Toitu te Land whenua Information New Zealand

Crown Pastoral Land Tenure Review

Lease name :Bellamore

Lease number :PO 205

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.

Copied October 2002

BELLAMORE PASTORAL LEASE

CONSERVATION RESOURCES REPORT

PART 1 INTRODUCTION

This report describes the significant inherent values on Bellamore Pastoral Lease. Bellamore is situated on the lower eastern slopes of the St Marys Range in the Waitaki Valley and covers 2296 hectares. The property occupies mainly hill country with some gentle rolling spurs but mostly moderately steep slopes with some incised gullies. The land rises from 400m at the homestead to 1800m where the pastoral lease adjoins St Marys Range Conservation Area. There is an internal retirement fence at 1200m above which emergency grazing is allowed.

Most of the lower half of the property below 850m has been developed for pastoral farming and now supports a modified cover of exotic grasses and clovers. Shrublands line streams and gullies often extending up slope. Above 850m snow tussock covers the slopes to the retirement fence at 1200m.

Bellamore lies within the St Marys Ecological District which is part of the Waitaki Ecological Region. However, there has been no Protected Natural Area survey (PNA) carried out in this district. The adjacent Hawkdun Ecological District has been surveyed.

The property adjoins the St Marys Range Conservation Area to the west; Sunny Peaks Pastoral Lease to the south and freehold land to the north and east.

PART 2 DESCRIPTION OF CONSERVATION RESOURCES AND ASSESSMENT OF SIGNIFICANCE

2.1 LANDSCAPE AND LANDFORM

For the assessment of significant inherent landscape values, Bellamore Pastoral Lease has been divided into three landscape units.

Unit 1: Upper Awahokomo Creek

This unit includes all of the hill country that falls towards the north into the Awahokomo Creek. This creek drains outside the property into Lake Waitaki. The main tributaries of the Awahokomo Creek have their origins within a large catchment area that extends up to the boundary.

The landform is principally a dissected ridge and valley system typified by undulating ridge crests that dip down into a series of incised gullies. Extending out from the mid slope of the large catchment are diagonal layers of rock outcropping, this natural feature is most prominent on the north facing slopes.

The slopes that immediately overlook the Awahokomo are generally moderately steep with a grouping of rocky hillocks being a feature close to the western boundary. The main channel of the Awahokomo is braided and flows over a high bed load of assorted gravels and rocks.

The vegetative pattern follows a natural sequence of plant communities that are representative of the hill country surrounding the St Marys Range with the upper slopes being dominated by uniform snow tussock with a representation of both short fescue tussock and golden spaniard. On the southern darker

slopes, where there is naturally good stature snow tussock, the tussocklands abruptly stop along the access track that has been utilized as a fire break. Below the access track which is at the 850m.asl. contour, the ground cover changes rapidly to introduced pasture grasses. On the sunnier slopes overlooking the Awahokomo Creek there is a good covering of tall tussock with matagouri shrublands lining the edge of the creek, and starting to migrate up the darker slopes. Several wilding pines dot the snow tussock and sweet briar is conspicuous along the creek's margins.

Landscape Values

This unit has moderate landscape values, being representative of the dissected hill country that fringes the St Marys Range. Therefore this unit should not be seen as a separate entity but part of a broader landscape type that helps to reinforce the district's character. This could be reinforced by linking the major catchment, which features a number of rocky formations, to the existing Conservation Area.

Visual Values

This unit is not visually conspicuous from any main public viewing points as it is obscured by chains of low hills between this unit and the Waitaki Valley.

Potential Vulnerability to Change

The activities that could have an adverse effect on this unit include:

- Further disruption or fragmentation to the existing uniform tussock lands above the 850m.asl. level.
- Further spread of wilding pines through the tussock lands.
- Further depletion of the matagouri shrublands along the margins of the Awahokomo Creek.

Unit 2: Lower Hill Country

This unit incorporates all of the hill country at the front of the property. Its upper boundary is the ridgeline that creates the watershed for creeks that drain into the Little Awakino River.

The dominant landform is a sequence of long rounded spurs that have a relatively constant gentle slope that fall towards the Waitaki Valley.

