

Crown Pastoral Land Tenure Review

Lease name : BARROSA

Lease number : PC 122

Conservation Resources Report

As part of the process of Tenure Review, advice on significant inherent values within the pastoral lease is provided by Department of Conservation officials in the form of a Conservation Resources Report. This report is the result of outdoor survey and inspection. It is a key piece of information for the development of a preliminary consultation document.

They are released under the Official information Act 1982.

April

05

DEPARTMENT OF CONSERVATION REPORT

TO KNIGHT FRANK LTD ON TENURE REVIEW

OF BARROSA PASTORAL LEASE

PART ONE: INTRODUCTION

Barrosa pastoral lease (5,747 ha) covers most of the Clent Hills, west of Mt Somers in mid Canterbury. Freehold land comprises a small part of the north-western Clent Hills, and the valley floor of the Heron Basin adjacent to the Maori Lakes.

Barrosa Station is part of Hakatere ecological district in the Heron ecological region. The district mostly comprises moraines and terraces, with associated lakes and wetlands, and a few isolated mountain blocks. In contrast, the district is mostly bounded by the more mountainous districts of Mt Hutt, Arrowsmith and Two Thumb, and by the flat outwash surfaces of High Plains.

Barrosa was surveyed as part of the Protected Natural Areas Programme (PNAP) in 1984/85. Five recommended areas for protection (RAPs) were identified on the property: RAP 5 Lake Emily, RAP 6 Maori Lakes, RAP 7 Potato, RAP 8 Clent Hill Boulderfield, RAP 10 Ashburton Fans, and RAP 14 Stour Shrub Remnants.

PART TWO: CONSERVATION RESOURCE DESCRIPTION

2.1 Landscape

2.1.1 Landscape Context

Barrosa essentially comprises the Clent Hills which separate the inland Heron Basin from the mid Canterbury Plains.

In this location, the Clent Hills are an integral part of two broader landscapes both of which have been identified by a Canterbury Regional Landscape study as an outstanding natural landscape and as a regionally significant one. This applies to the Front Range Canterbury Plains landscape, and the Heron Basin landscape. The Front Range landscape provides a striking backdrop to the western edge of the Canterbury Plains. Barrosa makes a significant contribution to the landscape of the Mt Somers area and provides a dramatic contrast between the plains and ranges.

Within the Front Range landscape, the Clent Hills are part of the Mt Somers volcanic centre, the largest of six small discrete volcanic centres occurring along the Range/Plains interface.

The Heron Basin is especially notable for its unusually well preserved and extensive assemblage of glacial landforms and for its lakes and wetlands. Barrosa makes a significant contribution to both these outstanding aspects of the Basins.

The Clent Hills are also a dominant part of the Ashburton Gorge which links these two broader landscapes. It is a smaller transitional valley landscape important at a district level, and provides the only road access to the Heron Basin and north side of the upper Rangitata.

2.1.2 Landscape Description

The landscape of Barrosa can be broadly distinguished as having three landscape types, Front Ranges, Heron Basin and Ashburton Gorge. These can be further subdivided into landscape units:

Front Range - Plains landscape is composed of two landscape units, south Clent Hills and Rhyolite Domes. The former is part of the southern slopes of the Clent Hills which are steep and rugged with snow tussock grassland on the upper slopes and OSTD grassland on the lower slopes. The latter contains two well defined dome landforms, with areas of rock debris, typical of volcanic activity. The vegetation is rich and varied with kanuka, remnant beech, shrublands and red tussock grassland.

Heron Basin landscape is the northern and eastern portion of the Clent Hills and has landscape units, Potato Haast uplands, Lake Emily Basin, Markham's Stream and the Maori Lakes.

The Potato Haast Uplands comprise the broad, elevated glacially smoothed and mantled shelf of the NW Clent Hills. Dense snow tussock covers the shelf with native shrubland occurring in the gullies.

Lake Emily Basin comprises the steep, planar slopes of the NE Clent Hills, south of Lake Emily, and the adjacent floor of the upper Stour Valley comprising terminal and ablation moraine, alluvial fans and river flood plain. Open short tussock grassland, much of which has been oversown and topdressed, matagouri and a few wetlands cover the lower slopes, while the upper slopes grade into open snow tussock.

