed surfaces. The indigenous fauna would have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area.

Indigenous vegetation on the property comprises podocarp-hardwood forest with varying dominance of invasive naturalized sycamore trees. This forest adjoins other indigenous forest on adjacent properties and lies close to indigenous vegetation protected within the regionally-important Peel Forest Park Scenic Reserve. The property lies within the known distribution of the South Canterbury population of long-tailed bat (a nationally endangered species).

SIGNIFICANT AREAS ON THE PROPERTY:

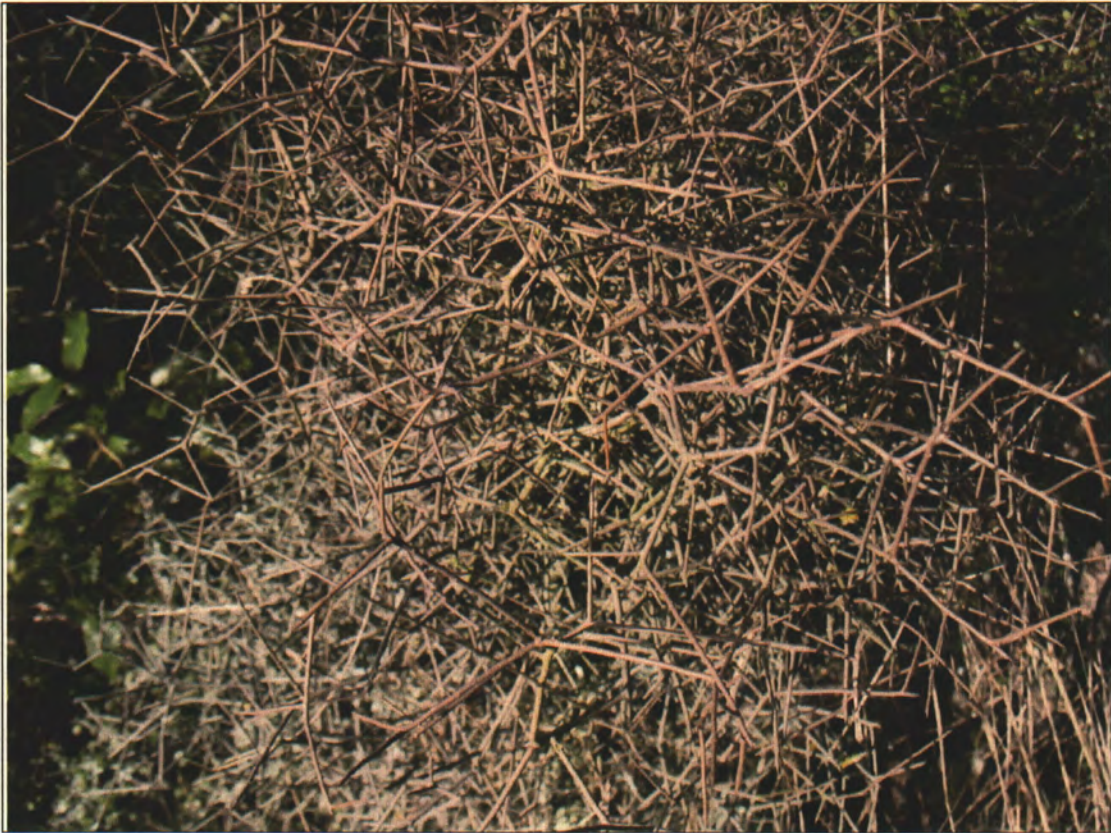
The property was surveyed as part of the District-wide survey of Significant Natural Areas during August 2010. The area of indigenous forest, comprising the area protected by a QEII Open Space Covenant, is regarded as a Significant Natural Area (SNA) when assessed against the District Plan criteria.

This SNA is illustrated on the attached aerial photograph and described in greater detail in this report. Note that the boundaries of the SNA are indicative, rather than precise. This area meets the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19) and is considered to be sustainable in the long term, or sustainable with appropriate management (criterion vii, page B19), notably control of sycamore. 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.