The original vegetative cover has been strongly modified by progressive pastoral farming with a large proportion of this unit now clothed in introduced grasses and legumes. There are still vestiges of short tussock and matagouri both on the darker faces and areas that have been difficult to convert to farmland, such as incised gullies. The primary land use for this unit is semi-intensive farming and it has a network of well maintained tracks.

Landscape Values

This unit has only moderate landscape values as the landforms within it are relatively subdued and the natural cover has been converted into productive farmland. In essence this unit has a strong cultural overlay that compromises most inherent values.

Visual Values

This unit is visually accessible from some parts of the Waitaki Valley but does not make an impression as it is a small part of the large scale St Marys Range.

Potential Vulnerability to Change

Being a relatively modified rural landscape changes to this unit would basically be associated with the farming operation and would not have a direct effect on inherent values.

Unit 3: West Branch Awakino River

This unit encompasses the southern side of the property which overlooks the West Branch of the Awakino River. The landform that dominates this unit are the extensive side slopes that lead off the St Marys Range. These convex slopes are characterized by a constant gradient which extends between the 1,200m.asl. level which is the retirement area fence, down to a river terrace at 600m.asl. There are numerous seepage areas that form the source of the indented water courses that drain directly into the West Branch.
Above and immediately below the retirement fence there are occasional long erosion chutes and scree faces.

The vegetation close to the retirement fence follows a natural pattern with the shady faces being covered in good condition snow tussock while on the sunnier faces the snow tussock becomes sparse with both short fescue tussock and golden spaniard being present. Opportunist species such as hawkweed are common on the thinner soils.

Below 900m.asl. the vegetation becomes more modified as the response to over sowing and top dressing becomes apparent. Around gates and in corners of grazing blocks there is a concentration of pasture weeds that include thistle, barley grass and nettles.

Landscape Values

This unit has moderately high landscape values, as natural elements dominate over cultural activities, and should be seen as a component of a natural extension that carries on from the retirement area. The impediment to this concept is the positioning of the existing retirement fence which forms an artificial horizontal line across the flanks of a prominent slope. If boundaries were rationalized an uninterrupted sequence of natural features would be protected, extending from the high alpine fell fields on the crest of the St Marys Range down to the intact sub alpine tussock grasslands overlooking the West Branch Awakino River.

Visual Values

This unit has a high visual resource value due to the scale of the slopes that lead directly off the St Marys Range, it also forms the backdrop to the access road that leads to the Awakino ski field.

Potential Vulnerability to Change

The activities that would have an adverse effect on this unit include:

- Further subdivision that would accentuate the different grazing regime.
- New access tracking, particularly over side slopes that have thinner soils.
- Replacement of the tall tussock with short fescue tussock.

2.2 GEOLOGY AND SOILS

Schistose rocks of low metamorphic grade compromise most of the basement in which the St Marys Range is cut. Non-foliated greywackes lie to the north-west of Mt Bitterness. In addition to ancient shearing and faulting, a well-developed block faulting episode postdates the widespread Cretaceo-Teriary peneplation of much of Otago, producing thick fault pugs which are liable to severe gully erosion.

Apart from the physically unstable fault pugs, the hard basement rocks are unlikely to erode at rates fast enough to cause concern. However, most of the long mountain slopes are mantled, particularly at lower levels, with thick colluvial deposits which are liable to catastrophic failure in particularly severe storm events.

Alpine soils on the steep mountain slopes and bluffs over 1650m altitude are lithosols, which in the recent past have only supported the sparsest vegetation. Mechanical breakdown of rock is often rapid, with daily freeze and thaw playing an important role.

Soils are predominantly hygrous high country yellow brown earths of low fertility. At higher altitudes there is a high susceptibility to wind and sheet erosion.

2.3 CLIMATE

Mean annual precipitation ranges from some 600 mm at lower levels to an estimated 1200 mm along the range summit. Snow lies above 1350 metres for six months of the year, with regular winter falls on lower areas. Cold temperatures occur year round, and very strong winds from the north-west and south occur frequently.

