

**DOC REPORT TO THE
COMMISSIONER OF CROWN LANDS ON
TENURE REVIEW OF STONEHURST PASTORAL LEASE**

PART I

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INTRODUCTION

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

The property has been subject to a previous assessment of its conservation resources. In 1982/3, at the invitation of the government, the Land Settlement Board oversaw 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 Department of Lands and Survey undertook a trial assessment of the pastoral leases on the Rock and Pillar Range. That assessment proposed the upper part of the summit plateau be retained in Crown ownership as "Range land", along with a "potential reserve" including land adjacent to the Loganburn Reservoir and the lower McHardies Creek outlet with the reservoir and a section 58 marginal strip along McHardies Creek.

The Crown has since acquired the "potential reserve" when it was taken for irrigation purposes to create the Loganburn Reservoir. No further acquisition has occurred by the Crown of other areas identified in the Clayton Report trial assessment.

The property has been assessed by DOSLI for marginal strip requirements.

Stonehurst is a medium-sized lease of 2966 ha located at the southern end of the Rock and Pillar Range. It is within the Rock and Pillar Ecological District but no Protected Natural Areas Survey of the district has been done. Its homestead is located approximately 7 km south-west of Middlemarch. The lease extends from the cultivated flats on the Strath Taieri Plain, across the eastern faces and summit plateau of the Rock and Pillar Range to the Loganburn Reservoir, west of the Old Dunstan Road.

PART II

CONSERVATION RESOURCE DESCRIPTION AND ASSESSMENT OF SIGNIFICANCE

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1 LANDSCAPE ASSESSMENT

As adopted for other landscape assessments in relation to land tenure review of the high country, Stonehurst has been divided into a number of landscape units. The boundaries of each of these units follow subtle changes in local topography, as well as distinguishable changes in the ground cover and land use patterns. In many situations the lines indicated on the attached map defining landscape zones are gradual changes in the physical landscape rather than severe ones.

Landscape Unit 1

This landscape unit encompasses all of the property that drains immediately into the Loganburn reservoir. This reservoir is a focal point within this unit, and due to its shallow topography, it merges in with the surrounding landscape. Furthermore this unit is very important in a visual context as it can be viewed extensively from the Old Dunstan Road. Stonehurst, along with adjoining properties, provides this historic gold mining route with a continuous tussock setting. Other such routes and passes in Otago are becoming increasingly modified.

The vegetative cover is generally low and quite sparse snow tussock which is quite a common characteristic within this dry shallow basin although there are better quality tussock closer to the wet flushes near the reservoir.

This unit's vulnerability to change would include any further subdivision which would affect the existing overall "big paddock" appearance. A distinctive characteristic is the lack of change in vegetative cover between the surrounding pastoral leases, including Kelvin Grove, Stonehurst, and Burgan Run. Uses and activities that could severely compromise the integrity of this tussock land would be further insensitive siting of pylons, tracks and fire breaks running at right angles to the edge of the reservoir.

This landscape unit has high visual, natural, historic and recreational (key public access to Loganburn) values.

Landscape Unit 2

This landscape unit includes all of the expansive tableland that is slightly higher towards the Loganburn Reservoir. Due to much of the unit's lack of natural relief, small depressions are a common feature with many of these depressions containing fragile cushion bogs and stepped flushes. These wet areas extend to the crest of the Rock and Pillars where they frequently take the form of interlining tarns. The balance of this unit's vegetative cover is continuous even snow tussock with a scattering of *Dracophyllum*.

In landscape terms, this unit is important as along with the other similar land on the adjoining properties, they collectively form a special and distinctive Otago high country landscape whose attributes convey a feeling of remoteness and isolation which are important ingredients for back country recreational pursuits, although the fragile bogs need to be taken into consideration.

Landscape Unit 3

This unit includes the crest along the Rock and Pillar Range and the scarpland which runs along the eastern face of this mountain range. Unlike on neighbouring properties, the rocky outcrops and tors are not such a distinctive feature on Stonehurst (in spite of name). Along the crest the snow tussock is intermingled with *Hebe* and *Dracophyllum* with this continual natural cover extending down to about the 750 m contour.

