

Crown Pastoral Land Tenure Review

Lease name :Mataura Valley

Lease number :PS 090

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.

The report attached is released under the Official Information Act 1982.

Copied October 2002

COPY



DOC CONSERVATION RESOURCES REPORT
ON THE TENURE REVIEW OF
MATAURA VALLEY PASTORAL LEASE,
FREEHOLD SECTIONS 46 AND 47 IN
BLOCK 35, EYRE SURVEY DISTRICT, AND
UNALLOCATED CROWN LAND, BEING
RIVERBEDS OF THOMSON CREEK AND
PIG CREEK

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

TABLE OF CONTENTS

PART 1		Page
1.1	INTRODUCTION	3
 PART 2		
INHERENT VALUES : DESCRIPTION OF CONSERVATION RESOURCES AND ASSESSMENT OF SIGNIFICANCE		
2.1	LANDSCAPE	4
2.2	LANDFORMS AND GEOLOGY	8
2.3	CLIMATE	11
2.4	VEGETATION	11
	2.4.1 Description	12
	2.4.2 Problem Plants	21
2.5	FAUNA	22
	2.5.1 Invertebrate Fauna	22
	2.5.2 Herpetofauna	24
	2.5.3 Avifauna	25
	2.5.4 Freshwater Fish	25
	2.5.5 Problem Animals	28
2.6	HISTORIC	29
2.7	PUBLIC RECREATION	29
	2.7.1 Physical Characteristics	29
	2.7.2 Legal Access	29
	2.7.3 Activities	30
 PART 3		
OTHER RELEVANT MATTERS AND PLANS		
3.1	CONSULTATION	30
3.2	REGIONAL POLICY STATEMENTS	31
3.3	DISTRICT PLAN	31
3.4	CONSERVATION MANAGEMENT STRATEGIES (CMS)	32
 PART 4		
MAPS, etc		
4.1	ADDITIONAL INFORMATION	33
	4.1.1 References	33
	4.1.2 Attachments	34
4.2	ILLUSTRATIVE MAPS	34
	4.2.1 Topo Cadastral	34
	4.2.2 Values - Landscape	34
	4.2.3 Values - Vegetation/Fauna	34

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

PART 1

1.1 INTRODUCTION

The lessee of Matura Valley Pastoral Lease has applied to the Commissioner of Crown Lands for a review of tenure.

The property was inspected by DOC staff in late January 1999. Part of the property had been previously assessed for some of its conservation values during the Protected Natural Area Programme (PNAP) survey of the central part of the Eyre Ecological District in 1987. This survey was undertaken primarily to provide base information to aid decision making on the land allocation of Eyre Creek and Cainard Farm Settlements, at the demise of the Department of Lands and Survey and the creation of the Department of Conservation and the state owned enterprise, Landcorp Farming.

The PNAP survey identified a very large recommended area for protection (RAP) covering the upper Eyre Creek catchment and the southern slopes of the Eyre Mountains as far eastwards as Robert Creek. A strip of RAP extended down the ridge between the upper Matura and Eyre Creek catchments. The bulk of this part of the RAP was located on an expired pastoral occupation licence, with only a small part of the head of the Mullocky Creek catchment being pastoral lease included in the RAP.

An earlier review (1991) of the expired POL saw most of the RAP become conservation land. The balance of the POL (626 ha) was incorporated into the pastoral lease, including the remainder of the RAP.

Matura Valley Pastoral Lease now comprises 7851 ha. The property is mostly located in the upper Matura Valley, and is approximately 19 km south of Kingston at the end of Cainard Road.

A small part of the property (the Firewood Block) is located within the Eyre Creek catchment, and contains the two small freehold sections 46 and 47 with a total area of 23.9574 ha. These sections have been agreed by the lessee to be considered as part of the tenure review of the pastoral lease and have therefore been assessed by DOC for their conservation resources.

The report also covers the two areas of the unallocated Crown land, being riverbeds of Thomson Creek and Pig Creek.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

PART 2:

INHERENT VALUES : DESCRIPTION OF CONSERVATION RESOURCES AND ASSESSMENT OF SIGNIFICANCE

2.1 LANDSCAPE

METHODOLOGY

For this assessment Mataura Valley has been divided into four landscape units with the boundaries being defined principally by catchment areas. After defining the landscape units (LUs) the following landscape criteria were applied to each unit to help determine each unit's distinctive and high inherent values.

1. CHARACTER DESCRIPTION:

This section of the assessment explains the overall appearance of the LU using common descriptive terms to help create a "mental picture" of the primary elements which include landform, landcover, and where appropriate, land-use.

2. QUALITY ATTRIBUTES:

The following are the attributes which contribute to the overall quality of each landscape unit:

- (a) Intactness: The condition of the natural vegetation and the degree of modifications to natural processes. In a landscape context intactness can be looked upon within a continuum of areas being completely pristine to being heavily modified.
- (b) Coherence: The level of harmony visually evident between natural elements, in other words coherence refers to the way a landscape "hangs together".
- (c) Distinctiveness: The special elusive quality which makes a particular landscape visually striking, frequently this occurs when contrasting natural elements combine to form a distinctive and memorable visual pattern.

3. VULNERABILITY:

This is a measure of each landscape unit's susceptibility to further ecological deterioration, based primarily on the intactness and coherence attributes. In general terms the less modified a LU is, the more vulnerable to further change as a result of human activities.

Landscape Unit 1

In a wider context this unit forms the setting for the Upper Mataura, which is one of Southland's major river systems. The unit includes all of the moderate slopes that extend from the crest of Razorback down to the valley floor; and all of the catchment which forms the western boundary of the lease. Altitude ranges from 1242 m along the sharp crest of Mullocky Gully down to 450 m near the river flats.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

The upper limits of Razorback and much of the upper catchment of Mullocky Gully are highly prone to natural erosion. Extensive areas convey common traits of eroding greywacke parent rock such as barren ridgelines and extensive areas of sheet and gully erosion.

On the dryer slopes of Razorback, vegetative cover is principally fescue tussocklands which grade into introduced grasses in the more developed blocks. The most diverse shrublands within the unit occupy the margins of the river flats (mostly outside the pastoral lease). The Mullocky Gully catchment is predominantly clad in fescue tussock with snow tussock at higher altitude. The darker gullies within this catchment are occupied by matagouri shrublands, with one small remnant of beech forest. The lower developed blocks are linked by a well graded access track which sidles around Razorback

Landscape Quality:	Intactness	moderate
	Coherence	moderate
	Distinctiveness	moderate

As indicated by the above landscape quality attributes, the natural character of this unit has been influenced by pastoral farming, and could be best described as typical edge country of the Eyre Mountains, with balanced land-use.

The unit's vulnerability to further change is mainly from the spread of weedy species being transported down the river, and also the possible spread of wilding pines.

Landscape Unit 2

This unit includes the upper and mid section of Thomson Creek, which drains into the Upper Mataura River within the pastoral lease. The unit is well defined by the parallel ridgelines of Razorback and Wether Ridge. In between these ridges is Short Spur which extends out from the crest of the main ridgeline that forms the watershed between the Mataura and Eyre Creek. Both Razorback and Wether Ridge have an east-west orientation which accentuates the moist shady and drier sunny aspects of the faces.

Thomson Creek is characterised by a long V-shaped valley, which in its mid section becomes divided by Short Spur and branches into two separate smaller catchments. The slopes on the faces are relatively moderate in relief, with similar physical features on both the drier and shady aspects. Above 1000 m the parent rock is frequently exposed by substantial areas of sheet and wind erosion. The drainage pattern of Thomson Creek is well defined with the main channel being entrenched within a narrow gully floor. The lower section of the channel meanders over a wide bedload of alluvium.

The distribution of the various plant communities is strongly influenced by altitude, aspect, and land-use. The darker faces of the upper and mid catchment support a variety of native shrubs including *Hebe*, *Olearia*, native broom, matagouri, and *Coprosma*. A spectacular feature of these shrublands is the fire induced blue Spaniard with its prominent golden flower head. The geographic range of these shrublands would appear to be continuously expanding by the number of outlying shrubs located around the fringes of the main communities. Above the shrubland zone there is a sward of vigorous snow tussock interspersed with blue Spaniard, *Coprosma*, and matagouri.

The corresponding drier faces are mainly covered in modified fescue tussock with matagouri starting to colonise the deeper gullies. Also cladding extensive areas on the drier faces are bracken fernlands which are a precursor to natural regeneration towards a more woody

ommunity. Within the mid altitude grazing blocks introduced grasses are common, especially browntop, which is particularly prevalent close to fencelines and stock camp sites.

The built elements within this unit are restricted to a well graded track along Wether Ridge and a stock access track following the true right side of Thomson Creek. The upper sections of the catchment, and the lower dark faces, are included within one large summer grazing block which encompasses much of the back country of the pastoral lease. This has resulted in little difference occurring to the overall vegetation pattern and ecological sequences which collectively form a large coherent landscape.

Landscape Quality:	Intactness:	moderately high
	Coherence:	high
	Distinctiveness:	moderate

Based on the above landscape quality attributes, this unit has a relatively high degree of indigenous natural character, ie, dominated by nature rather than being culturally influenced. From a landscape perspective, this unit's principal value is that it helps to reinforce the special landscape character of the Eyre Mountains rather than being outstanding or spectacular.

This unit's main vulnerability is from a change in the current management practices which are enabling regeneration of shrublands and snow tussock.

Landscape Unit 3

This unit encompasses all of the upper and mid sections of Pig Creek which forms a significant catchment area on the north east side of the Eyre Mountains. The unit occupies a large basin in the headwaters which narrows down to be a more enclosed valley system and gorge between the Ewe and Wether Ridges. This sharp ridgeline forms the watershed between the Upper Mataura and Eyre Creek.

As with the adjoining Thomson Creek the upper sections of this unit are prone to extensive sheet and wind erosion. Patches of barren land are evident below 1000 m on the drier faces.

Like the vegetative cover within Thomson Creek the distribution of plant species is strongly influenced by altitude, aspect, and land-use. However unlike the Thomson Creek catchment, there is a strong demarcation between the predominantly indigenous ground cover and farmland. This line follows a relatively recent burn-off along a lateral spur.

Within this catchment there still remain several remnants of beech forest. These pockets of forest are mostly located within deep gully systems or sheltered by rocky bluffs which have protected them from previous fires. The most extensive area of beech is within a tributary of Ewe Ridge. The larger remnants of beech, particularly on the shady faces, appear to be in a relatively healthy condition with a fringe of beech seedlings and shrubs spreading from their margins. The interior of the forest close to the margins of Pig Creek is in a less healthy condition.

Landscape Quality:	Intactness	moderately high
	Coherence	moderate
	Distinctiveness	moderately high

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

This unit makes a positive contribution to the natural character of the Eyre Mountains. Its landscape value is a degree higher than LU2 as it is more diverse.

Landscape Unit 3A

This sub-unit encompasses the small valley that drains into Eyre Creek. The terrain within this catchment is heavily dissected with a number of gullies containing active erosion. Continuous beech forest extends up to about 800 m, surrounding the forest are grasslands which are being rapidly colonised by a variety of shrub species.

From a landscape perspective, this small discrete catchment is different from its neighbouring side valleys due to the presence of beech forest.

Landscape Unit 4

This unit includes the gentle slopes which lead off Ewe Ridge down to the creek in Futtah Gully and the headwaters of the creek. Compared with the Thomson and Pig Creek catchments the physical characteristics of this unit are markedly different, the catchment lies below 950 m. Also, unlike the catchments within LU2 and LU3, this catchment is of a constant width which is maintained to the headwaters. Because of the gentle gradient of the creek the channel tends to meander across the whole valley floor.

The vegetative cover is modified short tussock grasslands with some snow tussock still occupying the darker faces and matagouri shrublands present in the deeper side gullies. Although the natural sward of original cover has been converted for pastoral farming and has been sub-divided into a number of grazing blocks, the overall impression of this unit is of continuous grasslands.

Landscape Quality:	Intactness	moderate
	Coherence	moderately high
	Distinctiveness	moderate

This unit, similar to LU1, would be best described as typical edge country of the Eyre Mountains with no significant landscape qualities.

SIGNIFICANCE OF THE LANDSCAPE

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

The Mataura Valley pastoral lease does not contain the same striking and spectacular landforms that are evident in the glacially shaped mountains that surround Lake Wakatipu. The inherent characteristics of the greywacke parent rock that form the eastern side of the Eyre Mountains resemble more the rangelands of Canterbury where highly erodible faces and barren ridgelines are a common element.

Over recent times the limitations that are associated with farming this relatively fragile environment have been recognised, with land-use practices now being more in balance with natural systems. This has brought about a continual recovery and restoration of the original vegetative cover. Native shrublands and tall tussocklands appear to be reoccupying their natural niche. Mid and higher altitude country within this pastoral lease now conveys a high degree of indigenous natural character, i.e. dominated by nature rather than by cultural processes, as well as coherent landscape patterns, these qualities have been reinforced by a large proportion of the back country being grazed as a single summer block.

The Eyre Mountains are both physically and culturally important to the region. This conclusion is supported by the Southland Regional Council's 1997 Regional Landscape Assessment which states that all of the inland mountains of Southland were outstanding with the report stating that:

The major Southland rivers rise in these mountains and their upper reaches meander through the valley flats with areas of extensive river terraces and steep mountain slopes. The natural character of these valleys with the rivers as a central focal point provides a vivid and coherent image, and is an essential aspect of the Southland landscape experience. The rivers provide a focus for angling and other recreational experience, and make a significant contribution to the Southland lifestyle."

2.2 LANDFORMS AND GEOLOGY

OVERVIEW OF GEOLOGY

The Eyre Mountains form a distinctive topographic block southwest of Lake Wakatipu, rising to 2000 m at Jane Peak. The area is mountainous and rugged, bush-clad in the southwest but tussock-covered elsewhere, with rocky bluffs and fell fields at higher altitudes. Geologically the Eyre Mountains are underlain by greywacke and semischist of the Caples terrain of Permian age, and are separated from other Caples rocks of northern Southland by the major valley systems of the Matura and Von-Oreti catchments which are infilled by extensive glacial and fluvio-glacial deposits of Quaternary age. The Eyre Mountains block is cut by several faults, the most significant being the South Von Fault (Turnbull 1980). The regionally significant and much larger Moonlight Fault follows the Von - Oreti valley, where it is almost entirely concealed by glacial gravels. The Eyre Mountains have been heavily glaciated, and glacial erosional features dominate most of the modern landscape. The inferred down-valley limits of the major advances of the Wakatipu glacier are summarised in Figure 1.

Greywacke

Non schistose greywacke and weakly schistose greywacke form most of the parent rock material on the property.

Massive, dark grey to greenish grey sandstone ("greywacke") forms most of the western Eyre Mountains, around Helen Peaks and into the Irthing and Cromel streams and toward Eyre Creek and the South Von. These rocks are hard, resistant to erosion, and contain only minor amounts of softer and finer-grained mudstone. Fracturing within the greywackes is largely controlled by jointing *1 and these rocks tend to break down to form coarse blocky scree slopes.

- *1 Joints are parallel, planar fractures or cracks in the rock, spaced from a few cm to 0.5m apart.

The Caples greywackes were deposited on submarine fans in an oceanic trench setting in Permian to possibly Triassic time (290-180 Ma). The rocks have a volcanic parentage - they are formed of sand eroded from a volcanic hinterland - and tend to have a lower silica content (average 53%) and higher iron and manganese content than similar greywackes of the Canterbury ranges (Roser *et al.* 1993).

Semischist

With increasing metamorphism (heat and pressure), greywacke is converted to semischist and then schist. This metamorphism is dated (radiometrically) as late Jurassic (200 Ma), with uplift and cooling of the rocks lasting into Cretaceous time (100 Ma) (Mortimer 1993). The Eyre Mountains rocks show a very well-developed transition from greywacke into semischist. The transition is mapped in terms of textural zones, which reflect increasing development of schistosity *3, as well as coarser grain size of metamorphic mica minerals, increasing amounts of quartz veining, and folding of original bedding in the parent sandstones.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

- 3 **Schistosity** or more generally **foliation**, refers to the slabbiness or "splittability" of metamorphic rocks

Geochemically, the Eyre Mountains semischists are very similar to the parent greywackes, with relatively low quartz content.

Faults

Mapping of most of the faults within the Eyre Mountains – the Forks Fault, the South Von Fault and the Lochy Fault – is based on offset or juxtaposition of the textural zonations within the schists. The Forks Fault bisects the Thomson Creek catchment on the property. The faulting marks a major readjustment of the earth's crust during the late Tertiary, partly influenced by movements on the distant Alpine Fault which was at that time pushing the Fiordland massif into the schist terrain around Lake Wakatipu.

GLACIAL GEOLOGY

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

The Eyre Mountains landscape is dominated by the effects of valley glaciation, with spectacular U-shaped valleys and cirques, and terminal moraines and outwash plains in the bounding Mataura and Von-Oreti catchments. The Lake Wakatipu trough, with its tributary and outlet valleys, records a succession of glaciations which date back at least 500 000 years (Fig. 1). It must be noted however that nowhere within the area shown in this figure is there any absolute age control from radiometric dating, and that the following correlations and discussions are based on ages extrapolated from the adjoining Mararoa-Te Anau and Clutha-Kawarau catchments; an element of mis-correlation is likely. Thomson (1995) gives locations of key sites and interpretations of the succession of ice advances in the Kingston-Athol area. Glacial advances and events are here correlated using the International Oxygen Isotope Scale (Imbrie *et al.* 1984), and the informal local names for advances used by Thomson are not adopted.

Major ice advances and deposits

Relatively little evidence remains on the property of glaciation beyond that created, and that which is present is mostly related to ice advances of the Wakatipu Glacier dating back to the Waimaungan advance. It can be inferred though that all periods of glaciation contributed to the formation of the minor cirque glaciers that occurred on Mataura Valley Station.

Waimaungan glacial advance, OI stage Q₈, 250-300 000 yrs BP

No moraine or outwash deposits of this age are known from the Mataura catchment, and are presumed to have been stripped out by younger advances and accompanying erosion. The down-valley Q₈ ice limit shown in Fig. 1 is thus inferred from the upstream limit of older deposits of Stage Q₁₀ (but note that all these correlations are tentative, due to the lack of absolute dating).

Extensive outwash plains in the Oreti and Mararoa valleys are correlated with this glacial period, but no major Q₈ valley moraine is known within the Eyre Mountains region. However, all the high cirques, including those on southern Eyre Mountains ridges, would have been occupied by ice.

Moraine deposits in the upper Mataura may date from this period, or may be younger. The lower reaches of the upper Mataura, upstream from Robert Creek, have classic interlocking spur topography, showing this reach to have been ice-free for some time. Very old alluvial fan deposits may be of this age or older.