2.4 VEGETATION

2.4.1 Original vegetation

McGlone (2001) suggests that the prehuman vegetation of the intermontane basins of South Canterbury was dominated by grassland and scrub with low stature forest on the range slopes. The low altitude grasslands were dominated by *Poa, Festuca, Elymus* and *Rytidosperma* species. *Coprosma* and *Myrsine* were the main scrub genera and mountain totara (*Podocarpus hallii*) was the main forest species. It is likely that *Plagianthus regius, Hoheria angustifolia* and kowhai (*Sophora microphylla*) were also present especially on fertile soils and along river and stream courses. Snow tussock would generally occupy higher altitude sites.

It is likely that the lower hill slopes of Bellamore pastoral lease would have supported short tussock grassland (dominated by silver tussock *(Poa cita)* and fescue tussock (*Festuca novae-zelandiae*) and shrubland. Low stature forest including kowhai is likely to have existed on stream banks and protected valleys.

2.4.2 Indigenous plant communities

- **Forest**
  Apart from pines, macracarpas and other exotic trees around the homestead there is no forest on Bellamore. There are groups of kowhai trees associated with *Coprosma propinqua* shrublands on the northern slopes above Awahokomo Creek.

- **Shrubland**
  Shrublands dominated by *Coprosma propinqua* occur along the banks and slopes above Awahokomo Stream. Matagouri *(Discaria toumatou)* is commonly present along with *Carmichaelia petriei, Melicytus alpinus Aristotelia fruticosa* and *Muehlenbeckia complexa*. Bush lawyer *(Rubus schmidelioides)* is often found scrambling over shrubs. Ground cover around these shrublands is dominated by silver tussock *(Poa cita)* and exotic grasses, including cocksfoot (*Dactylis glomerata*), bromes (*Bromus* spp.), thistles, vipers bugloss (*Echium vulgare*) and haresfoot trefoil (*Trifolium arvense*). The native grass, *Dichelachne crinita*, is often present.

  Occasional rock outcrops emerge from the scrub along the Awahokomo faces. *Melicytus alpinus*, prostrate kowhai (*Sophora prostrata)*, blue tussock *(Poa colensoi)*, and *Oxalis exilis* are often associated with these rock outcrops.

  Two adjacent small valleys contain copses of kowhai with several large trees with many seedlings and saplings. Stout trunks indicate some of the adult kowhai may be quite old. One site has four large kowhai trees (up to 5m high) and numerous younger saplings (1-2m high) with associated shrubs *Coprosma propinqua*, matagouri, *Carmichaelia petriei, Melicytus alpinus, Aristotelia fruticosa* and *Muehlenbeckia complexa*. The emerging kowhai saplings appear to be receiving some protection from browsing from the dense surrounding scrub. The other site has fewer young kowhai probably because there is less scrub to protect the seedlings from browse. Just above this copse of kowhai the matagouri has been recently burnt. This is the edge of a large block between the two sites which has been recently burnt and now supports low stunted matagouri and introduced grasses and herbs.

  Where a tributary joins the Awahokomo Stream there is an area of dense scrub containing *Coprosma propinqua*, matagouri, some large kowhai trees and several clumps of *Coprosma intertexta*. Scattered around the shrubland and merging into good snow tussock are *Muehlenbeckia complexa*, golden spaniard (*Aciphylla aurea*), *Carmichaelia petriei* and occasional mountain flax *(Phormium cookianum)*.

These shrublands on the banks and slopes overlooking the Awahokomo Creek provide the best examples of shrubland on the property. They are representative of the more extensive shrublands that would have once covered larger areas.

Low stunted matagouri occurs on the lower developed parts of the property e.g. the slopes and gullies draining the southern corner of the property. This type of scrub cover has been induced by burning and oversowing and top dressing and there is now little species diversity due most other scrub species having been eliminated by pastoral development.

- **Short tussock / exotic grassland**
  Most of lower altitude land (below 850m) has been modified and developed for pastoral farming with a high component of introduced grasses, clovers and weeds. Beside the tracks and on the lower slopes are silver tussocks, cocksfoot *(Dactylis glomerata)*, sweet vernal *(Anthoxanthum odoratum)*, vipers bugloss *(Echium vulgare)*, woolly mullein *(Verbascum thapsus)* and thistles (including nodding thistle). *Dichelachne crinita* is sometimes present usually just around scrub.

