

KELVIN GROVE PASTORAL LEASE CONSERVATION RESOURCES REPORT

PART I

INTRODUCTION

The lessee of Kelvin Grove Pastoral Lease has applied to the Commissioner of Crown Lands for a review of tenure. The property was inspected in November 1996 by DOC staff and their assessments have been incorporated into this conservation resources report.

Kelvin Grove is a medium sized (2442 ha) pastoral lease located at the southern end of the Rock and Pillar Range. The property extends from the Strath Taieri, southwest of Middlemarch, across the eastern slopes and summit plateau westwards to the Old Dunstan Road. The homestead is approximately 7 km from Middlemarch.

Kelvin Grove is situated in the Rock and Pillar Ecological District.

The property has been subject to a previous assessment of its conservation values. In 1982/83 an assessment was undertaken by the Department of Lands and Survey at the request of the Land Settlement Board. The board had been invited by the government to oversee trial assessments of the findings of the Report of the Committee of Inquiry into Crown Pastoral Leases and Leases in Perpetuity (The Clayton Report). The Rock and Pillar Range assessment identified an area of conservation interest (range land) on the summit plateau part of the property, and riparian strips along McHardies Creek. No follow-up implementation of the report's proposals occurred.

PART II

CONSERVATION RESOURCE DESCRIPTION AND ASSESSMENT OF SIGNIFICANCE

1 LANDSCAPE ASSESSMENT

As adopted for other assessments of the high country Kelvin Grove has been divided into a number of landscape units. The boundaries for each of these units follow distinctive changes in the local topography, as well as distinguishable changes in the ground cover and land use patterns.

LU 1

This landscape unit encompasses the whole of the upper plateau within the Kelvin Grove Pastoral Lease. The northern boundary approximately follows the edge to the higher Rock and Pillar dome which is characterised by the tundra-like conditions, with the co-dominant vegetative cover being *Celmisia viscosa* and the small blue tussock. The plateau country on this PL, being slightly lower in altitude, and tilted towards the southwest, does allow for snow tussock to become the dominant ground cover. Close to the crest at 1170 m the snow tussock is dense and of relatively good stature. The tussock has less vigour in the lower, drier country where it is competing with a number of other species including *Aciphylla aurea* and *Cassinia*.

Running through the middle ground of this landscape unit are a number of wet flushes and moss domes, some of which have been affected by stock pugging. However, the headwaters of the numerous streams are still intact with vegetation still covering the stream banks. Most of these smaller streams are tributaries of McHardies Creek which winds its way across this plateau into the Loganburn Reservoir (Great Moss Swamp).

Along the upper crest of the plateau there is a series of small tarns where the fragile turf has been slightly modified by sheep trampling.

There are a number of spectacular rocky tors jutting above the grasslands along the crest. The most impressive of these rocky outcrops is the Castle which is a landmark in the district. Unfortunately, continual sheep camping around the largest rocky outcrops has modified their native plant communities.

Of historic interest are the two Post and Telegraph buildings found nestled behind large rocky outcrops. These stone buildings are a very good example of when local materials are used and where the buildings have been sited in a location which does not compromise conservation values. These low impact buildings could be used as an example of how to integrate structures

into tussock grasslands (although there could be some concern in the desecration of a natural feature for building purposes).

From a broader landscape conservation perspective, the real value of this landscape unit is that it forms an integral part of the large basin that encircles the Loganburn Reservoir. This large mass of water has become a strong focal point in this extensive tussock grassland basin. Another significant characteristic of this LU is its lack of 'built' elements. For example, there would be very few areas of gentle rolling tussockland still existing that are not criss-crossed by tracking. One of the boundaries to Kelvin Grove is the historic Dunstan Road which allows people, not only to travel across the traditional goldfields route, but also gives the public an opportunity to appreciate an expansive tussock grassland so close to Dunedin.

The greatest threat to the existing inherent character of this LU would be the depletion of the coherent tussock cover. In visual terms that would mean further fragmentation to this outstanding tussock landscape as well as allowing hawkweed to establish on the drier ridges.

LU 2

This unit on the eastern side slopes of the range forms part of the coherent and highly visible backdrop to the Strath Taieri.

It is similar in physical character to side slopes on adjacent properties. The overall impression is of good, even tussock cover with no hard edged changes in land use. This uniformity extends down to about the 650 metre contour. The landscape unit would fall within the managed natural landscape category with emphasis being placed on the protection of the uniform character of the tussockland.

