

## **Crown Pastoral Land Tenure Review**

**Lease name : MT STUDHOLME**

**Lease number : PT 079**

## **Conservation Resources Report**

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

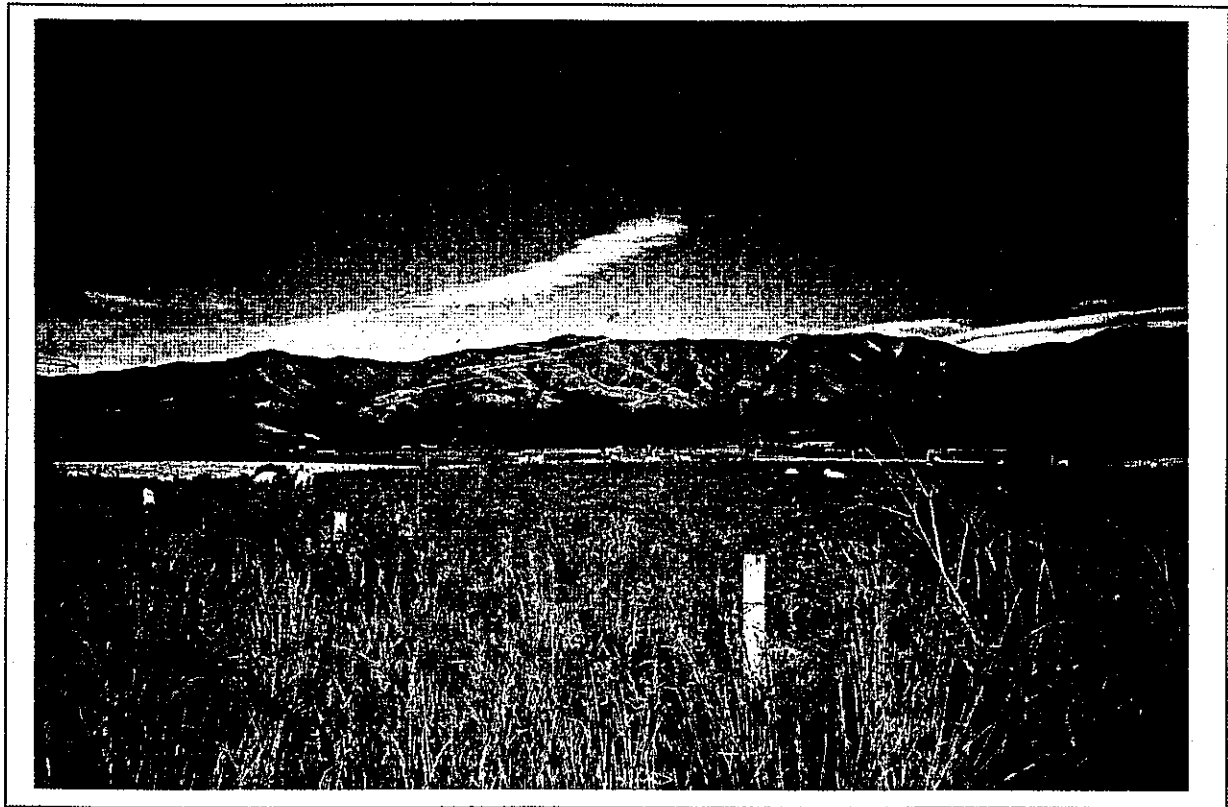
Note: Plans which form part of the Conservation Resources Report are published separately.

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

**December 05**

CONSERVATION RESOURCES REPORT

**MT. STUDHOLME PASTORAL LEASE**



DOC CONSERVATION RESOURCES REPORT ON TENURE REVIEW OF MT  
STUDHOLME PASTORAL LEASE

PART 1

INTRODUCTION

Mount Studholme pastoral lease lies at the southern end of the Hunters Hills. The lease covers a residual area of 1886 hectares and, at present, is run in conjunction with the adjoining Mount Cecil pastoral lease and Mt Cecil freehold. The lessee's homestead is on the eastern side of the hills some 20 km from Waimate.

The irregular eastern boundary of the lease follows the edge of the Hook Bush and Gunns Bush Conservation Areas. To the south the lease adjoins Waimate Forest while to the west the lease is bounded by the North Waihao River and freehold land. Mt Cecil lease is to the north.