- **Snow tussock grassland**
  Above the fence and four wheel drive track that roughly follows the 850m contour line snow tussock continues up slope to blend in with the retired area above (Area A). The steep slopes generally support a good cover of snow tussock (mainly *Chionochloa rigida* with *Chionochloa macra* on the higher and colder sites). Common intertussock species include fescue tussock, blue tussock, *Leucopogon fraseri, Raoulia subsericea, Lycopodium fastigiatum*, snow berry (*Gaultheria depressa* var. *novae-zelandiae*) and tauhinu (*Ozothamnus leptophylla*). On the central spur near point 1198, sheep camps have resulted in more open vegetation where tussocks are often cropped and many low grazing resistant plants grow including *Phyllachne colensoi, Scleranthus uniflorus, Celmisia sessiliflora, Kelleria dieffenbachii, Ourisia glandulosa, Schizeilema hydrocotyloides*. In damp depressions *Oreobolus pectinatus, Lobelia linnaeoides and Pentachondra pumila* are sometimes present. On drier rises fescue tussock, woolly moss (*Racomitrium lanuginosum*) and *Rytidosperma pumila* are common. On rock outcrops *Brachyglottis bellidioides, Helichrysum bellidioides, Agrostis muelleriana* and *Myrsine nummularia* are often present. Mouse-ear hawkweed (*Hieracium pilosella*) is occasionally present.

2.5 FAUNA

2.5.1 Birds

A total of eight bird species have been recorded on Bellamore Pastoral Lease, comprising 2 native species and 6 introduced species. These species are listed below.

Common name	Scientific name
Native species:	
Australasian harrier	*Circus approximans*

Black backed gull	*Larus dominicanus*
Introduced species	
Californian quail	*Callipepla californica*
Goldfinch	*Carduelis carduelis*
Redpoll	*Carduelis flammea*
Yellow hammer	*Emberiza citrinella*
Skylark	*Alauda arvensis*
White backed magpie	*Gymnorhina tibicen hypoleuca*

Other bird species that likely utilize Bellamore include: Banded dotterel, Paradise shelduck, Grey warbler, NZ Falcon, Spur winged plover, Welcome swallow, Silvereye, Pipit, Pied oystercatcher, Hedge sparrow, Blackbird, Song thrush, Starling, Chaffinch, Goldfinch and Greenfinch (Ornithological Society of New Zealand files).

2.5.2 Invertebrates

Shrubland and grassland provide main habitats for invertebrates on Bellamore. Remnant shrublands are found along the valley floors in scattered populations. Two species of Tenebrionidae (darkling beetles) were found under stones within the shrubland areas. Cicadas were heard singing throughout the pastoral lease, each species having a distinctive call.

Two species of grasshoppers were noted on the grasslands. The grasshopper Kawhitiwhiti *Phaulacridium otagoense* was commonly found on all areas that were hot/dry and below 900 metres. This grasshopper is endemic to Central Otago and Mackenzie Country (Morris 2002 & 2002a). The grasshopper *Phaulacridium marginale* was also noted on the pastoral lease. This grasshopper is widely distributed in both the North and South Islands, as well as on many of the offshore islands in open grasslands up to about 1,300 metres.

Three species of copper butterflies (*Lycaena*) were commonly seen flying over both the shrublands and grasslands region of the pastoral lease. Numerous diurnal (day time) moths were seen flying over the grassland. Only a few species were seen in total. This is not because of a low diversity of diurnal moths but the tendency of diurnal moths to fly only between October and December.

2.5.3 Reptiles

Skinks/mokomoko and geckos were commonly seen within the pastoral lease.

2.5.4 Freshwater Fish

Canterbury galaxiid and upland bully are found in the streams. Rainbow and brown trout can also move up into the lower reaches of streams on the property.

2.5.5 Problem Animals

Introduced animals noted on the lease have included rabbits, possums and pigs.

2.6 HISTORIC RESOURCES

Bellamore was purchased from Ngai Tahu as part of the Kemp Purchase of 1848. The first formal lease of the property was the issue of a Small Grazing Run. The lease was held by Mr Percy Heckler in 1911, Mr William Macauley in 1937, Mr Maxwell Croft in 1958 and Mr Richard Croft in 1970. The present lessees Bruce and Christine Nowell took over the lease in 1984.

