Toitu te Land whenua Information New Zealand

Crown Pastoral Land Tenure Review

Lease name : GLENROCK (RAKAIA)

Lease number : PC 140

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.

Note: Plans which form part of the Conservation Resources Report are published separately.

These documents are all released under the Official information Act 1982.

December 05

Conservation resources of Glenrock Pastoral Lease, Canterbury

Department of Conservation, Canterbury Conservancy, Pastoral Lease tenure review report to Knight Frank Limited

April 8, 1997

PART 1 - INTRODUCTION

1.1 Glenrock

Glenrock is a long narrow property of 7,012 hectares. A central piece of the property of approximately 3,500 hectares of the Black Hill Range has been retired and is to be surrendered once cadastral survey is complete. Surrendering this land will result in two separate pieces of pastoral lease. A larger, northern block of approximately 3000 ha runs from the Rakaia River to Cookies Flat in the upper catchment of the Swift River, and a smaller, southern block (approx. 380 ha) is wedged between the Swift River and the North Branch of the Ashburton River. These two pieces of land were the only areas assessed for tenure review, on the understanding that the surrendered area would in the future be administered by the Department of Conservation.

Land adjoining to the east is Redcliffe pastoral lease, to the north is Redcliffe freehold and Crown river bed (Rakaia River), to the west is Crown land (formerly Glenarife Pastoral Occupation Licence (POL)), and to the north-west is Glenariffe pastoral lease. In the south-west is Crown land, previously Winterslow POL and in the south-east is another piece of Crown land, formerly Glenrock pastoral lease, from an earlier retirement plan.

The property lies within the Mt Hutt Ecological District, which was surveyed as part of the PNA Programme in 1989 (Arand and Glenny 1990). Four whole or part RAPs were identified on the property - Mt Hutt RAP 15 (Redcliffe Hill), Mt Hutt 16 (Redcliffe Saddle), and Mt Hutt 22 (Turtons). Mt Hutt RAP 9 (Middle Creek) is also on Glenrock but is almost exclusively in the area that is retired from grazing and is to be surrendered. Glenrock Swamp (Mathias Ecological District RAP 2) is partly on freehold owned by Glenrock.

The property was inspected in December 1995. Other pastoral leases in the vicinity that are undergoing tenure review include Double Hill and Glenariffe to the west, and Redcliffe to the east.

PART 2 - CONSERVATION RESOURCE DESCRIPTION

2.1 Landscape

2.1.1 Context

Glenrock is located in the upper Rakaia valley, along the south bank of the river. The upper Rakaia is a well-known, dramatic and readily accessible landscape considered to be nationally outstanding. In the Canterbury Regional Landscape study by Boffa Miskell and Lucas Associates (1993) the Rakaia riverbed was identified as an area of national value and as an outstanding natural feature. The mountain ranges south of the Rakaia River have been identified as regionally significant. The Glenrock pastoral lease comprises around one-fifth of the total length of the ranges that enclose the south side of the upper Rakaia valley.

2.1.2 Landscape character types

Glenrock pastoral lease comprises six distinct landscape character types:

1. Rakaia Faces

The northern faces of the Black Hill Range, Donald Hill, and the Palmer Range (on another property) which stretch for 16km along the south side of the Rakaia River, are considered collectively to be the most significant natural feature of the south side of the upper Rakaia valley because of their highly distinctive, highly visible natural form and their size. Approximately 1.5 km of these are within the Glenrock pastoral lease.

The mid to lower slopes, rising from around 450-600m asl to 1300m asl, are large, steep, glacially smoothed and grooved, and rectilinear in shape with a cover of short tussock, scattered matagouri, and exotic grasses. They are finely dissected by straight-run channels and incised gullies.

There is a relative lack of visible cultural modification and the landform appears highly natural and intact. The subtle topography patterns are readily apparent because of the low grassland cover; and the large scale and simplicity of the landscape is also emphasized.

The upper slopes above the level of glacial scouring, are a deeply dissected steep spur, valley and basin landscape covered predominantly in snow tussock.

2. Black Hill Face

This is the large, extremely steep, planar, northeast facing lower slopes of Black Hill, dropping steeply for around 900m into the Rakaia riverbed and capped by rock buttresses. It is a highly impressive mountain slope, and forms a striking visual contrast with the smoothly rolling slopes of the Black Hill plateau above.

Surface cover is varied across the slope, with large areas of scree originating from the rock outcrops above streaming down the slope in narrow slides, alternating with a sparse short tussock cover, bracken and mixed shrubland. A large area of shrubland exists on the largest scree area.

There are few subdividing fences and the form of the slope remains intact. Exotic species such as sweet briar and hawkweeds increase in dominance over the lower slopes. The Double Hill Run road runs close around the base of the slope, just above the Rakaia riverbed.

3. Black Hill Cirque Basins

These are four classic cirque basins and their lower valleys forming the east side of Black Hill and ranging from 1000-1200m asl to around 2000m at their summits. The southern two basins and valleys including Cascade Glen are much larger and deeper than the northern two which are shallow and have relatively little valley development. Only the two northern basins, and the lower valleys of the southern two basins, are included in the area under tenure review. The lower edge of the two northern basins is sharply defined by extensive rock bluffs and a a very sudden increase in slope steepness, where the lower slopes of Black Hill drop into Packers Creek and the Rakaia riverbed.

