

DOC REPORT TO KNIGHT FRANK ON TENURE REVIEW OF LOWBURN VALLEY STATION

PART I

INTRODUCTION

Lowburn Valley is a modest sized (5814 ha) pastoral lease property located at the eastern end of the Kawarau Gorge with the homestead on Swann Road, 7 km north of Cromwell. It is the last property on the southern end of the Pisa Range and includes part of the plateau tops and ridge crest plus steep faces into the Roaring Meg, the Kawarau River and the Lowburn Valley. It contains a substantial area of high conservation values including ecological, landscape, recreational, and historic components. This station is all within the Pisa Ecological District which was surveyed as part of the Protected Natural Areas Programme in the summer of 1984/85. Two areas on the property were recommended for protection - Pisa A6 Skeleton Stream, a 330 ha predominantly shrubland RAP with an associated narrow leaved snow tussock grassland, and Pisa A8, a small 20 ha RAP selected for the 30 or so remnant mature silver beech trees, plus a small area of manuka, one of only two sites in the district.

There are no reserves or covenants within Lowburn Valley, however informal public access on the farm track leading to the old pack track has been negotiated with the lessee and this route is marked and has stiles over the fences.

PART II

CONSERVATION RESOURCES DESCRIPTION AND ASSESSMENT OF SIGNIFICANCE

1 LANDSCAPE

The property logically divides into three topographic areas:

- a Lowburn Faces
- b Summit Plateau
- c Roaring Meg and Kawarau Faces

A brief description of the landscape character of each of these is given.

Lowburn Faces

From the Lowburn Valley floor a series of low rounded hills and small gullies peppered with rock outcrops characterise the base of the slope. Above this the main ridge and gully system extends up to the summit crest. Landform is undulating slump topography with extensive rocky outcrops. Vegetation on the front face (below 900 metres) is dominated by short tussock, exotic grasses, herbs and clover. Shrubland species are scattered across the slopes and include briar, matagouri, *Coprosma* and *Olearia* spp. Shady gullies contain quite dense shrubland remnants.

Cassinia is notable in the Lowburn and Tongue Spur Creek basins. Bracken is also present in scattered patches. Snow tussock comes in above 1000 metres. Large rock outcrops and bluffs occur along the ridge crest. the most distinctive is the large and impressive Mitre rocks. These represent a significant landscape feature.

The Lowburn Faces form part of the backdrop view from the Cromwell-Lake Dunstan area, ie, distinctive Central Otago block range mountain backdrop (part of the Pisa Range eastern face).

Summit Plateau

There is an abrupt contrast between the Lowburn Faces and the smooth rounded profiles of the plateau. The summit consists of broad, gently undulating ridges, with rock tors protruding above the rounded and weather-worn surface. Rock tors are a dominant and very impressive feature. Some are of immense proportions.

Tributaries of the Roaring Meg form alluvial valleys entrenched into the plateau surface. The valleys become more deeply entrenched towards the south-west end of the summit.

A wide range of vegetation types is represented. Snow tussock is dominant, although there are large areas of induced short alpine tussockland, *Aciphylla* and cushionfield. Wetlands occur in the hollows. Eroded bare patches are apparent on dry ridges and steeper slopes.

Old water races follow around the contour at the head of Skeleton Creek. These fit neatly into the landscape. Stone revetments support the race in some sections. The water races plus the occasional fence and access track are the only obvious cultural intrusion.

Towards Mt Michael the plateau slopes to the south. Snow tussock forms only scattered remnants. Short alpine tussockland, *Aciphylla*, rock and bare ground are dominant. Some large rock tors also occur here. This end of the summit appears to have sustained a higher level of modification from grazing and burning than further north.

Other characteristics of the summit plateau include its broad, expansive nature, the obvious harshness of the environment, its remoteness, and views out to surrounding ranges and valleys. It has high visual resource values derived from its sheer scale, impressive landform, the diversity and relative intactness of the vegetation. In landscape terms, the whole of the summit represents a single landscape entity.

Roaring Meg and Kawarau Faces

The Kawarau and Roaring Meg Faces are typical block range slopes of slump and landslide topography. Broadly, the vegetation is sparse, short tussock, introduced grasses and briar, and remnant shrubland. Above about 900 m is a large band of short tussock, scattered snow tussock and *Aciphylla*. The short tussock is in reasonable condition. South of Skeleton Creek is a distinctive area of extensive rock outcrop, boulders and lumpy topography within the short tussock zone.

The faces form part of the Kawarau Gorge visual and scenic corridor.

2 LANDFORMS AND GEOLOGY

The property is on the southern end of the Pisa schist block mountain range where it dips into the Kawarau Gorge and river. The tops lying to the west are easy slope and contour but steep faces drop into the Kawarau River and Roaring Meg Stream.

These features are characteristic of the land systems present on the property. The Meg land system is the summit plateau of the Pisa Range with smooth undulating ridges (punctuated by common schist tors) tilted overall a few degrees to the west-north-west. Rather gentle valleys and streams flow down slope with significant alluvial flats at high levels but becoming deeply entrenched in narrow valleys further downstream.

Periglacial phenomena are widespread. Soil hummocks in particular are very extensive on the smooth upland surfaces except on the most exposed sites where lag gravels have developed. The Meg land system is a very distinctive alpine landscape featuring extensive cushionfield vegetation and short tussockland with gentle topography internally but dramatically elevated above the surrounding valley floors.

The K9 land system above the Kawarau Gorge and Roaring Meg is a large land slide mass. Parts of the slide have large floating block rock outcrops or extensive boulder fields with active slumping and blockslides. The moderate (25 degree) southwest dip of the Haast schist is responsible for the instability. Schist underlying the north edge of the Kawarau slide forms bluffs down the sides of Skeleton Stream.

The Skeleton Stream RAP contains good examples of both the land systems, however, landform is not a major feature of the RAP.

The property contains one geopreservation site:

ID LAN 183	
Landform:	Rock block slide
District:	Clutha
Importance:	B (National Importance)
Locality:	Alongside Kawarau River extending 4 km between Roaring Meg and Scrub Stream
Significance:	An extremely good example of a large-scale movement
Vulnerability:	3 (unlikely)
Hazards:	No known realistic hazards

Morphogenic: Map reference F41 Easting 012 Northing 713

SOILS

The main soil types are Carrick Hill soils (upland yellow brown earths) on the plateau, Dunstan steep-land yellow brown earth on the higher altitude faces and Arrow steep-land yellow grey earths on the lower faces. These and the other minor soil types are described in detail in the Knight Frank report. These soils are not particularly prone to erosion under normal circumstances, however, if denuded wind erosion can be severe at all altitudes and water erosion is a problem at higher altitude if the soil is disturbed (tracks, fence-lines, races).

SIGNIFICANCE

The landform is significant having representative characteristics of important district landforms, however the types are well represented elsewhere, are not significantly vulnerable, and landform is not a major issue in assessing the conservation values.

3 CLIMATE

The property experiences a Central Otago type climate with hot dry summers and cold winters. Rainfall varies from 400 mm at the homestead to over 1000 mm on the higher country which is under snow for 3-4 months most years.

4 VEGETATION

Lowburn Valley is in the Pisa Ecological District which is part of the Central Otago Ecological Region. The property was surveyed as part of the broader Linds, Pisa, Dunstan Protected Natural Areas Programme (PNAP) survey in 1985. Since then, a number of specialists have visited the property to assess its conservation value. The PNAP survey highlighted two areas recommended for protection (RAPs). These are:

a Skeleton Stream : Pisa A6

This RAP of 330 ha encompasses the lower reaches of Skeleton Stream and the steep slopes of the Roaring Meg upstream from its confluence with Skeleton Stream. This area includes a diverse shrubland of *Olearia odorata*, *Coprosma propinqua*, *C. parviflora*, koromiko, *Hebe salicifolia*, *H. subalpina* and *Olearia avicenniifolia*. Included within this area in the bluffs are Halls totara *Podocarpus ballii*, celery pine *Phyllocladus alpinus* and bog pine *Halocarpus bidwillii*. These

remnants are important relics of past woody vegetation. This community is the only example of its type in the southern Pisa District.