SIGNIFICANCE OF THE LANDSCAPE

The Kelvin Grove portion of the extensive intact tussockland on the summit plateau dotted by large rocky outcrops, with a lack of human modifications and easy public access, is ranked as an outstanding natural landscape.

The eastern side slopes of the Rock and Pillar Range are a significant natural landscape setting for the developed farmland and settlements of the Strath Taieri Plain.

2 LANDFORMS AND GEOLOGY

The property spans a wide altitudinal and topographical sequence from 230 m on the Strath Taieri Plain, up and on to the crest of the southern Rock and Pillar Range at 1170 m. Only about 10% of the run occurs on the floor of the Strath Taieri Plain. Lowland to low alpine bioclimatic zones are therefore present. Basement geology and lithology of the Rock and Pillar Range consists of foliated quartzo-feldspathic schist and lesser chlorite schist of the Haast Schist Group (New Zealand Geological Survey, 1963). No genuine alpine topography is included. The extensive valley slopes are of low to moderate relief (c. 10-20°) with solifluction lobes prominent. Tors and rock debris in the landscape occur along the convex upper slopes, along bony spurs across the summit, and down to c. 750 m on the mountain flank. Valley slope tors are infrequent further north along the Rock and Pillar Range. Sprawling tors litter the basin floor, mostly around the stream courses. The summit plateau is extensive and peneplained with minimal rock outcrops. It consists of distinctive wide, shallow depressions, often with seasonal wetlands or more permanent tarns, and rounded spurs studded with rock and tors. A series of shallowly-incised streams meander across the summit, consisting of moss-filled headward seepages coalescing into broad boggy channels that mostly discharge into the seasonal wetlands or tarns. Some are flushed, some are stagnant and the plant assemblages change accordingly. The only major flowing waterway is McHardies Stream.

There are no landform features listed in the Geopreservation Inventory occurring on the property.

SOILS

Soils of the summit plateau vary in depth according to topographical exposure, are seasonally water-logged, and show gleyed characteristics. They will be comparatively infertile, anaerobic and poorly drained. Soils of the valley slopes are moist, deeper, loess and schist derived, and comparatively fertile following improvements.

SIGNIFICANCE OF THE LANDFORMS AND GEOLOGY

The summit plateau forms part of a more extensive peneplain which is a distinctive Otago landform feature. Many tors and rock debris feature on the eastern faces which become infrequent further north along the range.

3 CLIMATE

The Rock and Pillar Range is subject to a coastal weather influence, especially from the southerly quarter. Snow may lie on the flanks of the range during winter and can persist for several weeks at a time with considerable redistribution by wind into drifts in depressions and leeward gullies.

Rainfall varies from 700 mm at low altitude to 1000 mm at higher altitudes

Winds are predominantly northerly. Frosts are frequent and can be severe in winter. Summer temperatures reflect the hot, dry Central Otago influence.

4 VEGETATION

The Rock and Pillar Ecological District has not been subject to a PNAP survey. However, many of the leases, especially on the eastern side of the range have been assessed for tenure review and with the knowledge gained it is possible to make comparative observations of conservation values, relative to other properties.

FLORA AND VEGETATION PATIERNES

Approximately 80% of the property is dominated by indigenous tussock grassland, concentrated above the 800 m contour. The great majority of it is narrow-leaved snow tussock (*Chionochloa rigida*). On the summit plateau in the absence of natural fellfield and cushionfield, elements of a true alpine flora occur only through translocation from higher altitudes on the range following human-induced disturbance. The property is distinctive for its wide altitudinal and spatial sequence of comparatively intact snow tussock on the mid and upper valley slopes and throughout the summit plateau.

The various wetlands contain varying amounts of copper tussock (*Chionochloa rubra cuprea*) either around the edges or as "islands" within them.

These support a wide variety of mosses (three sphagnum species), sedges and herbs in communities reminiscent of similar systems elsewhere on Otago's block mountains. Common vascular plants are comb sedge (*Oreobolus pectinatus*), several buttercups, *Plantago raoulii*, *Drosera arcturii*, *Celmisia* "rhizomatous", and *Gnaphalium paludosum*.