In landscape terms this unit forms an important transition zone between the expansive natural areas at a high altitude and the more developed farmland in the Strath Taieri and therefore it would come under the category of being a managed natural landscape with the overall impression of retaining the appearance of tussock grassland down to about the 750 m level. The demarcation between the land that is freeholded and left in Crown ownership should be consistent with the adjoining properties so that the existing landscape character of the overall eastern scarp of the Rock and Pillars is retained.

SIGNIFICANCE OF THE LANDSCAPE

The Stonehurst portion of the extensive intact tussockland on the summit plateau, with its relative 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.

GEOLOGY AND LANDFORMS

Stonehurst Pastoral Lease spans a wide altitudinal and topographical sequence from 236 m on the Strath Taieri Plain, up and on to the crest of the southern Rock and Pillar Range at 1100 m, extending west to near the Loganburn Reservoir. Less than 10% of the range occurs on the floor of the Strath Taieri Basin, with approximately 70% of the property on the southern summit of the Rock and Pillar Range and 20% on the flanks. Lowland to low alpine bioclimatic zones are covered in this sequence. 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 (NZ Geological Survey 1963). The range flanks are slightly more steep than those of adjoining properties and solifluction lobes are prominent. Tors and rock debris in the landscape are concentrated along the convex upper slopes of the range flanks, with only minor tors across the summit plateau. Blocks of rock debris are prominent down the flank slopes. Rock bluffs are a conspicuous feature bordering the Logan Burn and an unnamed tributary on the true left. The summit plateau is extensive and peneplained with minimal rock outcrops, but in contrast to adjoining properties, wide shallow depressions supporting seasonal wetlands and tarns are largely absent. However, the summit plateau has its network of shallowly incised streams mostly filled with moss and sedge vegetation producing gully seepages and further down boggy channels. Some are flushed, some are stagnant and the plant assemblages change accordingly. Logan Burn and one or two tributaries are the main open-water channels.

SOILS

Soils of the summit plateau vary in thickness depending on topographical exposure, are seasonally waterlogged, 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

The extensive peneplained summit plateau is a significant Otago landform feature. Rock bluffs are an important feature bordering the Logan Burn.

3 CLIMATE

The Rock and Pillar Range is subject to a coastal weather influence, especially from the southerly quarter. This cooling and more changeable influence has resulted in alpine vegetation

occurring at 1200 m, markedly lower than occurring on more inland ranges where the climate is more continental.

Snow lies on the crests and flanks of the range above 1200 m during winter and can persist for up to six months of the year, with considerable redistribution by wind in drifts in depressions and leeward gullies. Snow can lie on the property for several weeks at a time. Rainfall on the property varies from 720 mm at low altitude to 875 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

FLORA AND VEGETATION PATTERNS

Approximately 80-85% of the property is dominated by indigenous tussock grassland, concentrated above the 820 m contour. The great majority of it is narrow-leaved snow tussock (*Chionochloa rigida*) in comparatively intact condition. Genuine alpine habitats and plant communities are absent on the summit plateau but localised areas do exist. The homogeneity of the widespread snow tussock on rolling interfluves is broken by the fingers of wetland vegetation, sharply delineated from the interfluve tussock grassland.

Summit Seepages and Channels

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 the onset of frequent burning over the last 800 years, the steady-state vegetation was dominated by these woody species above the regional treeline. Several induced ablation pavements are colonised by *D. uniflorum*.

DISCUSSION

The summit and upper and mid valley slope portions of Stonehurst have important natural values by virtue of the extensive summit plateau, the solifluction lobed valley slopes, the intact vegetation communities, and the interconnectedness of the altitudinal sequence. The topographical and bioclimatic sweep imparts wide ecological diversity. Vegetation is comparatively intact down to 750 m and if the altitudinal sequence needed to be extended, the semi-natural or depleted tussock grasslands down to approximately 600 m show promise for recovery and rehabilitation if disturbance was removed.

SIGNIFICANCE OF THE VEGETATION

The great majority of the summit plateau and upper and mid valley slopes of the property contain significant intact botanical values. These values extend downhill to the 800 m contour, with less intact native vegetation extending down to the 600 m contour.