This RAP also encompasses short tussock *Festuca novae-zelandiae* and narrow-leaved snow tussock *Chionochloa rigida*, the latter occurring mainly on shady faces and the upper slopes of the RAP north of Skeleton Stream.

*Beech
Survived by*

b Lower Meg : Pisa A8
Douglas Fir

*sub 1000 1000 1000 to 1000
Johns photo 18*

This RAP of 20 ha is located approximately one kilometre below the upper Roaring Meg Dam and encompasses 30+ mature silver beech *Nothofagus menziesii*, trees and a variety of seedlings. The largest silver beech tree in the grove is 110 cm dbh. This beech remnant is the most extreme outlier of beech forest in northwest Otago, closest to the dry interior of Central Otago. It has been suggested that this silver beech represents an older, mid-Holocene forest that spread to the limits of its drought tolerance along the Pisa Range, and has subsequently become fragmented by fire.

Rock bluff vegetation, fescue tussock grassland, manuka and *Coprosma* shrubland, along with briar and matagouri dominate the immediate surrounds and surrounding stream margins.

c Balance of Property

The remaining 5500 ha contains four major plant communities of which some 3200 ha is relatively unmodified.

i Tall Tussock Grassland

The tall tussock grassland of *Chionochloa rigida* occupies the majority of the 3200 ha that is still in a relatively natural state. This snow tussock is primarily found above the 1100 m contour and with some exceptions becomes sparser with decreasing altitude. The exceptions are the back, less accessible areas of the property where relatively goods communities of snow tussock are found at lower altitudes down to 800 m in Skeleton Creek and 900 m in the middle Roaring Meg.

The *Chionochloa rigida* vegetation has been affected by burning and grazing and is today highly variable. It presents a mosaic of snow tussock that varies from scattered snow tussock in amongst a natural short tussock grassland of *Festuca matthewsii* ss. and *F. novae-zelandiae* to dense snow tussock covering 90-100% of the ground and over one metre tall. The general trend is denser snow tussock on the south-westerly aspects or shady slopes with good regeneration in places, to the sunny slopes and ridges having depleted narrow-leaved snow tussock in amongst the short tussock grassland.

As with the tussock cover the interspecies diversity is highly variable, reflecting the usual pattern found in the Otago block mountains. In some areas of dense snow tussock there is dense leaf litter with virtually no inter tussock species growing. In the more open depleted areas or drier ridges and crests the natural species diversity increases considerably. The most common plants are *Dracophyllum muscoides* and *D. prorum* on the drier ridges and hollows, with *Aciphylla aurea* being common throughout and in some cases becoming the dominant plant in amongst the tussock grassland. Maori onion *Bulbinella angustifolia* was prominent on a large number of sites and was particularly noticeable in amongst the snow tussock/short tussock above the Packspur Gully.

Mountain cottonwood, *Cassinia vauvilliersii* plants are scattered on both properties along with *Carmichaelia petrei*, *Corallospartium crassicaule*, *Dracophyllum longifolium*, *Olearia odorata* and whipcord. The overall species diversity varies, but a common thread is the remarkable degree of naturalness that prevails on the higher country.

ii Short Tussock Grassland

The short tussock grasslands on Lowburn are predominantly composed of *Poa colensoi* and *Festuca novae-zelandiae* and represent a transitional zone from tall tussock to a short tussock grassland. *Chionochloa rigida* is scattered throughout this induced mosaic. *Poa colensoi* is scattered from a low level (900 m) throughout the tall tussock grassland through to the higher (1500 m) cushionfields. *Festuca novae-zelandiae* occupies the lower slopes below 1100 m and the sunnier slopes that are more depleted. The majority of the property would be described as a *Festuca* grassland with tall tussock being a minor component. *Festuca matthewsii* and *Rytidosperma setifolium* are the other major grasses within this community along with a variety of *Poa* sp. This vegetation type extends below the tall tussock grassland zone of 1100 m and generally below 800 m on into the shrubland communities.

Silver tussock *Poa cita* is not common being confined to the lower OSTD areas below 900 m.

The induced short tussock grasslands have the highest plant diversity range, as the open nature of the grasslands have allowed the inter tussock species to grow without the competition presented by the taller snow tussocks. The dwarf heath *Leucopogon fraseri* is common throughout along with the *Celmisia* spp. *Brachyglottis bellidioides*, whipcord Hebe, *Pimelea aridula*, *Craspedia* spp., *Wahlenbergia albomarginata*, *Euphrasia zelandica* and *Gentiana bellidifolia* type.

Scattered throughout the short tussock land are patches of hawkweed *Hieracium lepidulum* and *H. pilosella*. Cats ear, *Hypochoeris radicata* and dandelion *Taraxacum officinale* add to the yellow tinge during the summer period.

iii Shrubland

The shrubland component is the most prominent vegetation community. It almost completely surrounds the boundaries covering an altitude bank from 300 m to 700-800 m in places. The vegetation is a mixture of dense briar, matagouri and *Coprosma propinqua*. The briar tends to thin out at the 800 m level and has completely disappeared by the 1000 m mark.

A history of fires in the area has dictated the shrubland diversity which remains today. Refugia in gorges, gullies or around rocky outcrops have a good species diversity, while other areas present a monoculture. Packspur Gully contains the greatest diversity with *Coprosma* spp., *Hebe salicifolia*, *Muehlenbeckia axillaris* and *Rubus schmidelioides*, while the Low Burn is the typical monoculture of briar.

The faces above the Roaring Meg are similar, except around Skeleton Stream which was identified as a RAP in 1984 because of its shrubland. Other shrub species recorded in this area are *H. lyallii*, *Carmichelea petrei*, along with herbs of *Astelia vervosa* and *Ischnocarpus novae-zelandiae* growing on dry rocky ledges. Lower down the Roaring Meg the stream bed is choked with willow or elderberry. Above the Meg RAP, on a terrace, the only manuka of significance on the properties was recorded. This is very blighted and scattered between the power station road and the Roaring Meg.

iv Lowland Grassland

This broad zone occurs primarily below 1000 m includes improved and unimproved grassland, as well as the shrubland community. Parts of Lowburn Valley have been OSTD but the majority of the property below 1000 m is a highly modified native grassland with a mix of pasture grasses and weeds (*Hypericum*, fox glove *Digitalis purpurea*, vipers bugloss *Echium vulgare*, thistles and haresfoot *Trifolium arvense*).

5 AQUATIC FAUNA

Brown trout are the only fish species previously recorded on the Lowburn Valley Station area. Two records in the NIWA database record brown trout (*Salmo trutta*) in sections of the Roaring Meg. No other species were known from the Lowburn property.

Fish surveys of the Lowburn Valley concentrated on the Roaring Meg catchment and Low Burn. Many of the streams on the Lowburn face and in the Meg Block were considered too steep and small to retain fish populations. This was confirmed when Tongue Spur Creek was fished at an altitude of 750 m and no fish were found. In the Roaring Meg brown trout still exist downstream

of the Plank Creek confluence, and brook char (*Salvelinus fontinalis*) occurs in the Roaring Meg from the confluence upstream. Skeleton Creek contains no fish either in the lower steep cascade section, or the higher altitude lower gradient sections. The upper reaches of Mitre Creek also contain no fish, but the upstream extent of brook char is undetermined. Both Mitre and Skeleton Creeks contain abundant freshwater invertebrates and water quality is high. This, together with the relatively undisturbed nature of these upper reaches they have good conservation values. Low Burn contains brown trout in its lower reaches near the homestead. These fish do not occur in steeper gradient streams and can be expected to occupy the Low Burn up to an altitude of 600 m.