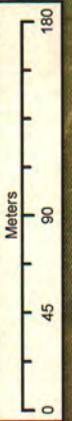
A single Melicytus flexuosus at the western forest margin

Peel Forest Outdoor
Pursuits Centre Property
24640/043.04

1:3,500

665a

Rangitata Gorge Road



Area Name: Clarke Flat Forest
Location (central map reference): K37: 707-996
Ecological District: High Plains
Surveyors: Mike Harding

Property: Peel Forest Outdoor Pursuits Centre
Nearest Locality: Peel Forest
Area Size (ha): 18.4 **Altitude (m):** 250-280
Survey Time: 5½ hours **Survey Date:** 10-08-10

General Description:

This SNA lies on a broad terrace and adjacent scarp slope alongside the Rangitata River at Peel Forest. It adjoins protected land administered by DOC at Clarke Flat on its northern boundary and lies very close to a large and regionally-important area of indigenous forest protected in Peel Forest Park Scenic Reserve.

Plant Communities:

Five main plant communities are present: podocarp forest on the lower (eastern) terrace; sycamore forest on the central part of the main terrace; kahikatea wetland forest on the main terrace; narrow-leaved lacebark-*Coprosma* wetland vegetation on the main terrace; and, podocarp-hardwood forest on the main (western) terrace scarp. These plant communities inter-grade and are affected to some extent by naturalized sycamore trees. The plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Podocarp forest on lower terrace:

The forest canopy on this lower terrace (adjacent to the open grassed area) is dominated by kahikatea and totara. Trunk diameters (at breast height) of the larger trees are: kahikatea, 50-75cm; and totara, 70-85cm. Other canopy species are broadleaf, sycamore*, pokaka, pohuehue and native jasmine. Sub-canopy species are totara, kahikatea, matai, marbleleaf, *Neomyrtus pedunculata*, lemonwood and sycamore*.

The forest understorey is dominated by *Coprosma rotundifolia* and lemonwood. Other understorey species are kaikomako, matipo, totara, *Coprosma rubra*, *Coprosma crassifolia*, *Coprosma propinqua*, *Coprosma linariifolia*, *Coprosma rhamnoides*, shrubby mahoe, weeping mapou, poataniwha, horopito, pate, lancewood, five-finger, lawyer, pohuehue and, on tree trunks, leather-leaf fern.

The forest floor is dominated by prickly shield fern. Other ground-cover species are hound's tongue fern, *Blechnum penna-marina*, hen and chickens fern, bush lily, blackberry* and seedlings of native jasmine, kahikatea, cabbage tree, lemonwood, kowhai, horopito, mahoe, broadleaf, pohuehue and *Coprosma* species.

Additional species near the small stream are bush rice grass, swamp kiokio and *Blechnum chambersii*.

Additional species present on the forest margin are kanuka and *Clematis foetida*.

Sycamore forest on main terrace:

The forest canopy on the central part of the main terrace is dominated by sycamore*. Other canopy or sub-canopy species are narrow-leaved lacebark, lowland ribbonwood, ash*, lancewood, broadleaf, lawyer, native jasmine, pohuehue and scattered large trees of totara, matai and kahikatea.

The forest understorey is dominated by sycamore* saplings. Other understorey species are poataniwha, weeping mapou, *Coprosma rotundifolia*, *Coprosma rubra*, *Coprosma crassifolia*, pate, blackberry*, gooseberry*, wild rose*, native jasmine and occasional saplings of totara and matai. Hound's tongue fern and leather-leaf fern are present on some tree trunks.

The forest floor was, at the time of survey, covered with a dense carpet of fallen sycamore* leaves. Ground-cover species observed were prickly shield fern, hound's tongue fern, hairy pennywort and seedlings of broadleaf, kahikatea and totara.

Additional species present in forest openings are koromiko, broom*, blackberry* and Himalayan honeysuckle*. Himalayan honeysuckle* forms dense thickets where sycamore* trees have been clear-felled.