5 FAUNA

a INVERTEBRATE 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 papers have highlighted the biogeographic 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. Lately 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) *Zolandobius* 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, right here. The families Geometridae, Tortricidae and Hepialidae are the most speciose.

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so the weevil *Nicaeana cervina* is found at its upper altitudinal limit here and not known elsewhere on the Rock and Pillar or nearby ranges (Barratt and Kuschel 1982). The Rock for invertebrates included cave weta and Trogossitid beetles as well as a common pseudoscorpions and darkling beetles.

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 and Otago wide elements and a distinctive local element represented. This assemblage in total is nationally important.

The Stonehurst property contains elements of the key features of the Great Moss Swamp area. Some of these are represented strongly. These are:

- i *Cbionochloa rigida* grasslands with an extensive and dense admixture of *Cassinia fulvida* shrubland. Inter-tussock herbfield is generally rich with open heathland areas of particularly high diversity.
- ii Riparian grassland and shrubland of *Hebe odora*, mountain flax, etc,
- iii A range of freshwater systems from running streams, tarns, wetlands, particularly moss-bogs and seepages. Alpine stoners and mayflies are particularly diverse.
- iv Summit crest of open grassland, herbfield with a particularly good diversity of diminutive shrubs. Tors are impressive with extensive areas of *Dracopbyllum uniflorum* shrubland.

b VERTEBRATE FAUNA

Three individuals of the common gecko (*Hoplodactylus maculatus*) were found of unusually large size (total length >180 mm). Common gecko are considered a species complex requiring further work to classify (M Tocher, pers. comm.).

A schist rock bluff in a tributary of the Logan Burn is used for roosting by New Zealand falcon. Falcon (*Falco novaeseelandiae*) have a threatened species status, Category B (Molloy and Davis, 1994). Other birds recorded include black-backed gull, pipit, skylark and Australasian harrier.

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AQUATIC FAUNA

Burgan Stream records indicate that no fish are present in this stream on Stoneburn. McHardies Creek (the major Logan Burn tributary) has brown trout *Salmo trutta*, and occasional common bullies, *Gobiomorphus cotidianus*. The bullies have been introduced to this fish.

Native flathead galaxiid fish are found in a small tributary contained entirely within the area between the Old Dunstan Road and the Logan Burn. This un-named tributary has waterfalls near the junction with the Logan Burn which provides a refuge from trout (*S. trutta*) predation for a potential population of the local galaxiid fish species (*Galaxias depressiceps*). This species was once widespread in Great Moss Swamp and its feeder tributaries prior to invasion by trout.

SIGNIFICANCE OF THE FAUNA

The southern Rock and Pillar Range is significant for its biographic importance. Of particular note is the autumn emerging moth fauna, new species of broad-nosed weevils and the high level of diversity of the stoner genus.

New Zealand falcon, a Category B threatened species, and the flathead galaxiid (Category I threatened species) are significant records.

High faunal values reflect the diversity and condition of the habitats present.

6 HISTORIC VALUES

ARCHAEOLOGICAL AND HISTORIC FEATURES

There are no New Zealand Archaeological Association recorded sites located on the property. Several recorded sites mostly dating from the Classic Maori period are located around the Loganburn Reservoir margin and in the Logan Burn Gorge. The remains of Kersleys accommodation house near Howells Hut are also recorded. All sites occur on land taken out of the lease for irrigation purposes and some have been inundated.

It is obvious that the Strath Taieri and Patearoa areas were well known and frequently occupied by Maori.

The Old Dunstan Road was an important early route for gold miners travelling between Dunedin and the Central Otago goldfields and dates from the 1860s.

PASTORAL FARMING

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

There are two formed legal roads adjoining the property. The eastern boundary adjoins Gladbrook Road, which leads to the homestead.

The Old Dunstan Road bisects the western plateau portion of the property. Leading west off this road is an unnamed road which provides access to the Loganburn Reservoir dam. The "road" is not a legal road, being crown land taken for irrigation purposes.

There are no unformed legal roads located on the lease.

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MARGINAL STRIPS

There are currently no marginal strips along any watercourse on the property. McHardies Creek is the only creek sufficiently wide enough to warrant marginal strips being laid off according to DOSLI.