In the absence of any threatened fish species, only Skeleton and Mitre Creeks have any conservation values.

Terrestrial fauna were not surveyed.

6 HISTORIC VALUES

WATER RACES AND OTHER HISTORIC SITES

Extracts from a report by Dr Jill Hamel, March 1996

Gold mining activities include massive water races and high altitude alluvial sites. Some, such as the two Lowburn races, have been in continuous use since the beginning of gold mining in Otago. The water races crossing Lowburn Valley Station which have current licences are:

- two Lowburn races (1378Cr, 1394Cr)
- Towans Race from Mitre Creek (1922Cr), which includes both the live section across the face of the hill and the dry section that runs down the ridge to Mt Michael. There is no indication that the section on the Kawarau Face is within the current licences
- four races in the Kawarau Gorge (1835Cr, 1849Cr, 2385Cr, 2386Cr) which run in only two physical courses on the ground.

The owners of these licences are listed in Appendix 1. It is unlikely that any of the other high races in Skeleton Stream and Mitre Creek have current licences, since none could be traced and there was no sign of recent water flow in them. The two Lowburn races were cut in 1863, but are not the oldest races in the area. One from Charcoal Gully has a priority dated 1862 (Appendix 1). The sections of Towans Race above 1300 m and running down to Mt Michael were probably cut in 1865 and the lower sections between 1899 and 1906. Of the Kawarau Face races, the 2385/6 pair were cut in 1870-74 and the third race in the complex (1849Cr) was

cut in 1881. The earliest date for the lowest race is 189-0 but it is likely that it was cut before then.

The alignments of all these races, other than the low level sections of Towans, are all pre-1900 and archaeological sites. Since the actual troughs of the race have been repaired and cleaned out regularly, the present profile cannot be considered to be an archaeological site under the Historic Places Act 1993. The alignments of the race across country provide valuable insights into the surveying skills of the original builders, their concepts of appropriate race gradients and other aspects of water management for mining.

The "live" water races on Lowburn Valley Station for which there are current licences are not part of the pastoral lease, and they are not shown on the title, even in the form of an easement. The only hint of their existence may be a condition on the lease that the Crown has the right to form and maintain races on the property. The races belong to those who hold the relevant licences (see Appendix 1), which in some cases may be the Crown. If it is the Crown, this will be clearly stated on the licence and the Crown licence does not lapse with time. Abandoned races for which the licence is specifically stated as cancelled become non-entities in law, and the formation on the ground belongs to the adjacent landowner to do with as he wishes (Brian Mooney, pers comm.).

Of the abandoned races, Henderson's race out of Mitre Creek had been constructed some time prior to 1900 and the longer race associated with John Hepburn in the top of Skeleton Stream may have been cut around 1891. The shorter pair nearby may have been earlier. The long race out of Colour and Winters Creek and associated workings are invisible in the mining records, which makes it likely that they are early rather than late. All these races can be considered as archaeological sites.

Most of the races are medium in size and designed to carry three or four heads of water, though the main licence for Towan's specifies six heads in a race 2 x 3 ft (60 x 90 cm). In the field we seldom saw a water depth of more than 20 cm and a width of 40 cm in the races, though the full trench from the hillside to the top of the berm could be two metres wide and one metre deep. Since we do not walk the full length of any of the races, racemen's huts were located only when we were given information by locals. It is likely that Deep Creek Hut was used by racemen on Towans Race as well as by musterers on Mt Pisa Station. The only raceman's site found on Lowburn Valley Station was Towans Camp in Rose Creek, which probably had platforms for two tents, one of which was supported by a stone chimney and a wooden door frame.

As a group, these races are skilled examples of long races built through rough country, most of them at high altitudes. The upper part of Towan's Race around 1300 m asl is one of the three highest live races in Central Otago. (The others are Winters Race out of the Leopold Burn and Colour Burn, Pisa Range, at about 1120 m asl, and the Carrick Race, Nevis Valley, at about 1120 m asl.) The abandoned Mitre Creek Race at 1300 m asl ranks with these other races for length and difficulty of construction, as does the unknown race out of the Colour Burn and Winter Creek on Mt Pisa Station, running between 1520 and 1370 m asl to the Boundary Workings.

The other historic mining sites on Lowburn Valley Station are mostly high altitude alluvial workings. The most spectacular are the Boundary Workings close to the Cromwell-Cardrona Pack Track in the head of Mitre Creek. They consist of an earth walled reservoir on a ridge at 1350 m asl, with tailings in valleys both north and south. The southern group are heavy tailings running down the creek for 500 m, and the northern group are smaller. The main head race and the northern tailings are in the head of Winters Creek and on Mt Pisa Station.

There is another important group of sluicings and tailings at Hairpin Bend in the Roaring Meg, which includes hut sites, as well as races and workings. Sites are scattered along the line of the Roaring Meg from part of a large set of tailings just below Meg Huts to a set of Chinese workings just below the Plank Creek confluence. There is also a complete set of hut, races, reservoirs and workings in the head of Skeleton Stream which can be assigned to John Hepburn.

The only physical sign of early pastoralism is the boundary rider's hut at the mouth of Pennycook Creek. Though it has no roof and the walls are slowly deteriorating, it is an interesting example of early stonework with a notable design of chimney, built within the wall and with internal buttresses.

Mining had begun up the Roaring Meg (or Kirtleburn) in the 1860s and the valley was used as a route to the Arrow field. Most work was done in the 1860s and 1870s and by the 1880s most of the alluvial mining in both the Meg and along the gorge was over.

The two Roaring Meg power stations are small vernacular buildings of a type no longer being built. The upper one is a simple barn-shaped building, the older part built of corrugated iron and curiously has 19th Century six-pane windows. Since the pack track was not upgraded to a vehicle road until the 1960s, the materials and pipes had to be brought in by pack horse. The dam above the power house is a concrete wall across a narrow part of the gorge. The pipes were winched by hand into place on the hillside. The older power house down by the road was not visited.

7 EXISTING LAND STATUS

The subject part of the property consists of one pastoral lease title.

There are three unsurveyed legal roads through the property (see attached cadastral map) and a marginal strip along the Roaring Meg. Two of the legal roads (near the Roaring Meg and over Mt Michael) approximate the old pack tracks. The third, near the homestead, is not close to either the present farm track or the old pack track.

There are no mining agreements or land improvement agreements registered on the title and, other than normal mortgagee consent, appear to be no impediments to conservation aspirations.

Lowburn Valley Pastoral Lease is contained within the Rural 1 Zone of the Vincent Section of the Central Otago District Transitional District Plan.

The plan recognises the scenic values of the rural zone and contains objectives and policies for landscape protection. Council will encourage development of land and buildings which is environmentally sensitive and in keeping with the existing natural and cultural characteristics of any given site. There are no provisions for indigenous fauna or flora, or amenity values.

The Rural 1 Zone provides predominantly for rural farming and activities associated with rural farming as permitted activities. Factory farming and forestry and their associated activities are also well covered as either permitted or controlled activities.

Reserves as defined under the Reserves Act is a permitted activity. Camping grounds and recreation grounds are controlled activities.

The extreme eastern end of the property is identified in the plan as an area with "high potential soils". However, this is unlikely to have any significant effect on the property.

8 RECREATION/ACCESS

The Cardrona-Roaring Meg and to a lesser extent the Cardrona-Cromwell (Mt Michael) pack tracks provide legal public access through Lowburn Valley. The most used track, Cardrona-Lowburn, is not on a legal road through Lowburn Valley, though it is in the adjoining Mt Pisa

property. While parts of the pack track formations have been destroyed by farm tracks or the Roaring Meg Power Station road, the public does use the tracks as walking routes from Cardrona to Roaring Meg or Lowburn. Currently the power station road gate is locked but the public can walk up the road. Central Electric believe that while the formation is partly on the legal roadline, they maintain the road at their cost and extra vehicle traffic would add to this cost. They also say that as the road is only one vehicle width in many places, it would be dangerous if the public were using the road.