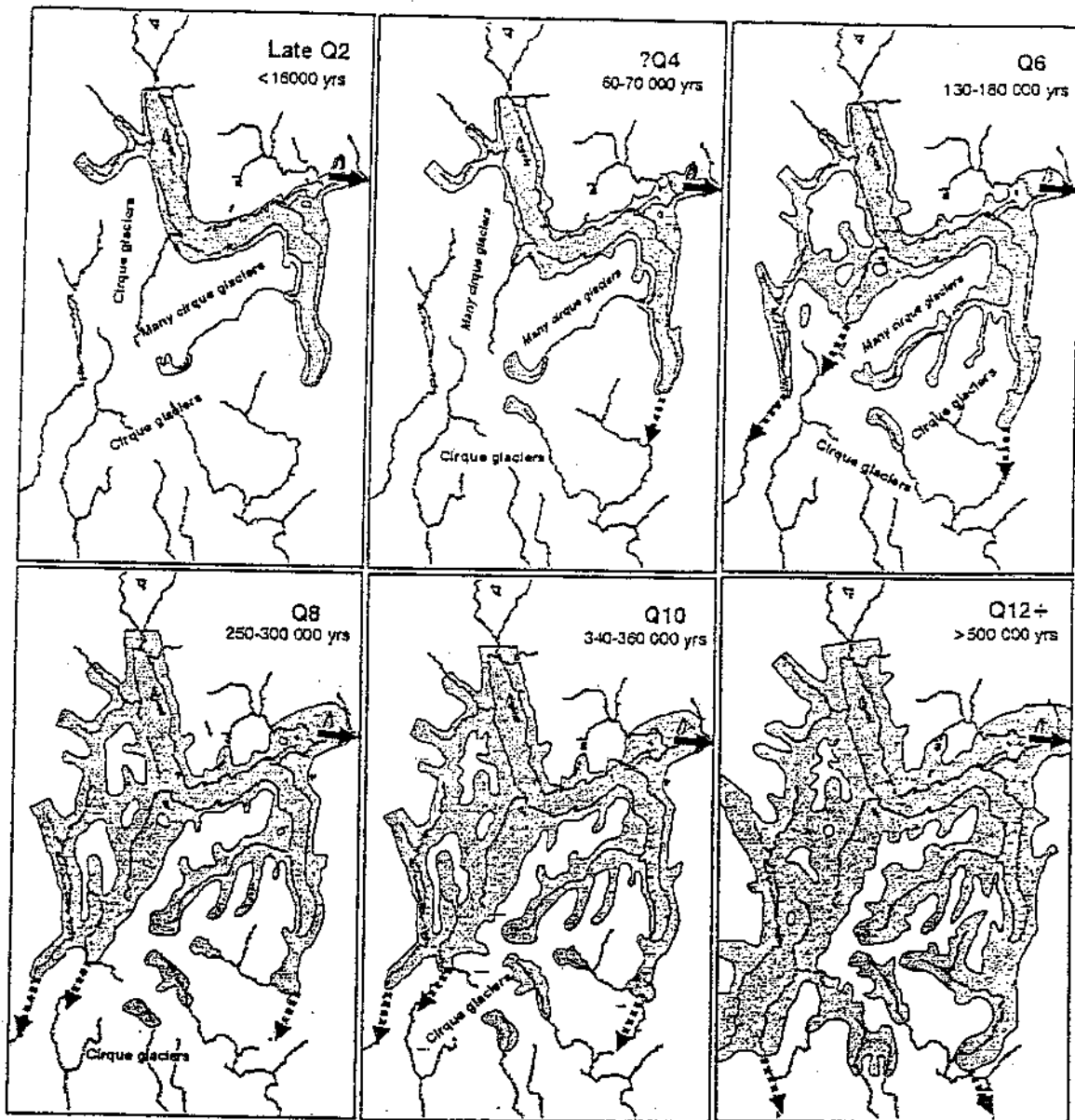


Figure 1. Inferred ice limits for various advances of the Wakatipu Glacier, for Oxygen Isotope stages Q₂ to Q₁₂₊. Modified from Fig. 13 in Turnbull and Forsyth (1988).

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Wemunan glacial advance, OI stage Q10, 340-360 000 yrs BP

A high-level degraded terrace on the eastern side of the Oreti Valley at the mouth of the Ashton Burn is the only deposit in that catchment correlated with this advance; the gravels in it are somewhat more weathered than in younger units. In the Mataura catchment, probable Q10 age lateral and possibly terminal moraines are preserved on the high terraces east of Fairlight (on Lorn Peak Station) and Garston, with outwash terraces further downstream toward Parawa.

Ice would have occupied all the central Eyre Mountains valleys, and the headwaters of the upper Mataura, Robert Creek, and Eyre Creek as well as the tributaries of the Oreti such as the Ashton Burn. If the ice limit inferred for Stage 10 shown on Fig. 1 is correct, the upper Mataura valleys would have been the site of a glacially-dammed lake; no evidence has been found to confirm this, and possibly the Q10 ice limit lay upstream around Greenvale, allowing the upper Mataura drainage to run along the hill south of Fairlight. Remnants of outwash gravel are preserved on that hill slope, but their age is unknown.

OI stages 12 and older (=430-500 000 yrs BP)

The only deposits known from these advances are within the Mataura catchment, downstream from Garston. It is possible that the ice level around Fairlight at this time reached the low saddle leading to Quoich Creek, with possible Q12 or older outwash gravels preserved in that valley. Weathered glacial debris probably older than OI stage 12 is preserved at heights up to 880m asl. on the Hector Mountains east of Fairlight, and southeast of Athol. However, there is no direct evidence, from topography or preserved gravel deposits, that the proto-Mataura River ever flowed southwest past Mid Dome onto the Five Rivers plain (cf. McIntosh *et al.* 1990). With ice at these levels, glaciers would however have infilled the upper Mataura, Robert Creek, Eyre Creek, and certainly all the central valleys of the Eyre Mountains, and only the highest peaks and ridges would have been ice-free.

Valley floor alluvium, scree and alluvial fan deposits

All the major and minor valleys of the Eyre Mountains contain deposits of post-glacial stream alluvium. Recent aggradation in the streams south of the upper Mataura is related to erosion of the softer, more weathered rock in that region, related to the active scree slopes in stream headwaters. Alluvial fan deposits are widespread, and form at the mouths of side streams of all sizes. These fans grade out and down-valley into terraces with flatter profiles, and the distinction is made on slope angle as much as different gravel properties within them. Both fans and terraces are more fertile, easier to fence and graze than steeper hill slopes, and consequently are the most developed areas within the Eyre Mountains.

Extensive scree deposits are a feature of the central Eyre Mountains, draping the bluff topography and grading out onto the valley floors. Scree also mantle the slopes of most high cirques. Scree debris ranges from loose fine material in areas of higher schist grade, to coarse, blocky scree in the greywacke-dominated area such as around Eyre Peak. The scree deposits are inferred to be many thousands of years old, dating from the last glaciation (Q2) or beyond. The ridges on Mataura Valley Station between Eyre Creek and the upper Mataura are also mantled by scree, deeper and finer than elsewhere. This difference is attributed to the area having been ice-free since the early Quaternary, with consequent deeper weathering of the underlying rocks.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

2.3 CLIMATE

Climatically the Eyre Ecological District is intermediate between the wet Fiordland region to the west and the drier more severe environment of Central Otago to the east. Rainfall varies from 800 mm at low altitudes, rising to 1500 mm at higher altitudes. Elevation is not sufficient to retain permanent snow. Occasionally high intensity rain storms can generate large floods which can carry a high sediment loading. Rivers respond rapidly to such events due to the relatively weak vegetative cover on the Eyre Mountains.

The property is exposed to both NW and SW weather patterns and receive rain from both quarters. Snow can lie for periods of several weeks during winter on higher ground. Frosts are seasonally common.

2.4 VEGETATION

ECOLOGICAL SETTING

Mataura Valley Station is located near the head of the Mataura River on the east side of the Eyre Mountains within the Eyre Ecological District. The district is large and mountainous, characterised by steep, highly eroded hillslopes and narrow valleys. The climate is cool and moderately wet, with a rainfall gradient from the wetter south to the drier north (rainfall 800 - 2400 mm) and snow may lie for several weeks. The geology is dominated by schist and schistose greywacke. These factors have contributed to the leached, shallow, stony, steepland soils that predominate. As a consequence of these characteristics the soils are prone to erosion.

The Eyre Mountains are part of a transition from between the dry Central Otago - Northern Southland area to wet Fiordland. Therefore the area forms an important biogeographic area with several endemic plant species and others at or near to their distribution limit.

The original (ie, pre-Maori) lowland and montane vegetation of the Eyre Ecological District would have been dominated by beech forest. This beech forest was mainly silver beech (*Nothofagus menziesii*) with mountain beech (*N. solandri* var. *cliffortioides*) and localised red beech (*N. fusca*). Non forest communities below treeline would have been localised, but included wetlands, tussockland, shrublands, braided riverbeds, screes and rock outcrops. The alpine communities would have been dominated by snow tussocklands. These tussocklands would have been dominated by narrow-leaved snow tussock (*Chionochloa rigida* var. *rigida*), with slim-leaved snow tussockland (*C. macra*) at higher altitude and localised areas of curled snow tussockland (*C. crassiuscula*). Other alpine communities would include shrublands, wetlands, scree, rock outcrops and fellfield.

Following the arrival of Maori, fires became a major influence upon the vegetation. The fire frequency further increased with European settlement and the start of pastoral activity. These fires had greatest impact upon the lowland and montane areas. As a result the forest become fragmented, while narrow-leaved snow tussockland and shrublands increased. Later stock grazing, over-sowing, topdressing and land development have further modified the original vegetation composition and distribution. The natural trend in lowland and montane areas is towards an increase in woody vegetation and a return of forest.

The Mataura Valley Pastoral Lease is on the eastern edge of the ecological district, to the east of the higher peaks of the Eyre Mountains. This lower altitude eastern portion of the ecological

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

istrict escaped glaciation during the last ice age. The property is characterised by having a number of small, parallel catchments that flow into the Mataura river. The slopes are relatively steep and capped by rocky ridges. The native vegetation is characterised by narrow-leaved snow tussocklands, with pockets of beech forest and shrublands in the gullies. A feature of the property is the lack of high alpine communities, wetlands and natural scree. However bare eroded areas are common.

2.4.1 DESCRIPTION OF VEGETATION

This section of the report is divided into the major catchments of the property. These being:

- A Mataura Catchment (= the Mataura Faces)
- B Thomson Creek
- C Pig Creek
- D Futtah Gully
- E The Firewood Block
- F Braided Riverbeds (Unallocated Crown Land)
- G Part Eyre Mountains RAP - Mullocky Gully

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

A Mataura Faces

This block is a sunny north facing slope. Much of the area has been topdressed and oversown. Generally the hillslopes are dominated by pasture grasses with a variable cover of fescue (*Festuca novae-zelandiae*), blue (*Poa colensoi*) and silver (*P. cita*) tussock, with limited narrow-leaved snow tussock. Generally the highest slopes retain some narrow-leaved snow tussock.

The composition recorded at one site (ie approx. Grid Ref NZMS 260 E43 589 272) consisted of: exotic grasses (25+% cover, included browntop (*Agrostis capillaris*), sweet vernal (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), Chewings fescue (*Festuca rubra* subsp. *commutata*) and crested dogs tail (*Cynasorus cristatus*)), fescue tussock (12%), hawkweed (*Hieracium pilosella*, 10%), matagouri (*Discaria toumatou*, 8%), rock/bare ground (6%), *Leucopogon fraseri* (2%), *Raoulia subsericea* (2%), with some silver tussock, narrow-leaved snow tussock and a variety of herbs.

The upper part of Razorback Ridge retains a high degree of naturalness. The uppermost part of the ridge is rocky and sparsely vegetated, containing *Celmisia densiflora*, *Dracophyllum uniflorum*, *Hebe biggarii*, *Anisotome flexuosa*, edelweiss (*Leucogenes grandiceps*) and other species. At mid altitude the ridge becomes more rounded with limited rock outcropping and better developed soil. This area generally contained a tussock-shrubland. This tussock-shrubland (at approx. GR E43 575 264) was composed of narrow-leaved snow tussock (20% cover), *Pentachondra pumila* (15%), *Celmisia densiflora* (12%), blue tussock (8%), rock/bare soil (6%), *Leucopogon fraseri* (5%), *Hebe propinqua* (4%), *Dracophyllum uniflorum* (2%), *Pimelea oreophila* (2%), *Kelleria dieffenbachii* (2%), *Raoulia subsericea* (2%), *Lycopodium fastigiatum* (2%), snowberry (*Gaultheria depressa* var. *novae-zelandiae*, 1%), *Hebe hectorii* (1%), *Celmisia gracilentia* (1%), *Hebe anomala* and other species. The whipcord hebes *Hebe propinqua* and *H. hectorii* are a feature of this community.

Mullocky Gully has an abundance of induced erosion and recently activated scree area. The upper part of this catchment has an open narrow-leaved snow tussockland. This catchment was not examined in detail, as it had been surveyed earlier as part of an assessment of Unallocated Crown Land (the expired Pastoral Occupation Licence) in the upper Mataura Valley (Rance, 1991).

Thomson Creek Catchment

This catchment has two major branches that join in the middle of the catchment. The two branches are separated by Short Spur. The shady faces have more intact vegetation than the opposing sunny faces. However on the sunny aspect the area above the upper fence is relatively intact, while below this it is much modified.

North branch - Upper slopes:

The upper slopes support an intact condition narrow-leaved snow tussockland containing scattered shrubs and speargrass, with some scree/bare ground. Areas sampled below Razorback Ridge (approx. GR E43 565 258) consisted of: narrow-leaved snow tussock (40 - 60% cover), bare (5-10%), leaf litter (10%), blue tussock (8%), *Celmisia densiflora* (8%), snowberry (5%), *Hebe anomala* (1-6%), *Dracophyllum uniflorum* (1-3%), cottonwood (*Ozothamnus vauvilliersii*, 1-2%), *Aciphylla* sp. "lomondii" (1-2%), *Raoulia subsericea* (1%), *Hebe propinqua*, *Brachyglottis revoluta*, *Lycopodium fastigiatum*, bryophytes and other species.

Rubble field (below Razorback Ridge):

This community was discontinuous and limited in extent. The rubblefield examined consists of: rock (40%), *Dracophyllum uniflorum* (30%), narrow-leaved snow tussockland (15%), *Hebe hectorii* (8%), *Celmisia densiflora* (4%) and *Brachyglottis revoluta* (2%).

Lower altitude shady faces:

With decreasing altitude the shrub component increases. On the shady face above the north branch and the adjacent main Thomson Creek there is a distinct patterning of woody communities, consisting of small isolated mountain ribbonwood (*Hoheria lyallii*) stands, with shrublands dominated by either *Coprosma propinqua* or *Dracophyllum longifolium* (dependent upon site conditions). Associated shrub species are cottonwood, *Hebe anomala*, *H. rakaiensis*, *Carmichaelia virgata* and matagouri. Also present are bracken (*Pteridium esculentum*), *Aciphylla glaucescens* and narrow-leaved snow tussock, especially on the margins. There were only a few beech trees observed within Thomson Creek (north branch).

Lower altitude sunny faces:

The fence on the south side (sunny aspect) of the catchment (below the junction of the two branches) provides a logical management boundary. As a consequence of oversowing and stock concentrating at the bottom of this fenced block, the first few hundred metres above the fence are somewhat modified. This area (GR E43 594 257) consisted of exotic grasses (25%, includes browntop, sweet vernal, Yorkshire fog, crested dogs tail and chewings fescue), fescue tussock (10%), hawkweed (*Hieracium pilosella*, 10%), matagouri (8%), rock (6%), blue tussock (5%), *Leucopogon fraseri* (2%), occasional narrow-leaved snow tussock and a variety of native herbs. The cover of snow tussock increases further up the valley with increasing altitude.

The sunny face along the bottom of Short Spur contains areas of bracken and *Coprosma propinqua* shrubland, but has only a light cover of narrow-leaved snow tussock.

C Pig Creek

Pig Creek is the largest catchment on the property. It contains the largest remnants of forest and natural scree, and also has a range of shrublands, tussockland and other communities. It also contains the highest altitude areas on the property (high point of 1522m). The lower third of the catchment has been topdressed and the natural values are much modified.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Wether Ridge:

Wether Ridge is a rocky ridge with limited soil. The mid altitude part of the ridge is generally dominated by rock/bare ground (35% cover), with bryophytes (15%), *Celmisia densiflora* (12%), narrow-leaved snow tussock (10%), *Gaultheria crassa* (8%), bristle tussock (*Rytidosperma setifolia*, 3%), *Leucopogon fraseri* (3%), snowberry (3%), *Raoulia subsericea* (2%), inaka (*Dracophyllum longifolium*, 1%), *Gonocarpus montana*, *Anisotome flexuosa*, *Hebe biggarii* and other species.

On the less exposed saddles the vegetation consists of narrow-leaved snow tussock (20%), *Celmisia densiflora* (10%), *Gaultheria crassa* (8%), *Hebe anomala* (6%), inaka (3%), *Dracophyllum uniflorum* (2%), *Hebe propinqua* (2%), and *Aciphylla "lomondii"* (1%).

Some localised flat, gravelly areas contained the moss (*Rhacomitrium languinosum*, 40%), snowberry (6%), *Leucopogon fraseri* (5%), narrow-leaved snow tussock (3%), and *Gaultheria crassa* (3%).

The high altitude ridge contains *Dracophyllum muscoides*, with occasional edelweiss, *Kelleria villosa*, *Raoulia buchananii*, *R. grandiflora*, *Hebe buchananii* and other species.

Ewe Ridge:

Ewe Ridge at c. 1000m contains relatively strong narrow-leaved snow tussock with much bare ground (cover 15%). Other species present include *Celmisia densiflora*, blue tussock, bristle tussock, fescue tussock, *Hebe anomala*, *Oxothamnus vauvilliersii*, *Gentiana bellidifolia*, *Bulbinella angustifolia*, *Raoulia subsericea*, *Lycopodium fastigiatum*, *Kelleria dieffenbachii*, *Gaultheria crassa*, snowberry, *Koeleria cheesemanii*, *Aciphylla* sp. "lomondii", *Olearia cymbifolia*, *Ranunculus multiscapus*, *Hebe propinqua* and many other native species and a small proportion of exotic species.

A wet/disturbed area contained *Euphrasia zelandica*, *Deyoucia* spp, *Linum catharticum*, *Oreomyrrhis colensoi*, harebell (*Wahlenbergia albomarginata*, tutu (*Coriaria sarmentosa*), *Hieracium pilosella*, cutty grass (*Carex coriacea*), *Carex ovalis*, *Coprosma propinqua*, *Juncus effusus* and *Acaena novae-zelandiae*.

On the summit of Ewe Ridge in vicinity of spot height 1172 (GR E43 603 203) *Scleranthus uniflorus* cushions prevalent. Species present are *Leucopogon fraseri*, *Celmisia gracilentia*, mountain flax (*Phormium cookianum*, *Hebe rakaiensis*, *Anisotome aromatica*, *Blechnum penna-marina*, *Hebe hectorii*, *Rytidosperma pumila* and *Agrastis muelleriana*.

Scree:

Although there are many rocky areas and areas of bare eroded lands within the tussockland along the Wether Ridge, there are limited areas of natural scree. One area was examined (GR E43 563 233) along the ridge near the high point at the head of the catchment. This scree contains scree chickweed (*Stelleria roughii*), a gentian (*Gentiana* sp.), *Epilobium porphorium*, *Ranunculus haastii* subsp. *piliferus* and *R. scirithalis*.

An induced lower altitude scree on Ewe ridge contains *Blechnum penna-marina*, *Hypolepis millefolium*, *Celmisia densiflora*, sheep's sorrel, *Bulbinella angustifolia*, harebell, *Brachyglottis southlandicus*, *Brachyglottis bellidooides*.

Shady aspect tussocklands:

The mid catchment area (GR E43 592 244, c. 950m) contains a shrub tussockland dominated by narrow-leaved snow tussock (30% cover), *Hebe anomala* (25%), with inaka, *Celmisia densiflora*, *Aciphylla* sp. "lomondii", *Coprosma cheesemanii* and *Uncinia purpurata*.

an area of wet tussockland was sampled in the upper part of the catchment (approx. GR E43 570 229). This community is dominated by narrow-leaved snow tussock (60% cover), with *Ranunculus foliosus* (6%), *Brachyglottis revoluta* (5%), leaf litter (5%), *Hebe anomala* (4%), exotic grasses (browntop and sweet vernal, 4%), *Bulbinella angustifolia* (3%), prickly shield fern (*Polystichum vestitum*, 2%), blue tussock (2%), *Pratia angulata* (2%), *Ranunculus gracilipes* (2%), *Aciphylla* sp. "lomonidii" (1%), cottonwood and other species.