Snow tussock of varying density is the predominant surface cover over the generally smooth planar to rounded slopes, but scree, bare ground and rock outcrop is dominant over the steeper valley side slopes and the higher altitude areas, and *Dracophyllum* shrubland occupies the south facing side slopes of the larger valleys. This area has been very extensively grazed. Two old subdivision fences are the only man-made elements in the area.

4. Black Hill Plateau

This is a broad open elevated basin and plateau area ranging in altitude from 1300m to nearly 2000m asl and skirting around the north side of Black Hill, overlooking the Rakaia valley.

Broad smooth-surfaced rolling and terraced fluvio-glacial landforms typify the area, with a generally dense snow tussock cover. Scree, bare ground and rock outcrops increasingly dominate with altitude.

The huge scale and openness of the area, and the smooth rolling landforms accentuated by the uniform snow tussock cover create a visually impressive, simple landscape of highly distinctive natural character.

A notable landscape feature of this area of Glenrock is a large peat dome on the plateau north of Black Hill, which has an unusual narrow upstanding rock-debris lined ridge about 1.5km long on its northern margin.

5. Redcliffe Valley

Situated between Shingle Hill, Rat Hill and Mt Hecla is a small, linear 7 km long by 1-1.5km wide intermontane basin around 800-1000m asl, merging with the Swift River valley, a major tributary of the Ashburton River.

It comprises a flat to gently sloping valley floor formed by meltwater streams flowing from the snout of the ,Rakaia glacier which deposited thick outwash gravels around 20,000 years ago. Large alluvial fans have covered some of these deposits and have dammed streams causing the formation of a tarn and wetland on the eastern side of basin floor.

Cascade Glen and Redcliffe Stream deeply dissect the basin floor, leaving a small remnant piece of basin floor to the north. These valleys are deep and steep sided, with mixed shrublands and remnant beech forest. A huge cliff erosion feature is on the true left of Cascade Glen exposing outwash gravels and earth pillar formations.

The enclosing mountain slopes are typical of this area, being steep, planar and well-dissected, with sparse snow tussock cover intermixed with scree and bare rock which increasingly dominates with altitude.

At present the valley is extensively grazed. A 4WD track passes through the valley, there is a hut above Cascade Glen and a boundary fence exists down the east side and across the soutn end. Overall the valley appears highly natural with the well-defined form of the valley floor remaining intact.

6. Cookies Point

Cookies Point is the area of steep hill country at the confluence of the Ashburton and Swift rivers, forming the pointed southern end of the Black Hill Range and is the whole of the area which remains in the lease after the run plan surrender.

Sparse short tussock grassland is the main cover on the flat to rolling top with matagouri and mixed shrublands on the very steep rocky sides sloping down to the riverbed. The western slopes have more open short tussock cover. The sparse and depleted nature of the vegetation on this block contrasts markedly with the dense tussock cover above the retirement fence, on the Black Hill Range.

A small elevated terrace at the confluence of Middle Creek and the Swift River, is cleared and fenced as a holding paddock, with a musterers hut.

2.1.3 Visual values

The whole of the mountain ranges forming the south side of the upper Rakaia valley are part of a visually spectacular valley landscape. Their value comes from the massive scale and the contrasts of the dramatic glacially carved mountain slopes accentuated by the predominantly uniform grassland cover, the vast braided

Rakaia riverbed, and the large alluvial fans and terraces neatly subdivided into green conifer-lined paddocks.

Black Hill is a major visual focus from the Double Hill Road west of Terrible Gully, completely dominating the view on the approach to Redcliffe Station flats. The extreme steepness of the lower slopes is fully appreciated as the road passes directly under the slope. Similar views also exist from the Rakaia riverbed.

Black Hill is also highly visible and is a dominant part of the views west across the Rakaia from the Coleridge Downs road, between the Dry Acheron and Coleridge village (a distance of about 10km), from Homestead and Algidus roads, and from the Coleridge Intake Road especially at the lookout near the top of the zig zag. The striking contrast between the sheer planar lower slopes with their cap of rock buttresses, and the gentler rolling upper slopes with smooth tussock cover is particularly apparent from here.

Although the property is not visible from any major roads or settlements, the upper Rakaia is a popular and easily accessible recreational area within a couple of hours drive of Christchurch. The Rakaia riverbed is an important recreational fishing and nationally important jet boating area.

The remaining parts of Glenrock - Redcliffe Valley and Cookies Point are not visible at all from existing public viewpoints except by air.

2.2 Landforms and geology

The underlying rock is greywacke and argillite with minor associations of conglomerate and metavolcanics. Pleistocene outwash gravels infill the basins and mantle mountain slopes.

The major landform groups on the property are:

- planar, very steep, glacially scoured mountain slopes up to 1500m in altitude, at the northern end of the Black Hill Range (the Black Hill face)
- above the Black Hill face, a plateau-like area of low relief, smoothly contoured mountain slopes rising to the scree-covered Black Hill (the Black Hill plateau).
- moderately steep mountain slopes of the the remainder of the Black Hill Range, with extensive areas of sheet scree above 1500m, scattered rock outcrops and cirque basins containng rockfall scree and occasional, moraines and rock glaciers
- Redcliffe Saddle and the Swift River ("Redcliffe Valley") a 800m wide, gently sloping basin floor of fluvio-glacial gravels capped by loess and large alluvial fans.