Both the Roaring Meg and the Lowburn pack tracks are signposted and marked along their lengths with stiles over the fences. This development has been in co-operation with the lessees. Usage is currently low but as the tracks traverse a natural tussock grassland landscape with an historical setting their popularity is expected to increase. Both tracks can be treated as either a one day trip or a two day trip camping overnight or staying at the Meg Hut on Waiorau.

Part of the Cardrona-Lowburn Pack Track is on the adjoining Mt Pisa Station. It enters Lowburn Valley at the top of Pack Spur (route for the old pack track and the present farm track). The Lowburn Valley farm track is the best and most popular vehicle access on to the southern Pisas whether for tramping or cross-country skiing.

The old pack track and surrounding plateau are also popular with local horse riders and the Otago Goldfields Cavalcade has previously used the track and no doubt will again.

9 MANAGEMENT ISSUES

From a conservation aspect there are a number of management issues, none of which are a major problem but some of which are significant.

- a Wildling pines: Lowburn Valley is both the recipient of seed from other sources (particularly from the west and north) and also a seed source from the Oregons near the power station. Not yet a major problem but regular removal would be necessary.
- b Goats: A modest number remain on the property. Not as many as some neighbours, but regular ongoing control will be needed.
- c Pigs: A small number remain. Still part of the MAF pig Tb programme. Not a problem while this continues.

- d A few deer and an increasing number of chamois are present. Recreational hunting would give adequate control.
- e Rabbits: A significant problem on the lower country, particularly on the eastern side. Aggravated by the amount of cover provided by briar.
- f Gorse and Broom: Not a major problem yet. Preventive control now is desirable.
- g Briar: Provides cover for rabbits otherwise not a major conservation problem. Could be if local body decided on a serious reduction policy.

10 OTHER ISSUES

Part of the Pisa Crest Special Area extends into Lowburn Valley and a relevant extract from the Conservation Management Strategy is attached. Only a narrow corner of Mt Pisa Station separates Lowburn Valley from the Pisa Conservation Area ex Waiorau.

EXTRACT FROM CONSERVATION MANAGEMENT STRATEGY

25 PISA

Cons.Unit No.	Name	Status	Area
	Pisa (Waiorau)	Conservation Area	4,018.00 ha

Ecological District

Pisa

Local Authority

Central Otago and Queenstown Lakes District Councils

DOC Land

The agreed tenure change deal on Waiorau Pastoral Lease, once fully implemented, will provide a 4000 hectare conservation area on the Pisa tops and will give covenant protection to values in the upper parts of the freehold.

Description

The Pisa Range is a large block mountain between the Cardrona and upper Clutha Valleys reaching an altitude of 1964 metres at Mt Pisa and forming the imposing backdrop to Cromwell and the western side of the upper Clutha Valley. It is the westernmost block mountain range in Otago, and the highest schist block mountain. The range is composed of Otago schist and displays a range of landforms typical of Central Otago mountains such as summit tors, active patterned ground and broad crests. Wetlands and seepages on the summit form the headwaters for many torrents and streams that cascade off the range such as Roaring Meg, Lochar Burn and Luggate Creek. Along with the wetlands there are some substantial tarns and small cirque lakes including Lake McKay.

Harsh winter and summer climate means the summit vegetation is predominantly native cushionfield, principally *Dracophyllum muscoides*, blue tussock, herbfield (mainly *Celmisia viscosa*), wetland, fellfield, snow banks and remnant snow tussock areas. Denser snow tussock is found on the flanks with few shrubs and increasing numbers of exotic herbs. The montane zone on the north-eastern faces have several patches of Halls totara-mountain toatoa-bog pine shrubland with *Corokia*-kanuka-manuka-*Coprosma* lower down on rocky faces or gullies. The northern and southern ends of the range have important gully systems with silver beech (*Nothofagus menziesii*) forest remnants and associated species.

Historic values consist of many old pack tracks of which two are significant; the Lowburn-Cardrona and Roaring Meg-Cardrona. In addition the Criffel Diggings are important for both their large size and are amongst the highest altitude gold workings in Otago. Some very high altitude water races are found on the range also.

Values

The Pisa Range was surveyed under the PNAP in 1985 and large parts of the range crest were among the areas recommended for protection.

Essentially the value to conservation of the Pisa Range is the variety and naturalness of landforms and indigenous ecosystems present. This is accentuated at higher altitude. Generally the vegetation and invertebrates here are those typical of other Central Otago

Ranges but with a distinctive Pisa Range element. The diminutive grass *Poa pygmaea*, and cushion *Chionohebe myosotoides* are very localised species of the high-alpine zone with their biggest populations anywhere, on the Pisa Range. Other important plants present at high altitude are *Aciphylla simplex*, *Anisotome pilifera* and *Epilobium purpuratum*. Among the invertebrates the presence of three species of flightless chafer beetle in the genus *Prodontria* is significant, as are the large weevils *Lyperobius* on speargrass. Typically, the alpine fauna is diurnal and distinctively coloured. A multitude of grasshoppers, flies, beetles and moths abound on the cushionfields and in the snowgrass. Aquatic ecosystems are also important for invertebrates with a variety of tarns, streams and waterfalls supporting a high diversity of caddis, stoneflies and mayflies. At high altitude many adults are flightless such as the caddis *Typhobiosis childi* while others such as the stonefly *Zelandobius inversus* are endemic to the Pisa Range.

Several native birds nest on the crests of the range including pied oystercatcher, black-fronted tern and banded dotterel.

At lower altitude the Halls totara remnants, dry silver beech forested gullies and kanuka-manuka shrublands are significant, as vestiges of once more extensive indigenous dry forest.

The recreational settings available in the area are predominantly back country 4WD, although the crest of the range (including most of the large conservation area) is inaccessible to vehicles in the winter and takes on remote characteristics.

The range is important for both commercial and independent cross-country skiing in winter. Summertime recreational activities include 4WDing and tramping.

The southern part of the range is traversed by the traditional huarahi (Maori trail) up the Roaring Meg and into the Orau (Cardrona).

Management Issues

- The department will shortly be responsible for a substantial part of the crest of the range. Pastoral lease tenure review of surrounding Crown pastoral lease land will provide opportunities to add areas of high natural and historic values. This will confer both conservation and management benefits in terms of representativeness, continuity and size.
- The protection of complete mining systems.
- Fencing to exclude grazing of land administered by the department, subject to any agreed transitional grazing arrangements.
- Fire, including neighbours' burnoffs.
- Track and hut maintenance.
- Commercial recreation and tourism.
- Off-road vehicles and their impacts on vulnerable areas.
- Lack of comprehensive natural resource information including freshwater fisheries data.

- Weed and pest threat, including goats in shrublands, and pigs and hares at high altitude.

Objective

To protect representative low altitude lands and high altitude lands on a more extensive basis in the area for their landscape, nature conservation and historical values; the former lands on an extensive basis providing enhanced public recreational opportunities complementary to those already being provided commercially.