A limited area of slim tussockland was observed (GR E43 564 232). This is dominated by slim snow tussockland (*Chionochloa macra*, 65% cover), with *Psycrophila obtusa* (5%), *Unania divaricata* (4%), bryophytes (4%), *Hebe anomala* (3%), *Bulbinella angustifolia* (3%), *Brachyglottis revoluta* (2%), *Ranunculus gracilipes* (2%), *Plantago triandra* (2%), *Carex hectorii* (red form), cottonwood and other species.

Sunny aspect tussocklands: The area examined was in the upper Pig Creek basin, above the large forest remnant (over ridge from firewood block). This grassland is dominated by narrow-leaved snow tussock with much fescue tussock, sweet vernal and browntop. Other species include blue tussock, inaka and *Olearia bullata*. Silver beech (*Nothofagus menziesii*) saplings are recolonising grassland on the upper forest margins.

Alpine flush and wetland communities: Generally wetlands were not a common feature of the property. A cushion bog area was sampled at GR E43 564 232. This cushion bog is dominated by the comb sedge *Oreobolus pectinatus* (60% cover), with the sundew *Drosera arcturii* (8%), *Schoenus pauciflorus* (6%), *Coprosma perpusilla* (5%), *Carpha alpina* (4%), *Bulbinella angustifolia* (4%), slim snow tussock (3%), *Gentiana amabilis* (2%), *Psycrophila obtusa* (2%), curled snow tussock (*Chionochloa crassiuscula*, 1%), *Plantago triandra* (1%), *Astelia linearis*, *Abrotanella caespitosa* and other species.

The cushion bog is surrounded by a diverse turf - tussock community. This community is composed of *Psycrophila obtusa* (30%), slim snow tussock (15%), curled snow tussock (8%), *Bulbinella angustifolia* (8%), *Schoenus pauciflorus* (6%), bryophytes (5%), *Celmisia densiflora* (5%), *Coprosma perpusilla* (4%), *Hebe anomala* (3%), *Ranunculus gracilipes* (3%), snow berry (3%), *Hebe hectorii* (2%), *Isolepis aucklandica* (2%), *Plantago triandra* (2%), *Lycopodium fastigiatum* (2%), *Phyllachne colensoi* (1%) and other species.

Another flush area sampled consisted of *Plantago triandra* (30%), bryophytes (20%), *Isolepis aucklandica* (15%), *Gentiana bellidifolia* (12%), *Rytidosperma australe* (5%), *Bulbinella angustifolia* (3%), comb sedge (3%), *Euphrasia dyerii* (3%), narrow leaved snow tussock (2%), *Juncus antarcticus* (2%), *Schizaelema cockaynei* (2%), *Schoenus pauciflorus* (1%), *Ranunculus foliosus* (1%), browntop (1%), *Hebe pauciramosa* and other species.

Sub-alpine shrubland: The area examined was a damp area c. 100m from the forest edge (GR E43 573 227). The community consists of narrow-leaved snow tussock (15%), inaka (12%), *Hebe anomala* (10%), *Brachyglottis cassinioides* (8%), *Dolychoglottis hyalii* (8%), cottonwood (6%), *Schoenus pauciflorus* (6%), *Coprosma ciliata* (5%), prickly shield fern (4%), *Bulbinella angustifolia* (4%), *Coprosma cheesemani* (2%), *Brachyglottis revoluta* (2%), mountain flax (*Phormium cookianum*, 1%), *Hebe pauciramosa* (1%), with occasional celery pine (*Phyllocladus alpinus*), *Olearia moschata*, *O. bullata* and other species.

The shrubland is more dense closer to the forest edge. Species composition is dominated by *Brachyglottis cassinioides*, with much inaka, *Coprosma ciliata*, cottonwood, *Hebe anomala*, some celery pine, *Olearia moschata*, and other species.

Olearia moschata is locally common along the shady aspect of a stream above the forest.

In the upper Pig Creek catchment the shady aspect of the valley sides (below the forest remnant at head) contains a thick shrubland right down to the valley floor.

Forest:

The upper Pig Creek forest remnant is dominated by a mixture of mountain beech (*Nothofagus solandri* var. *cliffortioides*) and silver beech. Other species include *Hebe salicifolia*, inaka, mountain flax, *Hebe anomala*, *Hebe rakaiensis*, *Chionochloa conspicua*, *Olearia bullata* and *Aciphylla glaucescens* on flats below forest.

Braided Riverbeds:

Braided river beds and frosty river flats are scattered along Pig Creek. These areas contain *Raoulia* spp., *Epilobium* spp., *Muehlenbeckia axillaris*, silver tussock and other species.

D Futtah Gully

This catchment was not surveyed in any great detail, however the aerial overview showed that the communities found on the sunny faces are reasonably modified. The vegetation patterns are generally similar to those in Pig or Thomson Creek catchments, however there is limited beech forest and the altitudinal sequences are not as great. The south side of the catchment is of only moderate altitude (maximum 923m).

The only area examined was the catchment north of Firewood block which flows into Futtah Gully. The upper faces have a strong narrow leaved snow tussock - *Dracophyllum uniflorum* shrub tussockland. The shady faces are strong narrow leaved snow tussock right down to the creek. On sunny face, narrow leaved snow tussock becomes sparse below ~ 750 m asl, changing into mixed tall/short tussock. A small patch of beech (probably mountain beech) is present in the gully.

E The Firewood Block

This area flows into Eyre Creek and woody vegetation is a distinctive feature. There is no sign of grazing by domestic or feral animals within the area.

Narrow leaved snow tussock:

The upper rim of the catchment is a narrow leaved snow tussock grassland of similar composition as to that described for the upper Ewe Ridge. Also present are screes supporting *Brachyglottis revolutus*, *Dracophyllum uniflorum*, *Forstera sedifolia*, *Aciphylla "lomondii"*, *Laxula rufa*, *Anisotome aromatica*, *Ozothamnus vauvilliersii*, *Deyeuxia avenoides*, catsear (*Hypochoeris radicata*), *Raoulia parkii*, edelweiss, *Microlena colensoi*, *Brachyglottis southlandicus*, *Brachyglottis bellidioides*, *Epilobium melanocaulon*, *Poa lindsayi*, *Raoulia tenuicaulis*, *Leucopogon fraseri* and other species.

Shrublands (true left, west facing):

Shrublands at the head of the catchment are dominated by cottonwood *Ozothamnus vauvilliersii*, *Hebe rakaiensis* and narrow-leaved snow tussock. Other species include *Olearia moschata*, *Brachyglottis cassinioides*, mountain flax, *Gaultheria crassa*, *Dracophyllum uniflorum*, *Brachyglottis southlandicus*, prickly shield fern (*Polystichum vestitum*), *Aciphylla "lomondii"*, *Celmisia densiflora*, *Hebe pauciflora*, *Brachyglottis bellidioides*, *Hebe propinqua*, *Olearia cymbifolia*, *O. bullata*, *Blechnum montanum*, inaka, *Coprosma propinqua*, *Coprosma ciliata*, *Aciphylla glaucescens*, *tutu* and *Geum parviflorum*.

The sunniest sub-aspects tend to be dominated by a mix of narrow leaved snow tussock, inaka and *Gaultheria crassa*.

Wet areas are dominated by a sedgeland of *Schoenus pauciflorus*, *Dolichoglottis hyalii*, *Craspedia uniflora*, *Uncinia purpurata* and *Parahebe decora*.

Lower down adjacent to the bush edge the narrow leaved snow tussock component of the shrubland largely replaced by blue tussock and fescue tussock.

Shrublands on the true right (east) side of the valley:

As on the other side of the valley the bush line is depressed, presumably by past fire. Vegetation comprises thick, mixed shrubland dominated by inaka, three finger (*Pseudopanax colensoi*), *Coprosma rugosa*, *Rubus cissoides*, mountain flax, *Astelia fragrans*, with scattered halls totara (*Podocarpus hallii*) and narrow-leaved snow tussock. The percentage of narrow-leaved snow tussock increases towards the ridge.

Forest:

The valley/gully floor is dominated by mountain beech over the majority of the area where topsoil is thin. On alluvial fans and terraces red beech (*Nothofagus fusca*) dominates. Adjacent to the creek, in gullies and on the shady (true right side) a diverse understory is present including koromiko (*Hebe salicifolia*), pokaka (*Elaeocarpus hookerianus*), *Coprosma parviflora*, *Corokia cotoneaster*, prickly shield fern, *Asplenium richardii*, *Coprosma ciliata*, *Uncinia uncinata*, *Rubus cissoides*, *Gingidia montana*, *Corybas trilobus*, *Chionochloa conspicua*, *Alepis flavida*, *Blechnum fluviatile*, marbleleaf (*Carpodetus serratus*), water fern (*Histiopteris incisa*), *Mycelis muralis*, *Astelia fragrans*, lancewood (*Pseudopanax crassifolius*), broadleaf (*Griselinia littoralis*), *Hypolepis millefolium*, *Olearia arborescens*, *Lagenophora strangulata*, *Ourisia macrophylla* and *Rubus schmidelioides*.

F Braided Riverbeds (Unallocated Crown Land)

General:

Braided riverbeds are a feature of northern Southland river headwaters, including rivers of the Eyre Ecological District. Braided riverbeds are a distinctive community, which is generally not well represented within the public conservation lands. Many of the original examples of braided riverbeds have been extensively modified by weed infestations.

Lower Pig Creek:

This area contains most of the typical braided riverbed plant species. These species include *Epilobium melanocaulon*, *E. microphyllum*, *E. sp. "minutiflorum"*, *Raoulia tenuicaulis*, *R. australis*, *Wahlenburgia albomarginata*, *Hydrocotyle sp. "montana"* and others in the less stable (more flood prone) areas. Hard tussock (*Festuca novae-zelandiae*), silver tussock (*Poa cita*), *Rytidosperma gracile*, matagouri (*Discaria toumatou*), mingimingi (*Coprosma propinqua*), porcupine shrub (*Meliccytus sp. aff. alpinus*), *Leucopogon fraseri*, *Muehlenbeckia axillaris*, *Raoulia subsericea*, *R. glabra* and many other species are present.

The botanical values are reasonably resilient, having survived many years of grazing.

It has no significant weed problems.

Lower Thomson Creek:

The botanical values are broadly identical to those described for Lower Pig Creek but on a reduced scale. There are no significant weed problems.

Part Eyre Mountains RAP - Mullocky Gully

The 1991 review of the expired POL identified the following botanical values:

- The catchment has a high level of naturalness overall.
- It is representative of the north facing Mataura Faces. Vegetation is dominated at mid and upper altitude by narrow leaved snow tussock. Also present are low altitude fescue grasslands, shrublands, a small beech forest remnant, numerous high altitude scree areas, rock outcrops and summit fellfields and ridge communities.
- The vegetation contains a rich diversity of species including the Eyre Mountains endemic, *Hebe biggarii*.
- The catchment is an entire altitudinal sequence, from 540 m to 1353 m.
- The area adjoins existing conservation land on three sides.

FLORA

The property has a very diverse flora comprising 233 native taxa. The species of greatest note include:

- *Alepis flavida*, national status declining: This yellow flowered mistletoe was recorded from Firewood Block. Category B, second priority for conservation (Molloy and Davis 1994)
- *Ranunculus haastii* subsp. *piliferus*, national status naturally uncommon-sparse: Upper Pig Creek
- *Ranunculus scirithalis*, national status naturally uncommon-range restricted: Upper Pig Creek
- *Uncinia purpurata*, national status naturally uncommon-sparse: widespread. Category I species about which little information exists, but which are considered threatened (Molloy and Davis 1994)
- *Hebe biggarii*, an Eyre Mountain endemic: widespread at higher altitudes
- *Pimelea poppelwellii*, a northern Southland endemic: Upper Pig Creek.

Other species of note include:

Olearia moschata, *Brachyglottis rotundifolia*, *B. cassinioides*, *B. revoluta*, celery pine and mountain ribbonwood, all subalpine shrubland species which are at the limit of common distribution (found further east in localised pockets).

Pokaka (*Elaeocarpus hookerianus*), marbleleaf (*Carpodetus serratus*), *Pseudopanax crassifolius*, *P. colensoi* var. *ternatus* and broadleaf (*Griselinia littoralis*) are all forest species which are common in the Eyre Ecological District and uncommon elsewhere in the dry beech forests in Northern Southland.

Curled snow tussock, *Astelia linearis* and *Microlaena colensoi* are all alpine species which are at the limit of common distribution (found further east in localised pockets).

DISCUSSION

Natural values are found through much of the property, but particularly in the major tributaries of Thomson, Pig and Firewood Creeks and especially at higher altitudes. Some of these values

are intact and extensive (e.g. the snow tussocklands on the upper parts of these catchments), while the low altitude communities are much modified and extensively fragmented (e.g. low altitude shrublands and braided riverbed communities).

As well as identifying the most extensive possible range of the vegetation present (including the best examples) this report includes those of greatest representative value to the ecological district as a whole. The areas which contain sequences and zonations of vegetation and patterns which show the relationships between the vegetation components have been described. The report also identifies areas of sufficient size to allow the successional processes (which are evident) to continue. This will allow nature to sort the patterning of these communities as they recover from disturbance (including burning and grazing) and succession proceeds.

A feature of the property are the shrublands and seral communities of which there is a rich diversity. These communities are found over large portions of the property, especially in the Thomson, Pig and the Firewood Block catchments. This indicates a recovery from a period with more regular (and intensive) burning. Burning is considered to be a greater limiting factor to vegetation recovery than grazing on this property.

CONCLUSIONS

Three levels of ecological importance are identified based on the botanical values found. These are considered to be very high (key sites for conservation), high (important sites for conservation), and moderate.

A Very high ecological values

1. Upper Pig Creek Catchment:

This catchment contains a wide range of communities which are highly representative of the property and the Eyre Ecological District. These include the largest area of forest on the property, along with large areas of narrow-leaved snow tussockland, areas of shrubland, wetland, ridge crest/fellfields and screes. These communities show the rich diversity and complexity of patterning on the property. This area also contains several national threatened or regionally notable species (including *Ranunculus haastii* subsp. *piliferus*, *R. scirithalis*, *Uncinia purpurata*, *Hebe biggarii*, *Pimelea poppelwellii* and celery pine). The whole area is considered relatively intact and of high naturalness. The abundance and numbers of exotic species declines with increasing altitude. This catchment includes the largest altitudinal sequences of relatively intact vegetation identified on the property (ie, 460-1522m). The area is sufficiently large to ensure long term viability and for the successional processes to continue, thus allowing nature to sort the patterning of these communities as they recover from disturbance. In addition the area adjoins the Eyre Creek Conservation Area.

2. Firewood Block Catchment (pastoral lease and freehold Sections 46 and 47):

This catchment contains the greatest diversity of woody communities on the property. The presence of the threatened yellow mistletoe *Alepis flavida* and several species which are approaching their eastern-most distribution extent (including pokaka, marble leaf, broadleaf, lancewood, *Olearia moschata*, *Brachyglottis cassinioides* and *Microlaena colensoi*) heightens the catchment's conservation status. The area is relatively intact with no evidence of stock being observed. Over time the area will continue to regenerate and become forest dominated. The values found complement those found in the north draining catchments on the property.

1 Areas of high ecological value

3 Upper Thomson Creek Catchment:

This catchment contains a wide range of communities which are highly representative of the property and the Eyre Ecological District. These include large areas of narrow-leaved snow tussockland, areas of shrubland, wetland, ridge crest/fellfields and screes. The area is relatively intact and the condition and naturalness increase with increasing altitude. This catchment includes good altitudinal sequences of relatively intact vegetation (maximum of 500-1446m). The area is sufficiently large to be viable in the long term and to allow the successional processes to continue, thus allowing nature to sort the patterning of these communities as they recover from disturbance. In addition the area adjoins both Area A and the Eyre Mountains Conservation Area, to form an extensive and important natural area.

The area is identified as a B priority as it is not as large or diverse as the Pig Creek catchment, however it is considered to be an important site for conservation on the property.

4 Lower Pig Creek/Lower Thomson Creek Braided Riverbeds (Unallocated Crown Land):

These areas of braided riverbed extend from the lower boundary of Area A1 and B3 respectively down to the junction with the Mataura River. They contain the best range of riverbed plants and communities present and form an important altitudinal link with upland areas of high ecological value.

C Areas of moderate ecological value

5 Mullocky Gully:

The catchment is steep and eroded, however the upper part of the catchment retains natural, though open narrow leaved snow tussocklands. The area has potential to recover over time, provided stocking is restricted or removed. This catchment adjoins both Area B3 and the Eyre Mountains Conservation Area.

6 Lower Thomson Creek:

This area is the sunny face adjacent to the lower most part of Area B3. The area is above an existing fence. The area has suffered modification by stock and possibly through oversowing; however its condition improves at higher altitude. The modified area is a relatively narrow strip of land.

7 Lower Pig Creek:

This area is the sunny face on the lower most part of Area A1. The area is above an existing fence. The area has suffered modification by stock and possibly through oversowing. The area contains a gully of beech forest and the grassland condition improves at higher altitude. The modified area is a relatively narrow strip of land.

8 Futtah Gully:

This area contains the higher altitude and shady aspect parts of Futtah Creek catchment. This is a large and ecologically viable area containing a range of communities. The communities found are generally similar to those found in Areas A1 and 2 and B3. This area adjoins both areas A1 and A2.

9 Lower Thomson Creek (Unallocated Crown Land)

The area contains the smaller of the two braided river systems described and has less representation of species and communities than Area B4.

2.4.2 PROBLEM PLANTS

Pest plants recorded were:

Broom	some scattered plants in the Mataura river valley.
Sweet briar	common on the mid-lower parts of the spur that the 4WD track follows from Ewe Ridge to Pig Creek.
<i>Hieracium pilosella</i>	extensive in the Mataura faces above the Razorback Track. Dense patches at mid altitudes on the spur from Ewe Ridge to Pig Creek.

SIGNIFICANCE OF THE VEGETATION

Extensive parts of the property contain very high and high botanical values. In particular, the areas described as Upper Pig Creek catchment, Firewood Block catchment, Upper Thomson Creek catchment, and Lower Pig Creek (UCL) are considered to be significant.

Significant flora recorded include:

-	<i>Alepis flavida</i>	yellow mistletoe; Firewood Block, status declining
-	<i>Ranunculus haastii</i> subsp. <i>piliferus</i>	Upper Pig Creek, status naturally uncommon-sparse
-	<i>Ranunculus scirithalis</i>	Upper Pig Creek, status naturally uncommon-range restricted
-	<i>Uncinia purpurata</i>	status naturally uncommon, sparse
-	<i>Hebe biggarii</i>	widespread at higher altitudes; Eyre Mountains endemic:
-	<i>Pimelea poppelwellii</i>	Upper Pig Creek, northern Southland endemic

A feature of the property is the shrublands and seral communities of which there is a rich diversity.

2.5 FAUNA

2.5.1 INVERTEBRATE FAUNA

INTRODUCTION

The lease was inspected in conditions of little wind but some overcast periods and mild temperatures. This followed a dry summer which reduced the presence of ground dwelling insects but moth fauna was active during warm periods. Eighty-two invertebrate records including 55 species were collected along with observations.

The insects present on this property contain elements associated with Southern Eyre Mountains, mountainous areas of west Otago and northern Southland (see Mark et al. 1989). Insects widespread in South Island streams, forests and tussock grasslands were also recorded.