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c 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 over 20 m² in area or vegetation within 5 metres of any watercourse.

d 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. Stonehurst 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*, *Poa annua* and *Aciphylla hectori*, 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 *Aorata orientalis* and *A. ruftvena* 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 rakaiensis* and *Helicbrysum 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. The area is not accessible 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 (Stonchenge). 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.

- (c) Legal access to land administered by the department will be negotiated and vehicular access and parking secured at key access points.
- (d) 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 ACCESS

This property stretches over 13 km from just north of the Loganburn Reservoir in the west to Gladbrook Road in the east. The Old Dunstan Road plus a "road" (crown land taken for irrigation purposes) running off this towards the Loganburn Dam, cut through the property at the western end. All of these roads have the potential to offer clear access points.

A 4WD farm access track extends from the homestead up the eastern faces across the summit plateau and joins the Old Dunstan Road south of Howells Huts. Deep bogs can be a hazard on the summit plateau section of this track and public use should be discouraged due to potential wetland damage and the real risk of getting bogged. The track section through the upper eastern faces is badly scoured and is not easily negotiated in its current condition.

b RECREATION USE

There are extensive opportunities for walking and mountain biking, although the latter may need to be restricted to protect fragile wetland areas which occur throughout much of the property. There is potential for 4WD use, however it is unlikely that the vegetation could withstand the pressures of sustained use as the number of wetland areas is considerable.

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umping is possible although it constitutes a fire risk which would need careful consideration. The area is considered too low in altitude to be of much interest to cross country skiers.

"Howells Hut" refers in fact to two small huts located just off the Old Dunstan Road. They are of relatively recent origin and have been vandalised and would require a reasonable amount of work to bring them up to a standard suitable for habitation. Being so close to the road, however, they are likely to suffer ongoing vandalism.

9 MANAGEMENT CONSIDERATIONS

a WILD ANIMALS

Pigs are the only wild animal present on the property and are controlled by recreational hunting. The animals are highly mobile and relatively few in number. Possums occur in low numbers in lowland shrubland.

b ANIMAL PESTS

A reasonable abundance of hare sign was observed. No other sign of animal pests was noted during the inspection.

c PLANT PESTS

The property is generally free of woody species. *Hieractium pilosella* is in low abundance and not considered a conservation management problem if grazing is to be eliminated. Two small patches of gorse were located beside the track leading down the eastern facing slopes but did not appear to be spreading. Sweet vernal was present in low abundance in the wetland areas but was not considered a threat to their integrity. A row of mature pine trees grow directly behind Howells Huts. They do not appear to have produced any wildings.

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 majority of the boundary appears to be fenced, with exceptions being the section surrounding Howells Huts and a small section of the Loganburn Stream. Internal fences include one along the east side of the Old Dunstan Road and one along the crest of the range. These appear to be of a

similar age and condition to the boundary fences. The eastern end of the property was not inspected.

c FIRE

Stonehurst experiences droughty periods in summer with consequent periodic high fire risk, especially in tall tussocklands. Without periodic burning and grazing there would be a build-up of combustible material. Given the ready public access via the Old Dunstan Road, the risk of accidental summer fires is a potential concern.

The Rural Fire Authority for the property is the Dunedin City Council, except for a 1 km fire safety margin around the land taken for irrigation purposes adjacent to the Loganburn Reservoir. The land is currently Crown land which qualifies it as a state area under the Forest and Rural Fires Act and DOC assumes responsibility as the Rural Fire Authority for that part of the property within the 1 km fire safety margin.

PART III

CONSULTATION

An early warning meeting with public interest groups (NGOs) on 6 April 1997 discussed Stonehurst and the following points were raised:

- high biological and landscape conservation values extend down to about the 800 metre contour.
- landscape protection along the historic Dunstan Road is required.
- the farm access track through the centre of the property has value for recreation access and use, eg walking, mountain bikes and horse trekking.
- the Loganburn Reservoir has high recreational fishing and local walking value.