Snow Tussock Vegetation

Although dominated by snow tussock the interfluves have numerous shrubs sorted edaphically along soil moisture and disturbance gradients. *Cassinia fulvida*, *Dracophyllum uniflorum*, *Hebe propinqua*, mountain flax, *Olearia bullata* and *Hebe odora* range from well drained to moist sites. These woody species link the present vegetation to the past when, before frequent burning over the last 800 years the steady-state vegetation was dominated by these woody species above the regional treeline.

SIGNIFICANCE OF THE VEGETATION

In general terms Kelvin Grove has high natural values by virtue of its wide ecological diversity. Driving the system is the range of bioclimatic zones and the topographic diversity. Vegetation is comparatively intact above 800 m and the mosaic of seepages and wetland depressions on the summit are a distinctive feature.

5 FAUNA

Much of this pastoral lease lies within the Great Moss Swamp area at the southern end of the Rock and Pillar Range in a "hybrid zone" with the Lammermoor Range to the south. Several scientific papers have highlighted the biographic importance of this area. Barratt and Patrick (1992) described the area as a biogeographic crossroads with both a high species diversity in various insect genera and a distributional limit for many taxa from the north, south, east and west. Patrick *et al* (1994) and Patrick (1992) discussed two moth genera, *Orocrambus* and *Notoreas* that are particularly diverse in this area and described new species. Barratt and Kuschel (1996) have discussed the significance of the area for the broad-nosed weevil genus *Irenimus* of which seven species are found in this area. They describe four as new species. Additionally the stoner genus (larvae in freshwater) *Zelandobius* has its highest diversity in this area. The genus ranges over most of New Zealand.

Patrick (1994) highlighted the presence in this area of an autumn-early winter emerging moth fauna that is best represented nationally, in this location. The families Geometridae, Tortricidae and Hepialidae are the most speciose.

Conclusions

It is clear the grasslands, wetlands, tors, shrublands and freshwaters of the Great Moss Swamp are particularly rich, in a New Zealand sense, for native invertebrates with widespread, Otago-wide and a distinctive local element represented. This assemblage in total is nationally important.

The Kelvin Grove property contains strong elements of many of the key features of the Great Moss Swamp area. These are:

- i *Chionochloa rigida* grasslands with only minor areas of shrubland of *Cassinia fulvida* and *Dracopylum uniflorum*. The quality and extent of this grassland system, its uniformity and lack of tors is impressive and particularly rich in insects, especially those depending on inter-tussock herbs.
- ii Riparian grassland and shrubland of *Leonobete odora*, mountain flax, etc,
- iii A very wide and impressive range of freshwater systems from running streams, tarns, ephemeral wetlands, mossbogs and seepages. The aquatic insect fauna is large by New Zealand standards and high in numbers. The apterus stoner *Zelandoperla pennulata* is worthy of mention
- iv Plateau crest tor areas with residual shrubland and locally rich herbfield.

b Aquatic Fauna

Prior to the tenure review survey no fish records were available for the Kelvin Grove property. The tenure review survey concentrated on the Loganburn Reservoir tributary referred to here as McHardies Creek. Brown trout were found at most sites in McHardies Creek. Maximum upstream range of the brown trout was not determined but was upstream of grid references NZMS 260 H43 726 183 and 746 173 in the two major tributaries. At two sites *Galaxias depressiceps* was found, NZMS 260 H43 728 194 and 733 175. These sites are in the upper reaches of small tributaries of McHardies Creek above the range of brown trout. Both populations appeared in low numbers and adults (when found) in poor condition

Galaxias depressiceps is a category 1 species and of conservation value due to its decline with the introduction of brown trout. The continued presence of population in McHardies Creek is dependent on the exclusion of brown trout from the tributaries which at present is maintained by natural barriers (waterfalls). Because of their smaller size, the *Galaxias depressiceps* population are of lower conservation value than the populations in the Taieri River system.

c Vertebrate Fauna

There is no information available on reptilian values. Bird species include black-backed gulls, pipits, skylark, Australasian harrier and the nationally threatened New Zealand falcon. The latter is the only species of note.

SIGNIFICANCE OF THE FAUNA

Invertebrate faunal values are considered to be of national biographic importance due to species richness and the distributional overlap of many species. General species are new to science. The area is significant for its autumn-early winter emerging moth fauna.

The importance of fauna is correlated to quality, general intactness and diversity of the variety of native plant communities and ecosystems present. The presence of New Zealand falcon, a threatened species, is important. It is a second priority species for conservation.