ALPINE COMMUNITIES

Slopes are thinly mantled in snow tussock dominated vegetation. However, the mosaic includes a rich variety of communities with wet flushes alongside gravel pavement and rock fell. Also Hebe, speargrass and *Celmisia densiflora* patches are common though bare gravel and rock areas are dominant. The widespread pattern of open basking sites adjacent to host plant patches is ideal for grasshoppers *Alpinacris tumidicauda* (snowbanks), *Sigauss campestris* (sheltered sites - widespread), *S. australis* (interspersed in grasses), *S. obolesci* (rocky sites). Also common and noisy are cicadas *Kikibia rosea* and *Maoricicada otagensis* in short tussock and bare colluvial/scree sites respectively. Seventeen species among a rich day active moth fauna were noted above 1100 m. Some habitat types are represented by the moths *Asaphodes declarata* from alpine herbfield, *Orocrambus catacaustus* from cushion bogs and *Tauroscopta trapezitis* alpine bare areas. Some alpine plants are represented by the moths *Dasyuris anceps* (*Anisotome* species), *Paranotoreas brephosata* (*Epilobium* species) and *Gelophaula* n. sp. (*Celmisia* species).

Other important finds were the moth *Asaphodes periphaea* - rarely noted from alpine bluffs and *Ascerodes prochlora* reaching its eastern limit here.

A *Peripatus* species, velvet worm and large carnivorous land snail *Powelliphanta spedeni spedeni* are at high elevation here (above 1100 m) reflecting a pattern noted further east in northern Southland mountains. Three large bodied weevil species (*Lyperobius* sp. and *Anagotis* sp.) are further evidence of the integrity of the lease's alpine communities.

BEECH FOREST

Small areas of forest on this lease are home to *Mecodema chiltoni* a large ground dwelling beetle. This has a threat status of "C" - third priority for conservation (Molloy and Davis 1994) but such isolated populations are in a number of places in the region. Also noted were the snails *Powelliphanta spedeni spedeni*, *Rhytida otagensis* and *Phacussa stewartensis* from Pig Creek. These are all representative of eastern lower South Island.

LOWER VALLEY SLOPES 400-800 m

Fire use has considerably fragmented communities. However, the valley head areas (Futtah Gully, Pig and Thomson Creeks) and also the Mataura Faces area show advanced vegetation recovery. The lower burnt slopes of the Firewood Block have vegetation cover and a build up of litter. Litter cover provides important habitat for a large range of moths, flies, beetles and spiders. Some notable communities were found in the valley floor of Pig Creek. Patches of Matagouri on damp toe slopes also included a range of other shrubs and *Olearia bullata* (rich in herbivore and pollinating insects). These damp sites are probably the larval habitat for the large darning needle dragonfly *Uropetala carovi* seen in Pig Creek. Gravels with old stable sites are covered in red lichens and prostrate herbs. Short tussock (fescue and silver tussock) is scattered also. This represents one of the least modified communities present and is colonised by boulder butterflies *Boldenaria* n. sp. and copper butterflies *Antipodalycaena* n. sp. Also basking here were three cicada species; *Kikibia* ?species, *Maoricicada campbelli* and *M. otagensis*.

STREAMS

While sampling at this dry time permanent water was not apparent until well down valley slopes. Insects recorded characterised their environment. Stonefly *Cristaperla eylesi* and caddis *Tiphobiosis cataractae* characterise streams with steep channels on bedrock with cascades entering plunge

pools where leaf litter retention is poor. Gradients are less but stream power during floods remains high lower down. These channels have cobbled substrates with refuge for invertebrates but have low nutrient status and leaf litter retention. Aquatic carabid beetles in the forested reaches of the Firewood Block are of note. These lower reaches - lower Firewood Block, Futtah Gully, Pig Creek and Thomson Creek appear to be experiencing periodic disturbance from sediments brought down from actively eroding gullies. The invertebrate community structure is distinctive here for the region.

LARGE CARNIVOROUS LAND SNAIL *POWELLIPHANTA SPEDENI SPEDENI*

This is a second priority threatened species (Category B, Molloy and Davis 1994). The snails distribution is southern Eyre Mountains to Mount Benger across northern Southland in about 20 different sites. The populations in Pig Creek may form the northern limit of distribution. This limit may reflect the extent of glacial advances in the Eyre Mountains during multiple Quaternary glaciations. On this lease, as in some other places snails are found both in forest and in grassland. *P. spedeni spedeni* appears to be less common at low elevation throughout its range. It has been recorded at 580 m in Pig Creek and about 440 m in the forest in the Firewood Block where it is very abundant. This is the lowest elevation site known which is significant. The Firewood Block forest supports a low density of Spedens snail and the slopes with mature tussock and shrubland cover carry a high density. Presently, populations are only protected in the Eyre Forest Conservation Area.

2.5.2 HERPETOFAUNA

INTRODUCTION

Previous surveys in the central part of the Eyre Ecological District had recorded a rich diverse assemblage of lizard fauna in the gorge Burn area (Mark *et al.* 1989). The area was identified as a significant mainland site for lizard fauna in terms of diversity, density and altitude records (Mark *et al.* 1989). The present survey reporting on the herpetological values on Mataura Valley Station concentrated on the eastern part of the Eyre Ecological District.

METHODS

Searching consisted of lifting rocks and by scanning for moving or basking lizards. Crevices were searched for lizards and droppings.

RESULTS

Six species of lizards were found during the tenure review survey of Mataura Valley Station. All these species had been previously recorded from the central part of the Eyre Mountain Ecological District (Mark *et al.* 1989). In the Southland Conservancy Reptile Recovery Plan (Roberts and Jewell (draft) 1998) five of species are listed as "moderate" priority (*Oligosoma maccanni*, *O. nigriplantare polychroma*, *O. inconspicuum*, *Hoplodactylus* sp. "West Otago", *H.* sp. "Southern mini") and one species "high" priority (*O. chloronoton*) for conservation action.

- *Oligosoma maccanni* and *O. inconspicuum* were widespread and occurred in all habitats on Mataura Valley Station. They were most numerous along the ridge tops, scree, rock piles and tussock grasslands. *O. inconspicuum* occurred in two discrete colour forms - an unusual feature.

Oligosoma chloronoton was unusually abundant at high altitudes (as compared with other parts of inland Southland/Otago). The Eyre Mountain populations are highly distinctive from other Southland populations and appear to be a separate, undescribed species. However, it is unknown whether they are endemic to the Eyres or are more widespread. Samples collected will hopefully reveal more information.

- Only single specimens of *Hoplodactylus* sp. "West Otago", *H.* sp. "Southern mini" and *O. n. polychroma* were recorded.

Each species is still widespread in Otago and Southland where suitable habitat remains (ie, rock outcrops, tussocklands, native vegetation, scree slopes, etc). All the species are found on numerous sites managed by DOC. The significance of Mataura Valley Station's exceptional lizard community is in terms of diversity, exceptional abundance and the relatively intact environment in which they live. Diversity and encounter rates of lizards were high in areas of low modification (ie, no recent burning, light grazing) and between altitudes of 500-1446 m. Habitats of particular distinctiveness were scree slopes, tussock grasslands and sub alpine/alpine areas.

2.5.3 AVIFAUNA

Birds recorded during the inspection and known from recent historical records are:

NZ falcon	- a pair known to nest in lower Futtah Gully (R Parker pers. comm.). Previous records are in the Mataura River Valley just above the Robert Creek junction and also about Mullocky Gully.
Australasian harrier	- throughout
Bellbird	- in forest areas
NZ pipit	- throughout open areas
South Island tomtit	- in forest areas
Kea	- known historically, most recently in the early 1990s
Paradise shelduck	- common about pasture areas and the Mataura River Valley
White-faced heron	- one in the Mataura River and two in Futtah Gully
White-fronted tern	- known to have nested along the Mataura River in the past
Spur-winged plover	- regularly seen about river flats
Greenfinch	- several seen in Pig Creek
Redpoll	- common, especially in and about shrubland areas
Yellowhammer	- regularly seen about the lower slopes and valley floor along the Mataura River
Skylark	- common in the Mataura River Valley
Thrush	- several in Pig Creek
Starling	- flock of 30+ in Futtah Gully.

2.5.4 FRESHWATER FISH

INTRODUCTION

At the time of survey, river water levels were low and the lower braided reaches of Futtah Gully, Pig and Thomson Creeks were dry. A total of nine reaches or sites were sampled from four river systems within the property boundaries. One site from the mainstem of the Mataura River directly above and below the Cainard Road bridge at the entrance to the property was also surveyed to provide a context for the results.

METHODS

All sites were fished using a back pack DC "Kaianga" electric fishing unit. Reaches were sampled with a single pass into a stop net, set down stream. Individually stunned fish were also collected by hand net. Stream side observations of larval fish and abundance were also noted. Type specimens were collected and preserved in formalin for confirmation of species identifications. These preserved fish were sent to Dr R. Allibone (NIWA) for confirmation. All sampling was qualitative, with data recorded on NIWA database forms. Abundance was recorded as rare, occasional, common, or abundant, assessed in a standard 50 meter reach of river, where rare = 1 fish, occasional 2 - 5 fish, common 6-10 fish, and abundant greater than 10.

RESULTS

Fauna

A limited fauna of six fish species were recorded from the ten reaches sampled (Table 1). Flathead (*Galaxias* sp. (southern)) and roundhead (*Galaxias gollumoides*) galaxiids were the most widespread native fish species recorded at eight and six sites respectively. The introduced brown trout (*Salmo trutta*) was also commonly encountered and was present at six sites.

Futtah Gully (Site 1) contained the most diverse fauna with five species including the only record of long finned eels (*Anguilla dieffenbachii*) and upland bullies for the property. Upland bullies were also recorded in the mainstem of the Mataura River (Site 10).

Mullocky Gully, and the upper reaches of Thomson and Pig Creeks, contained healthy populations of round and flathead galaxiids. At the time of sampling, large numbers of juvenile fish and early life history stages were observed. In Pig and Thomson Creeks the populations were dominated by fish 70-80 mm in length with a few fishes up to 110 mm. Within Mullocky flathead galaxiids up to 146 mm were recorded in addition to numerous smaller size classes.

The upper reaches of Mullocky Gully was numerically dominated by round head galaxiids. Flathead galaxiids were present but became more common in the middle reaches as the roundhead numbers dropped off. Below a small waterfall two trout (one 269 mm in length) were recorded in the plunge pool. Thereafter roundhead galaxiids were uncommon, whereas flatheads were still relatively abundant and the first alpine galaxiids were recorded. At the very lower reaches (site 9) roundhead galaxiids were not recorded, alpine galaxiids were abundant and flatheads relatively common. Small numbers of 100-120 mm length trout were also recorded.

Fish distributions within Pig Creek were not as expected. Below bush line the river opened out into a gravel fan outwash area, where the river was a shallow (@ 10 cm) riffle/run system with substrate dominated by gravels and limited fish cover (Site 5). Trout were relatively uncommon whereas flathead and alpine galaxiids were common and abundant respectively. Directly inside the bush line, the river changed to a deeper (@ 15-20) almost step stair system of pools, run/riffle/rapid complexes. Alpine and flathead galaxiids were occasional or rare and trout more abundant. However, further into the forested sections of Pig Creek as far as site 4, only trout were recorded. The river here was constricted, and a complex of pools, rapid runs and riffles with numerous small shoots or falls, one up to 2m high. One trout (280 mm in length) was recorded. These fish were able to negotiate barriers, perhaps at times of higher flows. In a pool at the downstream end of a small side tributary, a healthy population of roundhead galaxiids were observed. Ten to twelve fish were observed in this 1m by 2m pool, the largest was 126 mm in length. The tributary was not connected to the mainstem due to a subsurface flow. Finally

bove the forested gorge area the river branched and the southern tributary flowed over an open gravel outwash plane. Substrate was dominated by cobbles and gravel and an abundant roundhead and flathead galaxiid community was present. No trout were observed. This suggests that there is a more significant fish barrier present in the upper gorge area of Pig Creek, above sites 3 and 4.

DISCUSSION

The fish assemblages within Futtah Gully, although the most diverse and species rich were largely what would be predicted from tributaries in the Mataura River catchment. This site contained the only upland bullies and long finned eels recorded on the property. However, both species are widespread and are present in the main stem of the Mataura River, although the eel (*A. dieffenbachii*) was not recorded from the limited sampling undertaken in this survey.

Sympatric populations of the two non migratory galaxiids (round and flathead galaxiids) is unusual (Allibone pers. comm.). Larger populations of these two species were recorded in Upper Pig Creek, Thomson Creek and Mullocky Gully and these systems are therefore more significant. The absence or low numbers of trout within the latter creeks ensures that these populations are likely to be more secure than Futtah Gully which also contained a healthy trout population.

The longitudinal distribution of these two species differs from similar morphological forms that are recorded in the Taieri River system by Allibone 1996. Roundheads were more common upstream of flatheads on Mataura Valley Station, which is opposite to that recorded in the Taieri. In addition, *G. gollumoides* was previously only known from Stewart Island, where it favours swamps and low gradient streams, habitats very different from those encountered on Mataura Valley Station (McDowall and Chadderton 1999).

Given the recent recognition of a number of new species within the "*Galaxias vulgaris*" complex the significance of these populations is uncertain, and in the interim they should be considered to represent significant genetic diversity. Genetic characteristics indicate that the flathead fish are an undescribed species of galaxiid (J Waters, University of Otago).

The sympatric distributions of three non migratory species of galaxiids, alpines, flatheads and roundheads within Mullocky Gully is very unusual and presently unparalleled elsewhere in Central Otago and Southland (Allibone pers. comm.). Hence of all the creeks on the property, this system appears to be the most significant. A similar community may exist at the bottom of Thomsons Creek just as it flows onto the braided outwash area. However, the unusual community in Mullocky Gully may arise from its short nature, low trout population, and regular immigration of alpines galaxiids from the main Mataura, which would be absent in Thomsons Creek.

Table 1. Species present, relative abundance and site locations of all fish taxa collected from Mataura Valley Station, January 1999.

Site numbers	1	2	3	4	5	6	7	8	9	10
<i>Galaxias gollumoides</i> (round heads)	O	A	A			O	A	C		
<i>Galaxias</i> sp. (southern) (flatheads)	C	C			C	A	C	A	C	C
<i>Galaxias paucispondylus</i> (alpine galaxiid)					A			O	A	A
<i>Gobiomorphus breviceps</i> (upland bully)	A									O
<i>Anguilla dieffenbachii</i> (longfinned eel)	O									P
<i>Salmo trutta</i> (brown trout)	C			C	C			O	O	C

R = rare (1);
 O = occasional (2-5)
 C + common (6-10);
 A = abundant (>10)
 P = present but not recorded this survey

Site names:

1. Futtah Gully
2. Pig Creek (Upper)
3. Small tributary of Pig Creek. Not connected)
4. Mainstem Pig Creek. Middle of Bush
5. Lower Pig Creek
6. Thompsons Creek
- 7-9. Mullocky Gully
10. Mataura River (Around road bridge)

RELEASED UNDER THE
 OFFICIAL INFORMATION ACT

2.5.4 PROBLEM ANIMALS

Pest animals recorded were:

- | | |
|------------|------------------------------------------------------------------------------------------|
| Rabbits | - an apparently increasing population exists on the bed and margins of the Mataura River |
| Hares | - present in low numbers, especially about flats – mid slopes |
| Ferrets | - present throughout suitable habitat |
| Feral cats | - observed in lower Futtah Gully |

Possums and red deer are known to be present – the former in moderate numbers very much throughout and the latter in low numbers, in forest areas. Two fallow deer were seen on the ridge above the Firewood Block.

SIGNIFICANCE OF THE FAUNA

Invertebrate Fauna

Mataura Valley Pastoral Lease had a range of significant invertebrate values. Places with the highest inherent value include alpine areas, beech forest remnants and other areas with little natural woody vegetation such as riverine lichen terraces, grass and shrub margins of rock talus and gravel pavement, eg, lower sections of Thomson and Pig Creeks.

Species of note include the following:

- | | |
|--------------------------------------|----------------------------------------------------------------------------------------------------|
| <i>Ascerodes prochlora</i> | - at eastern limit of distribution |
| <i>Mecodema chiltoni</i> | - Category C threatened species |
| <i>Powelliphanta spedeni spedeni</i> | - Category B threatened species, at northern limit of distribution, and lowest recorded elevation. |

Herpetofauna

An extremely diverse lizard fauna involving six species with exceptional abundance. One species, *Oligosoma chloronotoa* is ranked as a high priority for conservation action in the Southland Conservancy Reptile Recovery Plan. Habitats of particular importance for lizard conservation are scree slopes, tall tussocklands and subalpine/alpine areas.

Avifauna

The property has a full complement of rangeland birdlife. Species of note are New Zealand falcon and kea, both Category B threatened species (Molloy and Davis, 1994). There is evidence to suggest that falcon breed on the property. Several forest bird species are at their north-western distributional limits, eg, bellbird and tomtit.

Freshwater Fish

The presence of sympatric populations of roundhead and flathead galaxiids is unusual. Large populations of these two species were found in Upper Pig Creek, Thomson Creek and Mullocky Creek, making these systems significant. They are secure populations due to the absence of trout.

The longitudinal distributions of these species is not typical.

Mullocky Creek contains sympatric distributions of these two species and the alpine galaxiid and hence this system appears to be the most significant on the property.

Roundhead and flathead galaxiids are Category I threatened species (Molloy and Davis, 1994), ie, species about which little information exists but which are considered threatened.

2.6 HISTORIC

There is no information available on this resource. As far as is known, there are no historic or archaeological sites located on the property.

2.7 PUBLIC RECREATION

2.7.1 PHYSICAL CHARACTERISTICS

Mataura Valley Pastoral Lease is situated between the Mataura River and Eyre Creek in the southeast Eyre Mountains. The property rises to an elevation of 1665 m and largely comprises three valley systems that drain into the Mataura River. Extensive natural environment lands occur above 900 m, that are suited for recreational use.

2.7.2 PUBLIC ACCESS

MARGINAL STRIPS

Marginal strips exist or are deemed to exist along the frontage with the Mataura River and along both banks of Thomson and Pig Creeks in the lower parts of these minor catchments.

LEGAL ROADS

Only one major legal road exists within the property, which is an extension of Cainard Road. The part of this road within Mataura Valley Station is unformed and in places supplants the marginal strip along the Mataura River frontage.

The road ends in the Mataura River bed near the confluence with Robert Creek.

There is also a short piece of unformed legal road contained within freehold Section 47, which does not extend beyond the boundaries of this section.

NB: Public access to the Eyre Mountains is usually obtained via the existing public access easement through Cainard Farm (Landcorp property) on the true left of the Mataura River.

2.7.3 ACTIVITIES

There are no authorised commercial recreation activities on the property.

The main private recreational activity is angling on the Mataura river. Access is usually via the riverbed or marginal strip and angling is usually confined to the river below the Bowels of the Earth Confluence.

Occasionally tramping parties heading for the Eyre Mountains Conservation Area upstream may pass through part of the property, ie, the flats alongside the Mataura River.

Some very limited hunting for deer may occur on the back of the property.

Overall the property receives minimal recreational use, although there is potential for limited tramping use as a through route to the Eyre Mountains mostly and mountain bike use.

Pig Creek in itself is a pleasant tramping destination.

PART 3

3.1 CONSULTATION

The property was commented on by public interest groups at an early warning meeting on 3 December 1998. Key points raised were:

- The property adjoins the recreationally important Eyre Mountains.
- Access up the Mataura River Track (to the north-west corner of the property) is important for angler access and for access to the Eyre Mountains.
- NGOs request the pastoral lease and the former POL be reviewed together. Major concerns were expressed about the sustainability of pastoral farming LUC Class VIII land on both parcels. Such land should become conservation land and probably retired from grazing.
- The Eyre Mountains RAP partly located on the pastoral lease appears to have significant inherent values.
- A landscape and vegetation assessment of the property is needed.