Markham's Stream is a large catchment on the east side of the Clent Hills draining into the Stour River. Depleted short tussock with extensive hieracium covers the lower slopes with open snow tussock inter mixed with scree and rock outcrops on the upper slopes.

Ashburton Gorge is found along the steep southern and western half of the Clent Hills on Barrosa. It is characterised by high sheer and very steep greywacke slopes. A notable feature is the large peculiarly shaped boulder field existing high above Fault Stream. Snow tussock covers the upper

slopes and grades into short tussock/exotic grassland. Shrublands are extensive over the area. Scree and rocky outcrops are widespread.

The Maori Lakes comprise a large tussock wetland area encompassing two large irregularly shaped lakes at the foot of the Clent Hills. In places the lake is lined with cracked willow.

2.1.3 Visual Values

Most of Barrosa is clearly visible from public roads, often at close range.

Mt Barrosa dominates the view approaching the Gorge and exemplifies the striking visual contrast between plains and mountains.

Blowing Point Swamp and its steep rocky side slopes are the subject of a unique and striking vista from the road at Freezing Point, and are important as the "entrance" to the Heron Basin.

The large peculiarly shaped boulderfield is a visually striking natural landscape feature.

The eastern-most of the Maori lakes is the foreground to one of the more impressive panoramas of the Heron Basin.

The Stour rhyolite area is in the foreground of the first panoramic view up the Stour Valley, on emerging from the beech forest in Woolshed Creek on the Mt Somers Walkway.

2.2 Landforms and geology

The pastoral lease is largely comprised of moderately steep to steep, debris-mantled hills and mountains, and a small component of moderately steep hillslopes. Bedrock is both Torlesse greywacke and argillite, and Mount Somers volcanics andesite and rhyolite.

North of the fault trace of Potato Stream and an imagined north-east extension, the Clent Hills comprise Jurassic greywackes and argillites. These are very well-exposed in the Haast Stream which is notable for its abundant fossils which are found on the freehold land of Barrossa Station. The remainder of the northern half of the Clent Hills and the south-western quarter comprise older, Triassic, greywackes and argillites.

Parts of the northern end of the Clent Hills are mantled by till from three advances of the former Rangitata and Rakaia glaciers. The till-mantled hillslopes are less steep than others. The northern part of the Hills also contains two very small remnant Tertiary deposits of calcareous sandstones.

The south-eastern quarter of the Clent Hills comprises andesite and a smaller amount of light-coloured rhyolite, which were erupted through the underlying greywacke and argillite. The Barrosa Andesite unconformably overlies Torlesse rocks along its western margin on the Clent Hills. The northern contact point is a fault (but some sandstone is intensely baked up to 20m from the fault contact).

The Heron Basin valley floor on the property is comprised of till and outwash, and alluvium and swamp deposits. Valley floor landforms include gently-sloping glacial deposits, fans, lakes, outwash terraces, swamps and a floodplain and associated terraces.

Significance of the landforms and geology

- There is one New Zealand Geopreservation Inventory (NZGI) record for Barrosa Station and is found on the freehold land: Maori Lakes Nature Reserve and Wildlife Reserve, which is regionally important because it is the only Canterbury reserve representative of Dobson soils under sedge swamp and raupo.
- Haast Stream is a nationally significant site (which is on freehold and leasehold land) because there are few fossil-rich sites in Torlesse rock in New Zealand.
- Haast Stream also contains a geological reference section, for the non-marine facies of the Clent Hills Group. Tree trunks and branches are preserved in the sandstone beds in this section, and the siltstones contain well preserved plant fossils (Oliver and Keene 1990).
- Mt Somers volcanic area is one of only three such areas in the Canterbury high country.
- The type section for the Barrosa Andesite extends from the southern corner of the Clent Hills by the Ashburton Gorge Road to the summit of Mt Barrosa (i.e. GR: J36 72273 to 672303). A reference section is defined from the western end of the andesite with the overlying Somers Rhyolite immediately south of Blue Duck Stream to a point west along the ridge (GR: J36 692294 to 672295) (Oliver and Keene 1990).