2.3 Climate

According to Catchment Board records the rainfall at the homestead is between 800-900 mm, and around 1400mm at Cookies Point. The prevailing wind is west to north-west. These funnel down the Rakaia Valley, particularly in spring and autumn and sometimes bring rain. Rain is more reliable from the south, however. Snowfalls are frequent from May to August. On the higher mountain slopes and basins snow lies for about four months. On the flats and low hills, heavy snowfalls may lie for some weeks but generally snow melts on sunny aspects in a few days.

2.3 Vegetation

For descriptive purposes the vegetation has been divided into seven geographical areas - one in the southern block and six in the northern.

2.3.1 Small southern block, near Cookies Point

On the steep lower slopes (below approx. 900 m) of the Swift and North Branch Ashburton Stream catchments scrub is the dominant vegetation. The main species are matagouri (*Discaria toumatou*), mingimingi *(Coprosma propinqua),* mountain wineberry *(Aristotelia fruticosa)*, patches of mountain ribbonwood on talus slopes and around streamsides, and *Olearia bullata.* On mid slopes there is also kanuka (*Kunzea ericoides*), speargrass (*Aciphylla aurea*), flax and porcupine scrub (*Melicytus alpinus*). Rock and rubble cover is on average about 25%. In areas of more soil *Hieracium (H. pilosella, H. lepidulum, H. praeltum*), is abundant (up to 50% cover) with cover increasing in places of less scrub. Native ground cover is most commonly *Leucopogon fraseri*, blue tussock (*Poa colensoi)*, hard tussock (*Festuca novae-zelandae)*, and cotton daisy (*Celmisia spectabilis).*

Higher up the slope scrub communities are replaced by sparse tussock grassland. Tussocks are mainly fescue and blue tussock and occasional scattered slim-leaved snow tussock, with about 50% *Hieracium.* Other species present were cotton daisy, *Celmisia gracilenta*, a native broom (*Carmichaelia monroi)*, *Luzula rufa*, *Raoulia subsericea*, sweet vernal (*Anthoxanthum odoratum)* and other small herbs and grasses.

Above 1100 m snow tussocks are more abundant but often have large central dead areas, which in many cases were being colonised by *Hieracium spp.* Fescue tussock was more abundant than at lower altitude. Above the fenceline (where the land had been retired from grazing), snow tussocks were noticeably more abundant (up to 60-70% cover) with inter tussock vegetation of fescue and blue tussocks, and little *Hieracium.*

2.3.2 The northern block

The main vegetation groups in the northern block are:

- fescue tussock grasslands on Redcliffe Saddle and low altitude side slopes (< 1000m)
- slim leaved tussocklands on slopes above 1000-1100m throughout
- bracken with scattered scrub, exotic grasses and herbs with a scree and scrub covered fan of McCracken Stream on the Black Hill face.
- areas of red tussockland in hollows and around the foot of fans on Redcliffe Saddle
- a small tarn with a turf and sedgeland margin
- limited areas of *Chionochloa flavescens* on steeper gravel slopes of Shingle and Black Hill
- Mountain beech, mixed hardwood forest and scrub in Redcliffe Stream and tributary streams
- scree, mainly unvegetated, but with a scattering of specialised scree plants, mainly on Black Hill.

For descriptive purposes the northern block has been separated into six geographical areas:

2.3.2.1 Redcliffe Basin

This description covers the area to the north of Cookies Flat, and extends east to the pastoral lease boundary, north to the cliffs at the edge of Cascade Glen and west to the base of Shingle Hill. The majority of this area was identified as an RAP, Mt Hutt 16.

Short tussocklands cover the fans and valley floor. Fescue tussock and blue tussock (*Poa colensoi)* are the main tussocks with some scattered slim snow tussock. The main intertussock species are *Brachyglottis bellidioides,* woolly moss (*Racomitrium lanuginosum*), a mat daisy *Raoulia subsericea* and sub-shrubs of dwarf broom *(Carmichaelia monroi), Coprosma petriei,* and *Leucopogon fraseri. Hieracium* and exotic grasses are present in low amounts, but increase on the fans. There is very little bare ground. Overall the naturalness of the vegetation in this area is relatively high, particularly compared with most other short tussocklands in the district which have a predominant intertussock cover of exotics.

On the eastern side of the basin floor against the foot of the slope is an area of red tussockland with a small tarn. The tarn has a *Schoenus pauciflorus* - *Juncus effusus* sedgeland margin and small turfland areas. The PNA survey identified

several plants in the tarn and margins not recorded elsewhere in the district (*Epilobium billardiereanum*, *Glyceria fluitans*, *Myriophyllum triphyllum* and *Pratia perpusilla*).

Scattered over the fan and hillside above Redcliffe Saddle are also six bog pine. Bog pine was once widespread in montane Canterbury, but owing to burning they now only have a scattered distribution. This is the only record of bog pine in the northern half of the Hutt Ecological District.

