

# Waenga

## Report on botanical values

### Overview

Waenga was found to have several areas of significant values from a botanical viewpoint and some of these areas are of considerable extent. These contained 20 nationally or locally uncommon plant species and three rare communities. Diversity of native species is high with 203 species recorded during the survey. Exotic species were a moderate factor of the vegetation at 18% of the species recorded and are estimated to give primary character to 22% of the land area. Major threats identified were invasion of woody weeds, fire and goat grazing. Minimal management would be needed.

### Survey method

This report is based on information gathered during walk-through field inspection of Waenga. on 9<sup>th</sup> & 10<sup>th</sup> March 2006 and information held in the Department of Conservation BIOWEB database.

### General site description

This site is on the southern Dunstan mountains and includes portions of Fairfax spur, Mt Horn, Brewery Creek and the Sonora Headbasin.

Climate data is unavailable. Winter would be cold, with snow lying over winter at higher elevations. Altitudinal range is from alpine c. 1400m to lowland c. 240m.

Basement geology is coarsely foliated chloritic schist of the Haast Schist Group (Wood 1962) with occasional outcropping. An older outwash fan is present at the base of Brewery Creek. The face is slumped and moderately steep. Areas of fellfield occur near the crest of Fairfax spur.

### Waenga vegetation descriptions

The vegetation of Waenga has to some degree been altered by grazing and probably fire, particularly tussock areas, but the higher elevation of most of the site inspected appears to consist of near natural examples.

Waenga has a diverse native flora with 203 species recorded during this survey. Forty five exotic species were recorded during the survey, a relatively low number. This is 18% of the total number of species recorded during the survey and it is estimated that this gave the primary character to 22% of the vegetated area of the site.

Six broad vegetation zones were apparent: 1) Ridge top prostrate *Dracophyllum prunum* shrubland/short grassland/fellfield, 2) remnant *Chionochloa rigida* tussock grassland within short tussock grassland, 3) small-leaved shrubland, 4) Stream margin and bluff shrubland, 5) Alluvial fan dryland herbfield/short grassland,

6) Ephemeral wetland. These communities intergrade. There is no readily apparent boundary between degraded exotic-dominated country and areas with more natural vegetation.

#### Fairfax spur top

This area graded from an exotic-dominated lowland zone intermixed with native species with increasing naturalness at higher elevations. Along the crest of Fairfax spur proper there are nationally significant fellfield communities of *Dracophyllum pronum* and *D. muscoides* with short tussock grasses and a high diversity of native herbs. The threatened brooms *Carmichaelia crassicaule* and *C. vexillata* have large populations here. Tussock is rare (probably as a result of past management practices) and primarily confined to drainage areas. Hard tussock *Festuca novae-zelandiae* is the dominant grass cover at higher elevations with some blue tussock *Poa colensoi*. An area with scattered ephemeral wetlands is present on Fairfax Spur, this type of site can harbour a variety of threatened species (but these would not have been visible at the time of the survey). The sedge *Carex resectans* was notable in one of these.

#### Face (including Sonora Basin)

This area is primarily short tussock grassland with areas of higher natural diversity associated with schist outcrops and seepage areas. Larger rock bluffs were found to harbour several threatened plant species such as *Pachycladon cheesemanii*, *Uncinia elegans*, *Senecio dunedinensis* and further populations of the two threatened broom species. The locally endemic undescribed sedge *Carex wakatipu* "Bendigo" was found in this area.

#### Shrublands

Extensive areas of shrubland exist centred on large rock outcrops, particularly in Brewery Creek. These shrublands consist of *Melicytus* aff. *alpinus*, *Coprosma propinqua*, *Muehlenbeckia complexa* and matagouri *Discaria toumatou* with less frequent *Coprosma tayloriae*, and *Aristotelia fruticosa*. At lower elevations briar and other exotic shrub species become problematic. The locally uncommon kowhai *Sophora microphylla* was found at several sites in Brewery Creek. These shrublands are important in a Central Otago context, being of limited extent in this region.

#### Outwash fan

This dry fan is dominated by exotic grasses and herbs intermixed with native species such as *Leucopogon fraseri*, *Raoulia subsericea*, hard tussock, porcupine scrub, and blue tussock. This landform and vegetation community is under increasing threat in Central Otago with most now lost to agricultural development. This area also gives a natural lower extension to forming a natural altitudinal sequence.