2.3 Vegetation

Introduction

Past burning and grazing have left their imprint on the vegetation of much of the South Island high country, and the existing vegetation patterns on Barrosa pastoral lease are no exception. The general pattern is:

- Above about 900m the vegetation is still primarily narrow-leaved snow tussocklands, with few introduced species. These grade to slim-leaved snow tussocklands above 1200m, with a zone of hybrid tussocks in between.
- On the drier north faces there is less narrow-leaved snow tussock. These faces grade downslope and onto dry fans and valley floors into hard tussock with abundant *Hieracium pilosella*. Patches of native shrubland here contain *Coprosma intertexta* as well as matagouri and other *Coprosma* species.
- Extensive regenerating shrublands occur in most streams and gullies, and often extend up the valley sides and out on to hillslopes. Matagouri and *Coprosma* species predominate at lower levels but their density and cover reduces with altitude.
- Extensive wetlands occur around Maori Lakes.
- There are also extensive areas of the lower mountain slopes, fans and terraces which have been top dressed and oversown..
- More localised native vegetation types include:
 - (i) small remnant pockets of mountain beech in steep-sided gullies of the southern area facing the Stour River
 - ii) a tiny ephemeral wet land south of Lake Emily has an interesting assemblage of plants, most of which were not seen elsewhere on the property;
 - iii) dense red tussockland in several poorly-drained shallow basins at higher elevations and at two sites in the Stour Valley; and
 - iv) an interesting mosaic of shrublands and grasslands on soils derived from rhyolite at the south east end of the pastoral lease.

Detailed Vegetation Description

Mt Barrosa ('1' on map 2): This is the highest area and contains the best tall snow tussock grassland. It is predominantly south facing with a relatively broad summit ridge with open areas and rock outcrops. There is a good diversity of plants with few exotic species. Slim-leaved snow tussock dominates above about 1100m with a cover of 50-75%. Cotton daisy is common, as well as *Celmisia lyallii* and hybrids between the two. Other common species are *Dracophyllum uniflorum* and *D.pronum* on rocky slopes, as well as *Leucopogon suaveolens*, golden spaniard, hard tussock, blue tussock and *Rytidosperma pumilum*. Boulders and bare ground can reach 10% and exotic grasses and herbs occasionally 5%. Uncommon native plants occurring on open ground are *Lignocarpa carnosula* and an unidentified *Myosotis* sp. (probably *M. suavis*). *Ranunculus insignis* grows among boulders,

while on rocky ground *Celmisia angustifolia* is found as well as loose mats of *Raoulia beauverdii*, *Raoulia australis*, *Craspedia lanata* and *Gingidia dectpiens*. A few plants of the whipchord hebe *Hebe lycopodioides* also grow here. Lower slopes have a good cover of narrowleaved snow tussock. North-facing slopes in the upper Markham Stream catchment contain more open slim-leaved snow tussock, with much cotton daisy and more bare ground.

Small areas of regenerating shrublands are found in gullies of the Blue Duck catchment. They vary in composition and species dominance but contain *Brachyglottis cassinioides*, snow totara, mountain ribbonwood, mountain flax, *Hebe rakaiensis*, *Coprosma ciliata*, *Aciphylla scott thompsonii*, *Astelia nervosa*, *Dracophyllum uniflorum* and hard shield fern and *Blechnum* sp "mountain". Dense shrubland is found in the rocky, steep-sided Waterfall Creek. As well as those species already mentioned, matagouri and other *Coprosma* species form thick areas with occasional broadleaf. In the long term these areas can be expected to regenerate into forest if left undisturbed.

A shallow wet gully at the eastern end of this block contains red tussock in good condition with few exotic species. Red tussock forms 70-80% cover with bog rush 10-25% and *Aciphylla scott-thomsonii* 5-10%. Other prominent species are *Cassinia vauvilliersii*, *Olearia bullata*, *Clematis marata*, *Carex coriacea* and a further twenty native species as ground cover.

Clent Hills Boulderfield ('2' on map 2): This is the largest of several relict screes found along the western slopes of the Clent Hills. There is a good range of surrounding native plant communities including shrubland and snow tussock grassland.