The Mount Studholme Conservation Area of 219 hectares lies in the middle of the lease on the western face. This area was retied for soil and water conservation purposes in 1974 and is fully fenced. A Crown Land Management Plan was prepared for this area in 1983.

A further portion of land of approximately 10 hectares on top of Mt Studholme was taken and gazetted in 1969 for a television station site. A well-formed shingle road leads to the repeater site but was not included in the land taken for the repeater and remains part of the pastoral lease.

The pastoral lease lies in the Hunters Ecological District of the Pareora Ecological Regional and is characterised by non-glaciated low ranges to 1525 metres above sea level. No assessment has been made of the ecological district as part of the Protected Natural Areas Programme.

PART 2

INHERENT VALUES: DESCRIPTION OF CONSERVATION RESOURCES AND  
ASSESSMENT OF SIGNIFICANCE

2.1 LANDSCAPE

The Hunters Hills can be divided into two landscape types. The first type consists of the eastern faces which are characterised by the downlands rising gradually from the plains into the dissected high hills and low mountains which contain deeply incised valleys such as the Otaio Gorge. The second type consists of the western flanks which are characterised by a series of valleys that run directly towards the North Branch of the Waihao river which is contained within a broad valley.

The lease can be divided into two landscape units:

Landscape Unit 1.

Includes all of the property on the eastern side of the Hunters Hills. The upper boundary of the unit is dominated by three distinctive landmarks being, from the south, Mt Shrives (958 metres), Trig S (1035 metres) and Mt Studholme (1085 metres). These three pyramidal-shaped landforms are joined by narrow saddles. The headwaters of both the Hook River and Gunns Bush Stream

originate just below the crest of the Hunters. The lower boundary of the unit (550 metres) mainly follows the edge of the native forest.

The uninterrupted sequence of vegetation types in this unit gives it an overall impression of coherence. Visually, the unit is very significant as it forms an integral part of the Hunters Hills which can be viewed from many parts of the South Canterbury Plains. The unit's landscape integrity has been downgraded by the number of utilities on the mountain but its overall coherence and visual significance remains.

### Landscape Unit 2.

This unit encompasses the western slopes of Mount Studholme as well as the headwaters of the Otaio River. It is characterised by a series of long spurs that branch out of the main axis of the Hunters Hills. Each of the spurs contain small dissected gullies with streams that lead out to the North Branch of the Waihao River.

A natural feature of this unit is the extent of wind erosion with, in some places, the vegetation cover being left to grow on pedestals with the underlying sub-soils exposed. The landscape character of the lower country reflects the local slope, aspect and grazing patterns with the sunny dry faces contrasting sharply with the darker faces and could be best described as typical pastoral country.

## 2.2 LANDFORMS AND GEOLOGY

The lease lies across the range with both east and west aspects. The Hunters Fault runs north/south on the eastern edge of the range and has been instrumental in causing the uplift of the range. A subsidiary fault runs along the range itself and, to the north of the lease, the Otaio River follows this fault initially before forcing its way out through the gorge to the plains.

The underlying rock is predominantly dark greywacke, black argillite and conglomerate with interspersed beds of red and green spilite. These rocks belong to the Torlesse group from the Permian (Paleozoic) age and are about 270 million years old. The lower western faces of the property are underlain by metamorphic semi-schist rocks of the Haast group from the Middle Triassic period.

Soils are from the yellow-brown group and are predominantly Kaikoura steepland soils comprising silt, sandy and stony loams developed under snow tussock grasslands and Hurunui steepland soils developed under fescue tussock grassland. Both these types of soil are susceptible to wind and sheet erosion if the vegetation is reduced.

On the eastern side the lease contains the headwaters of Hook River and Gunns Bush Creek. On the western side three catchments drain into the North Branch Waihao River. The lease also includes the top of the Otaio River, which flows northward from Mt Studholme.

## 2.3 CLIMATE

The annual rainfall is between 1000 and 11000 mm and is mainly from the southerly quarter. Easterly cloud drift often results in fog remaining around the tops, providing cold, moist conditions. Heavy frosts are common during winter and the occasional snowfall may cover the whole area, but usually lies only on the higher faces. The area is exposed to strong, dry, north-west winds which dry the vegetation and soils and lead to wind erosion.