Implementation

- (a) Seek opportunities arising out of further pastoral lease tenure review negotiations to protect extensive high altitude areas of high landscape, nature conservation, historical, recreational and water and soil conservation significance.
- (b) As tenure reviews are concluded, keep under consideration the unifying concept of a high altitude Pisa Range Conservation Park. If the park proposal proceeds, a management plan for the park will be developed.
- (c) Ensure appropriate public access, both vehicular where appropriate and on foot, to lands administered by the department.
- (d) Continue to gather ecological and historical information that aid management and pastoral lease tenure review negotiations, including surveys for indigenous fish.
- (e) Recreation and tourist concessionaire use of the range may be allowed where detrimental effect on the natural, historic and recreational resources and opportunities can be avoided, remedied or mitigated.
- (f) Continuing education of summertime recreationists about the fragility of upland wetlands to vehicle traffic, and fire hazards.
- (h) Aiming to protect at least one complete mining system.
- (j) Foot access to and along the Roaring Meg-Cardrona and Lowburn-Cardrona Pack Tracks will be negotiated/identified, and their natural, cultural and historic resources protected, in relation to demand. Cultural aspects will be interpreted in consultation with Kai Tahu.
- (k) The protection of significant natural and historic resources will be advocated through Resource Management Act and other statutory processes.

Priorities

Completion and continuation of protection negotiations at both high and low altitudes, including tenure reviews, will be a priority in this Special Place.

PART III

CONSULTATION

An early warning meeting was held with NGOs on 23 May 1996 covering this and other properties. Most were not familiar with the property, however various issues were raised, some specific, some generic.

Issues raised in regard to this property were:

- 1 All land above 1200 m (FMC 1000-1100 m) to go to DOC.
- 2 Power board road up Roaring Meg to be made legal and available to public for vehicle use.
- 3 Vehicle access for public up farm track on Packspur Ridge.
- 4 Foot and mountain bike access on all three pack tracks (Lowburn, Cromwell, Roaring Meg).
- 5 DOC/freehold boundary to be consistent with neighbouring/related runs.
- 6 All watercourses greater than 3 m to have marginal strips laid off.

Federated Mountain Clubs made a written submission (copy attached).

In addition, outside this meeting the Cromwell Riding Club and the Otago Goldfields Heritage Trust have made written representations regarding horse access on this property and on into conservation land. Copies of these are also attached.

ATTACHMENTS

- Conservation resource map
- Cadastral map
- NGO written representations

Pastoral Lease Tenure Reviews May 1996

Notes for Early Warning Meeting 23 May 1996

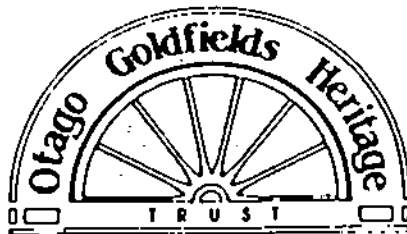
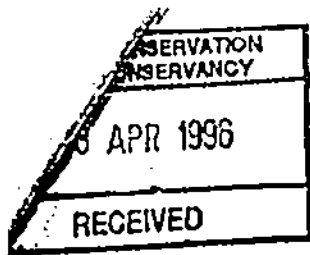
CONTRIBUTION FROM MIKE FLOATE FOR EMC

<u>Station</u>	<u>Reference</u>	<u>Location</u>	<u>LUC Map(s)</u>
PISA/KAWARAU AREA			
Glencoe	Pf F44	Arrowtown	S123, S124, S133
Eastburn	Po 257	Arrowtown	S124, S133
Waitiri	Po 270	Gibbston	S124, S133
Lowburn	Po 256	Cromwell	S124, S133
Mt Pisa	Po 271, 272	Cromwell	S124,
Mt Difficulty	Po 257	Arrowtown	S133
HAWKDUN/NASEBY AREA			
Eweburn	Po 074	Naseby	S126, S135
ROCK AND PILLAR/ROCKLANDS AREA			
The Burgan	Po 079	Middlemarch	S154
Styx Run	Po 333	Patearoa	S145, S154
Kelvin Grove	Po 280	Middlemarch	S154

Matters of recreational interest/concern

Lowburn (Po 256)

- Land above 1000-1100m to go to DOC
- All LUC Class VIII and most Class VII land to go to DOC
- DOC/Freehold boundary to be consistent (landscape) with neighbouring/related runs
- Foot and mountain bike access via Cardrona-Meg pack track
- Foot and mountain bike access from Mount Michael to the Meg via the Cromwell-Cardrona Pack Track
- Foot and mountain bike access from Mount Michael to Mitre Rocks, Mount Dottrel and on to Pisa Tops (Mt Pisa Station)
- Use of hut at Mt Pisa Yards (Infomap 260 F41: 047.757)
- Rights of access on emergency exit route from Mt Pisa Yards via 4WD track on Lowburn face, and spur leading to Packspur Gully and Lowburn
- All water courses greater than 3m to have marginal strips laid off



12/2/96 P 143 (57)

Otago Goldfields Heritage Trust
PO Box 91
CROMWELL.

17 April 1996

Jeff Connell
Department of Conservation
PO Box 5244
DUNEDIN

Dear Mr Connell,

Thankyou for your letter of March 15.

We note that you suggest we should make specific submissions on proposed tenure reviews.

In the light of the fact that the Commissioner of Crown Lands has approved an exchange of property rights on Earnsclough Station, we ask the Department to consider approval for horse riding on the Old Man Range which will pass into conservation reserve.

We would like to point out that horses have historically been ridden all over the land that we are concerned with, both in mustering and recreation. Alistair Campbell, of Earnsclough Station, has said he will still give permission for horse riders to cross his land if they ask.

We are pleased that the Earnsclough tenure exchange has meant historic goldmining areas in the Fraser Basin will be conserved.

We also understand Lowburn Station will shortly be advertised for tenure review. Once again, we will be urging your department to maintain horse access over the historic pack tracks between Lowburn and Cardrona.

We understand that in some cases horse riding may be inappropriate because of the fragile nature of the landscape or such like, but emphasise that horses have traditionally travelled throughout much of the high country of Otago.

Yours sincerely,

Jean Gibson
SECRETARY
OTAGO GOLDFIELDS HERITAGE TRUST

RC	✓	2/1/5
ADMIN FUNCTIONS		
ADMIN OPERATIONS		
ADMIN PERSONNEL		
ADMIN FINANCE		
LEGAL		
SCIENCE		
PUBLIC RELS	✓	
KA HAKIHI		
LIBRARY		



Cromwell Riding Club



KER 16

Cromwell Riding Club
C/- Gibson
Strathburn Farm
Lowburn valley
R.D. 2 Cromwell

DEPT OF CONSERVATION
OTAGO CONSERVANCY
- 6 MAR 1996
RECEIVED

4 March 1996

Regional Conservator
Dept of Conservation
Private Bag
Dunedin

RE: Access to High Country Areas managed by DOC for non commercial horse riders

Dear Mr Connell

In November 1995 I attended a meeting in Alexandra on behalf of the Cromwell Riding Club organised by Knight Frank and attended by Mr Perrot representing DOC. The aim of the meeting was to discuss the process of negotiation for horse access to back country areas identified for surrender to the crown and to be administered by DOC. Many of these areas are valued very highly for back country horse trekking. During the discussions Mr Perrot pointed out to the meeting that it should not be assumed that even if horse access across land to be freeholded was successfully negotiated, DOC would not necessarily allow access to any of the back country under its administration. In the case of the Fraser Basin on Earnsleugh it was stated that it was more than likely that horses would not be allowed. This raised an issue which is of paramount importance to back country horse trekkers and resulted in considerable discussion at the meeting. The Cromwell Riding Club has since met to discuss this issue and is extremely concerned about the likelihood that prime horse trekking areas may become off limits when they come under DOC management. The club would like to ask you to consider this question taking into account the following and to clarify what DOCs attitude to this recreational past time is.

During this discussion several aspects were identified by Mr Perrot as relevant to considering the issue of horse access. These were;

1. Conflicts with other users of the conservation estate
2. Physical damage to the resource
3. Risk of introducing weeds
4. Management issues (locking gates etc.)