Potato ('3' on map 2): This has a good representative sample of the major plant communities present on the western slopes of the Clent Hills. The steep upper slopes contain slim-leaved snow tussock with cotton daisy equally dominant in places. Golden spaniard, small shrubs such as *Pentachondra pumila*, *Pimelia traversii* and *Gaultheria* spp. together with small herbs such as *Senecio discoideus*, are common on the rock outcrops and the rocky ridge tops and spurs.

A gently sloping moraine terrace lies below the steep upper slopes. Here dense narrow-leaved snow tussock, up to 90% cover and up to 1.5m tall grows on wetter ground. Lower on the moraine terrace the narrow-leaved snow tussock cover is less dense with more species appearing including hard tussock. Bare ground, in places reaches 15% cover. Exotic species are present but never very prominent. A few small bogs contain comb sedge *Oreobolus pectinatus*, and associated plants with areas of bog rush and some red tussock.

The incised, narrow valleys of Haast and Potato Streams contain open to dense shrubland of matagouri, mountain ribbonwood, *Coprosma* species, *Olearia bullata*, *O. paniculata*, mountain flax, *Hebe rakaiensis* and *H. salicifolia*. *Helichrysum intermedium* and *Hebe pinguifolia* grow on bluffs with numerous herbs such as *Brachyscome sinclairii*. *Carmichaelia nana* also occurs here.

Maori Lakes ('4' on map 2): An important wetland system containing several lakes. Large stands of raupo are found in open water with the tall pukio prominent around the lake edges and in swampy ground. A number of other native sedges including *Carex gaudichaudiana*, *C. diandra*, *C. sinclairii* and *C. echinata* are found here, and the introduced rush *Juncus articulatus* is common. Wet ground can be dominated by bog rush and *Carex coriacea*. Exotic species are common throughout this area and dominate the surrounding drier grassland. Crack willow grows thickly along parts of the area. A small turf edge to the eastern lake, nearest the road is important for its range of small plants. They include *Limosella lineata*, *Schizolema nitens*, *Hydrocotyle hydrophila*, *Galium* sp. "tarn", *Ranunculus limosella* and *Mylriophyllum pedunculata* var. *novae zelandiae*.

Lake Emily ('5' on map 2): Lake Emily is a small, circular, shallow lake (approximately 2m deep, with an open water area of 20ha) which lies amidst a swamp (approximately 50ha). The area has been recognised as "one of the best examples of a small lake wetland system" in Hakatere ecological district (Harrington et al. 1986). Only the small part at the southern end of the lake is in Barrosa pastoral lease and is considered here.

This area comprises red tussockland interspersed with open ground dominated by the exotic grasses browntop and sweet vernal, with Yorkshire fog in damper parts. *Hieracium pilosella* is also present. There is however also a good range of native species here including *Coprosma cheesemanii*, *Aciphylla subflabellata*, *Prasophyllum oligantha*, *Gaultheria parvula* and comb sedge, with several other native sedges and rushes in the wetter ground close to the lake.

Ephemeral Wetland - Stour Valley ('6' on map 2): South of Lake Emily and below the road lies a small turf land. This shallow depression is periodically wet which enables a specialised native community to survive amongst the more aggressive species in the surrounding area. Species found include *Coprosma atropurpurea*, *Carex decurtata*, *Dichondra brevifolia*, *Pimelea prostrata*, *Gnaphalium palludosum* var. *parviflorum*, *G. traversii*, *Galium* sp. "tarn" and *Ephilobium komarovianum*. Grazing may have assisted in maintaining these species by reducing competition from exotic grasses.

Northern Stour Valley Hard Tussockland ('7' on map 2): The valley floor, fans and lower north-east slopes of the Clent Hills have a higher proportion of exotic species than the upper slopes and southern slopes. The native component is still significant for it is a modified remnant of short tussock grassland comprising both hard and silver tussock. There are also remnant shrublands found at lower altitudes and on dry sunny faces. Hard tussock forms about 30% cover with *Hieracium pilosella* about the same, but there are numerous native species present such as *Plantago spatulata* (not found elsewhere in the survey area), large mats of *Coprosma petriei*, the shrub *Coprosma intertexta* (only found along the lower slopes with matagouri), *Olearia bullata*, *Melicytus* sp. "blondin" and other shrubs. Toitoi grows in seepage areas along these slopes. The dead-looking *Helichrysum depressum* is found on dry, stony stream beds and the reddish *Carex buechananii* on damp, alluvial sites.