Additional species present in the forest canopy or sub-canopy at the eastern edge of the main terrace, where sycamore is less dominant, are pokaka, wineberry and rohutu. Additional understorey species are matipo, lemonwood, mahoe, poataniwha, rohutu, shrubby mahoe, *Coprosma rigida*, *Coprosma propinqua*, *Coprosma rhamnoides* and *Clematis marata*. Additional ground-cover species are *Carex solandri*, sedge (*Carex* sp.), *Hypolepis ambigua*, hanging spleenwort, hound's tongue fern, water fern, *Lastreopsis* sp., male fern*, necklace fern, hen and chickens fern and parsley fern.

Other species observed in forest at the northern end of the main terrace were kowhai, *Raukaua anomalus*, cherry laurel*, bracken and hookgrass.

Kahikatea wetland forest on the main terrace:

The forest canopy in this wet area is dominated by small (pole) kahikatea. Other canopy or sub-canopy species are totara, lancewood, sycamore*, marbleleaf, broadleaf, kaikomako, five-finger, native jasmine and pohuehue. Trunk diameters (at breast height) of the larger trees are: kahikatea, 30-45cm; totara, 25-30cm; and sycamore*, 25-30cm.

The forest understorey is dominated by *Coprosma rotundifolia*. Other understorey species are horopito, poataniwha, lemonwood, *Neomyrtus pedunculata*, marbleleaf, mahoe, broadleaf, weeping mapou, pokaka, kaikomako, pate, native jasmine, sycamore*, occasional holly* and saplings of kahikatea and totara.

The dominant ground-cover species is prickly shield fern. Other ground-cover species are bush lily, *Carex solandri*, hound's tongue fern, hen and chickens fern, *Blechnum fluviatile*, *Blechnum penna-marina*, *Blechnum chambersii* and seedlings of horopito, mapou, kahikatea, kaikomako and *Coprosma* species.

Narrow-leaved lacebark-Coprosma wetland on the main terrace:

This low-stature forest occupies a very wet area at the northern end of the main terrace and is similar to forest on the adjacent DOC-administered property. The forest canopy is variously dominated by *Coprosma rotundifolia*, *Coprosma propinqua* or narrow-leaved lacebark. In some areas, tall *Carex secta* is dominant. In other areas kahikatea, broadleaf, lancewood, lowland ribbonwood and sycamore* are present in the forest canopy.

Understorey species are weeping mapou, *Coprosma rhamnoides*, *Coprosma rigida*, *Coprosma rubra*, lowland ribbonwood, narrow-leaved lacebark, pate, horopito, koromiko, *Clematis marata* and blackberry*.

Ground-cover species are bush lily, *Carex solandri*, prickly shield fern, swamp kiokio, *Blechnum penna-marina*, hound's tongue fern, hairy pennywort and seedlings of kahikatea, horopito, native jasmine and *Coprosma* species.

Podocarp-hardwood forest on the main (western) terrace scarp:

The forest canopy on the lower slopes of the scarp is dominated by sycamore* with large emergent old trees of totara and matai. One large totara tree has a trunk diameter (at breast height) of 206cm. The forest canopy on the upper slopes is dominated by kowhai, mahoe, and pohuehue. Other canopy species are narrow-leaved lacebark, lowland ribbonwood, totara, five-finger, lancewood and native jasmine.

Understorey species on lower slopes are elderberry*, sycamore*, fuchsia, lemonwood, *Coprosma rubra*, lancewood, pate, mahoe, poataniwha, Himalayan honeysuckle* and native convolvulus.

Ground-cover species are prickly shield fern, *Pellaea rotundifolia*, hound's tongue fern, *Hypolepis ambigua*, hen and chickens fern, necklace fern, male fern*, black nightshade* and seedlings of mahoe, broadleaf, pate, kowhai, cabbage tree and sycamore*.

Present only on upper slopes are turepo, *Coprosma crassifolia*, *Coprosma rhamnoides*, *Coprosma linariifolia*, rohutu, matipo, shrubby mahoe, weeping mapou, koromiko, horopito, tutsan*, *Libertia ixioides*, white climbing rata, leather-leaf fern, common shield fern, *Asplenium richardii* and *Asplenium hookerianum*.