6 ARCHAEOLOGICAL AND HISTORIC VALUES

There are no known archaeological or historic features on the pastoral lease, except for the old stone Post and Telegraph telephone line maintenance hut and stable. These structures are located as shown on Map 2.

The Old Dunstan Road alongside the western boundary of the property became established as a result of the 1862 Dunstan gold rush, but its original formation along the length of the lease boundary has been upgraded over time.

This high, direct and desolate route to Central Otago was used by thousands of miners in preference to the circuitous Pigroot and Clutha Valley routes. For many years it was also the quickest route for escorted gold coaches carrying bullion and criminals to Dunedin.

Pastoral Farming History

The southern Rock and Pillar Range was initially divided into two pastoral leases; Run 254 (originally called Logan Burn and then Rocklands) which was south of the Sutton Stream, and Run 213 which comprised the area between Rocklands and Taieri Lake Stations and was known as Strath Taieri or the Rock and Pillar Run.

Run 213 was initially taken up in the late 1850s by Harris and Innes, pastoralists from South Canterbury, but it is unclear whether they ever stocked it. Campbell Thompson was the first to successfully stock it. Around 1866 the original run was subdivided into two separate runs,

213A (which became Garthmyl Station) and 213B (Gladbrook Station). Thompson put all his sheep (10,200) on 213A and the new lessees of 213B, Alex Shepherd and William Gordon put 13,000 on Gladbrook. Gordon became the sole lessee but sold the lease to William Murray and John Roberts (of the stock and station firm Murray Roberts) in 1873. The name Gladbrook became associated with the run at this time.

Gladbrook was the foremost run in the area and was responsible for introducing many innovations including the first exotic tree plantations, first steam driven threshing mill, the first large scale rabbit poisoning (rabbits reached the area in the early 1870s) and also established important Angus and Clydesdale studs (Thompson 1977:32-42).

7 EXISTING LAND STATUS

a LEGAL ROADS

Gladbrook Road and the Old Dunstan Road define the eastern and western boundaries of the property. Both roads are formed. There is a legal road along part of the boundary with Brookdale to the north which is unformed at the eastern end. The western end of this road largely corresponds with the route of the old bullock dray route used to harvest peat from the summit bogs. It is now used as part of the Brookdale farm access track.

b MARGINAL STRIPS

There are no existing marginal strips on the property. It is unlikely that McHardies Creek, the largest watercourse on the property, would warrant a marginal strip, being of insufficient width.

c ADVERSE OCCUPATION

The boundary fence between Kelvin Grove and Stonehurst is located west of the Old Dunstan Road resulting in part of Stonehurst being occupied by Kelvin Grove. Approximately 60 ha of land is involved.

d DISTRICT PLAN

The property is located within the Dunedin City and is covered by the local authority plans as follows:

Silverpeaks County Transitional Plan

The property is zoned Rural B which provides for pastoral farming as a predominant use. Reserves under the Reserves Act 1977 are a conditional use.

Dunedin City Proposed District Plan

The relevant zoning is Rural which provides for farming and forestry as predominant activities. Recreation is a controlled activity provided no significant buildings are involved. There is no recognition of natural landscape values except for a restriction on the removal of native bush or native vegetation in riparian zones.

e DOC CONSERVATION MANAGEMENT STRATEGY (CMS)

The Otago Conservancy CMS is in draft form awaiting final approval. The CMS identifies 41 Special Places in Otago. These locations are considered by DOC to be important for conservation. The Rock and Pillar Range is one of these special places. Kelvin Grove is one of more than 20 pastoral leases on the range. Relevant sections of the Special Place, Rock and Pillars is extracted as follows:

Description

The Rock and Pillar Range block range rises to 1450 metres overlooking the broad relatively flat valley of Strath Taieri. Composed of Otago schist it has many imposing tors along its summit. Fellfield with scattered low herbs and cushion plants occupy the highest and most exposed crests where patterned ground is a feature while seepages with stepped tarns surrounded by snow bank plant species are found in sheltered hollows below the summit. An alpine shrubland, diverse and thick in places, provides an upper border to extensive snow tussockland areas that clothe the range. Numerous torrents cascade off the range through shrublined gullies. Wetlands are common at all altitudes.