Stour Valley Red Tussockland ('8' on map 2): This is the only significant area of valley floor red tussockland on Barrosa pastoral lease. Individual tussocks are up to 1.8m tall. The cover is variable - 40-80%. There are small areas of open water. Other significant species include bog rush, *Juncus* (spp) and sedges (*Carex*) species. Of the forty species recorded here, about one-third are introduced.

Stour River Rhyolite ('9' on map 2): The vegetation on the rhyolite bedrock and soils is significantly different to that found on the andesite and greywacke areas adjacent. Extensive shrublands and regenerating forest cloth the lower colluvial slopes and boulderfields. The very dry and rocky northern slopes have large patches of kanuka, with manuka and a few Halls totara, snow totara and bog pine. The scrambling, leafless shrub *Exocarpus bidwillii* and the small shrubs *Pimelia traversii* and *Hebe pimelioides* are common, as are sun orchids *Thelmymitra* sp. These species were not found or are uncommon on the rest of Barrosa pastoral lease.

On a low saddle on the western side of the high point (978m) there is a red tussockland on poorly-drained soils.

Steep south-facing slopes have a mosaic of shrub and grassland communities. Remnant pockets of mountain beech fill a few deep gullies. A forest of broadleaf and mountain ribbonwood cover an area of boulderfield. *Dracophyllum longifolium* and *D. uniflorum* are prominent in some communities as are *Coprosma propinqua*, *C. ciliata* and *C. rigida*. *Hebe rakaiensis* forms almost pure stands in places as does matagouri. The large speargrass *Aciphylla scott-thomsonii* is found along stream banks. Mountain flax is often prominent on damp, rocky vegetated slopes. Some slopes are covered with cotton daisy, others with narrow-leaved snow tussock which can be dominant (30-50%) with kanuka (10-25%) and cotton daisy up to 50% under the tussock. *Leucopogon suaveolens*, *Myrsine nummularifolia*, *Carmichaelia monroi*, lichens, mosses and bracken fern are some of the other species. *Hieracium pilosella* and *H. praealtum* are also common. Some snow tussock and shrublands appear to be reverting to forest via shrubland. There is a rich variety of native plants here.

Threatened or uncommon native plants

No rare or endangered native plants are known from the area surveyed.

Significance of the vegetation

- Includes remnant examples of vegetation which was once extensive throughout much of the eastern South Island high country, before the arrival of Polynesians including slim snow tussockland around Mt Barrossa; red tussocklands on the Stour Valley floor and in shallow mountain basins; wetlands at Maori Lakes and Lake Emily; mountain beech forest in the steep-sided, south facing gullies above the Stour River; and shrublands in many of the other stream floors and deep valley systems.

- Includes snow tussock grasslands with high natural values because of the vegetation structure and composition, and because the ecosystem processes are predominantly "natural" - i.e. with relatively low impact of introduced plants and animals (there were higher numbers of deer and sheep in the past, but the vegetation shows good recovery). The narrow-leaved snow tussocklands over the upper slopes of the Clent Hills are remnant examples of the Polynesian fire-induced vegetation which completely transformed most of the South Island high country.
- Includes rhyolite-native vegetation associations, which are very uncommon in the South Island. The shrublands on rhyolite bedrock and soils in the eastern parts of the pastoral lease also have high natural values because of their vegetation structure and composition, and because the ecosystem processes are predominantly "natural", i.e. with relatively low impact of introduced plants and animals.

2.4 Fauna

Birds

Native bird species on Barrosa pastoral lease include:

- in grasslands/tussocklands: pihoihoi/New Zealand pipit, karearea/New Zealand falcon and kehu/Australasian harrier. Introduced species include white-backed magpie, redpoll, skylark and yellowhammer. Californian quail are present on freehold land adjacent to the South Branch Ashburton River.
- in shrublands: tauhou/waxeye and riroriro/grey warbler. Introduced species include redpoll and yellowhammer and chaffinch.
- at the lakes and wetlands: puteketeke/southern crested grebe, parera/grey duck, kawau pu/black shag, papango/scaup, putangitangi/paradise shelduck, Australasian bittern and, occasionally, marsh crake. Introduced species include Canada goose, black swan and mallard duck.