2.3.2.2 Cookies Flat

Cookies Flat is south of Redcliffe Basin described in 2.3.2.1. Vegetation is predominantly short tussock grassland. Fescue tussock, cotton daisy, *Coprosma petriei*, and *Hieracium spp.* are the major species. There is a wide range in the condition of this grassland, but overall the naturalness and cover is less than Redcliffe Saddle. In some places, such as the southern end of Cookies Flat, fescue tussock occurs on pedestals with the surrounding soil removed and the bare ground in the process of being colonised with *Hieracium*. Other areas on Cookies Flat were in better condition, although everywhere *Hieracium* was present.

Red tussockland found in hollows within the Cookies Flat area is very healthy and in a relatively natural state. Bog rush (*Schoenus pauciflorus)*, cutty grass *(Carex coriarea)*, red tussock (*Chionochloa rubra)* and the introduced soft rush (*Juncus effusus*) were found. The red tussock cover was dense, with few adventive species. But overall this patch is smaller, has less natural diversity, has more adventive species and is surrounded by more modified grasslands than the red tussock near Redcliffe Saddle and tarn (in 2.3.2.1).

2.3.2.3 Shingle Hill

Shingle Hill (1873m) is on the western side of the Redcliffe basin floor. The lower slopes and fans extend onto the Redcliffes Basin and are covered in a similar vegetation. On lower midslopes a mixture of grasses and herbs and scattered shrubs are common. Medium sized matagouri (1-2m) and cotton daisies are found over a lower layer of matagouri, slim leaved snow tussock (*Chionochloa macra)*, golden Spaniard (*Aciphylla aurea)*, mat coprosma (*Coprosma petriei)*, hard tussock and *Leucopogon fraseri*. Most of the ground is covered by native and introduced herbs (e.g. *Ranunculus foliosus*, *Hieracium spp.*, *Raoulia subsericea*, catsear (*Hypochoeris radicata*)) and grasses (blue tussock, *Elymus sp.*). Grazing was evident by the *Elymus* growing prolifically only amongst protective spiky shrubs.

Above this level, a band of scattered flax separates this vegetation community from a community above of broad-leaved snow tussock (*C. flavescens)* dominated herb grassland. Scattered cotton daisy, matagouri, and spaniards continue throughout this latter grassland. Fescue and blue tussocks, herbs and *Hieracium* are also present. The slope here is steeper than lower down and there is also more

bare ground and exposed rock. Scree covers the higher altitude slopes of Shingle Hill above approximately 1500m.

2.3.2.4 Cascade Glen and Redcliffe Stream

This area forms the northern boundary of the Redcliffe basin. It drains part of the eastern slope of the Black Hill Range. Only the middle sections of the catchment are inside the area under tenure review. Vegetation changes from scrub and snow tussock on the higher altitude slopes (approx. 1000 m asl) to mixed hardwood forest, beech forest and mixed shrubland below the 4 w.d. track (below 900m).

Vegetation on the higher altitude slopes also varies with aspect - the north facing slopes have a community dominated by matagouri, broadleaved snow tussock, snowberry (*Gaultheria crassa),* and heath *(Leucopogon fraserii),* while the south facing (true left) predominant species is turpentine scrub *(Dracophyllum uniflorum)* and slim snow tussock with a diverse ground cover of fescue tussock, cotton daisy, *Ranunculus insignis*, snowberries, mat *Coprosmas* and dwarf heaths.

In the middle reaches (i.e. near where the 4WD track crosses Cascade Glen) there are areas of scrub dominated by matagouri, mingimingi, mountain ribbonwood, tauhinu *(Cassinia vauvilliersii)*, and flax (*Phormium cookianum).* The lower reaches of Cascade Glen support a remnant of mature beech forest on the steeper slopes on the true left. On the true right are areas of matagouri and mingimingi scrub with brier, occasional flax, *Corokia cotoneaster, Olearia paniculata* and bracken. Along streamsides is matagouri, ribbonwood, tutu, tauhinu and koromiko *(Hebe salicifolia).* This type of shrubland with open grassy patches and shingle also extends up into Redcliffe Stream. Dotted across these slopes on the true left bank is around 20 plants of the threatened plant *Hebe cupressoides,* the only record of the plant in the ecological district. *Hebe cupressoides* is now only found at 15 sites in the country and only remains at four sites north of the Mackenzie Basin.

Further downstream on mainly freehold land around a steep gut on south facing slopes, is mixed hardwood forest of *Olearia paniculata*, kowhai, ribbonwood and broadleaf (*Griselinia littoralis*).

2.3.2.5 Upper slopes of the Black Hill Range (Black Hill plateau and Black Hill cirque basins landscape character types) from approx. 1200 m to the pastoral lease boundary.