There are the remains of a stone hut on freehold property below the lease boundary and an old water race passes through the property. The historical significance of the hut and water race is unclear.

2.7 PUBLIC RECREATION

2.7.1 Physical Characteristics

Bellamore lies within the "Natural" and "Open Space" zonings of the Department's Recreation Opportunity Spectrum and would be covered by the 4x4 Drive In, Back Country physical setting. The environment is modified by tracking and farming development, particularly in its lower reaches. However, natural vegetation cover has been retained at higher altitudes.

The northern part of the lease has a little flat land beside the Awahokomo Creek. The land rises steeply from the flats with a couple of gullies draining into the Awahokomo and some streams in the eastern part of the lease draining into the Little Awakino River. On the southern side of the ridge which bisects the property the catchments drain into the West Branch Awakino River. There is no flat land on the southern side of the lease.

The streams and rivers on the lease are mainly well incised with some interesting gorges and waterfalls. Side streams can cause large washouts. There are some wetlands associated with the streams and with catchment areas on the plateaux and in gullies on the lease.

2.7.2 Legal Access

The Awahomoko Road provides legal access to the eastern edge of the lease. There are no legal roads on the lease. There is a marginal strip on the true right of Awahomoko Creek from the eastern boundary to the boundary of the retired area.

The St Marys Range Conservation Area is to the west of the lease but there is little legal access to the Conservation Area. Resolution of this problem is important.

2.7.3 Activities

There is little recreation activity on the lease at present. Hunting and some 4WD trips are carried out with permission from the lessee.

PART 3 OTHER RELEVANT MATTERS AND PLANS

3.1 CONSULTATION

At a meeting held with Non-Government Organisations in Timaru on 26 September, 2001 the following comments were made:

- Top country should be managed by Department of Conservation.

3.2 DISTRICT PLANS

Bellamore pastoral lease lies within the Rural S (Rural Scenic) Zone in the Waitaki District. The Rural Scenic Zone contains areas of the District which have significant scenic values – the high country, rangelands and inland basin areas. The majority of this zone lies above the 400 m contour (a.s.l).

The proposed Waitaki District Plan was publicly notified in December 1996. Following public submissions and hearings on the proposed plan, the District Plan as amended by Council decisions was released in September 1999. The Plan establishes what sort of activities are Permitted, Controlled, Discretionary or Non-complying. The Plan also establishes Site Development Standards and Critical Zone Standards for these activities. A permitted or controlled activity that does not comply with any one or more of the Site Development Standards becomes a restricted discretionary activity. However, the Plan has undergone a number of changes in the Rural Scenic Zone following Council's decisions on submissions.

3.3 CONSERVATION MANAGEMENT STRATEGIES AND PLANS

Bellamore is within the Waitaki Unit of the Canterbury Conservation Management. The key priorities for this unit are:

- To identify, maintain and seek to enhance the natural landscapes and natural landscape values of the unit – through appropriate methods such as tenure review and district plans.
- To identify the significant native vegetation and threatened species of the unit and to use a range of effect methods to protect a representative range of indigenous biodiversity of the unit as well as protecting and enhancing the viability of priority threatened species populations and their habitats in the unit.
- For recreation and access the Conservancy's objectives are to provide new recreational facilities and opportunities by the Department and other organisations and concessionaires where natural and historic resources and cultural values are not compromised, and to liaise with adjacent landholders to resolve conflicts over access for recreation to land managed by the Department.
- To reduce and maintain rabbit and thar densities to levels that ensure their adverse effects on natural values are minimised.

Other priorities identified in the CMS that are Conservancy wide and relevant to tenure review on these properties are – to undertake necessary actions to secure the conservation of Category A and B species, including predator control, fencing and habitat protection.