Game birds frequent the Maori Lakes throughout the year in high numbers, but show little seasonal pattern of lake use, whereas the New Zealand scaup show a distinct temporal pattern of lake use being present during summer, autumn and early winter, but is absent in late winter and early spring. High lake use is often recorded during May (late autumn) with between 200-400 game birds and up to 85 scaup present, possibly reflecting the value of the lake system as a refuge area during the shooting season. The Maori Lakes do not feature as important grebe habitat given that only two birds are usually supported for part of the year, being totally absent during late spring/early summer (October to December). Such limited summer use reflects the unlikelihood of breeding.

Lake Emily and its associated wetland supports moderate numbers of game birds and New Zealand scaup throughout much of the year. Specifically, Lake Emily is

of value as a breeding lake for waterfowl as small populations are resident during spring and summer. It does not regularly feature as an over wintering lake, presumably a consequence of small lake size and its tendency to freeze over in winter. Lake Emily is a valuable habitat for southern crested grebes, with maximum numbers attained in spring and summer. However, the lake is of dubious value as a breeding lake given that no recent breeding has been recorded.

Lizards

Lizard species recorded on Barrosa pastoral lease includes the common skink (probably either *Leiopisma nigriplantare ploychroma* and *L. maccanni*) and the common gecko (probably *Hoplodactylus* sp. "Canterbury" and *H.* sp "Southern Alps") which were observed in many areas (taxonomy after Daugherty et al. 1994).

Other species which may be present are green skink and spotted skink (which have been recorded in the Ashburton Gorge and on the Manuka Range), the jewelled gecko, and the endangered scree skink *Leiopisma otagense* form "waimatense".

Terrestrial invertebrates

Alpine weta were common in screes, boulder-fields and beneath stones in the tussock grasslands.

The scree weta is likely to be present in the screes.

The alpine grasshoppers *Sigaus australis*, *S. villosus*, *Paprides nitidus* and *Brachaspis nivalis* occur in the tussocklands of the district.

Freshwater fish

Five streams on the pastoral lease have been surveyed:

- i) the outlet stream from Maori Lakes which drains into the Ashburton River South Branch
- ii) Markhams Stream,
- iii-iv) three smaller unnamed streams draining the Clent Hills to the West Branch of the Stour River.

The streams fished had a variety of substrate types ranging from fine gravels and cobbles to boulders providing habitats suitable for a wide range of native fish species.

Fish species recorded during the survey included upland bully, common river galaxias, koaro and brown trout. Freshwater invertebrate communities were dominated by mayflies and caddisflies, with a wide range of species present including taxa typical of high water quality. Other fish species recorded from

nearby streams and lakes but not found during the survey include brook char, common bully, alpine galaxias and long-finned eel (NIWA Freshwater Fish Database). Lake Emily contains brook char, which were transferred there some 30 years ago by the Acclimatisation Society.

Still water habitats electrofished and/or minnow trapped including the Maori Lakes and the wetland near the Barrosa homestead. Only upland bully were recorded from Maori Lakes while upland bully and common river galaxias were recorded from the wetland. Brown trout and rainbow trout are also known to be present in the Maori Lakes. Common invertebrates present in Maori Lakes and the homestead wetland were typical stillwater forms and included water boatmen (*Sigara* spp), tubificid worms, chironomids and the snail *Potamopyrgus* sp.

Introduced mammals

Introduced mammals include cattle, sheep, hare, rabbit, hedgehog, possums, cat, and chamois.

Significance of the fauna

- Two threatened fauna species live in or visit the survey area: (i) karearea/New Zealand falcon, which is a second priority species for conservation action, and (ii) manuka/Australasian bittern, which is threatened in New Zealand but known to be secure in other parts of their range outside of New Zealand (Molloy and Davis 1994).
- The lizard, terrestrial invertebrate, fish and freshwater invertebrate species occurring in the survey area are typical of those expected to be present in the mid Canterbury high country. No threatened or uncommon native species are known to be present.