Values

The crest of the Rock and Pillar Range of which the Rock and Pillar Scenic Reserve is a small part, is important as an ecosystem composed of native biota and natural processes. Most abundant plant species on the crest are *Celmisia viscosa*, *Pod colensoi* and *Aciphylla bectorti*, while on the flanks of the range, *Chionochloa rigida* grasslands are intact in many places. Although fire and grazing have modified the abundance and structure of these communities, they are still essentially native. Native species diversity is high for both plants and animals, containing both species characteristic of Central Otago block mountains and several endemics.

The Rock and Pillar Range, along with the neighbouring Lammermoor to the south, is recognised as having amongst the most intact, unmodified belt of snow tussock grassland of any of Otago's block mountains.

When viewed from a distance, the range is an imposing feature with little in the way of farm tracking to mar its eastern and western aspects. On its slopes or crest, the viewer stands in a gently sloping or undulating sea of tussock-herbfield cushionfield studded with castellated tors.

A feature of the range is the large bodied insects such as the weta *Hemideina maori*, moths *Aoraia orientalis* and *A. rufivena* and beetle *Megadromus bullatus*. Also important is the relatively high diversity and localised nature of the high-alpine aquatic insect fauna of seepages and torrents. Many stoneflies and caddis species have their type localities on the range and are typically diurnal and flightless.

The dense subalpine shrublands on the range are the most extensive and diverse of any Otago block mountain. They contain bog pine, celery pine, snow totara, in addition to many *Dracophyllum*, *Hebe* and *Coprosma* species. Lower down (400-900 metres) large areas of native shrubland exist also with *Olearia nummulariifolia*, *Hebe rakauensis* and *Helichrysum aggregatum* of note, confined however to the deepest gullies. Near the northern end of the range a remnant of Halls totara forest (30-40 trees) is a notable feature. The shrubland near the top of the eastern face forms a continuous belt probably indicating the treeline of pre-human times.

The liane *Fuchsia perscandens*, some ferns and mountain flax are local within broadleaf dominated gullies.

Natural and historic values are high along the Rock and Pillars as are scientific, landscape and recreational values. The upper slopes and summit peneplain of the Rock and Pillar Range are a back country drive-in setting for recreation. The highest part of the range is snow-covered in winter and takes on more of the characteristics of a remote experience area. Existing recreation includes cross-country skiing, tramping, nature tourism and 4WDing all utilising an extensive network of tracks, and two well-maintained huts, but without secure access.

The Rock and Pillars contain early surveying structures of historic interest.

Patearoa is the traditional name for the Rock and Pillar Range. On it was gathered the tikumu (*Celmisia* sp.) used by weavers in garment making. Tikumu was traditionally known to have been gathered at Paruparu a Te Kaunia (Stonehenge). The resin of the taramea (*Aciphylla* sp.) was also sought as a fragrance used by women.

Management Issues - Rock and Pillar Range:

- Negotiation of protection and secure access
- Fence maintenance and incidental grazing.
- Fire control and fire risk management.
- Research facilities and debris from former projects.
- Access track maintenance

- Resource information, particularly relating to freshwater fisheries and archaeological sites is still required.
- Commercial tourism.

Objectives

To continue to document the values and permit research where it will lead to conservation benefits. In the case of the Rock and Pillar Range, to extend the reserve along the summit and to take in altitudinal sequences and secure access where opportunities arise.

Implementation - Rock and Pillar:

- (a) Pastoral lease tenure review on properties on the Rock and Pillar Range will provide opportunities to achieve protection of areas of significant landscape, scientific, natural and historic resource and recreational value. Overall management of these new areas with the existing reserve will confer net conservation and management benefits (eg, fencing), and will provide extensive recreational opportunities. Management of contiguous areas will be integrated and public awareness developed through the concept of a Rock and Pillar Conservation Park.
- (b) Research will be encouraged where it provides conservation benefits. All associated structures will be removed at project end.
- (c) Fire risks will be minimised using a range of methods including fire breaks where appropriate, education, liaison and co-operation with neighbours.
- (d) The streams will be surveyed for freshwater fisheries resources as a low priority.
- (e) Legal access to land administered by the department will be negotiated and vehicular access and parking secured at key access points.
- (f) To advocate for the protection of significant natural and historic resources through the Resource Management Act and other relevant legislation.
- (g) Recreation and tourism concessions may be allowed where there is no detrimental affect on natural, cultural and historic values including remote experience recreation, or where concession conditions can minimise such effects.
- (h) Kai Tahu involvement in management and sustainable use of customary resources will be facilitated.