These slopes are generally low angled, low relief and are covered in slim leaved snow tussock with cotton daisy, blue tussock, fescue tussock, prostrate snowberry (*Gaultheria depressa* var. *novae zelandiae),* dwarf speargrass *(Aciphylla monroi)*, and Raoulias (*R. subsericea* and *R. grandiflora* on the gentle east, north-east and north facing slopes. On shady south east facing slopes the snow tussock is mixed with turpentine scrub *(Dracophyllum uniflorum).* Also on these slopes, in a shallow basin at the north end of Black Hill Range is a large cushion bog peat dome dominated by patches of comb sedge (*Oreobolus pectinatus)* with

Abrotanella caespitosa, Carex gaudichaudiana and *Plantago triandra* between small pools of water. Surrounding the cushion bog in this basin floor is dense *Chionochloa macra* tussock with golden spaniard and *Pentachondra pumila* as well as *Hieracium pilosella* and *H. lepidulum*.

Screes cover the top of Black Hill, dotted with specialised species such as *Lignocarpa carnosula, Epilobium pychnostachyum, Leptinella,* scree buttercup (*Ranunculus haastii)*, edelweiss (*Leucogenes grandiceps*) and vegetable sheep (*Raoulia eximia*). The scree species here are numerous and often abundant compared with the rest of the district. Also on the rounded higher altitude slopes of Black Hill are solufluction lobes and gravelfields of *Dracophyllum pronum* along with occasional plants of *Epilobium pycnostachyum, Hebe tetrasticha, Anistome aromatica* and blue tussock.

2.3.2.6 Mid and lower north facing slopes of Black Hill Range (Black Hill face)

Very steep slopes (30+°) with a cap of rock bluffs and intervening screes rise up from the Double Hill Road to approx. 1200-1300 m where the gradient eases and grades into the vegetation described above (section 2.3.2.5). These slopes are covered predominantly in a bracken-herb grassland with scattered matagouri, sweet briar *(Rosa rubiginosa), Coprosma propinqua* and mountain wineberry with a ground cover of hard tussock, and abundant *Hieracium lepidulum,* and *H. pilosella* as well as a scattering of other exotic species such as haresfoot trefoil, woolly mullein *(Verbascum thapsus)*, sweet vernal and browntop. In the middle of these slopes is a large 'fan' of scree and scrub marked on older maps as McCracken Stream. The scrub is mainly matagouri, mountain wineberry, mingimingi and bracken with scattered cabbage trees, kowhai, and mountain ribbonwood. Thick scrub and occasional trees such as this are rare along the mountain slopes of the Rakaia faces. They now only remain in deeply incised gullies or between scree slopes, sheltered from past fires by steep rocky walls.

2.4 Fauna

No specific faunal survey was carried out for tenure review but birds recorded during the vegetation field work include the threatened falcon, Australasian harrier, pipit and kea around mountain tops and Redcliffe Saddle. Paradise shelducks were around the tarn near Redcliffe saddle and in the Ashburton River bed along with South Island pied oyster catchers. Black-backed gulls were nesting near the confluence of the Swift and Ashburton Rivers. Self-introduced or naturalised birds included spur winged plover, yellow hammer, skylark, chaffinch, blackbirds and magpies.

2.4.2 Fisheries

No fisheries data is available from recent survey work. However, the native fish community is likely to resemble that of the adjacent pastoral leases Glenarriffe and Double Hill. Upland bully, common river galaxias and alpine galaxias are

therefore likely to be present. In the small streams to the northern end of the lease (i.e. Donald Stream, Packers Stream and Redcliffe Stream) which enter the Rakaia River there may be some limited pentration by salmonids for spawning but this is not likely to be significant.

The tarn and wetland area located on Redcliffe Saddle is a significant freshwater habitat that may support bully or galaxiids.

2.6 Historic values

Prior to 1938 Glenrock was part of Double Hill. In about 1940 Double Hill was split into three units - Glenrock, Glenarriffe and a smaller Double Hill. Since then, 1150 ha was included into Mt Alford and the remainder was futher subdivided into two separate units - Redcliffe and Glenrock in the late 1980's. There are no known areas of historic interest on the property.

2.7 Public recreation

2.7.1 Access

Section 24, marginal strips were surveyed out either side of Redcliffe Stream and the Swift River at the time of the subdivision of Glenrock in 1988 providing access to the head of the Redcliffe Stream. The two strips are not connected, however, and do not join onto any other formed access. A legal road runs from the Double Hill Road near the Redcliffe homestead to the Swift River, but does not follow any formed access. At the time of lease renewal the Commissioner of Crown Lands recommended that pedestrian access be negotiated to the Swift River along the formed 4 w.d. track. At the time of surrender negotiations in 1991 this was not, however, agreed to. Instead access was negotiated from Redcliffe Stream to the retirement area on Redcliffe via a ridge between Rat Hill Stream and Jacks Stream, and on Glenrock from the Double Hill Road to Black Hill following a fenceline then ridgeline. The completion of this exercise is still awaiting cadastral survey.

2.8.2 Recreation activities

Very little is known about the recreation use of Glenrock. The main current use is angler access to the Rakaia River - across freehold, rather than pastoral lease. There are possibilities for tramping trips in the Black Hill Range from Cascade Glen through Cookies Basin (on the retired section of Glenrock), and for access down the Swift to the Ashburton River. From the junction of the Swift and Ashburton Rivers there are two main alternatives - to carry on down the Ashburton to Mt Alford if the river is very low or to travel back up the North Branch Ashburton River to Glenarriffe. The Black Hill Range and Cookies Basin have been used in the past for heliskiing and offer suitable terrain for ski-touring. The best access for this would be through Glenrock - requiring permission from the lessees.