## 2.4. VEGETATION

Vegetation patterns are based on aspect and the effects of stock and wallaby grazing. On areas above 700m and on moist, shaded slopes, snow tussock dominates. Below 700 m and on the dry, exposed slopes hard tussock dominates. Shrublands and forest remnants survive in gullies and where protected by rock bluffs. A rare shrub (*Helichrysum plumbeum*) survives on the top of the mountain. Outlined below are the vegetation communities present.

### Western Side

#### Narrow-leaved snow tussockland

As with most of the Hunters Hills, narrow-leaved snow tussock (*Chionochloa rigida*) dominates the vegetation above 700 m, varying in cover from about 50% cover on dry faces and slopes to 80 to 90 per cent cover on deeper soils or more moist slopes, particularly on south or east faces. Few exotic species are found above 800 m. except along tracks and flatter areas where stock congregate. On steep, dry, rocky slopes, bare ground or rock can occupy as much as 10 per cent of the ground with snow tussock 50 per cent and only 0.5 m tall. *Cernisia spectabilis* 5 per cent, mosses and lichens 10-15 per cent, *Gaultheria depressa* var. *novae-zelandiae*, *Pentachorda pumila*, *Leucopogon fraseri* and *Raoulia subsericea* are all important components of this community. In the most rocky places the rock can make up to 30 per cent of the cover. On less steep slopes and shady faces, snow tussock is up to 80 per cent cover and 1.2 m tall with a lot of litter underneath. Hard tussock and blue tussock can be important inter-tussock species, especially as the snow tussock density lessens. Other species present are similar to those found in the rocky areas but here they are generally only minor components of the vegetation. Sweet vernal and brown top can also be present. Mountain flax (*Phormium cookianum*) and speargrass (*Aciphylla aurea*) occur as scattered plants with occasional *Dracophyllum longifolium*. Mountain flax increases in the damper gullies. Matagouri and coral broom (*Carmichaelia crassicaule*) appear as scattered plants at about 850 m.

The shady south-east faces still contain a good snow grass cover down to at least 500 m. These faces can be steep and rocky with areas of exposed, blocky scree but the surrounding snow tussock can form 80 to 90 per cent cover at 600 m. and be 1.6 m. tall. Speargrass, hard tussock and small herbs occur between and under the snow tussock.

#### Hard Tussock Grassland

Below about 750 m. hard tussock becomes dominant (30 to 60 per cent) with brown top and sweet vernal also prominent, particularly in the drier north and north-west faces. Blue tussock is an important plant in this community with a number of small native herbs and grasses and occasional shrubs of matagouri and *Melicactus* sp. And of snow tussock. Lower slopes have increasing percentages of the exotic grasses so that on a flat ridge top at 650 m. hard tussock represents only 20 per cent of the community with blue tussock 15 per cent and brown top/sweet vernal 15 per cent. Matagouri 15 per cent (of low stature due to previous burning), mouse-ear hawkweed 15 per cent, mosses, scattered snow tussock clumps and native herbs make up the rest of the community. North and north-west ridge faces have a higher percentage of hard tussock and native species while snow tussock still dominates most of the south and south-west faces. In places bracken patches make their appearance.

### Shrublands/Forest Remnants

At 600 m. large logs are found, showing signs of fire, a clue to the past vegetation. Most of the incised, rocky stream bottoms contain remnant hardwood forest species and shrubland, often extending up slope, particularly where protected by rock bluffs or scree/rock slides. Trees include broadleaf (*Griselinia littoralis*) fuchsia (*Fuchsia excorticata*), cabbage tree (*Cordyline australis*), three finger (*Pseudopanax colensoi* var. *ternatus*), lancewood (*Pseudopanax crassifolius*) mapou (*Myrsine australis*), putaputaweta (*Carpodetus serratus*) and kowhai (*Sophora microphylla*). Shrubs include *Coprosma crassifolia*, *Coprosma propinqua*, *Coprosma rugosa*, *Coprosma* sp. Aff. *Parviflora*, *Gaillardia antipoda*, *Myrsine divaricata*, *Hebe salicifolia*, *Carrichaelia petriei*, *Coniaria sammentosa* and matagouri. Other plants of note are the hybrid *Fuchsia perscandens* x *F. excorticata* and speargrass (*Aciphylla scott-thompsonii*) Mountain flax can be quite prominent and toi toi (*Cordataria richardii*) and silver tussock occur along the stream edges in places. Several fern species grow in the shelter of these forest remnants. Extensive areas of matagouri-dominated shrubland extend over all slopes to the south of point 557 m. and below about 600 m. altitude down to the Waihao River boundary.