A written record of the above interests has been supplied by Mike Floate on behalf of Federated Mountain Clubs and Bruce Mason on behalf of Public Access New Zealand. FMC has also supplied a Preliminary Report on the Recreational and Related Significant Inherent Values of Mataura Valley Station.

Copies of these supplied written materials are attached.

3.2 REGIONAL POLICY STATEMENTS

3.2.1 SOUTHLAND REGIONAL POLICY STATEMENT

The Regional Policy Statement for Southland provides a framework for all of Southland's significant resource management issues. It does not contain rules. District plans shall not be inconsistent with the Regional Policy Statement. In respect of natural values the Regional Policy Statement includes the following objectives and policies:

Objectives

- To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna within Southland where this will maintain and enhance biodiversity of indigenous ecosystems.

To maintain and enhance the biodiversity of indigenous species within the Southland Region.

Policy:

Identify and encourage the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna which maintain or enhance the biodiversity of indigenous ecosystems within Southland.

It also includes the following objectives and policies in respect of natural features and landscapes.

Objectives

- To protect outstanding natural features and landscapes of the region.
- To avoid remedy and mitigate adverse effects on ecosystems which contribute to the diversity of landscapes in the region.

Policies:

Identify and encourage the protection of outstanding natural features and landscapes within Southland.

- Promote, and where appropriate provide for the protection of significant trees, areas of indigenous forests and scrublands, groups of trees, wetlands and tussocklands which contribute to the diversity of landscapes within the region

3.3 DISTRICT PLANS (MATTERS OF NATIONAL IMPORTANCE)

3.3.1 SOUTHLAND DISTRICT

The Resource Management Act 1991 requires territorial and regional authorities to take into account section 6 *Matters of National Importance* when exercising their functions, powers and duties under the Act.

The Southland District Council has recently made their District Plan operative in part. However, the *Heritage* section of the plan, which addresses the principles of section 6 in the Resource Management Act 1991, including protection of significant habitats of indigenous fauna and areas of significant indigenous vegetation is still the subject of outstanding references by the Minister of Conservation and other parties. These outstanding references by the Minister of Conservation and other parties. These outstanding references were the result of the proposed plan having few rules to act as a trigger for protection of values of significance to the department in areas such as the area under review. The appeal process for the *Heritage* section has been in effect for over three years and is unlikely to be resolved in the near future. Until the references are resolved there are almost no rules that could act as a trigger for protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna for this area. The exception is that a forestry plantation in excess of at least 100 hectares requires a landuse consent.

3.4 CONSERVATION MANAGEMENT STRATEGIES (CMS)

3.4.1 SOUTHLAND CONSERVANCY

The Eyre Mountains are identified as a significant landscape unit in the Southland Conservancy CMS. Mataura Valley Station is located within the Eyre Mountains landscape unit.

ECOLOGICAL VALUES

The vegetation of this unit is dominated by tussock grasslands, with large areas of beech forest and alpine communities. Much of the natural character is intact, particularly the forest and higher altitude communities. There is a high degree of endemism of indigenous plant species, and a large number of threatened species which are reliant on tussock habitats. Mataura Valley Station hosts the endemic plant species *Ranunculus scithalis* and *Hebe biggarii*, threatened plant species *Ranunculus haastii* var. *piliferus*, *Pimelia popellwellii*, *Uncinia purpurata* and *Alepis flavida*. Threatened animal species include the giant snail *Powelliphanta spedeni spedeni* and bird species, kea and New Zealand falcon.

Ecological Objectives Relevant to Mataura Valley

- *To investigate options for a conservation park for the Eyre Mountains and adjoining land administered by the department and implement if feasible.*
- *To survey for new galaxiid species in the subalpine areas in the northeast of this unit.*
- *To monitor and/or inspect the population status of endemic and other threatened plant species.*

RECREATION AND TOURISM

The Eyre Mountains are possibly the most under-utilised backcountry recreation area in Southland. They provide for extensive backcountry and remote recreation opportunities.

Public access rights are via an easement into the Mataura Valley.

There is considerable potential for the area as the forested and open valleys and open tops are attractive and the terrain is easily navigated.

The unit plays an important role in the spectrum of recreation opportunities available in Southland, particularly as it is easily accessible but remote, with low levels of facilities and use and can cater for those people desiring a more traditional style New Zealand backcountry recreation opportunity.

Opportunity Objectives

- *To provide opportunities for visitors to explore readily accessible mountain lands with only basic facilities. An area utilised for low impact recreation by low numbers of self reliant parties.*
- *To provide opportunities for recreational activities involving the use of vehicles (including mountain bikes) while avoiding possible conflicts with other recreation opportunities available in the area.*

The following Implementation statements apply to meeting these objectives:

- mountain biking will be allowed on all formed roads.
- In order to protect the quiet nature of the area and to advance an atmosphere of remoteness, aircraft landings will only be allowed for management purposes.
- In order to maintain the current low level of use and remote opportunities provided in the Eyre Mountains, no concessions will be granted.

PART 4

4.1 ADDITIONAL INFORMATION

4.1.1 REFERENCES

- Allibone R M, 1996 : Ecology and Distribution of the Taieri River Galaxiids. Unpublished PhD Thesis, University of Otago
- de Lange P J, Heenan P B, Given D R, Norton D A, Ogle C C, Johnson P N, Cameron E K, 1999 : Threatened and Uncommon Plants of New Zealand. *New Zealand Journal of Botany* 37 Number 4.
- Druce T, Simpson N, Rance B and Rogers G, 1993 : Indigenous Psilopsids, Lycopods, Quillworts, Ferns Gymnosperms and Flowering Plants of the Mountains of Inland Otago and North Southland. *Unpublished report.*
- Eagle A, 1982 : Eagle's Trees and Shrubs of New Zealand in Colour. *Collins, Auckland*
- Geological Society of New Zealand Miscellaneous Publication 99, (1998). Inventory and Maps of Important Geological Sites and Landforms in the Otago Region.
- Mark A F, Dickinson KJM, Patrick B H, Barratt BIP, Loh G, McSweeney G D, Timmins S M, Simpson N C and Wilson J B, 1989. An ecological survey of the central part of the Eyre Ecological District, northern Southland, New Zealand. *Journal of the Royal Society of New Zealand*, 19(4), 349-384.

- McDowall R M and Chadderton W C, 1999 : *Galaxias gollumoides* (Teleostei Galaxiidae), a new fish species from Stewart Island, with notes on other non-migratory freshwater fishes present on the island. *Journal of Royal Society of New Zealand*, Vol. 29, No. 1, pp 77-88.
- Molloy J and Davis A (1994) : Setting priorities for the conservation of New Zealand's threatened plants and animals. Department of Conservation: Wellington. 64 pages.
- Roberts A and Jewel T, 1998 : Recovery Plan for Reptiles in Southland Conservancy (draft). DOC Southland Conservancy
- Turnbull, I M, 1999 : Geology of South-eastern Eyre Mountains, relevant to Tenure Review. Conservancy Advisory Science Note ##. Department of Conservation, Wellington (in press).

4.1.2 ATTACHMENTS

- i Department of Conservation (1996) Southland Conservancy Revised Draft Mainland Southland/West Otago Conservation Management Strategy. pp 273-278.
- ii Floate M, Federated Mountain Clubs. Notes on NGOs' Early Warning Meeting, December 1998.
- iii Floate M, Federated Mountain Clubs. Preliminary Report on Recreational and Related Significant Inherent Values, Mataura Valley Station, April 1999.
- iv Mason B, Public Access New Zealand. Notes on NGOs' Early Warning Meeting December 1998.

4.2 ILLUSTRATIVE MAPS

- 4.2.1 Topo/Cadastral
- 4.2.2 Values - Landscape/Landform
- 4.2.3 Values - Vegetation/Fauna
- 4.2.4 Values - Freshwater Fish

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Physical Description

This landscape unit is centred on the steep and dissected Eyre Mountains. The altitude climbs from approximately 600m in the narrow valleys to 2050m on Jane Peak. There are both natural screes and man-made erodible areas with ultramafic soils found in West Dome. The climate is cool temperate, with a rainfall of 800-2400mm and snow may lie for several weeks above 1000m.

The vegetation of this unit is dominated by tussock grasslands, with large areas of beech forest and alpine communities. Much of the natural character is still intact, particularly the forest and higher altitude communities. There is a high degree of endemism, meaning the existence of species in this unit which are found nowhere else in New Zealand.

Generally the valley floors, lowlands and gentle slopes have been modified by pastoral use. Some extensive areas of red tussock remain around West Dome and the Oreti Valley.

There are extensive forest areas in the south and forest remnants further to the north. This forest is mainly mountain beech. There are shrublands scattered throughout the unit. Some of these shrublands represent a successional stage to beech forest, if they are not burnt.

This unit is part of the Eyre Ecological District.

Areas Managed By The Department

A little under half of this landscape unit comprises lands administered by the Department. Several of the areas contain intact sequences of vegetation through a variety of ecosystems. The largest protected area is Eyre Forest Conservation Area. Other significant conservation areas include the upper Eyre Creek, land at the head of the Mataura catchment, West Dome, south-western Eyre Mountains and Ashton Flats.

At present a large area of unallocated Crown land is in the process of being transferred to the Department. It includes the unshaded land between the two major conservation areas identified on the map. The area contains significant natural values, and will enable a more holistic management regime for the Eyre Mountains to be implemented.

Ecological Management

Ecological Values

The Eyre Mountains are very important and contain a number of features special to this unit. There are several local endemic species including plants *Brachyscome "Westdome"*, *Carex unciifolia*, *Celmisia thomsonii*, *Hebe biggarii*, *Ranunculus scritchalis*, *Aciphylla spedeni*, *Myosotis "Mossburn"*, *Celmisia philocremna*, and

Celmisia spedeni. The vegetation represents a transition between wet Fiordland and dry Central Otago.

Around Eyre Creek and the upper Mataura River there are extensive and diverse alpine communities and large areas of snow tussock grassland. Eyre Creek has significant natural scree communities and a large diversity of shrublands. Apart from the endemic plants there are a number of other threatened plant species which are reliant on alpine conditions. These include *Celmisia hookeri*, *Cheesemania wallii*, *Epilobium purpuratum*, *Hebe dilatata*, *Pimelea poppelwellii*, *Ranunculus haastii* subsp *pilliferus* and *Senecio dunedinensis*. Intact altitudinal sequences are evident in Eyre Forest, Eyre Creek and the upper Mataura River valley. The Eyre Forest is significant in that it contains large tracts of unmodified indigenous forest.

This unit contains a large number of threatened species many of which are reliant on tussock habitats. Some not mentioned include plants *Uncinia purpurata*, *Ourisia spathulata*, *Myosotis "glauca"*, and *Deschampsia caespitosa*, the green-backed skink and the snail *Powelliphanta spedeni spedeni*. The only population of rock wren known to exist outside the Southern Alps is found in this unit. Yellowheads and the mistletoe *Alepis flavida* are found in beech forest, other bird species such as NZ falcon, NZ pigeon, kea, banded dotterel and yellow-crowned parakeet, and the mistletoe *Neostylus micranthus*, are found in a number of habitats. The large beetle *Mecodema cbiltoni* has been found under dead trees in the Irthing Valley. The priority A threatened species *Olearia hectori* is found in primary shrubland off lands administered by the Department in this unit.

At West Dome there are large areas of red tussock and ultramafic soils which contain plant species restricted to these types of soils.

Ecological Issues

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

An investigation of conservation park status for the Eyre Mountains has been proposed. There are a number of separate pieces of land in the Eyre Mountains that are all administered as conservation areas. Managing this area as one unit will help ensure integrated management. The special features such as the high level of endemism and ultramafic rocks, would be given more recognition.

Other smaller protected areas in the Eyre Mountains fall into the Otago CMS area, but these could be incorporated into the Conservation Park. Management co-ordination is necessary, particularly for pest control.

Seasonal grazing still occurs in the valley floor of Eyre Creek in the Eyre Valley. Monitoring is undertaken to assess the effects of exotic grasses in the tussock grasslands. Burning of tussock and oversowing occurs outside of lands administered by the Department. Current evidence suggests that limited grazing may be necessary in some lowland areas to control the spread of exotic grasses. In the higher areas it was determined that grazing was not necessary to control exotic grasses and was in fact having a detrimental effect on the tussock. Grazing of these areas has ceased.

At Mount Bee, exotic tree species including *Pinus contorta* were planted for land stabilisation on natural scree communities. Some of the species planted have the ability to spread into indigenous habitats. It can be argued that these trees were not necessary

for stability as the scree slopes are a natural feature of this unit. It is generally agreed that these trees should be removed.

The University of Otago has been investigating new galaxiid species including those from the Taieri river catchment. It is suspected that they will be found in some areas adjoining the Otago CMS area. These areas have been identified as a priority for survey. This includes the sub-alpine areas of the north eastern regions of this unit.

Generally, the Eyre Mountains are relatively weed free, though control is undertaken in some areas. At West Dome control of gorse and broom is undertaken, and at Mt. Bee control of *Pinus mugo* and broom is undertaken.

Agricultural development and burning of tall tussock grasslands poses the greatest threat to *Powelliphanta spedeni spedeni*. There is a need to survey areas to ascertain the location of these snails and to assess their population status.

Biological Objectives

To continue monitoring the effects of grazing on lowland tussock systems on lands administered by the Department. Should continued degradation occur cease all grazing.

To investigate options for a Conservation Park for the Eyre Mountains and adjoining land administered by the Department and implement if feasible.

To survey for new galaxiid species in the sub-alpine areas in the north east of this unit.

To survey habitats and populations of the snail *Powelliphanta spedeni spedeni*.

To remove the exotic trees at Mount Bee.

To monitor and/or inspect the population status of endemic and other threatened plant species.

Resource and Estate Use

By three grazing concessions have been granted in this unit. One is along the creek, and the other two are located in the Oreti Forest (refer 5.6).

A communication facility is located on land administered by the Department at Mt. Bee. This is unlicensed (refer 5.11).

Historic Conservation

Ch Hut in the Upper Mataura Valley is the only actively managed site on lands administered by the Department in this landscape unit. It dates from at least 1913 and was used as a shelter for musterers from Fairlight and Mount Nicholas Stations. This use continued until recently. It is one of the oldest mustering huts in Southland. The management of this site is outlined in Part 3.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

There are no other known protected sites on lands administered by the Department in this unit.

Recreation and Tourism

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Visitor Use

The Eyre Mountains are possibly the most under-utilised backcountry recreation area in Southland. Although there are several huts and a system of marked routes, largely as a result of earlier wild animal control operations, few hunters and trappers make use of the area. Some huts receive as few as 4 visitors per year. Low numbers of red deer, chamois and wild pig are found in the area.

Most major catchments have legal access; elsewhere, access is over private roads or runhold land. There is some local use of the periphery for 4WD. Mount Bee hut can be reached by off-road vehicles and has potential for access by mountain bike.

A picnic and camping area on a riverside clearing in the Lower Irthing receives use mainly from local people.

Nearby West Dome provides a marked contrast to the Eyre Mountains. A road runs around West Dome. Some use has been made of the area for trail riding, though on the upper sections of the Dome there have been problems with use in fragile areas off the road. Off-road use will be actively discouraged.

Recreation Facilities

Eight marked routes are currently maintained in this unit.

4WD Tracks	Marked Routes
Five Rivers Station - Cromel Hut Irthing Rd - Mount Bee Ridge	Cromel Hut - Acton Junction Acton Hut - Island Hut Cromel Branch Hut - Cromel Bivvy Irthing Valley Track Mount Bee - Irthing Bivvy Acton Hut - Cromel Junction Mount Bee - Cromel Branch Hut Cromel Hut - Acton Hut

Fourteen huts and shelters administered by the Department are scattered throughout the Eyre Mountains with one or more in every catchment, some within a few hours of road ends. Other tracks and huts will be signposted as not being maintained. Offers by local clubs or groups to maintain these facilities will be considered. Huts not being maintained may be removed or relocated to other areas only after public consultation.

Category 4 (Basic) Huts	Bivvies / Shelters
Cromel Hut Mount Bee Huts Complex	Irthing Bivvy Mansion Bivvy

Cromel Catch Hut	Cromel Bivvy
Oreti Hut	Lincoln Bivvy
Shepherds Creek Hut	Windley Bivvy
Island Hut	
Windley Hut	
Beech Hut	
Ashton Burn Hut	

BASED UNDER THE
INFORMATION ACT

A small picnic and camping area is located on a riverside clearing in the Lower Irthing. This is maintained by the Lumsden Lions Club in agreement with the Department. Access is by an all weather vehicle track off Irthing Road.

Recreation Opportunities

The Eyre Mountains provide for extensive backcountry and remote recreation opportunities. The area is easy to navigate and allows good opportunities for inter-valley and open tops walking and camping. Roads through bordering exotic forests enable good all-weather access to the Windley and Acton Catchments.

As the Eyre Mountains are dry by Southland standards the opportunity to develop a good mountain bike track may exist, though currently the best opportunity is along the Mount Bee access and in bordering production forests. Current access rights are via easements in the Cromel, Acton, Eyre Creek and Mataura Valleys and on West Dome Road.

There is considerable potential for the area as the forested and open valleys and open tops are attractive and the terrain is easily navigated.

Along with the Takitimu and Snowdon Mountain areas the Eyre Mountains have sometimes been suggested as areas to promote for absorbing some of the pressure on high use areas in Fiordland and Mount Aspiring National Parks. This fails to acknowledge the important role they play in the spectrum of recreation opportunities available, particularly their importance as easily accessible but remote areas, with low level of facilities and use, and their role in catering for those desiring a more traditional style New Zealand backcountry recreation opportunity. In the Eyre Mountains an important opportunity exists to maintain easily accessible lowland areas relatively free of marked routes. It is for these reasons that concessions will not be allowed in this unit.

The Southland Fish and Game Council identifies the upper reaches of the Mataura River as having good fishing opportunities and high game bird numbers.

Opportunity Objectives

1. To provide opportunities for visitors to explore readily accessible mountain lands with only basic facilities. An area utilised for low impact recreation by low numbers of self reliant parties.
2. To provide opportunities for recreational activities involving the use of vehicles (including mountain bikes), while avoiding possible conflicts with other recreation opportunities available in the area.

3. To provide an informal picnicking and camping site beside the Irthing stream.

Implementation

1. The more remote huts were once interconnected by well maintained tracks that have generally become overgrown with the end of wild animal control operations. These huts are rarely visited and the potential high cost of their upkeep is difficult to justify. Therefore the Department will put its resources into maintaining five tracks as marked routes, with huts provided for overnight accommodation. They are those in the Acton, Cromel and Irthing Valleys. Beech Hut in the Mataura Catchment will be maintained for its historic value and the Shepherds Creek Hut shall be maintained because it is an easily accessible location. The other seven huts and bivvies will receive only minimal maintenance. Assistance will be sought from user groups to keep these facilities in good repair. Priorities for resourcing will be reviewed if there is a marked increase in use. No increase in track or hut facilities will be allowed.

The Southland Tramping Club has assisted with the maintenance of routes in this area especially the marked route from the Acton to Island Hut.