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PART IV

JUSTIFICATION AND RECOMMENDATIONS

Stonehurst Pastoral Lease contains an extensive area with significant conservation values warranting formal identification and protection. The conservation proposal is described as follows:

1 CONSERVATION AREA : ROCK AND PILLAR RANGE

This area extends from about the 800 m contour on the eastern face of the range westwards to the property back boundary with the Loganburn Reservoir and the Logan Burn and is justified as follows:

a Landscape

An area of significant natural landscape, ranked as outstanding, including the upper eastern slopes of the range, the summit plateau and the visual backdrop to the Loganburn Reservoir. It has high public accessibility.

b Landform

The peneplained summit plateau is a distinctive Otago landform feature. Rock bluffs are an important feature bordering the Logan Burn.

c Vegetation

The area identified has very high natural values due to its ecological diversity with a broad range of bioclimatic zones and topographic variety. Vegetation is comparatively intact above 800 m.

d Fauna

Invertebrate faunal values are considered to be of national importance due to species richness, new species, and the distributional overlap of many species (biogeography). Of particular note is the autumn emerging moth fauna.

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the presence of New Zealand falcon, a Category B threatened species, and the rafter galaxiid, a Category I threatened species are significant records.

c Recreation

The area is suitable for low impact recreational uses, eg, walking/tramping and mountain biking in combination with other opportunities on the Rock and Pillar Ranges. The area has good formed legal public vehicle access, ie, the Old Dunstan Road.

2 LAND STATUS SOUGHT

The area should be retained in Crown ownership and transferred to DOC as conservation area. It will eventually form part of the Rock and Pillar Conservation Park when combined with adjacent areas of land with high conservation values on adjoining pastoral leases as a consequence of completion of tenure reviews.

3 MANAGEMENT/BOUNDARY NOTES

The summit plateau and upper eastern faces extends over all of the Strath Taieri pastoral leases and the boundaries identified on Stonehurst are consistent with those identified on other leases undergoing tenure review.

In order to exclude grazing and to better define the eastern boundary between conservation land and freehold, a new fence will be required to be constructed along a practical line about the 800 m contour. Approximately 2.5 km new fencing is required.

Existing boundary fences around the conservation land are adequate to exclude stock. Part of the Logan Burn section of the boundary is unfenced and utilises natural barriers to contain stock.

The conservation land is virtually free of pests and weeds. Monitoring of the pig population may be required. The two isolated gorse patches on the eastern faces should be destroyed.

The future of Howells Huts needs to be assessed. They are in poor condition, are prone to vandalism and appear to have little historic merit. The pine shelterbelt at the huts should be removed if the huts are removed to restore the naturalness of the area.

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Off road vehicle use of the farm track through the proposed conservation land should not be allowed due to the risk of damage to wetlands along and near the track.

The risk of accidental fires is high, especially due to the easy access along the Old Dunstan Road. Appropriate signposting will be required advising the public of this risk.

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4 ACCESS

There is a need for public foot and mountain bike access and for DOC vehicle access for management purposes through the property, using a combination of the existing track through the middle of the property on the faces and the southern boundary fenceline across the flats.

5 NGO CONSULTATION

The points raised by NGOs at the early warning meeting of 6 March 1997 are supported and provided for in the recommendations for tenure review, with exception of provision for horse trekking.

This request is not supported because of the extensive wetlands present on the summit plateau which may suffer from adverse impacts of such use. Provision for horse trekking on the southern end of the Rock and Pillar Range is made in the DOC tenure review recommendations for Burgan Run Pastoral Lease, to the south of Stonehurst.

6 SUMMARY OF RECOMMENDATIONS (Refer to Map 3)

- a That the pastoral lease tenure review negotiations on Stonehurst proceed on the basis that the Crown seeks to retain ownership and transfer to DOC for conservation purposes all that land hatched black, to be known as the Rock and Pillar Conservation Area.
- b That fencing of the proposed conservation area unfenced eastern boundary to be undertaken as part of the negotiated agreement on tenure review. The cost to be charged to the Land Tenure Reform Account.

A Section 7(2) Conservation Act easement for public foot and mountain bike and DOC vehicle access for management purposes be created.

NB: The future status of the "access road" to the Loganburn River Dam needs to be considered and investigated as to the possibility of getting it adopted as legal road. It is currently crown land taken for irrigation purposes but has important recreation access value.