## Rare and threatened plant species

Fourteen nationally threatened or at risk species were found during this survey or have been previously recorded from this site. These are (threat rankings from Hitchmough 2002):

Threat Division	Threat Category	Species	Location on lease
Acutely threatened	Nationally critical	<i>Ceratocephala pungens</i>	Historic site on lower Fairfax Spur
	Nationally endangered	<i>Myosurus minimus</i> subsp. <i>novaezelandiae</i>	Record from ephemeral wetland
Chronically threatened	Serious decline	<i>Carmichaelia vexillata</i>	Large populations near Mt Horn and in Sonora Basin
	Gradual decline	<i>Carmichaelia vexillata</i>	Large populations near Mt Horn and in Sonora Basin
		<i>Acaena buechananii</i>	Two sites on face
		<i>Pachycladon cheesemanii</i>	One site with 6 plants on tor in Sonora Basin
At Risk	Sparse	<i>Raoulia beauverdii</i>	Open sites on lower Fairfax Spur
		<i>Senecio dunedinensis</i>	One site on bluff in Sonora Basin
		<i>Uncinia elegans</i>	Noted at two sites
		<i>Uncinia sinclairii</i>	Beside seepage in Sonora Basin
	Range Restricted	<i>Acaena tesca</i>	Higher elevation tor bases
		<i>Elymus falcis</i>	Occasional in grasslands of lower Fairfax Spur
	Data Deficient	<i>Colobanthus brevisepalus</i>	Rock outcrops on lower Fairfax Spur
		<i>Vittadinia australis</i>	Recorded from one locality

In addition, six species that are uncommon in Otago (regionally Significant) or uncommon in this area but reasonably common in the rest of Otago (Locally Notable species) were found:

*Podocarpus hallii* Hall's totara. reported from one site.

*Pimelea aridula*. This shrub daphne was found in several locations of lower Fairfax Spur and faces.

Kowhai *Sophora microphylla*. In several places in Brewery Creek.

*Leptinella goyenii*. Two sites for this button daisy were found on Fairfax Spur. The Southern Dunstan mountains is the only locality for this species in the area.

*Myosotis elderi*. This forget-me-not was found very infrequently within fellfield vegetation.

*Carex wakatipu* "Bendigo". This locally endemic undescribed sedge was found at one site by a tor in the Sonora Basin.

### **Rare plant communities**

The dryland herb/short grassland community on the outwash fan is representative of a community increasing being lost from Central Otago.

Ephemeral wetlands are a very rare plant community.

### **Problem plants and threats**

Problem plants were rare.

Broom *Cytisus scoparius* is present in by Mt Horn and should be controlled before spreading further.

Briar is a frequent component of the shrublands at lower elevations.

Elder is a rare component of the shrublands at lower elevations.

Hawkweed (*Hieracium pilosella* and *H. lepidulum*) are common in tussock grassland, and although forming extensive patches (*H. lepidulum*) in the Sonora Basin they do not appear to be having a major impact.

The biggest existing threat is continued grazing, particularly from goats. This is having the biggest impact at lower elevations. This is evident by many species being restricted to rocky sites and lowered abundances of some species.

Fire is an ever present threat.

### **Management needs**

Minimal management would be needed on this property. All reserved areas should be fenced to exclude stock. Grazing by sheep may be acceptable, at stocking rates much below current in some areas (lower Fairfax Spur and Brewery Creek).

The broom should be removed.

None of the threatened plant populations currently need active management, but an ongoing monitoring regime should be maintained for all of these species to identify changes when management may be necessary.

### **Recommendations**

That the area of Sonora Basin and upper Fairfax Spur (from below Mt Horn) be included in a reserve. Lower Fairfax Spur, Brewery Creek and the outwash fan be incorporated into a sheep-grazing only Conservation Covenant.

## **Appendices**

Appendix 1. Plant species recorded during current survey.

## **References**

Hitchmough, R. (Comp.) 2002. New Zealand threat classification system lists 2002. Threatened Species Occasional Publication 23. Department of Conservation, Wellington.

Wood, B.L. 1962. Geological map of New Zealand, Sheet 22, Wakatipu. Department of Scientific and industrial Research, Wellington.

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