RC		
MANGR FUNCTIONS		
MANGR OPERATIONS		
MANGR PERSONNEL		
MANGR FINANCE		
LEGAL		
SCIENCE		
PMA/PAST		✓

3. Legislation conflicts.

We have provided comment on each of these as follows:

Other user conflict

Back country horse trekking is a passive recreational pursuit. It does not produce offensive noise as motorised sports do or present a danger to other users in the wide open expanses of these back country areas. In addition in our members experiences, and their discussions with non-riders it is suggested that horse trekking is generally viewed by back country walkers as a compatible non conflicting pastime which carries the same basic philosophy of getting out and experiencing these areas under the users own steam (in this case horse and rider) and without resorting to modern motorised means. It has even been suggested that horse trekking conflicts much less than does mountain biking in which speed and hooning is usually part of the motivation for carrying out the pastime. Horse riding certainly leaves less physical evidence to offend other users. Possible areas identified that could result in conflict were; other users fear of large animals and the presence of horse dung. Neither of these is likely to be of significance in the wide open expanses given the extremely low density of use by horse riders. These may be of some significance where both types of users are confined to a narrow track due to terrain or around huts. However developing a code of conduct may be the best way to resolve this minor issue.

We presume that DOC does not foresee this as a potential conflict given its latest development of a walking track along the Lowburn Cadrona Pack Track. This track was originally formed through the intense use of horses packing supplies to and from the Cadrona and upper Meg gold workings and Cromwell. Although it was no longer required for packing supplies from about the 1920's on it has remained a popular trekking route (especially with our members) right through to the present. As DOC has not held any discussions with the horse trekking fraternity regarding this popular horse trekking route and has seen fit to develop it for walking we can only assume that DOC does not foresee any user conflict. I will refer to this route through out this letter as it allows some very relevant points to be made. I will also raise some other issues regarding its development at the end.

- 2.) **Physical Damage to the Resource:** Horse Trekking leaves very little physical evidence other than hoof prints and these are only obvious when walking on soft ground or when many horses are confined to a track as in a commercial trekking situation. The sort of back country trekking our members undertake is of low frequency and/or spread out over a wide area. Sensitive areas such as bogs which are frequently damaged by four wheel drives and motor bike hoons are avoided at all costs by horse riders. Firstly back country horse riding is about experiencing the peacefulness and tranquillity as well as the beauty of our back country areas not racing through a bog revving a big engine with mud flying everywhere, secondly horses have a natural fear of boggy ground as bogs can represent a considerable danger to a heavy animal like a horse. When traversing soft ground riders will always cross slowly and carefully if at all.

It was suggested that confining riding to tracks may be an option. We see little benefit in this and very little justification. Even when members have been a part of the Cavalcade (over 100 horses) travelling cross country - they have noted very little evidence remains for long as to where the horses have been. This can of course be backed up by visiting areas where the Cavalcade has passed through. Being able to

travel cross country is a very important part of the experience of back country trekking.

- 3.) **Weed Invasion:** Although it is biological possible for horses to ingest weed seeds and to pass them on in their dung very little risk of weed introduction exists. Many weeds of the high country have light wind borne seeds which obviously are mostly spread by wind. These types of seed are most likely to be destroyed in the horses gut as they are not adapted to withstand the acids within the stomach and intestine. Others such as burdock or Australian sheeps burr will cling to fur or wool but do not stick to horses hair. Trampers socks and long jolms are much more likely to spread these.

Some seeds such as gorse or broom could conceivably be spread by a horse in the highly unlikely event they had been present in a horses feed. These seeds are much more usually spread through vehicles and bull dozers and through transporting of gravel containing the seeds. Horses do not eat plants such as elderberry, their seeds are transported through birds. If horses were a source of weeds, we would expect to see weed infestations along areas frequented often by horse riders. As mentioned earlier the Lowburn Pack Track has been a route heavily used by horses historically and up to the present. There are no weed infestations along this route and like the Fraser Basin many weeds would not survive at the higher altitudes any way.

- 4.) **Management Implications:** The main manage implication raised was being able to lock gates to prevent motorcycle access and four wheel drives to areas where these are not permitted and to a lesser extent for rabbit control. We raised this issue in respect of access to DOC administered land at the meeting pointing out that some lateral thinking may be required and more consultation to take advantage of other peoples ideas not simply banning horses because its the easiest option. We have suggested the horse style as used successfully in Australia to keep 4wd and motorcycles out, but to allow trained horses in. Other approaches such as siting gates in places where only horses can get to them could also be considered.
- 5.) **Legislation:** Mr Perrot pointed out that under the reserves act that horses were in the same category as vehicles and motorcycles. We presume that this has been done mostly for legislative convenience and simplicity not because they have the same impact. Although we understand that individual management plans can allow other activities we do not wish to get into a situation where we have to justify and push for individual management plans for every piece of land in the high country. Apart from anything else our member do not have time to voluntarily make a new case every time a new bit of land becomes part of the conservation estate especially given the current rate of land acquisition. This is perhaps most relevant in Central Otago where a great number of properties are going through the freehold process and surrendering good back country trekking areas to DOC. We believe that an overall strategy should be adopted so that areas are gazetted appropriately to easily allow horse access. Once again we strongly believe that this is not a problem just an issue needing some thinking, consideration, and forward planning, to work out how the uses can be best accommodated

In further reference to the Lowburn Pack Track our members have noted the walking track markers deviate away from the original unsurveyed paper road. It seems likely that DOC's intention is to survey the new walking track and ask the surveyor general to adopt the surveyed walking track as the legal way. The walking track is observed to cross fences with styles for walkers provided. Our members wonder what provision for horses will be made along the new walking track if this is to become the actual legal access.

I have noted on my own travels in the United States that horses are not only allowed but encouraged in wilderness areas alongside walking trails. They are seen as compatible and ecologically friendly and on major walks everywhere including National Parks, facilities are actually provided to encourage the use of horses.

In summary horses have been a most important part of the high country historically through to the present. They were an essential part of everyday life for transport and mustering for many years and are still a very popular means of experiencing the back country. Despite all this use we are not aware of any areas where conservation values have been compromised in the high country through this use of horses, there are many other causes of land degradation. We strongly believe DOC should be planning with foresight for allowing this activity on all high country areas unless some very good reason exists for preventing the activity. If that is necessary then that area should be identified as such and restrictions imposed that apply to that particular area only. If a problem should arise or situation change such as a dramatic increase in private horse trekking, then we would encourage DOC to identify the problem and discuss it, so as to try and find a solution without having to take draconian measures such as blanket ban on private horse use. Commercial horse trekking of course would require a concession and can be controlled through that process.