Additional species present on the upper forest margin at the crest of the scarp are *Coprosma propinqua*, dwarf mistletoe (on *Coprosma crassifolia*), lawyer, bush lawyer, gooseberry*, broom*, a single adult tree of fierce lancewood and a single small-leaved *Melicytus* bush (*Melicytus flexuosus*).

Additional species present in or near a small gully are marbleleaf, wineberry, wheki-ponga, *Blechnum chambersii* and *Leptopteris hymenophylloides*.

Birds/Fauna Observed:

Native birds observed during this survey were bellbird, grey warbler, fantail, kereru (NZ pigeon) and rifleman. Native leaf-veined slugs were observed under rotting logs.



The northern end of the SNA, viewed from the western scarp.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of large old podocarp trees, the diversity of plant species present (77 species), the presence of 'at-risk' plant species (fierce lancewood and *Melicytus flexuosus*), locally-uncommon plant species (parsley fern, dwarf mistletoe and bush rice grass), the presence of an 'at-risk' bird species (rifleman), the habitat the area provides for forest birds and possibly long-tailed bat (a nationally-endangered species), the presence of wetland forest, the extent (size) of the area and its proximity to other areas of indigenous vegetation.

Notable Plant and Animal Pests:

Sycamore is clearly the most important plant pest present. It occurs throughout the SNA and is dominant over a considerable part of the main terrace. Other important plant pests observed were ash, elderberry, Himalayan honeysuckle, holly, cherry laurel, gooseberry, wild rose, blackberry and broom. Of these species, only ash, holly, elderberry and cherry laurel pose a significant threat. An earlier survey (Duncan, 1999) recorded old man's beard and hawthorn at the site. Neither of these species were recorded during this survey, though mid-winter is not the most favourable time to observe these species. Animal pests were not surveyed, though possum and feral cat sign were observed.

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

This area of forest adjoins protected land at Clarke Flat at its northern boundary and another area of indigenous forest on an adjoining property at its southern boundary. It is a large area of forest with a good shape and is well buffered at its western boundary by a moderately steep scarp. It is securely fenced from grazing. It lies close to an extensive area of protected indigenous forest in Peel Forest Park Scenic Reserve.

Condition and Management Issues:

The forest is in good condition apart from the presence and in places dominance of sycamore. Control and eventual removal of sycamore (and other important plant pests, such as ash and old man's beard) is the most important management issue. The property owners are implementing a sycamore-control programme. If sycamore control is successful, the indigenous forest is likely to recover with little other management effort (apart from continued monitoring and weed control) as there are abundant sources of indigenous species seed at the site and good populations of seed-dispersing birds.



Sycamore-dominant forest at the centre of the main terrace

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	Parts of the area have very high representativeness values, whereas other parts are dominated by sycamore. Despite the presence of sycamore, the area is a very good example of indigenous vegetation typical of the ecological district and containing many species representative of the original vegetation.
Rarity	H	Indigenous forest at lowland alluvial sites is now very rare in Canterbury. Lowland wetland vegetation is nationally rare. The forest supports three 'at-risk' species: rifleman (declining); <i>Melicytus flexuosus</i> (declining) and fierce lancewood (naturally uncommon). It provides suitable habitat for long-tailed bat (nationally endangered).
Diversity and pattern	H	The area supports terrace forest, kahikatea wetland forest and scarp forest. It has a very high diversity of indigenous vascular species.
Distinctiveness/special features	M/H	The presence of very large old podocarp trees is a special feature.
Other Criteria		
Size/shape	H	A large site for the High Plains Ecological District. The area has a good shape and is well buffered.
Connectivity	H	Adjoins protected forest at its northern boundary and links that forest with indigenous forest at its southern boundary. Lies very close to and provides important low-altitude habitat for species in Peel Forest Park Scenic Reserve.
Long-term Sustainability	M	Protection of ecological values in the long term will require effective control of sycamore and other invasive weed species. Regular animal pest (especially possum) control will also be necessary.

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

This important area has been formally protected as a QEII Open Space Covenant by the property owners. The owners are protecting and actively managing the area for nature conservation.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of large old podocarp trees, the diversity of plant species present (77 species), the presence of 'at-risk' plant species (fierce lancewood and *Melicytus flexuosus*), locally-uncommon plant species (parsley fern, dwarf mistletoe and bush rice grass), the presence of an 'at-risk' bird species (rifleman), the habitat the area provides for forest birds and possibly long-tailed bat (a nationally-endangered species), the presence of wetland forest, the extent (size) of the area and its proximity to other areas of indigenous vegetation.