Priorities

Negotiation, principally through pastoral lease tenure review, of an extended protected area along the crest of the Rock and Pillar Range will be a priority in this Special Place.

8 RECREATION/ACCESS

a Recreation/Access

This property stretches over 10 km from the Old Dunstan Road in the west to Gladbrook Road in the east. These two formed roads therefore have the potential to offer clear access points. It is likely that vehicle access (4WD only) would be possible from the Kelvin Grove Homestead on

Gladbrook Road to the top of the range via one of two tracks (only the top half of the southern most track was inspected). The northern track is part of a legal roadline running from Rock Road along the northern boundary and thence through the Brookdale property to the Old Dunstan Road.

b USES

There are extensive opportunities for walking and mountain biking, although the latter may need to be restricted in some way to protect fragile wetland areas on the crest of the range. Camping is possible although it constitutes a fire risk which would need careful consideration. Although there is clear potential for 4WD use, the sensitive nature of the terrain and vegetation would be severely threatened by such use, especially at high altitude where recovery from disturbance is slow. The area is considered too low in altitude to be of much interest to cross country skiers. Horse trekking on existing tracks is another potential use. Pig hunting is an occasional pastime.

An historic stone hut and stable are located in the western part of the property (refer to historical report for details). In terms of recreational use, these would be suitable for short-term shelter purposes.

SIGNIFICANCE OF RECREATION

The summit plateau extending across to the Old Dunstan Road has potential for summer recreation activities such as walking/tramping and mountain biking, although most of these activities are perhaps more suited to higher parts of the Rock and Pillar Range. The vulnerability to damage the extensive wetlands limits some activities to formed tracks only, eg, mountain bikes, 4WD use, etc.

9 MANAGEMENT CONSIDERATIONS

a WILD ANIMALS

A small amount of pig rooting was observed on the plateau at the top of the range. Pigs are known to dig out the roots of the speargrass, however damage such as this was not noted during the inspection.

From the evidence seen, the property periodically harbours a small and mobile population of pigs, frequently moving between neighbouring properties. Periodic inspections should be

sufficient to detect any changes in population and damage to vegetation, in which case control may be required.

b ANIMAL PESTS

A reasonable abundance of hare sign was observed throughout the property. Rabbits do not appear to be present at mid to high altitudes.

c PLANT PESTS

The property is generally free of woody weed species. *Hieracium pilosella* is in low abundance and not considered a conservation management problem. One wilding pine tree was located at mid altitude on the eastern facing slopes. This should be removed to prevent spread.

d FENCING

Generally fences comprised six wires plus one barbed wire with flat standards. The fences appear to be fairly old but in adequate condition to contain stock in most cases. The entire boundary of the property appeared to be fenced, although the lower altitude areas were not visited. A fence of similar condition and standard bisects the property at the crest of the range. Cattle stops are present on the Old Dunstan Road where it crosses the boundary fence.

e FIRE

The property experiences droughty periods in summer with consequent periodic high fire risk, especially in tall tussocklands. Burning of tall tussocklands has been practised for pastoral management. Dunedin City Council is the rural fire authority for the property.

PART III

CONSULTATION

An early warning meeting occurred on 23 May 1996 with non governmental organisations (NGOs) representing public conservation/recreation interests