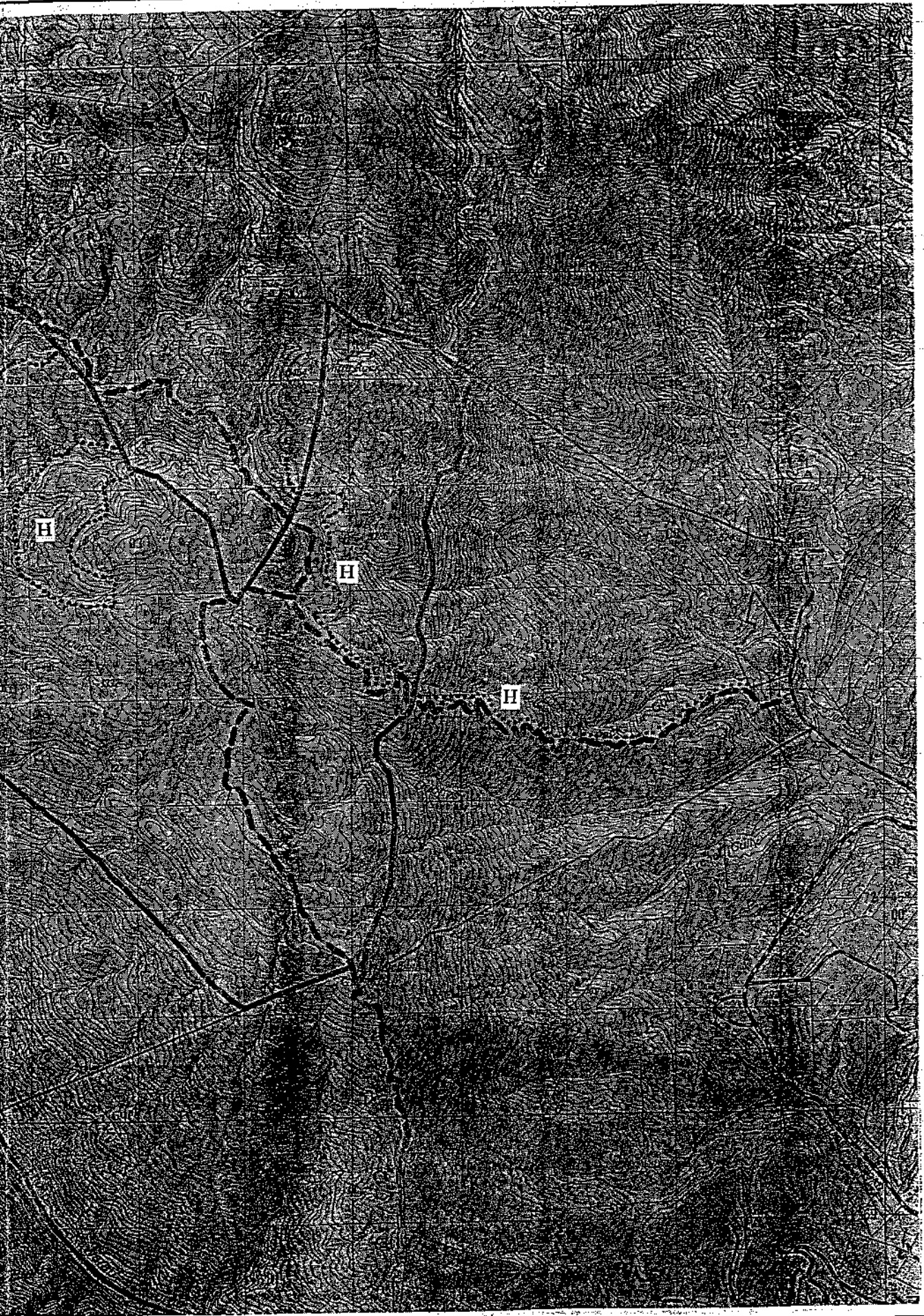
Please consider this letter carefully and we look forward to your clarification of this issue so that our members can be assured that the land tenure review process is a positive one to be supported.

Roger Gibson



President, Cromwell Riding Club.

cc: The Otago Conservation Board
Public Access New Zealand
Otago Goldfields Trust
Knight Frank

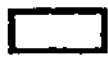
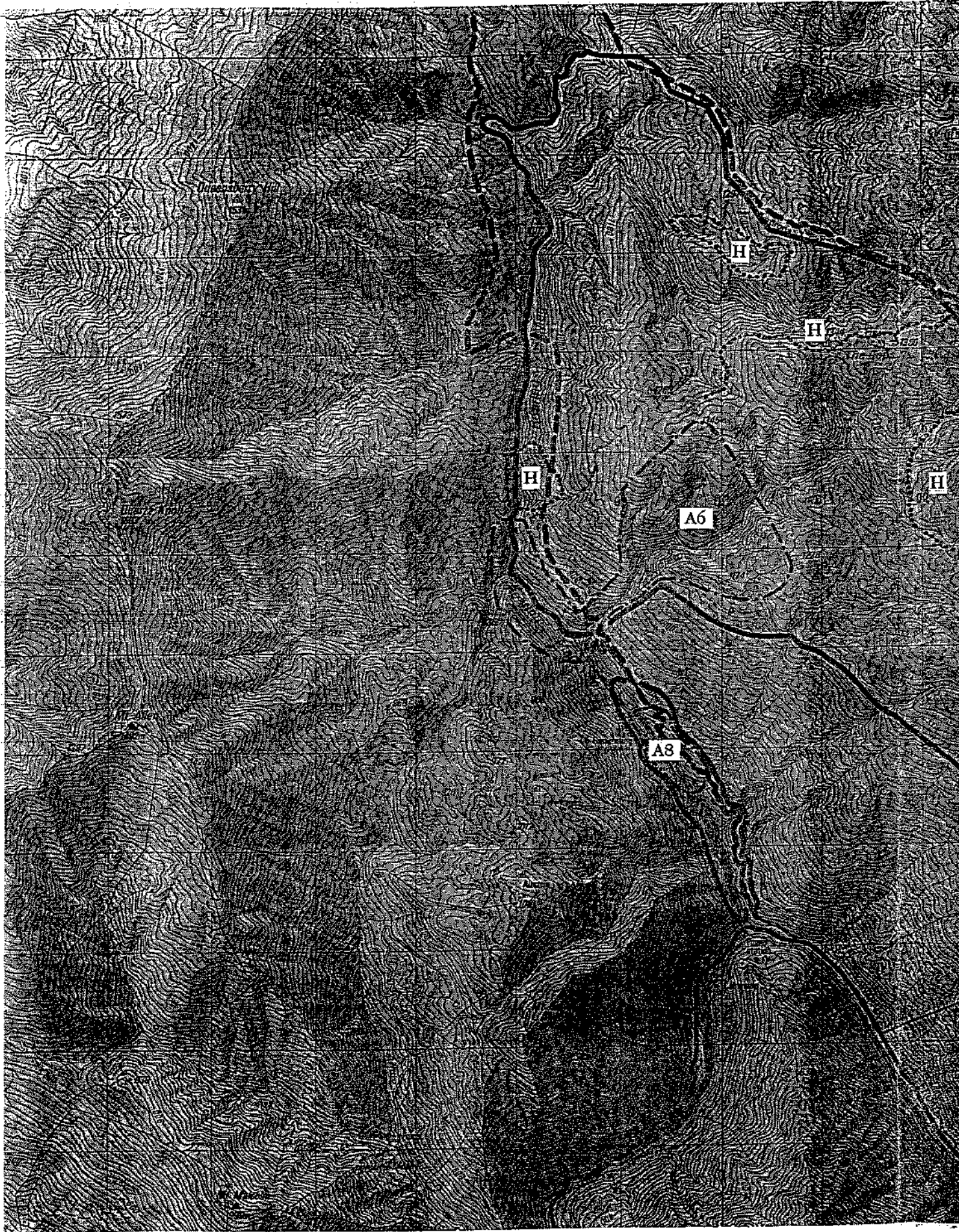


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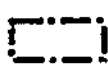
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MAP 1
LOWBURN VALLEY
CONSERVATION RESOURCE