An earlier survey of the forest by Duncan (1999) recorded the following additional indigenous species at the site: crown fern (*Blechnum discolor*), *Blechnum procerum*, *Coprosma colensoi*, *Coprosma virescens*, hinau (*Elaeocarpus dentatus*), *Parsonsia capsularis*, supplejack (*Ripogonum scandens*), poroporo (*Solanum aviculare*) and tree nettle (*Urtica ferox*). Several of these species may be present and simply not observed or overlooked during this mid-winter survey. However, some of these species are unlikely to be present: *Coprosma colensoi* has not been recorded in eastern Canterbury; hinau does not occur this far south; and, tree nettle has not been previously recorded in the Peel Forest area.

References Cited:

Duncan, R.J. 1999. Ecological Survey, Peel Forest Outdoor Pursuits Centre Charitable Trust. *Unpublished Report*. 27 pages and appendices.

Indigenous species recorded at Peel Forest OPC covenant, Clarke Flat, August 2010.

C = common

O = occasional

R = rare

Shaded rows = species recorded by Duncan (1999)

Scientific Name	Common Name	Harding (2010)
<i>Aristotelia serrata</i>	wineberry	C
<i>Asplenium gracillimum</i>	hen and chickens fern	C
<i>Asplenium flaccidum</i>	hanging spleenwort	O
<i>Asplenium flabellifolium</i>	necklace fern	O
<i>Asplenium hookerianum</i>		O (scarp)
<i>Asplenium richardii</i>		O (scarp)
<i>Astelia fragrans</i>	bush lily	C
<i>Blechnum discolor</i>	crown fern	not recorded
<i>Blechnum chambersii</i>		O (damp areas)
<i>Blechnum fluviatile</i>		C
<i>Blechnum minus</i>	swamp kiokio	O (damp areas)
<i>Blechnum penna-marina</i>		O
<i>Blechnum procerum</i>		not recorded
<i>Botrychium bifforme</i>	parsley fern	R
<i>Calystegia tuguriorum</i>	native convolvulus	C
<i>Carex secta</i>	pukio	O (wet areas)
<i>Carex solandri</i>		O
<i>Carex sp.</i>	sedge	O
<i>Carpodetus serratus</i>	marbleleaf	C
<i>Clematis foetida</i>		O
<i>Clematis marata</i>		O
<i>Coprosma colensoi</i>		not recorded
<i>Coprosma crassifolia</i>		C
<i>Coprosma linariifolia</i>	yellowwood	O
<i>Coprosma propinqua</i>		C
<i>Coprosma rhamnoides</i>		C
<i>Coprosma rigida</i>		C
<i>Coprosma rotundifolia</i>		C
<i>Coprosma rubra</i>		C
<i>Coprosma virescens</i>		not recorded
<i>Cordyline australis</i>	ti/cabbage tree	O
<i>Dacrycarpus dacrydioides</i>	kahikatea	C
<i>Dicksonia fibrosa</i>	wheki-ponga	O (base of scarp)
<i>Elaeocarpus dentatus</i>	hinau	not recorded
<i>Elaeocarpus hookerianus</i>	pokaka	C
<i>Fuchsia excorticata</i>	tree fuchsia	O
<i>Griselinia littoralis</i>	broadleaf	C
<i>Hebe salicifolia</i>	koromiko	O
<i>Histiopteris incisa</i>	mata/water fern	R (wet areas)
<i>Hoheria angustifolia</i>	narrow-leaved lacebark	C
<i>Hydrocotyle moschata</i>	hairy pennywort	O
<i>Hypolepis ambigua</i>		O
<i>Kothalsella lindsayi</i>	dwarf mistletoe	R (scarp crest)
<i>Kunzea ericoides</i>	kanuka	O