2. The Windley Burn Catchment will be provided as an area free of marked routes.
3. Mountain biking will be allowed on all formed roads. Specifically, access to Mt. Bee Hut, along Mt. Bee ridge and around West Dome by mountain bikes will be allowed.
4. In order to protect the quiet nature of the area and to advance an atmosphere of remoteness aircraft landings will only be allowed for management purposes. This is in contrast to most other areas managed by the Department around the Wakatipu region to where helicopter access is allowed.
5. Horse riding will be allowed in the Eyre Creek and Upper Mataura Valley only. No other areas may be used. Stock holding paddocks at Shepherd Creek Hut should be used.
6. In order to maintain the current low level of use and remote opportunities provided in the Eyre Mountains, no concessions will be granted.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

LAND ADMINISTERED BY THE DEPARTMENT - EYRE

CONSERVATION UNIT NUMBER	LEGISLATIVE CODE	NAME	PRIVILEGE	AREA (ha)
CONSERVATION ACT 1967, SECTION 62				
E420001	CA62	EYRE MOUNTAINS (CAINARD)		7953.7
E430002	CA62	EYRE MTNS (EYRE FOREST)		30
E430003	CA62	EYRE MTNS (EYRE CREEK)	Grazing (part)	11878
E430004	CA62	EYRE MTNS (ORETI FOREST)	Grazing	488
E430005	CA62	EYRE MTNS (EYRE FOREST)		24373
E430006	CA62	EYRE FOREST (COAL HILL)		2375
E430007	CA62	EYRE MTNS (WEST DOME FOREST)		3643.5
E430010	CA62	JOLLIES HILL PASS		0.8
E430064	CA62	EYRE MTNS (ORETI FOREST)	Grazing	480
E430065	CA62	MATAURA VALLEY		654
RATION RESERVE RESERVES ACT 1977				
E430007	RARR	ACTON STREAM REC RESERVE		5.7429
MISCELLANEOUS RESERVES, RESERVES ACT 1977				
E430014	RALP	REFUSE TIP		0.2024
MARGINAL STRIP, CONSERVATION ACT 1967				
E430032		MATAURA RIVER, THOMSON CREEK		
E430022, 45		MATAURA RIVER		
E430044, 46, 48		MATAURA RIVER		
F430011, 12		MATAURA RIVER		
E430034		PIG CREEK/MATAURA		
E430038		QUOICH STREAM		
E430035, 36		EYRE CREEK		
E430067		EYRE CREEK		
E430031		IRTHING STREAM		
E430030		ACTON STREAM		
E440057		ACTON STREAM		
E430025, 26		WINDLEY RIVER		
E430024		ORETI RIVER		
E430028		ORETI RIVER		
E430002		ROBERT CREEK		
E430033		ROBERT CREEK		
E430034		PIG CREEK/MATAURA		

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

NGOs Early Warning Meeting OTAGO/SOUTHLAND December 1998

Notes from Mike Floate on behalf of FMC

MATAURA VALLEY Fairlight, Mataura Valley, Southland

Runholder:

Phone:

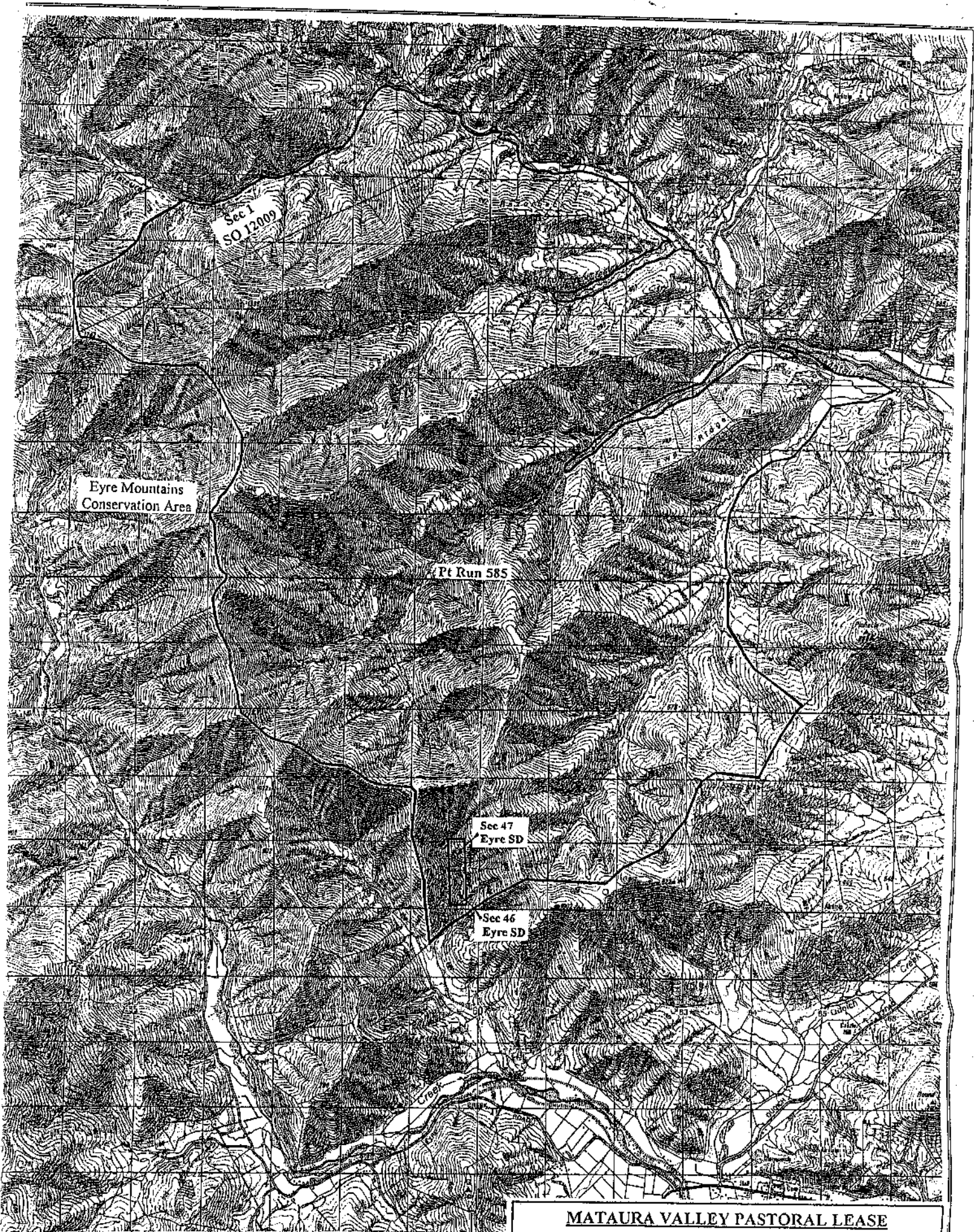
K-F Contact: Phil Murray

Map Sheet(s): E 43

The following features are of particular interest/importance for current and potential recreational users of this property:-

- This property was originally part of the large Fairlight Station in the upper Mataura. It lies to the south of Greenvale which was discussed above, and like Greenvale, lies close to the recreationally important Eyre Mountains.
- Access up the Mataura River Track (to the north west corner of the property) is important for the extensive use of the river made by anglers, and for access to the Eyre Mountains. Public access needs to be secured through tenure review.
- It is understood that both the pastoral lease and a former POL will be considered together. It is also understood that the land included in the POL is similar geologically to parts of Mid Dome and the Henroost Block of Cattie Flat Station (Southland). Both these areas are severely erosion prone and are classified LUC Class VIII. Pastoral farming on such land is unsustainable. The affected areas on Mataura Valley Station (which should be inspected and assessed by a site inspection) should probably be retired from grazing and be allocated as conservation land.
- Little is known of the conservation values on the property but an area in the north west corner appeared to have values to commend it as RAP when observed from across the Mataura River. The significant inherent values (including landscape and vegetation) of Mataura Valley need to be assessed by site inspection.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

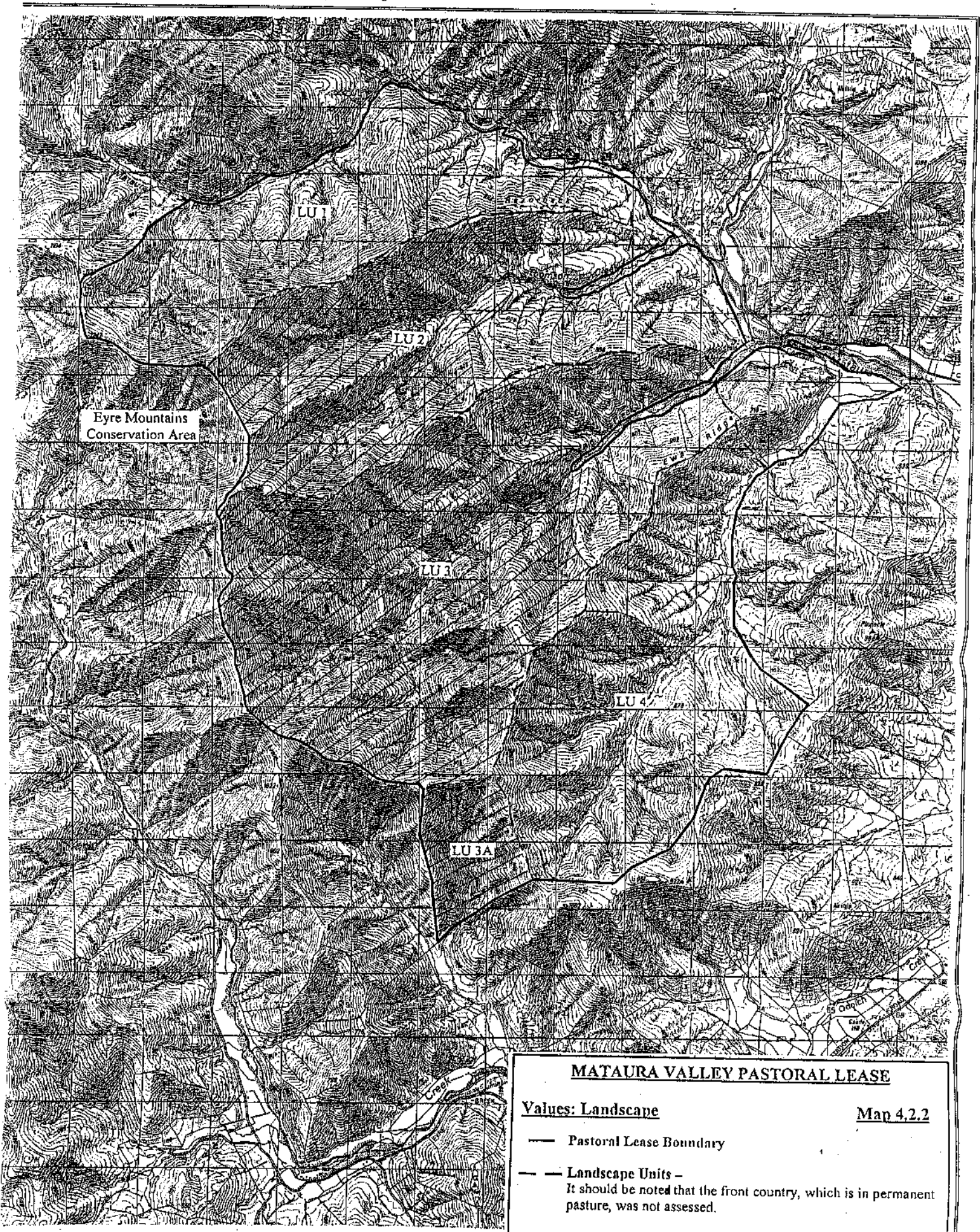


MATAURA VALLEY PASTORAL LEASE

Topographical/Cadastral

Map 4.2.1

— Pastoral Lease Boundary



MATAURA VALLEY PASTORAL LEASE

Values: Landscape

Map 4.2.2

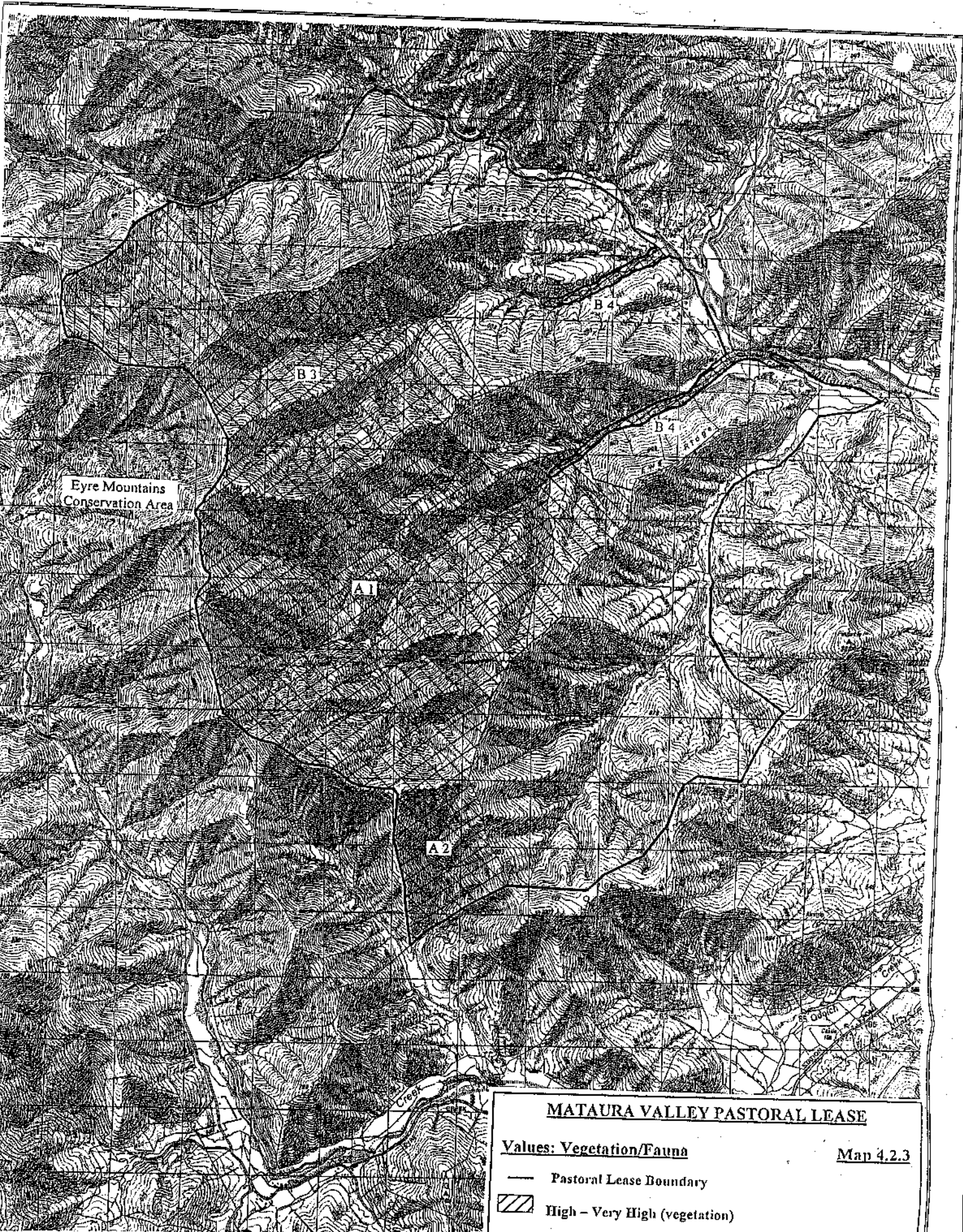
— Pastoral Lease Boundary

— Landscape Units —

It should be noted that the front country, which is in permanent pasture, was not assessed.






Areas which are fully representative of the eastern Eyre Mountains and generally make a positive contribution to the natural character of the South Island High Country's landscape.



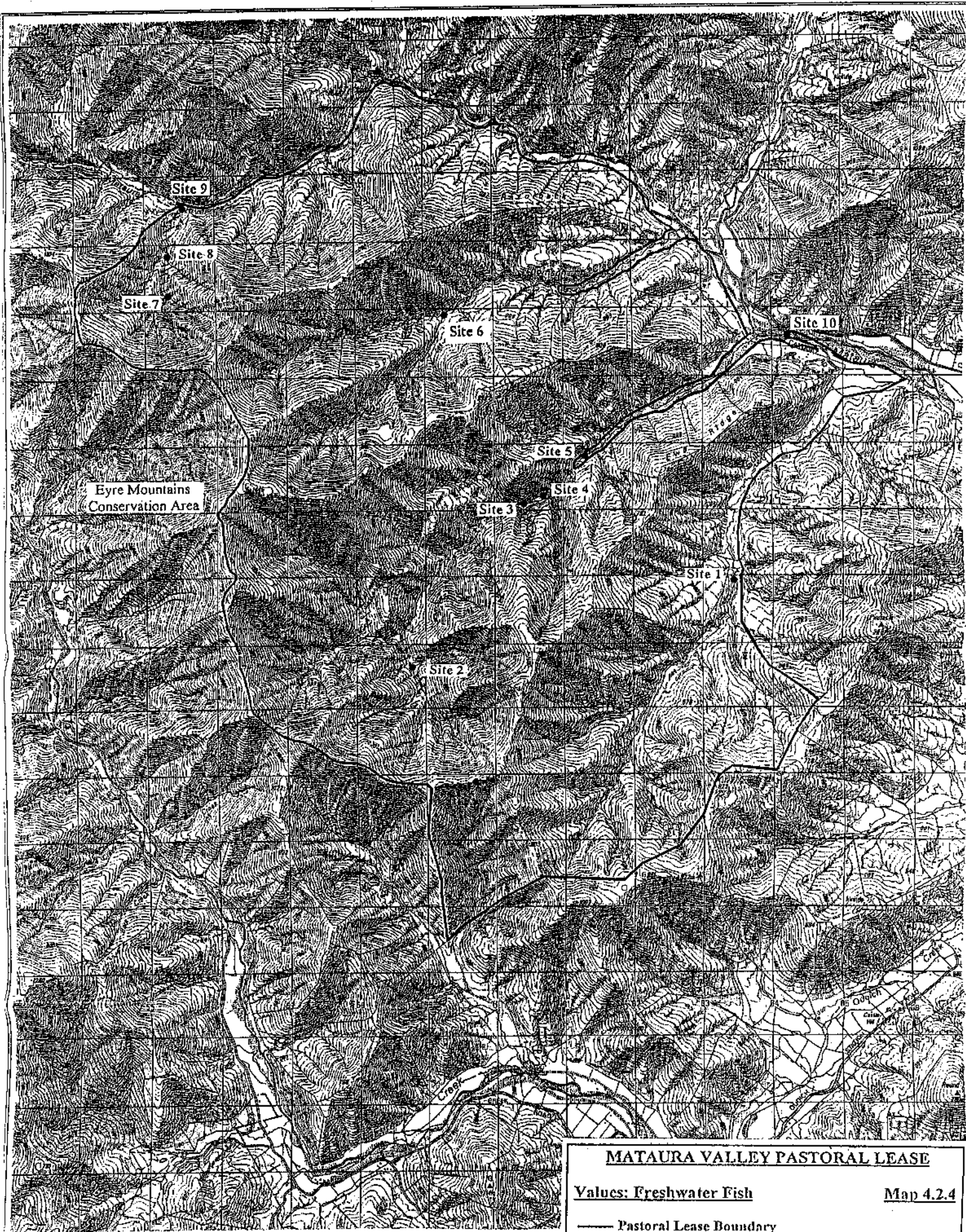
MATAURA VALLEY PASTORAL LEASE

Values: Vegetation/Fauna

Map 4.2.3

- Pastoral Lease Boundary
-  High - Very High (vegetation)
-  Part Eyre Mountains RAP
-  High (invertebrate fauna/herpetofauna)

RELEASED UNDER THE
OFFICIAL INFORMATION ACT



MATAURA VALLEY PASTORAL LEASE

Values: Freshwater Fish

Map 4.2.4

— Pastoral Lease Boundary

● Fishing Sites 1 - 10

▨ Significant Fish Values

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

PASTORAL LEASE TENURE REVIEWS

Preliminary Report on
Recreational and Related Significant Inherent Values

MATAURA VALLEY STATION

April 1999

Compiled for Federated Mountain Clubs of NZ (Inc.)