Extent of Ecological Values



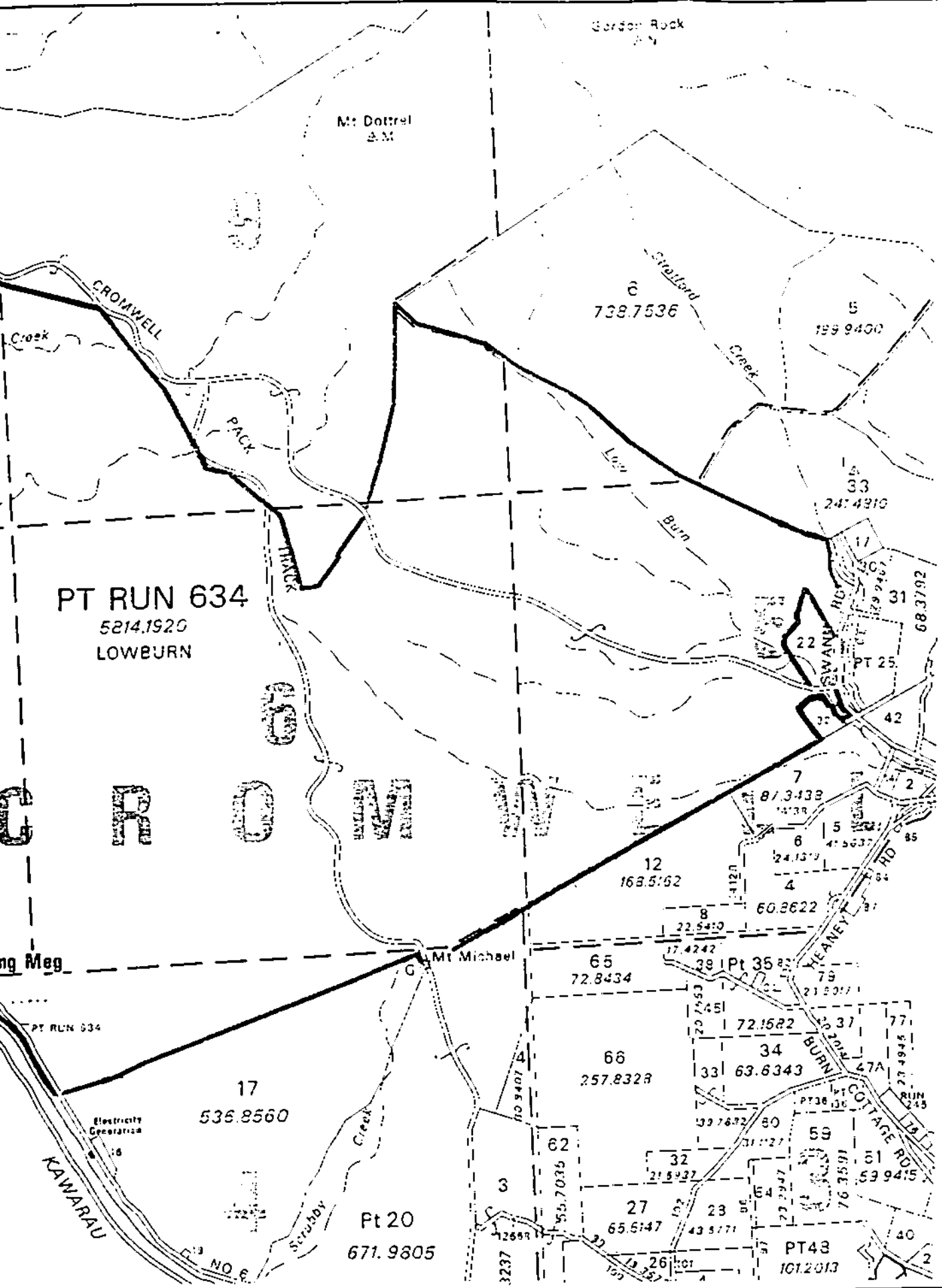
R.A.P.



Recreational Access



Historic



PT RUN 634
5214.1920
LOWBURN

C R O W N W O R T H

ng Meg

PT RUN 634

Electricity Generation

KAWARAU

17
536.8560

Pt 20
671.9805

65
72.8434

66
257.8328

62
55.7036

27
65.6147

12
168.5162

8
22.5410

38
17.4242

20
20.7553

33
63.6343

80
53.7682

32
21.5437

23
43.5171

19
19.2610

7
87.3438

6
47.5637

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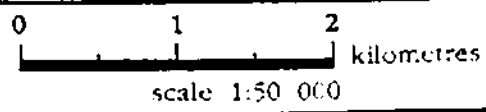
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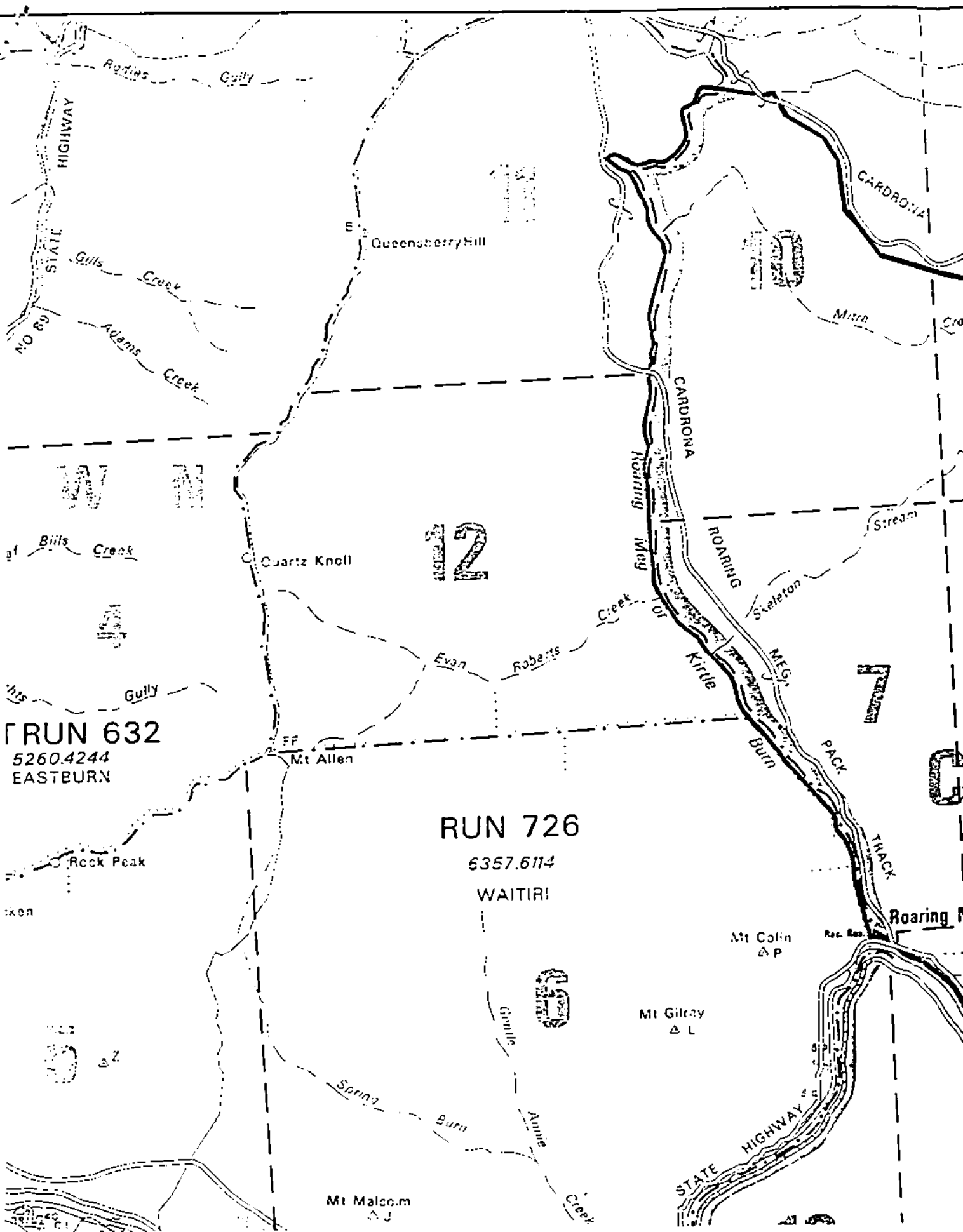


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MAP 2
LOWBURN VALLEY



DEPARTMENT OF CONSERVATION
TE PAPA ATANGATA



RUN 632
 5260.4244
 EASTBURN

RUN 726
 6357.6114
 WAITIRI



Lowburn Station Boundary