PART 3 - CONSULTATION AND DISTRICT PLANS

3.1 Consultation

On 25 September 1996 a meeting was held with representatives from Forest and Bird, Trout Unlimited, Four-Wheel Drive Club, Canterbury Botanical Society, Federated Mountain Clubs, Agenda 21, Epicentre and the North Canterbury and Aoraki Conservation Boards to discuss tenure review on Glenrock amongst other properties.

Areas of interest on Glenrock include access to the Swift River across Redcliffe Saddle, with the route down the Ashburton River being noted as a well recognised tramping trip. There was some concern about nasella tussock and Hieracium on the front faces, and the liability of taking on the management of these areas.

3.2 District Plan provisions

Glenrock lies within the Ashburton District. Their proposed District Plan was notified in March 1995.

Under this Plan Glenrock is zoned Rural C (High Country). The plan identifies three areas on the property that are sites of significant conservation value - Area 6 Glenrock Swamp (Mathias RAP 2), Area 7 which is the Turtons Saddle RAP (Mt Hutt 22), Area 8 Redcliffe (RAPs Mt Hutt 15 Redcliffe Hill and MtH 16 (Redcliffe Saddle).

For areas of landscape importance, areas of significant conservation value, riparian[1] and alpine environments (areas above 1000m) the District Plan has a number of rules:

- No earthworks to exceed 20 metres^3 in volume and/or 50 metres^2 in area in any one hectare in any continuous period of five years or to be located on slopes greater than 20 degrees.
- No clearance of indigenous vegetation in the Rural C zone to exceed 100m^2 in area in any one hectare in any continuous period of five years, except for amenity plantings.
- No exotic tree planting, except amenity tree plantings (and in the case of riparian management areas - no exotic tree planting intended for commercial purposes)
- No buildings to be erected.

For general landscape values, except for what is provided in the rules above, all building, tree planting (other than of amenity trees), and earthworks (other than the repair and maintenance of operational tracks) in Rural C and located on slopes with an angle of greater than 20°, shall be Controlled Activities in respect on siting, design and methods of construction.

For general natural conservation values, except for what is provided in the rules above, there should be no clearance of indigenous vegetation, other than matagouri, which has an average maximum height of the canopy of greater than three metres, exceeding 1000 m^2 in any area in any continuous period of five years.

PART 4 - RECOMMENDATIONS AND RATIONALE

It is recommended that five areas be protected, one area be fully restored to the Crown and four areas by conservation covenant. These areas are:

AREAS TO BE FULLY RESTORED TO THE CROWN

4.1 Black Hill Plateau

This area covers the upper north and east slopes of Black Hill as far south as Cascade Glen.

Recommendation

- It is recommended that this area of approximately 2,500 ha. be retained in Crown ownership and be gazetted Conservation area.

Rationale

- This area includes some of the best remaining areas of snow tussock in the ecological district, as well as a diversity of other vegetation types with an overall high degree of naturalness and range of species.

- It also has a diversity of landforms and special features including the largest peat dome in the district and solifluction lobes which are uncommon in the ecological district.

- Over half of this area is an RAP (Mt Hutt RAP 22 - Turtons) identified as being an extensive area of high natural value.

- Black Hill is considered to be one of the most striking and impressive parts of the upper Rakaia valley landscape. The high level cirque basins and their lower valleys, the smooth rounded upper slopes of gently angled plateau-like shelf contrasting markedly with the virtually perpendicular, rock-bluff capped lower slopes forms a powerful visual image. Black Hill is a major visual element of the range landscape, being highly visible and forming the focus of significant views from Coleridge Downs, Homestead and Algidus roads.

- The addition of this area to the retirement area (due to be surrrendered under a run plan agreement) provides a large compact protected "core" area that has more natural boundaries than was recommended in the run plan.

Management and boundary issues

It is recommended that there be no grazing of this area. A practical line for the fence will need to be sought, probably around the base of the slope where it meets the basin floor at approximately the 1000m contour and should include fencing off Cascade Glen and may also require fencing along the base of Shingle Hill to prevent stock from grazing the upper reaches of Cascade Glen and Middle Creek which is supposed to be retired.

4.2 Redcliffe Stream

This recommended area covers shrubland and forest remnants that are in the part of Cascade Glen downstream of where it exits the Black Hill Range and all of the true left of Redcliffe Stream valley, including freehold land.

Recommendation

- It is recommended this area be protected by a conservation covenant administered by the Department of Conservation.

Rationale

- Riparian forest is not common or extensive in the ecological district. It only occurs elsewhere around four other streams and is the only area of forest, and the most extensive area of shrubland on the property. The area recommended for protection in this review is an RAP identified in the Mt Hutt-Mathias PNA survey.

- The presence of a population of the threatened plant *Hebe cupressoides*.

- Large spectacular cliffs in Cascade Glen, formed by erosion of a deep layer of outwash gravels. There are no other erosion features like this in the district

Management and boundary issues

The aim of the covenant is to protect the forest remnants and shrublands, and promote their regeneration. Conditions on the covenant should specify no burning or clearance of native vegetation. Fencing of parts of the area will be necessary to exclude stock and encourage regeneration (particularly in the area containing *Hebe cupressoides*). Some parts are protected by bluffs and existing fences.