By Dr Michael JS Floate
High Country Consultancy

Prepared for Federated Mountain Clubs of NZ (Inc.)
With financial assistance from New Zealand Lottery Grants Board

MATAURA VALLEY

Mataura Valley is a moderately large run of about 8,000ha situated immediately to the south of the Mataura River and was formerly part of the original Fairlight Station. It consists of the valleys and interfluvial ridges of many Mataura tributaries including Futtah Gully, Pig Creek, and Thomson Creek, separated by Ewe Ridge, Wether Ridge and Razorback (Fig. 1). These valleys and ridges generally run east-west so the landscape consists of alternating sunny and shady faces.

The homestead is situated at the end of a spur at the junction of Futtah Gully and the Mataura River (Fig. 1). Access to the property is up the Cainard Road from Fairlight Station on the historic Kingston Branch Railway (Fig. 2). It is well known for the Kingston Flyer tourist attraction, which is adjacent to the Kingston-Garston Road at the southern end of Lake Wakatipu.

The lowest point on the property is near the homestead at about 400m (Fig. 1), but higher up the Mataura, the valley floor is closer to 600m (Fig. 3). At the back of the property, along the ridge which forms its western boundary and separates the catchments of the Mataura River and Eyre Creek, the ridge crest varies between 1000m and 1500m (Fig. 4).

Very little recreational use is currently made of Mataura Valley Station other than for access up the Mataura to the Eyre Conservation Area and the Eyre Mountains (Fig. 5), some hunting on the back blocks, and of course fishing in the Mataura River.

To secure public access up the Mataura to the boundary of the Eyre Conservation Area for trampers, mountain bike users and recreational hunters and fishers is the issue of greatest recreational importance in this tenure review (Figs. 5 and 6). It is understood that foot access is available on the true left of the Mataura, through Cainard Station. The farm track over Mataura Valley Station to the upper Mataura (Fig. 6) provides alternative access to the Bowels of the Earth, and the associated hut close to the river. This track may be more suitable for vehicle use. It is also understood that the hut is on Cainard Station and that public use is available by arrangement with Landcorp Farming. It is recommended that an easement allowing for foot and mountain bike access over the farm track to the upper Mataura River and the Eyre Conservation Area (Fig. 6) be established and registered on the freehold title. 4WD vehicle use of this track by the public (with the runholder's consent) would also be valuable and consideration should be given during tenure review to making this available. The route is indicated in yellow on the attached map.

An increasing problem for people wishing to do day trips into the backcountry, and for trips involving overnight stays in the backcountry, is security of car parking at road ends. Consideration should be given during the tenure review process to making provision where possible for car parking off highways, and in the most secure places possible near the start of new easements over land which becomes freehold through tenure review. In the case of Mataura Valley consideration should be given to providing off-road parking in the vicinity of the confluence of Thomson Creek and the Mataura River, or somewhere opposite the mouth of Robert Creek (Fig. 7).

Conservation interests (associated with enhancing the recreational experience) are primarily focused on the landscape values of the higher country at the back of the property along the divide between the Mataura River and Eyre Creek catchments. Much of the country above about 1000m, especially on the sunny faces, has been severely eroded and should be retired from grazing to allow the slow process of recovery of the native vegetation (Figs. 3 and 8).

Recreational experiences are greatly enhanced by being able to enjoy landscape and other natural and historic features. This is one reason why the protection of such significant inherent values is an important part of tenure review. Features which should be considered for protection through tenure review on Mataura Valley are of limited extent and really only consist of the ridge crests and high country discussed above (Figs. 3 and 8), and a small area of native shrubland near the head of Pig Creek.

Most of the land along the Mataura/Eyre Creek divide, which varies between about 1000m and 1500m at the highest point at the head of the Wether Ridge, and including the high ground around the heads of the tributary catchments (eg Pig Creek, Thomson Creek, and an unnamed creek in the north west corner of the property) is classified as Land Use Capability (LUC) Class VIII land (Kaikoura Steepland soils, see Figs 3 and 8). Such land is not capable of supporting ecologically sustainable pastoral use and should not be considered for freeholding. As suggested above, this land should be restored to full Crown ownership and control, and be transferred to the Department of Conservation for conservation management.

It is not realistic to fence around the boundary of the Class VIII land because of the nature of the topography. A more realistic separation between land to be retired and land to be freehold may be best achieved by utilising existing fences, and constructing new fences, mainly running up and down spurs near the heads of the catchments of Pig Creek and Thomson Creek. The boundary of the Class VIII land is indicated with dashed line on the map while the proposed new conservation land, within the suggested fencing, is indicated in green. It will be noted that the proposed new conservation land includes some land which might otherwise be suitable for grazing if it were not for the need to locate fence lines on appropriate spurs. Some compensation (in lieu of lost grazing) may be in order, but this should be discounted to allow for the costs of theoretical fencing along the Class VIII land boundary (which is impractical).

As well as the rationale to retire the Class VIII land from grazing and promote the recovery of native vegetation, parts of the high country have significant inherent values in their own right. This applies to much of the ridge crest along the western boundary of the property (Fig. 9). This ridge crest forms the boundary between Mataura Valley Station and conservation land in the Eyre Conservation Area. The new conservation land to be created at the back of Mataura Valley Station would therefore not be isolated, but rather would be an extension of existing conservation land in the neighbouring Eyre Creek catchment (Fig. 10).

In the head of the Pig Creek catchment there are a few remnants of native scrub and bush which would add significantly to the natural value of the land to be transferred for conservation. This area of native scrub and bush in Pig Creek, would be included within the fencing proposed for the Pig Creek catchment (see maps). All the land which it is proposed should be retired, and be returned to full Crown ownership and control, and be transferred to DOC and be managed for conservation is indicated in green on the attached map.

The balance of the property, most of which is LUC Class VI land with some Class VIIe land on the ridges below about 1000m (Figs 1, 6 and 7), appears to be capable of ecologically sustainable pastoral use and should therefore be suitable for freeholding.

As part of the tenure review process, marginal strips should be laid off on all waterways of appropriate size. On Mataura Valley Station this is likely to include the Mataura River (if this does not already have marginal strips), Pig Creek, and possibly also Futtah Gully and Thomson Creek.

On the attached map, the area which should be restored to full Crown ownership and control and be managed for conservation, is indicated in green. The important public access route up the Mataura valley and the desired easements for foot and mountain bike access are indicated in yellow.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

N

MATAURA VALLEY

EYRE CONSERVATION AREA

EYRE CONSERVATION AREA

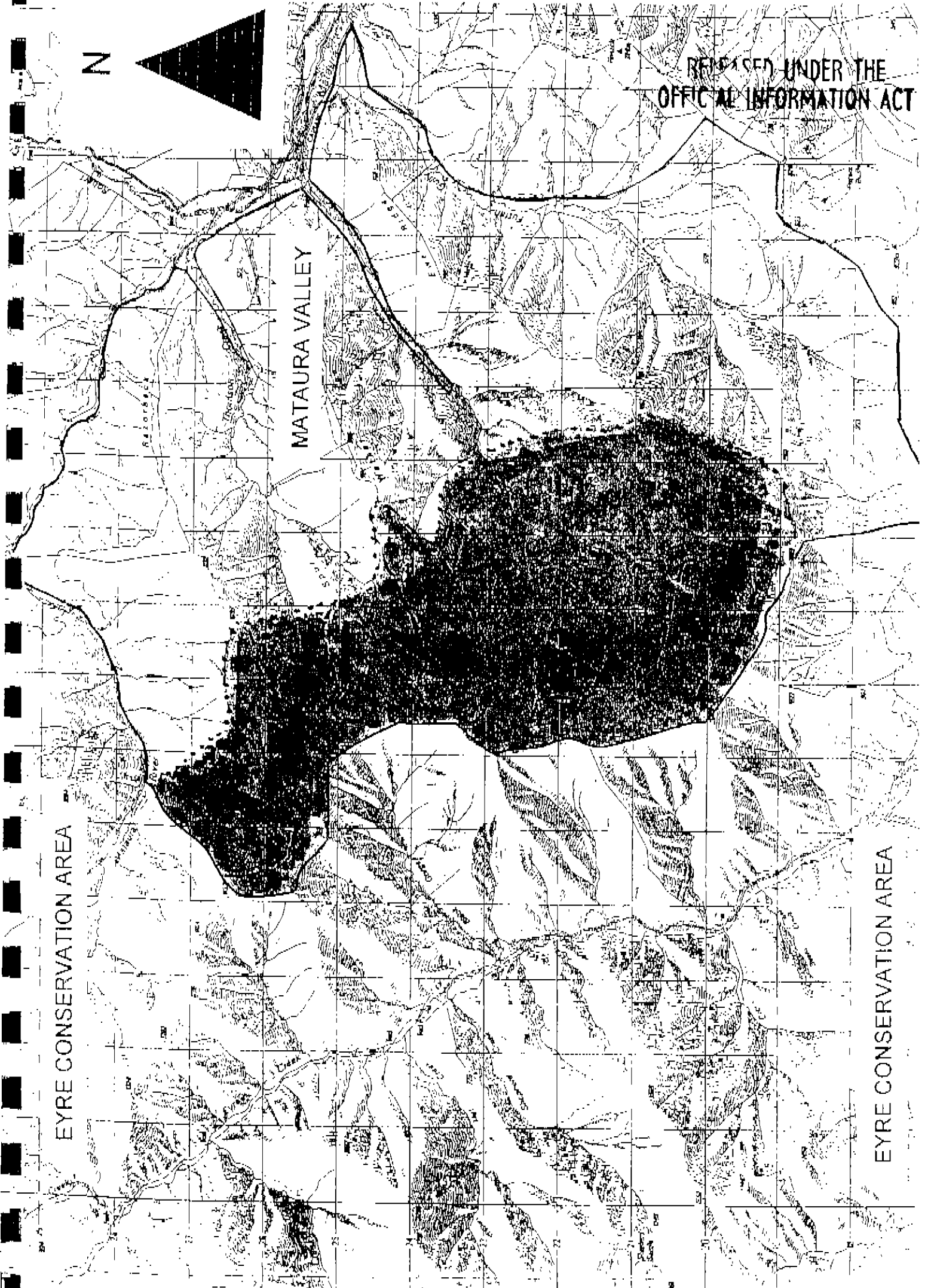




Fig. 1 Ewe Ridge (centre) is one of several parallel ridges and valleys which comprise Matura Valley Station. The homestead (foreground, left) is situated at the foot of the spur near the junction of Futtah Gully with the Matura River. The other prominent Matura tributary is Pig Creek (right).

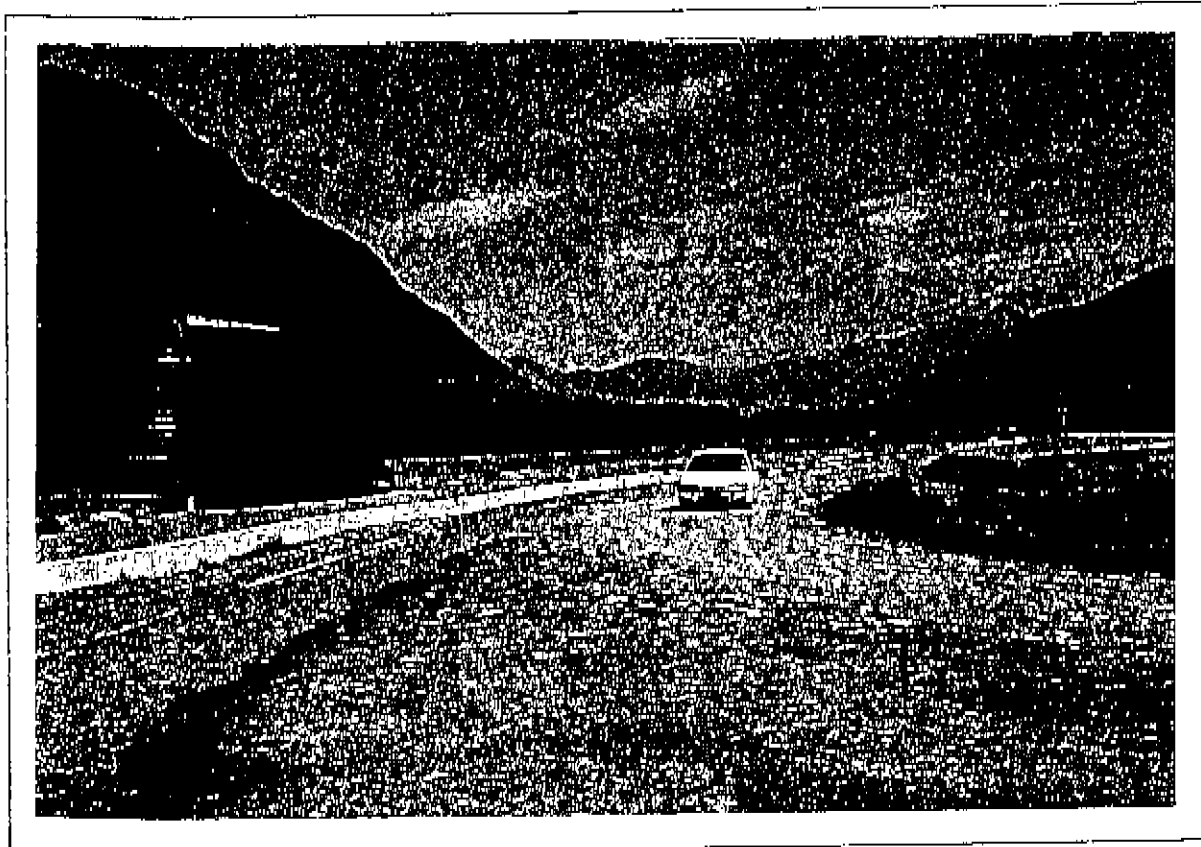


Fig. 2 Access to Matura Valley is from Fairlight Station on the historic Kingston Branch Railway. Wether Ridge (on Matura Valley) can be seen in the middle distance, with the Eyre Conservation Area in the distance. The Eyre Mountains rise to a high point on Symmetry Peaks to the right.



Fig. 3 Looking over Razorback Ridge to the valley floor of the upper Mataura which rises to about 600m at the back of the property. There is a significant area of eroded LUC Class VIII land along the back boundary (skyline, centre) which cannot support ecologically sustainable pastoral use.

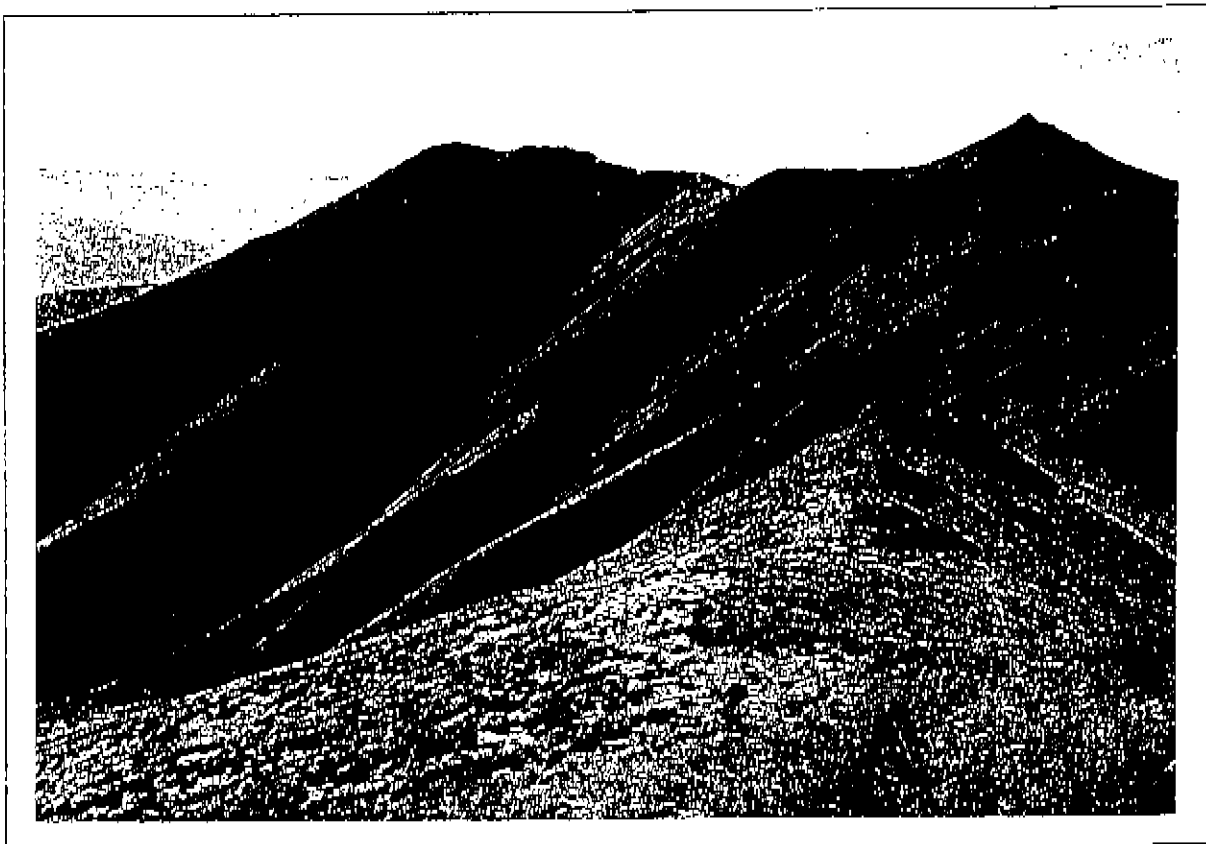


Fig. 4 The western boundary of Mataura Valley ranges from 1000m to 1500m and separates the catchments of the Mataura River and Eyre Creek. Most of the higher sunny faces are characterised by eroded Class VIII land which should be retired from grazing and be managed for conservation.

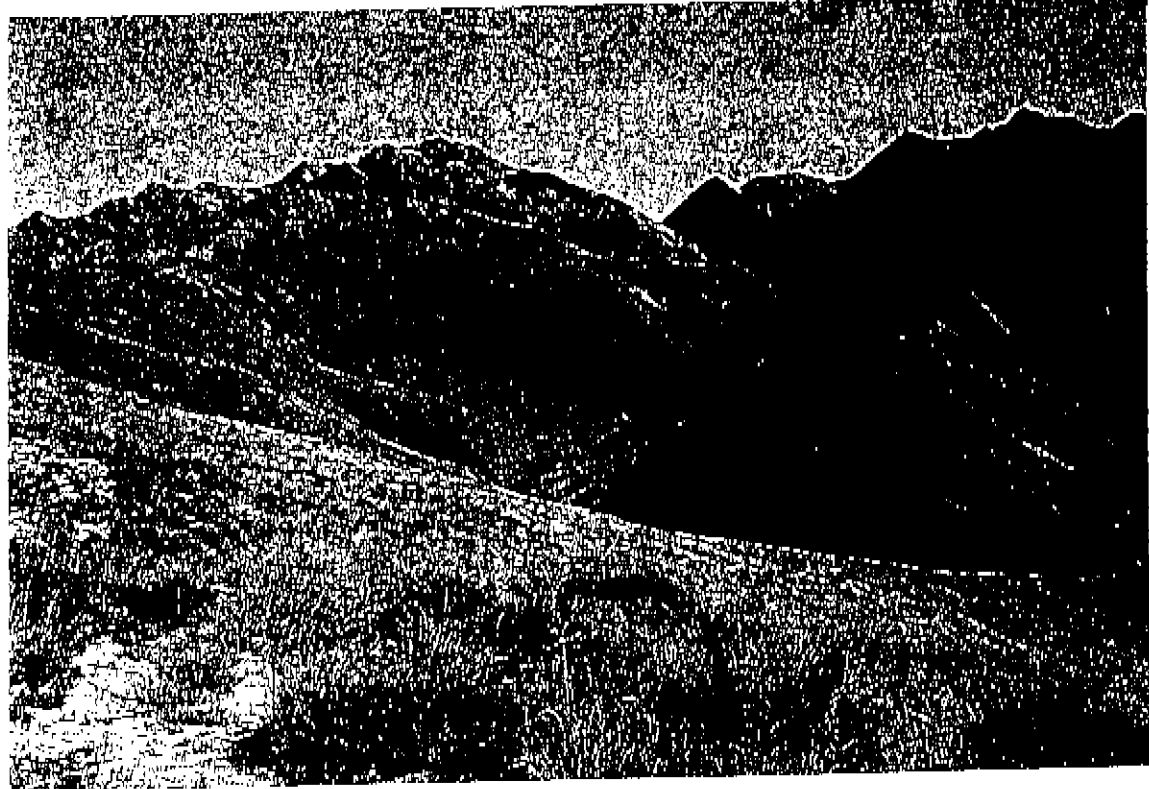


Fig. 5 Although little recreational use is made of Mataura Valley Station at present, access up the Mataura valley to the Eyre Creek Conservation Area is important. This picture shows the upper Mataura within the Conservation Area. The 'Bowels of the Earth' are nearby.