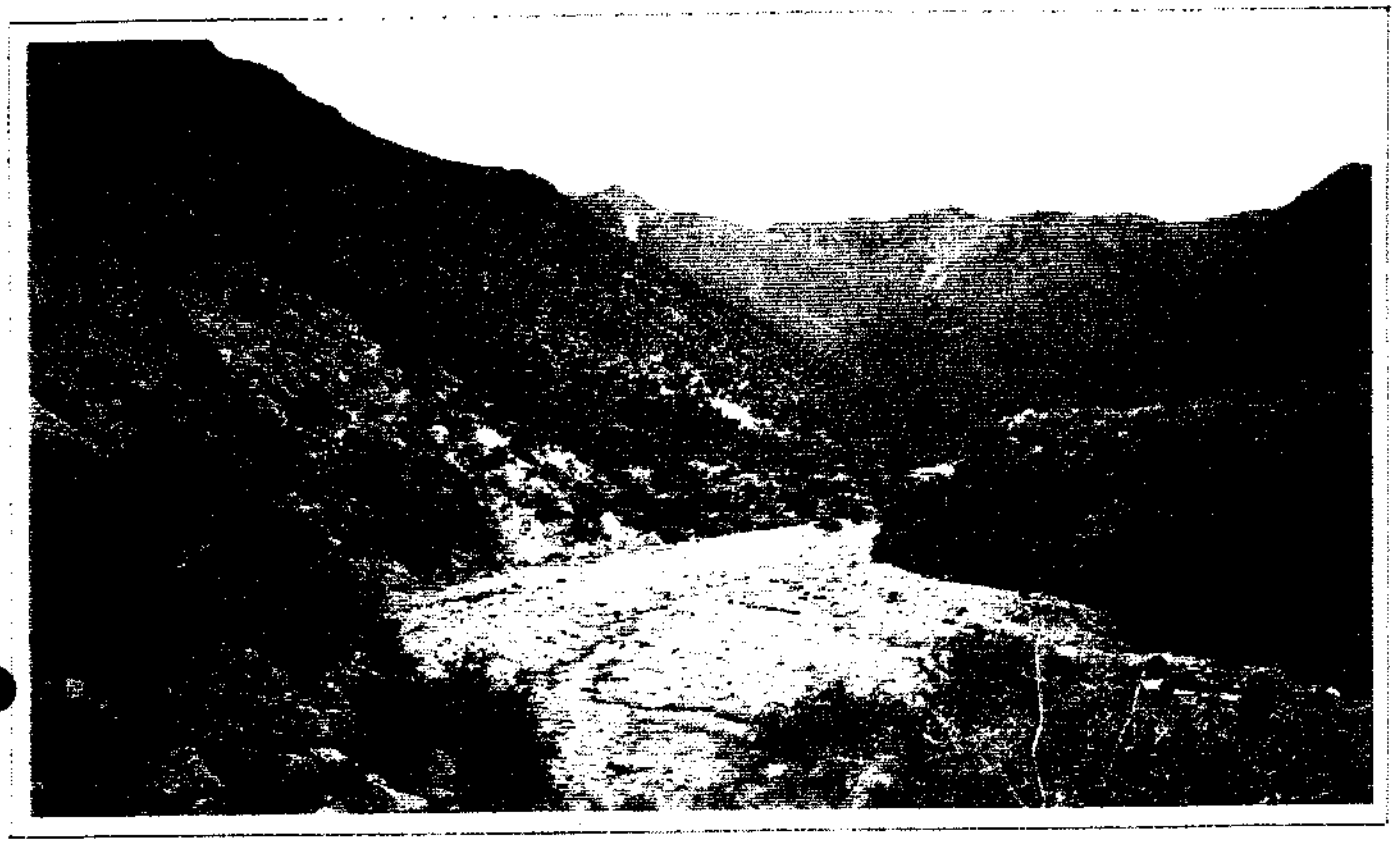
PART 4 MAPS AND ACKNOWLEDGEMENTS

4.1 Maps

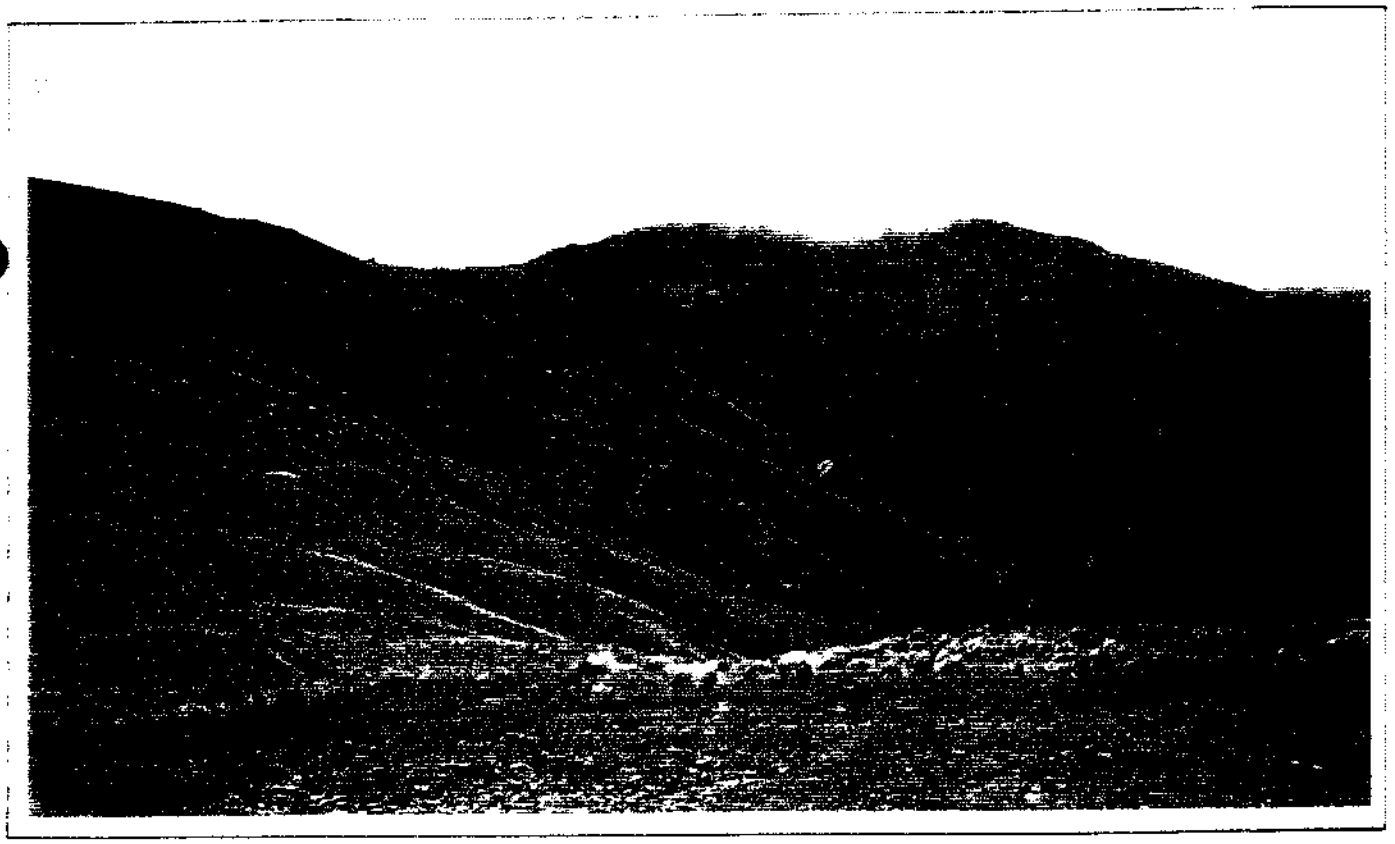
4.1.1 Topo/Cadastral (attached)
4.1.2 Values (attached)

4.2 Acknowledgements

The Department would like to thank Bruce and Christine Nowell for their assistance in undertaking the survey work. Our thanks also to members of the survey team – Alan Petrie, Carol Jensen, Simon Morris and Kerry Brown.