4.3 Redcliffe Saddle

This area covers all of Redcliffe valley floor north of and including all of the large alluvial fan at Redcliffe saddle.

Recommendation

- It is recommended this area be protected by a conservation covenant.

Rationale

- A large part of this area has been identified as an RAP in the Mt Hutt-Mathias PNA report. The RAP was selected as it represents wetland vegetation communities and ecological units that are uncommon in the district and not represented in any of the

other RAPs. This includes the red tussockland on ablation moraine, the only valley floor tarn in the district and dense short tussockland of medium to high natural value which is uncommon in the district and is the only area of short tussockland recommended for protection (i.e. the best area of short tussockland in the district). The tarn itself is large and permanent with very few exotic species in surrounding wetland vegetation and no apparent stock damage.

- From a landscape perspective the valley retains a highly natural and intact appearance with a 4WD track being the only obvious modification. The natural character of the valley floor also contributes to the natural values of Redcliffe Stream valley (described above) which bisects the valley floor. The open tussock covered valley floor is important in providing a natural setting for the tarn. The outwash surfaces and moraine remnants, are important markers of the extent of the Rakaia glacial advances.

Management and boundary issues

The aim of the covenant is to protect and enhance the vegetation communities and the natural character of the land, and to to maintain the integrity of the valley floor landform by maintaining an absence of fragmenting elements and maintain/improve its existing degree of naturalness.

In order to achieve this some fencing will be required to exclude stock from a representative portion of the short tussock community, the tarn and surrounding red tussocklands. For areas outside of the fence there should be no oversowing, topdressing or cultivation and the valley floor should be kept free of trees.

4.4 Shingle Hill

This area covers the whole of the east side of Shingle Hill within the lease, from the floor of Redcliffe valley at about 1000m asl to summit at 1873m asl. Shingle Hill is a large discrete pyramidal hill landform with very steep sides with extensive scree on mid to upper slopes, separating Middle Valley and Redcliffe valley. Half of the northern and the western and southern facets of Shingle Hill are within the existing (unfenced) retired area of Middle Creek.

Recommendation

- It is recommended this area be protected by a conservation covenant administered by the Department of Conservation.

Rationale

- The hill landform retains a highly natural and intact appearance as there are no subdivision fences or tracking. The north and east facing slopes are a visible part of the skyline backdrop to the spectacular upper Rakaia valley.

- The vegetation is largely indigenous, with few introduced species or problem plants. Protection of these slopes would protect a sequence of vegetation communities from

short to tall tussock and scree. When combined with the Redcliffe Saddle area, it provides a relatively large area with increased chances of long-term viability and will be more easily managed than several smaller blocks.

4.5 Black Hill Face

This recommended area covers the very steep lower north-east slopes of Black Hill, between Double Hill Run Road and its crest at about 1300m asl, and Donald Stream Valley.

Recommendation

- It is recommended the Black Hill face be protected by a covenant, administered by an organisation other than the Department of Conservation.

Rationale

- These mountain slopes are considered to be one of the most important natural landscape elements of the ranges enclosing the south side of the Rakaia, second only to the Rakaia faces, on account of their size (about 900m high and about 3km long) and their uniformly extreme steepness and sheerness, plunging from around 1300m asl straight into the Rakaia riverbed. The crest of the slope comprises large rugged rock bluffs, in marked contrast to the smooth tussock-covered rolling slopes above, immediately above (refer Black Hill in 4.1). Extensive scree streams down from the bluffs and in one place has protected a large area of mixed shrubland from past fires.

- Black Hill, from summit to Rakaia riverbed, is a major visual element of the range landscape, being highly visible and forming the focus of significant views from Coleridge Downs, Homestead and Algidus roads. Together with Steepface Hill and the Mt Hutt Range, it is also within the more frequently visible part of the range landscape enclosing the south side of the upper Rakaia valley.

- Donald Stream valley is also proposed to be included in this area. It is similar in character and natural landscape significance to Double Hill and Glenariffe Stream valleys in that it is one of the larger valleys incised in the Rakaia faces and has very steep rock bluff side walls that have protected mixed shrubland and forest. At the head of the catchment the snow tussock cover is dense with few exotic species. Protection of the whole valley would protect and promote further growth of a full altitudinal vegetation sequence.

Management and boundary issues

The aim of the covenant is to protect the natural character by maintaining an absence of unnatural fencelines, tracks, and tree plantations and to protect the large shrubland area in the middle of the face.

The main threats to conservation values are burning to the area of shrubland and contour fencing across the slope would be highly visible and fragment the currently intact landform.

4.6 Access arrangements

It is recommended that:

1. an easement be surveyed out to provide for foot, horse and mountainbike access along the 4 wheel drive track leading from behind the Redcliffe's homestead, past the limestone quarry and through to the Swift River.

Department of Conservation
Te Papa Atawhai

PTR 040

22 January 2002.

Barry Dench
QV valuations
PO Box 13443
CHRISTCHURCH

Attention: Barry Dench

Dear Barry

RE: GLENROCK PASTORAL LEASE: TENURE REVIEW – RESOURCE INFORMATION.