Fig. 5 The farm track (dotted line) provides access to the upper Mataura and the Eyre Conservation Area. An easement for foot and mountain bike use should be negotiated through tenure review, and consideration should also be given to making provision for vehicle use with the runholder's consent.



Fig. 7 Looking up the Mataura from its junction with Robert Creek. Parking for recreational users vehicles near here would provide some security from the problems of road-end parking. Razorback Ridge on Mataura Valley land, which is likely to become freehold, is on the left. The Bowels of the Earth is over the ridge in the far distance.



Fig. 8 The eroded Class VIII land along the tops (generally above 1000m) should be retired from grazing and be allowed to begin the slow process of recovery of native vegetation. The land should be returned to full Crown ownership and control, and be managed by DOC for conservation.

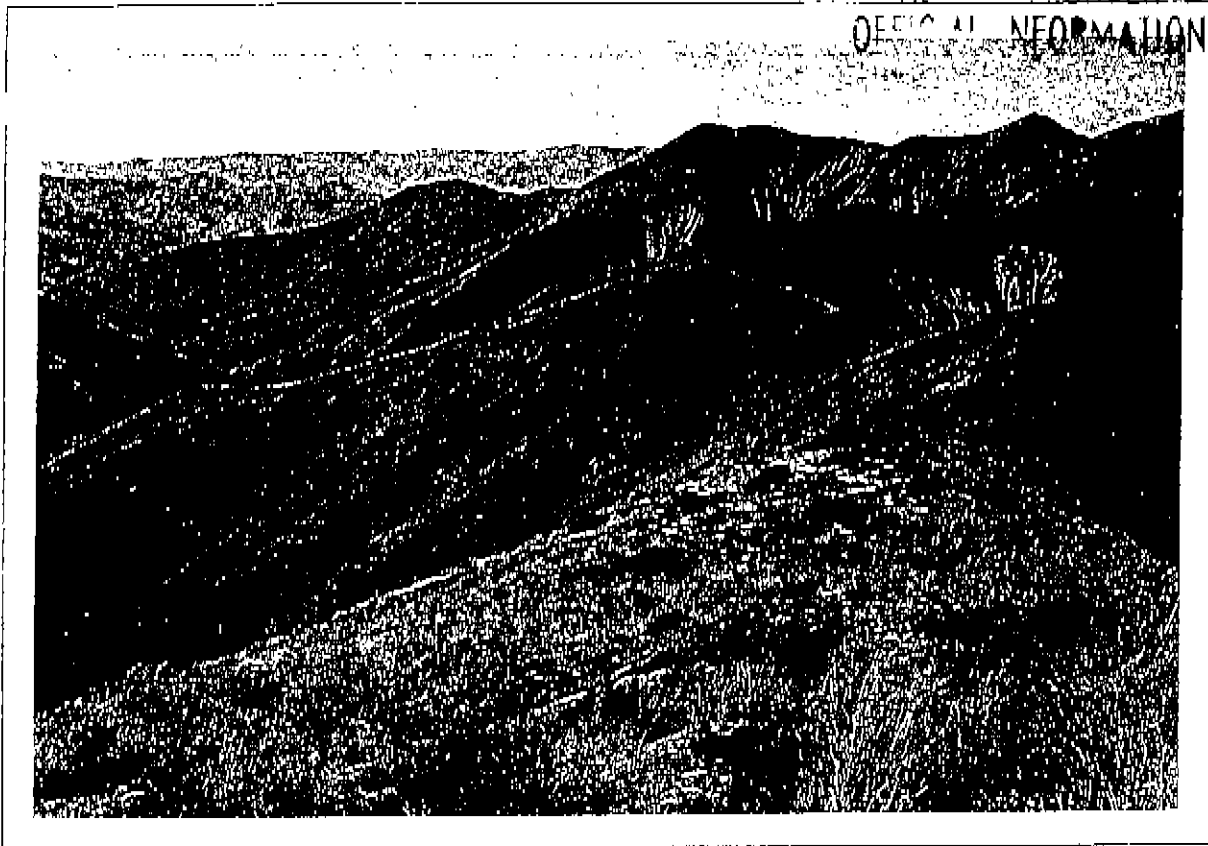


Fig. 9 The land along the back boundary which should be retired from grazing and allowed to begin the slow process of recovery of native vegetation, has significant inherent values in its own right as can be seen from the native tussock and shrubland along the boundary with the Eyre Conservation Area

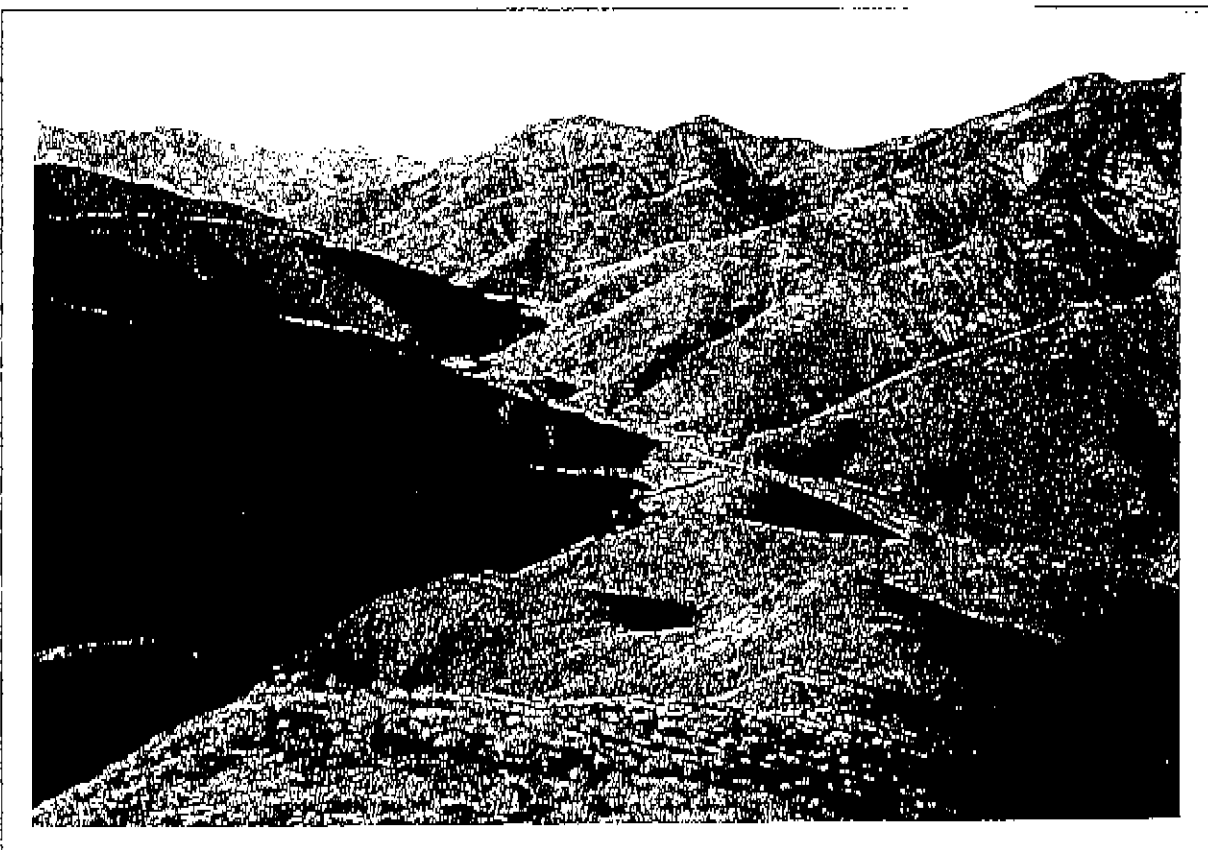


Fig. 10 The proposed new conservation land along the tops would not be isolated, but would be an extension of, and complementary to, the existing conservation land seen here in the Eyre Creek Conservation Area (Eyre Creek valley) immediately to the west of Matarua Valley Station.

Public Access New Zealand

DEPT OF CONSERVATION
OTAGO CC. HERVANCY
- 7 JUN 1999
RECEIVED

INCORPORATED

Dunedin 9182 Central Otago New Zealand

Phone & Fax 64-3-447-3554

www.publicaccessnewzealand.org

paunz@esb.co.nz

3 June, 1999

Ken Taylor
Knight Frank NZ Ltd
P O Box 27
Alexandra

Tony Perrett
Department of Conservation
P O Box 5244
Dunedin

Administrative stamp with fields for date, time (A.M.), and initials. The date field contains '3 JUN 1999' and the time field contains 'A.M.'. There is a checkmark in the 'INITIALS' field.

Ps 090 Mataura Valley

As an outlier from the main Eyre Mountains, I believe that, with the exception of access up the Mataura Valley, existing recreational use will be limited. However the tops would provide good tramping.

Pasture development appears to be confined to the lower halves of the leading ridges rising from the Mataura Valley (Ewe Ridge, Wether Ridge, Razorback). This is separated from the high country by fencing. The tops show the scars of past 'management' with extensive exposed sub-soil and screes. The overall impression is that this country has had a hammering. There are pockets of beech remaining in several gullies, all with irregular, fire-induced boundaries. If this country is not already completely retired from grazing, it should be to allow recovery.

I believe that all the 'retired' country should be reserved. Rights of foot access should be provided, say up Ewe Ridge and down the Razorback Ridge, so as to allow access to the northern and southern extremities of the high country and to permit round trips. There are no existing legal roads providing access from the south or west however this is of no great concern provided the suggested access ways are provided.

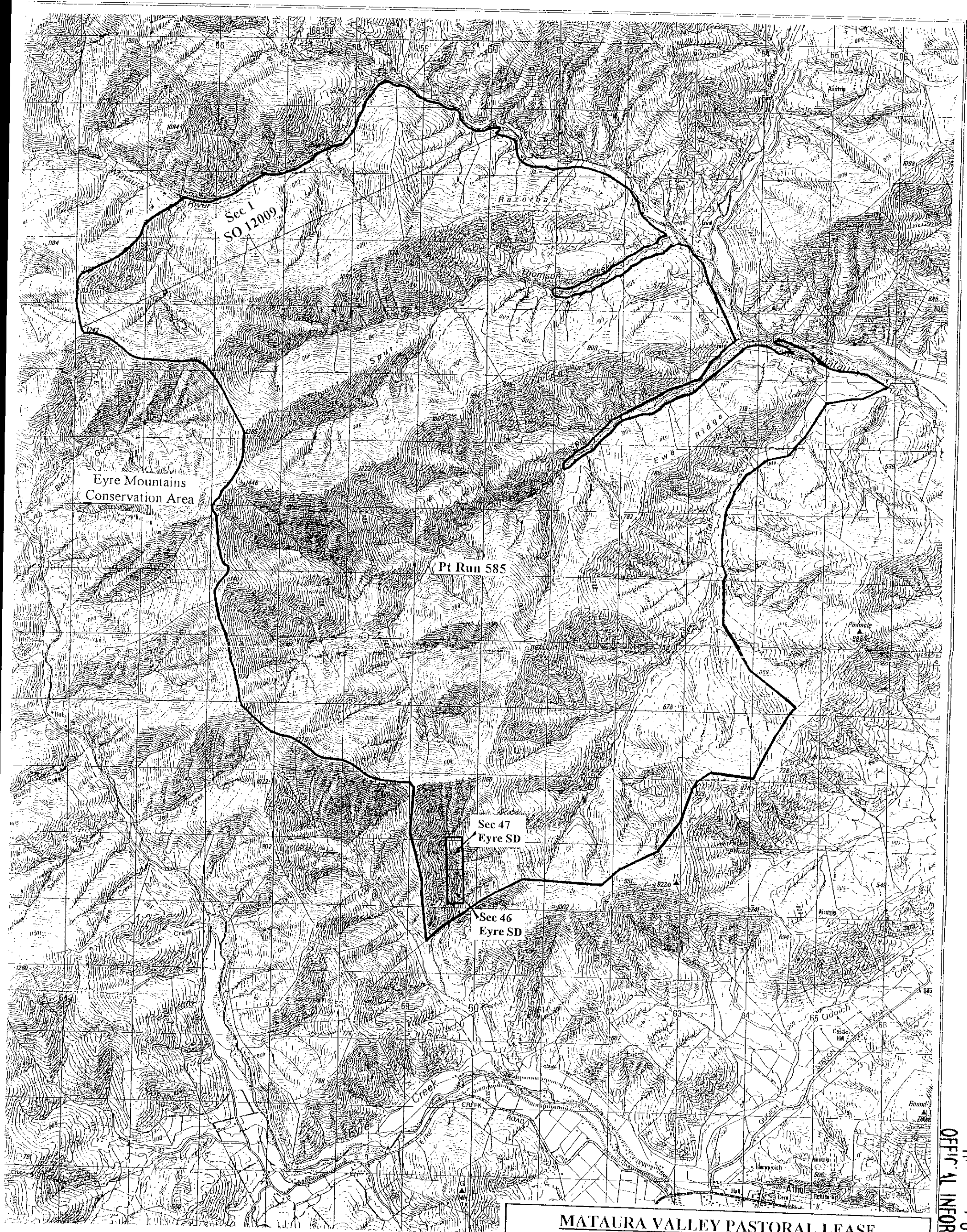
The major need, and absolute bottom line for any tenure review on this property, is to sort out and secure guaranteed public access up the Mataura Valley. There are roads and marginal strips, however it is uncertain if these coincide with the formed access currently in use. We do not accept possible arguments that it is not the job of the Government to sort out such problems just because it is inconvenient and possibly time consuming to do so. Realistically there will not be any future opportunities to do so after tenure review is complete.

We also do not agree with assertions by the CCL that it is not a function of central government to deal with public roads. Government has a long history of road provision and development and this is still enabled under a variety of statutes. Government can continue to involve itself in such matters if it chooses. All that is lacking currently is the will. Given that lands other than "reviewable land" can be involved in tenure reviews, it is inconsistent for the CCL to arbitrarily exclude roads.

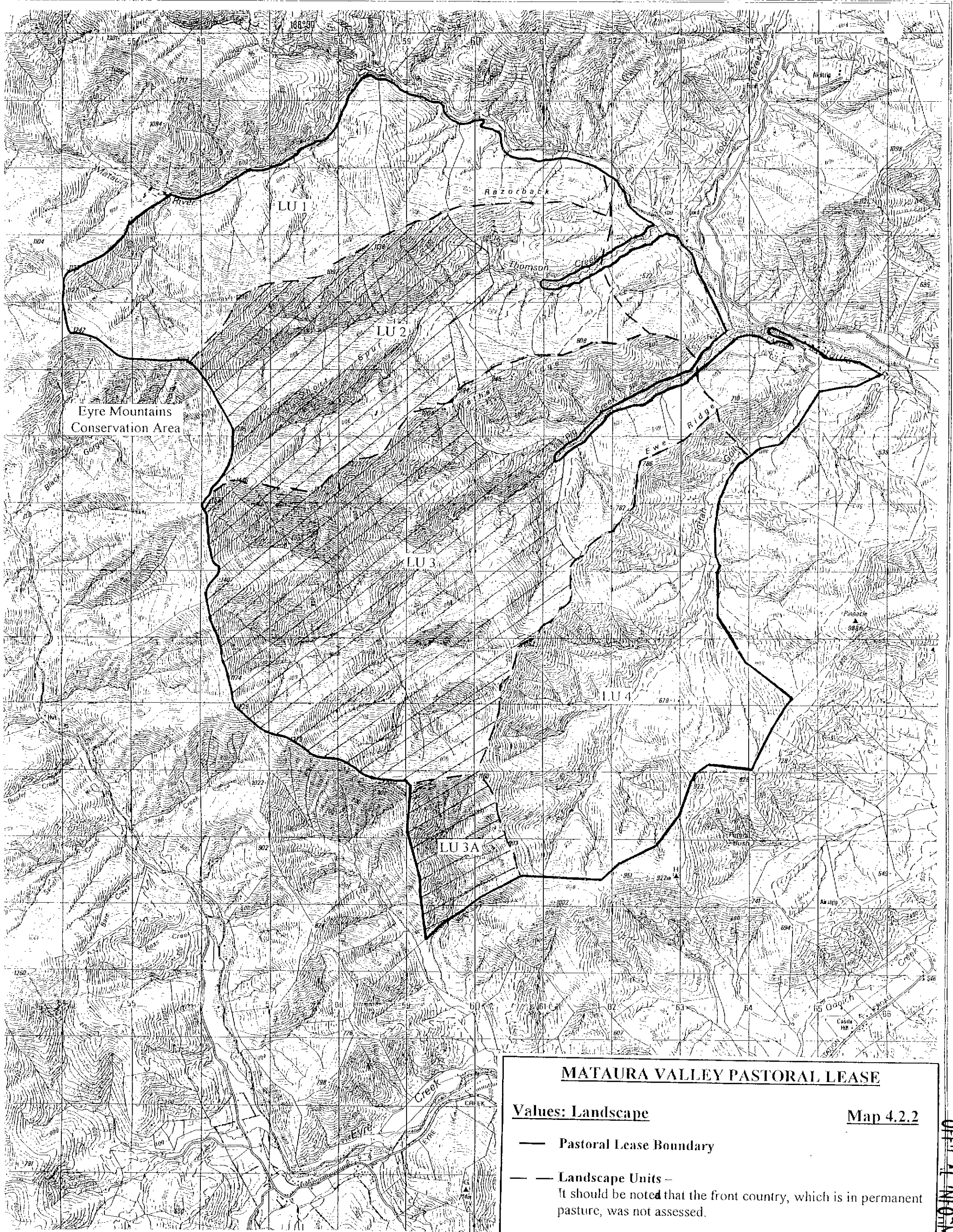
One of the statutory objects of tenure review is "to make easier the securing of public access to and enjoyment". We believe that not to do so in this instance would be in breach of the Crown Pastoral Land Act.

Yours faithfully

Bruce Mason
Researcher & Spokesman



MATAURA VALLEY PASTORAL LEASE
Topographical/Cadastral
— Pastoral Lease Boundary
Map 4.2.1



MATAURA VALLEY PASTORAL LEASE

Values: Landscape

Map 4.2.2

— Pastoral Lease Boundary

— Landscape Units —

It should be noted that the front country, which is in permanent pasture, was not assessed.



Areas which are fully representative of the eastern Eyre Mountains and generally make a positive contribution to the natural character of the South Island High Country's landscape.