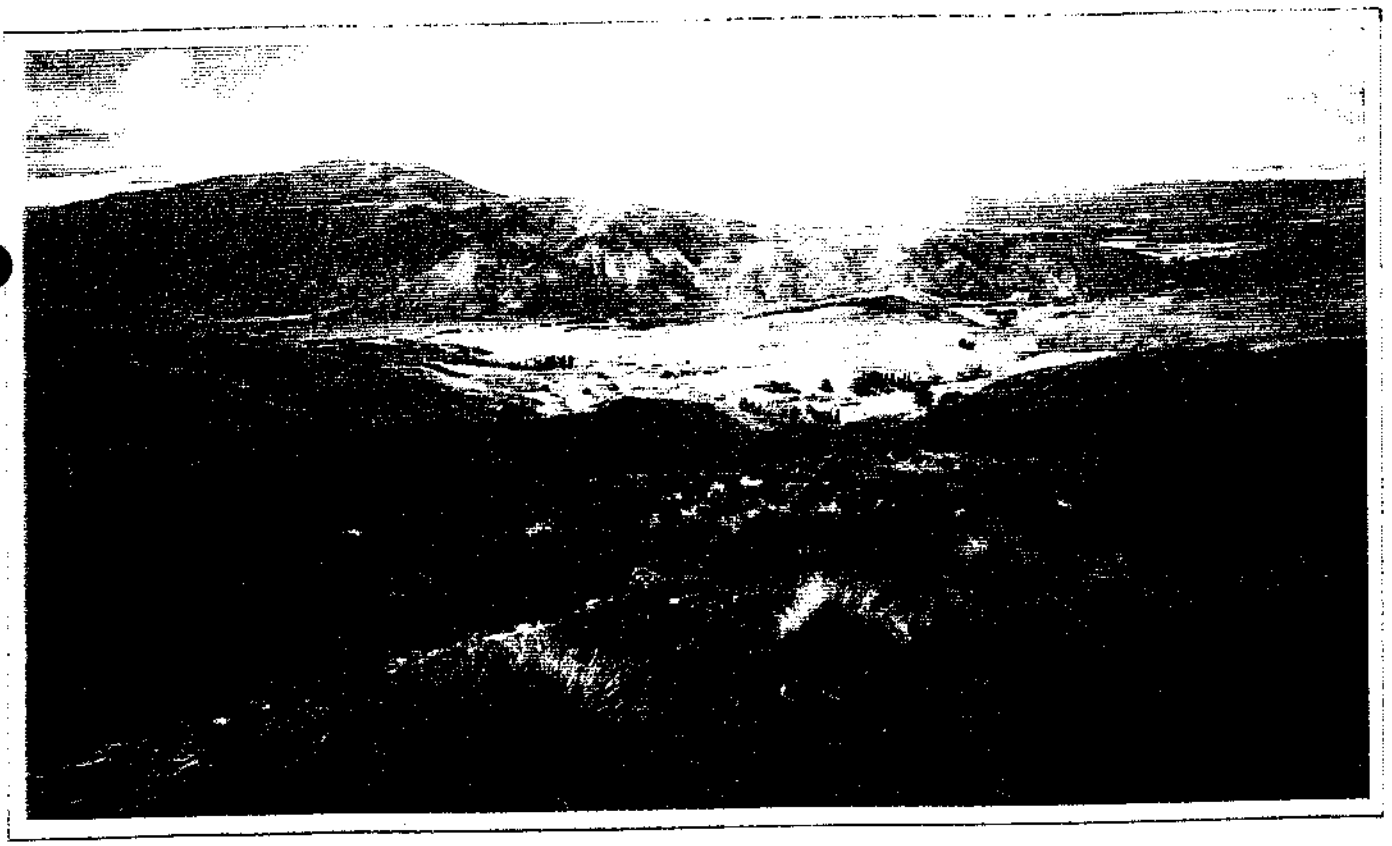


LU1 Looking into the dissected hill country of the Awahakomo Creek. A distinctive feature are the several hillocks that are clad in good condition snow tussock.



LU1 The most notable feature within this unit is the short steep valley that contains extensive rock outcropping and is clad in tall tussock down to about the 850m.asl. contour.

LU2 The hard demarcation line between tall tussock and improved pasture is graphically represented in the front country that slopes towards the Waitaki Valley.



LU2 Close to the lower boundary of the property where only residual areas of both tussock and shrublands still exist.

LU3 This pan is looking north towards the mid slopes of the St Marys Range. The arbitrary fence line between the retired area and the property is quite apparent due to the concentration of stock that has resulted in a localized "greening" effect. It is considered that a rational boundary should be defined that is more sympathetic to both landform and the uniform ground cover.