I have been notified recently that the proposed surrender of the retired lands on Glenrock Station is unenforceable. This is despite the fact that some years ago the Department of Conservation was told that the surrender would occur. Based on this the Department of Conservation, organised survey and paid for it. At the time (1996) the Department of Conservation did the survey work we were clearly of the opinion that the retired lands would be surrendered and would transfer to the Department as public conservation land. As the Conservation Resource Report clearly states the retired part of the property was not surveyed, as it was presumed the land would transfer to the Department.

Following the passage of the CPLA in 1998 the Department of Conservation was required to revise its previous Land Act recommendations into a Designations Report. This revision occurred in 1999 and was forwarded to the then LINZ contractor, Knight Frank. At the time the Designations report was reviewed we were aware that there may be legal issues associated with the surrender of the retired area and we therefore included the retired area in with our Designations recommendations. The Designations report included the 3500ha of *"retired land"* in with the total area of 6080ha as we considered that these lands had significant inherent values worthy of being Retained in Full Crown Ownership and Control. As part of the Designations report we justified these significant inherent values. The Designations Report fully justifies the area we believe the Crown should retain as public Conservation Land.

As the Conservation Resource Report for Glenrock Station is lacking the Resource information on the higher *"retired tops"*, this letter is being provided so that the Designations report can be linked with the Resource information for the retired areas to ensure full transparency. This information is based on the survey work of the Mt Hutt-Mathias PNAP survey and subsequent field work on the property.

Canterbury Conservancy
Private Bag 4715, 133 Victoria Street, Christchurch, New Zealand
Telephone 03-379 9758, Fax 03-365 1388

The landscape of the Black Hill Range forms the back bone of the property and is characterised by very steep and dissected Torlesse greywacke/argillite mountain ranges rising to over 2000m asl with extensive scree and rock outcrop. Most of this landscape type has been shaped by minor cirque glaciation, fluvial and slope processes. Glaciation has been a major landshaping influence on the property. The landscape is highly natural in character.

The huge scale and steepness of the landforms, the degree of definition of their glaciated form, the extent of eroding bedrock, visible rock strata and scree, and the virtual absence of visually fragmenting modifications is a key characteristic of the Black Hill Range.

The northern faces of the Black Hill Range and the Turton Tops stretch for a number of Kilometres above the south side of the Rakaia River, are considered collectively to be the most significant natural feature of the south side of the upper Rakaia valley because of their highly distinctive, highly visible natural form and their size.

A large part of the Black Hill Range was identified as an RAP during the PNAP survey of the Mt Hutt ecological district. The Mt Hutt RAP 9 – Middle Creek – 1940ha typifies the vegetation of the higher country of Glenrock Station.

These slopes are generally low angled, low relief and are covered in slim leaved snow tussock with cotton daisy, blue tussock, fescue tussock, prostrate snowberry (*Gaultheria depressa* var. *novae zelandiae),* dwarf speargrass *(Aciphylla monroi)*, and Raoulia (*R. subsericea* and *R. grandiflora* on the gentle east, north-east and north facing slopes. On shady southeast facing slopes the snow tussock is mixed with turpentine scrub *(Dracophyllum uniflorum).* Also on these slopes, in a shallow basin at the north end of Black Hill Range is a large cushion bog peat dome dominated by patches of comb sedge (*Oreobolus pectinatus)* with *Abrotanella caespitosa, Carex gaudichaudiana* and *Plantago triandra* between small pools of water. Surrounding the cushion bog in this basin floor is dense *Chionochloa macra* tussock with golden spaniard and *Pentachondra pumila* as well as *Hieracium pilosella* and *H. lepidulum.*

Screes cover the top of Black Hill, dotted with specialised species such as *Lignocarpa carnosula, Epilobium pychnostachyum, Leptinella,* scree buttercup (*Ranunculus haastii)*, edelweiss (*Leucogenes grandiceps*) and vegetable sheep (*Raoulia eximia*). The scree species here are numerous and often abundant compared with the rest of the district. Also on the rounded higher altitude slopes of Black Hill are solufluction lobes and gravelfields of *Dracophyllum pronum* along with occasional plants of *Epilobium pychnostachyum, Hebe tetrasticha, Anisotome aromatica* and blue tussock.

Halls totara and mountain toatoa dominate are found in Middle Creek, along with a number of alpine shrubland species. Small patches of mountain beech forest occur on the lower colluvial slopes. The Hall's totara and toatoa are the most extensive in the district. The slim leaved tussock grasslands are also the least modified and most extensive in the ecological district.

The backcountry of Glenrock has considerable potential for recreational use; the high tops, broader slopes and the cirque basins are ideal tramping or ski touring country.

The latter occurs more as a commercial proposition at the present time, while other recreational use is relatively low.

As outlined in the Designations Report the total area being sought for Retention has very high significant inherent values that should ensure that the land becomes public Conservation Land.

I trust that this additional summary of the resource of the Glenrock retirement block will enable the finalisation of the DPP so that presentation can proceed soon.

If you have any queries please give me a call

Yours faithfully

Mike Clare
Manager High Country Tenure Review.

Cc Bob Lysaght
Crown Property management
LINZ - Christchurch