The following comments relevant to Kelvin Grove were noted

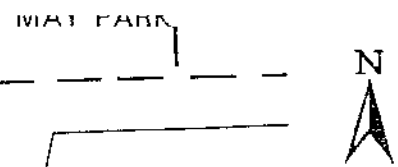
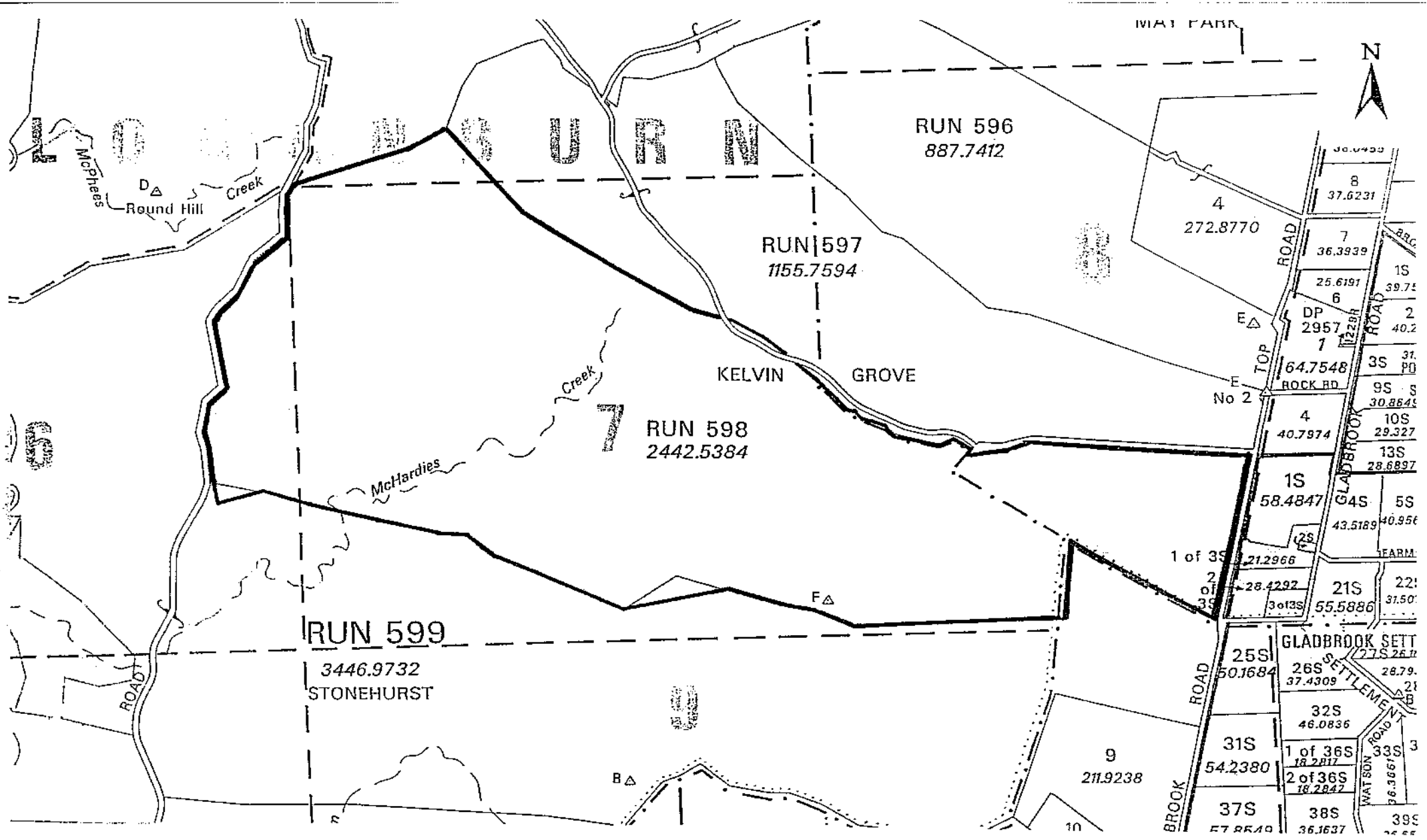
- The back block has high conservation/recreation interest. Its lack of tracking was an important feature along with availability of access from the Old Dunstan Road
- Any conservation land boundaries should be consistent with Brookdale, a pastoral lease on the northern boundary of the property which has undergone tenure review
- Foot access through Brookdale along the unformed legal road adjacent to Kelvin Grove provides adequate access to the back block.
- The value of accessible tall tussock landscape adjacent to the Old Dunstan Road was mentioned.

In addition, written comments have also been received from Mike Floate, on behalf of the Federated Mountain Clubs as below:

- Land above 1000-1100 m 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 (eg, Brookdale and The Burgan).
- Provide legal foot access to the natural and landscape values (spectacular rock tors) in the vicinity of The Castle and The Window, and also to the historic peat workings accessed via bullock tracks across Brookdale. Alternatively access might be negotiated across Stonehurst from the Old Dunstan Road via an existing 4WD track. This track enters Kelvin Grove at Infomap 260 H43 769 159

- All water courses greater than 3 m to have marginal strips laid off (McHardies Creek?).


Trevor Howse, representing Ngai Tahu, has inspected the property and will report direct to the Commissioner of Crown Lands.