<i>Lastreopsis sp.</i>		R
<i>Leptopteris hymenophylloides</i>		R (damp areas)
<i>Libertia ixioides</i>		R (scarp)
<i>Lophomyrtus obcordata</i>	rohutu	O
<i>Melicytus aff. flexuosus</i>		R (scarp crest)
<i>Melicytus micranthus</i>	shrubby mahoe	C
<i>Melicytus ramiflorus</i>	mahoe	C
<i>Melicope simplex</i>	poataniwha	C
<i>Metrosideros diffusa</i>	white climbing rata	R (scarp)
<i>Microlaena avenacea</i>	bush rice grass	R (lower terrace)
<i>Microsorium pustulatum</i>	hound's tongue fern	O
<i>Muehlenbeckia australis</i>	pohuehue	C
<i>Myrsine australis</i>	mapou	C
<i>Myrsine divaricata</i>	weeping mapou	C
<i>Neomyrtus pedunculata</i>		C
<i>Parsonsia capsularis</i>	native jasmine	not recorded
<i>Parsonsia heterophylla</i>	native jasmine	C
<i>Pellaea rotundifolia</i>		O (scarp)
<i>Pennantia corymbosa</i>	kaikomako	C
<i>Pittosporum eugenioides</i>	tarata/lemonwood	C
<i>Pittosporum tenuifolium</i>	matipo	C
<i>Plagianthus regius</i>	lowland ribbonwood	C
<i>Podocarpus totara</i>	totara	C
<i>Polystichum richardii</i>	common shield fern	O (scarp)
<i>Polystichum vestitum</i>	prickly shield fern	C
<i>Prumnopitys taxifolia</i>	matai	C
<i>Pseudopanax arboreus</i>	five-finger	O
<i>Pseudopanax crassifolius</i>	lancewood	C
<i>Pseudopanax ferox</i>	fierce lancewood	R (scarp crest)
<i>Pseudowintera colorata</i>	horopito	C
<i>Pteridium esculentum</i>	bracken	O
<i>Pyrosia eleagnifolia</i>	leather leaf fern	C
<i>Raukaua anomalus</i>		O
<i>Ripogonum scandens</i>	supplejack	not recorded
<i>Rubus cissoides</i>	bush lawyer	O
<i>Rubus schmidelioides</i>	lawyer	C
<i>Schefflera digitata</i>	pate	C
<i>Solanum aviculare</i>	poroporo	not recorded
<i>Sophora microphylla</i>	kowhai	O
<i>Streblus heterophylla</i>	turepo	O (scarp)
<i>Uncinia unciniata</i>	hookgrass	O
<i>Urtica ferox</i>	tree nettle	not recorded

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>
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</i> sp.
bush rice grass.....	<i>Microlaena</i> sp.
cabbage tree/ti rakau	<i>Cordyline australis</i>
cherry laurel*	<i>Prunus laurocerasus</i>
common shield fern.....	<i>Polystichum richardii</i>
crown fern	<i>Blechnum discolor</i>
dwarf mistletoe	<i>Korthalsella lindsayi</i>
elderberry*	<i>Sambucus nigra</i>
fierce lancewood	<i>Pseudopanax ferox</i>
five-finger	<i>Pseudopanax arboreus</i>
fuchsia.....	<i>Fuchsia excorticata</i>
gooseberry*.....	<i>Ribes uva-crispa</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hanging spleenwort.....	<i>Asplenium flaccidum</i>
hawthorn*	<i>Crataegus monogyna</i>
hen and chickens fern.....	<i>Asplenium bulbiferum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
hinau	<i>Elaeocarpus dentatus</i>
holly*	<i>Ilex aquifolium</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>
koromiko	<i>Hebe salicifolia</i>
kowhai.....	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
leather-leaf fern	<i>Pyrrosia eleagnifolia</i>
lemonwood.....	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe/whiteywood.....	<i>Meliccytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
mapou	<i>Myrsine australis</i>
marbleleaf/putaputaweta.....	<i>Carpodetus serratus</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine.....	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
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>
old man's beard*.....	<i>Clematis vitalba</i>
parsley fern	<i>Botrychium bifforme</i>
pate.....	<i>Schefflera digitata</i>