The rare shrub (*Helichrysum plumerum*) occurs on most rocky crags where it is relatively common but it can occasionally be found on open rocky ground. The largest colonies appear to be contained within the Conservation Area but it is likely to be found also in adjacent areas from about 700 m. and above. This is one of the strongholds for this plant.

### Eastern Side

Good snow tussockland covers most slopes right down to the bushline on this side of Mount Studholme although with increasing hard tussock and exotic grassland below 700 m. slopes facing north and ridge tops tend to have a greater cover of hard tussock and lower down, especially on rocky, shallow soils below the road, *Celmisia spectabilis* is prominent. Mountain flax and speargrass are scattered amongst the snow tussock and patches of *Coprosma* shrubland occur and some gorse patches. Regenerating shrubland and forest extend up all gullies and reach the road at 680 m. As well as the tree species mentioned previously, an increasing range of trees appear in the deeper gullies where they have escaped more recent fires. They include matai, tarata, kohuhu, wineberry, totara and tree ferns.

Exotic grassland with scattered hard tussock is found below the road towards the lower edge of the pastoral lease. A row of hybrid poplars follow the Mount Studholme road. Originally planted to help stabilise the road, the poplars do not appear to be spreading or root suckering.

## 2.5 FAUNA

Birds appear to favour the shrubland areas with bellbird, tomtit, silver-eye and fantail noted. New Zealand falcon have also been seen and red poll and New Zealand pipit are seen in the open country. Hook Bush and Gunn's Bush, adjacent to the lease, are both SSWIs (Sites of Significant Wildlife Interest) and, as well as some of the above birds, contain rifleman and New Zealand pigeon.

The open grasslands, shrublands, rock faces and wet grasslands/seepages are key habitats for a variety of invertebrates, particularly diurnal moth species. The *Notoreas* species found here are known only from Mount Cook southwards.

The lease incorporates the headwaters of the Otaio River which contains numerous small fish including *Gallaxias*, upland bully *Gobiomorphus breviceps*, long-finned eel and brown trout. In some of the smaller tributaries koura and brook char may also be present. The Waihao River supports a significant local fisher for brown trout in its upper reaches.

In the past, wallabies (*Macropus nyfogrisea*) have been a problem with there being almost as many wallabies present as sheep. Poisoning and hunting have dramatically reduced the number of wallabies but they are still present.

Hares, rabbits and possums are present in the area but in low numbers. Chamois have been occasionally seen in the area.

## 2.6 HISTORIC

Mount Studholme was named after the Studholme brothers who first took up the Waimate run in 1854. The Waimate run took in the country between the Hook and Waihao rivers and ran from the coast back to Station Peak in the Hakataramea Valley. The leasehold country was relinquished by the Studholmes in 1889. Apart from the strong link between the name and the Studholme family who were the founders of the township of Waimate, there is nothing of historic value on the lease.

## 2.7 PUBLIC RECREATION

### 2.7.1 Physical Characteristics

The Mount Studholme lease encompasses the high points on the southern end of the Hunters Hills. The environment has been modified but is generally dominated by natural vegetation or landscapes. It is accessible by off road vehicles. Other motorised vehicles can get to within one kilometre of the area and the road gives easy access for walkers. The area qualifies as a 'Back Country Experience' under the Recreation Opportunity Spectrum.

### 2.7.2 Legal Access

On the eastern side of the lease the Mount Studholme road (the road leading to the top of the mountain) follows a legal roadline as far as the lease boundary. Above the boundary the road is not legal. The road is well formed and accessible by most vehicles in the summer and by 4wd vehicles in the winter. General public use of this road is discouraged by lack of signposting. Walking access is also available through the Hook Bush Conservation Area.