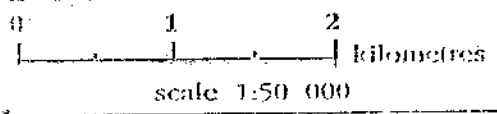
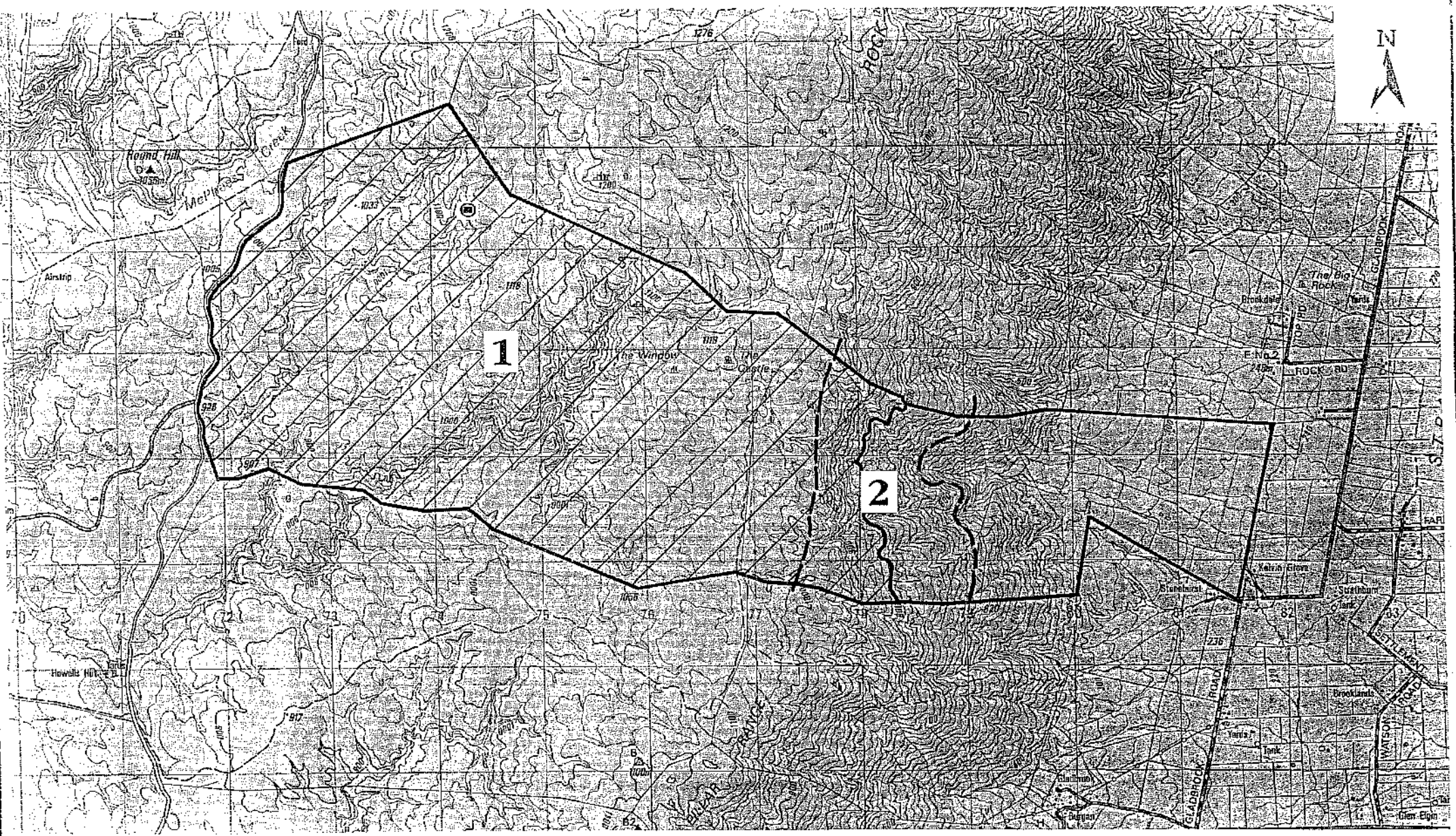


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MAP 1 KELVIN GROVE CADASTRAL






 Run Boundary



MAP 2
KELVIN GROVE
CONSERVATION VALUES



-  Landscape Values
-  Ecological Values (landform, vegetation, fauna)
-  Historic Hut

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