2.5 History and historical features

Barrosa Station was originally taken up in four parts between 1858 and 1860 by Leach and Dudley, and known as Clent Hills. When Alfred E Peache of Mt Somers Station acquired the run in 1879 16,000 sheep were being run on about 20,000 ha. Peache sold the run in 1885 to the brothers Thomas and James Harrison. At this time the homestead was on a flat between Lake Emily and Maori Lakes. James built a new homestead at the Stour River, which became the main homestead site.

In 1914 the farm buildings were shifted from the abandoned site by the then lessee R.B. Neill. Neill also changed the name of the station to Barrosa. The abandoned homestead site is now outside the current pastoral lease boundary. Part of Barrosa was resumed by the Government in 1919 for ex-serviceman re-settlement.

There are no recorded archaeological or historic sites on the pastoral lease.

Existing land status

Barrosa pastoral lease covers 5746 ha. The station also comprises approximately 1494 ha of freehold land.

The survey area is roughly bounded by formed and unformed legal roads.

The lake bed only of Maori Lakes is classified as a nature reserve. The surface of the lakes and a 40m strip around them are wildlife reserves along with a road reserve. There is a small esplanade reserve near the inlet of the eastern Maori Lake, adjacent to the Hakatere Heron Road.

The lake bed only of Lake Emily is a wildlife refuge, which is surrounded by a Section 58 strip.

Barrosa falls under the umbrella of the Ashburton Country District Scheme and the whole property was zoned Rural B. This allows for intensive farming and forestry. Under the local government restructuring the property now falls under the proposed Ashburton District Plan which identifies the property as being Rural C (High Country) which allows for extensive farming as well as providing opportunities for recreation, tree planting and tourism.

In the proposed district plan two areas of landscape importance were identified on the property, being the Lake Emily Basin and part of the Ashburton River South Branch gorge area.

Also four areas of significant conservation value were included in the proposed plan. These areas were largely based around the RAPs identified in 1984/85 PNAP survey.

The District Plan is currently in the hearing process and decision may be made in May which may alter some of the comments made above.

2.7 Recreation and access

Existing recreational use of Barrosa pastoral lease is low with the main focus of public activity being centred on the adjacent Mt Somers conservation area where public facilities such as walkways and foot tracks have been provided.

Within Barrosa pastoral lease however, occasional horse trekkers use the Stour River four wheel drive track from the homestead entry to Lake Emily, and angling is a significant public pursuit at both the Maori Lakes and Lake Emily.

The picturesque Maori Lakes, adjacent to the Hakatere/Heron road provide a popular stop off point for sightseeing and picnicking motorists.

Due to the close proximity of Barrosa Station to the popular recreation areas of Mt Somers and the wider Ashburton Lakes group there is potential for greater

recreational use if the existing public access along the lower Stour River was made known to the public. This could provide opportunities for walking, mountainbiking and additional horse trekking activities.

Significance of the recreation and access

- Lake Emily supports one of the most prolific American brook char fisheries in New Zealand and as such, attracts moderate numbers of both national and international fishers.
- Both brown and rainbow trout are present, and fished for, in the Maori lakes.

2.8 Existing management

Rabbits are a pest and are regularly poisoned. They are a particular problem on the western slopes of the Clent Hills, between Haast Stream and Potato Stream, and also in the Stour Valley from Lake Emily down to the Mt Somers boundary. Poisoning operations on this part of the lease, have covered RAP 7 Potato.

There are few chamois on the property. They winter over. No sign of them was seen during the field survey.

Plant pests include gorse, broom and wilding trees. Control programmes are carried out against all of these, including wilding trees and broom in RAP 14 Stour Shrub Remnants and RAP 7 Potato.

Hieracium is present throughout the lease including the oversown and top dressed country.

PART THREE: CONSULTATION

Informal consultation has been undertaken with interest groups. The property was visited over one weekend by the New Zealand Forest and Bird Protection Society field officer. Issues raised to date have been recreational access to Mt Barrosa, access to Blowing Point area for rock climbing and the importance of fishing in the area.