It is unclear what legal access arrangements are in place for the facilities on top of the hill. It is probable that there is no legal access but the facility owners, particularly TVNZ, do help maintain the road.

To the south there is walking access through the Waimate Forest and via the North Waihao River. Marginal strips occur on the river as far as the lease boundary but not within the lease. On the north-western corner of the lease a legal roadline follows, for a short distance, the boundary of the Mount Studholme and Mount Cecil leases from the Old Kaiwaru Road. A 4WD track follows this for a while before diverting off onto the Mount Cecil lease.

### 2.7.3 Activities

Use of the road on the eastern side of the mountain for walking, mountainbiking and 4WD has been at the discretion of the lessee. The amount of existing use is unknown but it is clear that such types of use could be very popular to gain easy access to such a prominent mountain. The 4WD track across the summit of Mount Studholme continues on to Mount Cecil. There are locked gates near the top of Mount Studholme and near Mount Cecil. A track does, however, divert off the ridgeline track and drops down through the Mount Cecil lease to the North Waihao River.

A track in the middle of the western face of the Mount Studholme lease is very steep and rocky, making it hard even for 4WD use.

Wallaby hunting is the other recreational pursuit carried out on the lease.

The facilities on the mountain that are within the pastoral lease are believed to belong to Telecom, Vodofone and a Radio Users Group. The BCNZ facility is on freehold land.

## PART 3

### OTHER RELEVANT MATTERS & PLANS

#### 3.1 Consultation

NGOs have been notified of the inclusion of Mount Studholme in the tenure review programme. A written submission has been received from the Federated Mountain Clubs of New Zealand and other comments from NGOs noted. Their submissions seek the retention of all legal roads and the provision of legal access to the top of Mount Studholme. If the road can be used the Federated Mountain Clubs believe this could be made available for walking and mountainbiking.

#### 3.2 Regional Policy Statements and Plans

Not applicable.

#### 3.3. District Plans

Mount Studholme lies within the Waimate District. The proposed District Plan was notified in April 1996 and decisions on the plan were released in May 1998. The lease is all on land zoned rural. The Otaio catchment is further zoned as the Otaio Makikihi Water Supply Protection Area and the Hook catchment as the Hook Waituna Water Supply Protection Area. Objectives of the Rural Zone include:

1. Enhancement and protection of the conservation values of areas of conservation significance;
2. High country land use to be managed to ensure a robust and intact vegetation cover is maintained to assist in sustaining the life supporting capacity of the soil;
3. Protection and enhancement of the outstanding landscape values of the district and of those natural processes and features and cultural values which contribute to the overall character and amenity; and



4. Maintenance of waterways, wetlands and water supply intakes and their margins to avoid degradation of the natural values of these areas and their associated water bodies.

There are controls over indigenous vegetation clearance, forestry, earthworks and the erection of structures in areas over 900 metres in altitude (principally the main summit ridge). There are no rules applying to these activities below this altitudinal level. There are no extra rules for the water supply protection areas.

There is a designation over Telecom New Zealand facilities on Mount Studholme.

### 3.4. Conservation Management Strategies and Plans

The draft Canterbury Management Strategy recognises the Hunter Hills as the most seaward alpine area in Canterbury. An ecological survey of the Hunters Ecological District is recommended. Wallaby control is to be implemented in the future through a wallaby control plan. In the meantime, control will be undertaken on land managed by the Department and hunting permits will be issued in the Waimate Forest area under a joint permitting arrangement with the Waimate District Council.

### 3.5. Freshwater Fisheries Plans

Not applicable.

## PART 4

## MAPS ETC.

### 4.1 Additional Information

- (i) Terms and conditions of qualified designations
- (ii) Terms and conditions of protective mechanisms

### 4.2 Illustrative Maps

#### 4.2.1 Topo/Cadastral

#### 4.2.2 Values

### Acknowledgements

I would like to thank the Fraser family (lessees) for assistance with this survey. Also Ray Ward - Smith (Knight Frank) and members of the survey team - Alan Petrie (landscape), Neil Simpson (botanical) and Joy Comrie (DOC).