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PART V**ATTACHMENTS**

1 *Photos of Areas of Conservation Interest on Stonehurst Pastoral Lease.*

2 *Illustrative Maps:*

- *Map 1 Cadastral Map*
- *Map 2 Topographic Map - Conservation Values*
- *Map 3 Topographic Map - Recommendations*

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Significant Landscapes

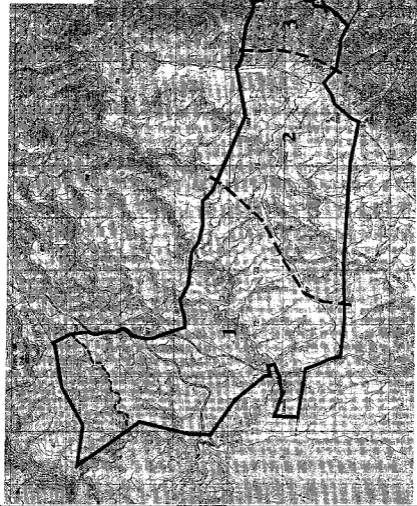
Ecological Values
(landform, vegetation, fauna)



Flathead galaxiid population



Access Route



scale 1:50 000

File Ref : P 276, Map Ref : H 43

MAP 2

STONEHURST PASTORAL LEASE
CONSERVATION VALUES



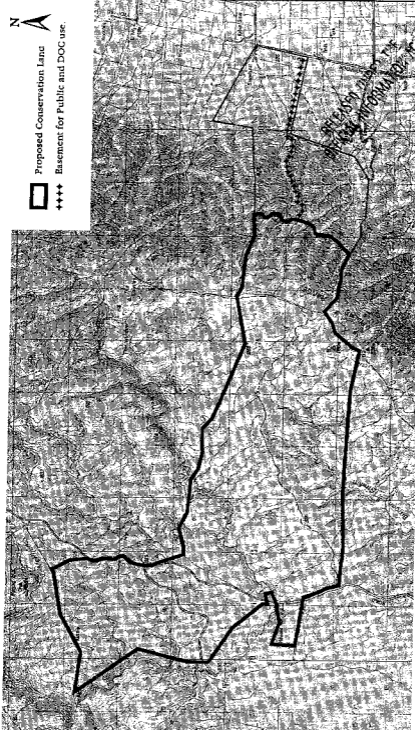
DEPARTMENT OF
CONSERVATION



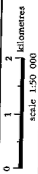
Proposed Conservation Land



Easement for Public and DOC use.



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GOVERNMENT



MAP 3 STONEHURST PASTORAL LEASE RECOMMENDATIONS



File Ref : P 276, Map Ref : H 43

PROPOSED DESIGNATIONS REPORT
TENURE REVIEW OF STONEHURST PASTORAL LEASE
HELD BY J.F.C. JAMES
UNDER PART 2 CROWN PASTORAL LAND ACT
(FOR OFFICIAL USE ONLY)

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RECOMMENDATIONS AND JUSTIFICATION

1 RECOMMENDATIONS

1.1 That the proposals described below be submitted to the CCLs agent during the consultation process on the preliminary proposal for this tenure review as representing the views developed under delegated authority from the Director General of Conservation.

1.2 Note that statutory consent will be required before the CCL can include in the preliminary proposal for this tenure review the designation set out in paragraph 2.5.1.

1.3 Note that any disposition of land by the Crown will be subject to the relevant provisions of Part IV A of the Conservation Act 1987.

2 PROPOSALS AND JUSTIFICATION

2.1 Areas to be Restored to or Retained in Full Crown Ownership and Control

2.1.1	Name	Rock and Pillar Crest and Plateau
	Existing status	Pastoral Lease
	Authority	Section 35(2)(a)(i) Crown Pastoral Land Act

Proposal

That an area of approximately 2200ha be designated as a conservation area for the purpose of protection of natural and historic resources to be managed by the Department of Conservation. It is intended that grazing be excluded utilising existing fences plus 2.5 km of new fencing.

Description

Predominantly a tall tussockland, but with diverse shrublands and wetlands, the proposal extends from the 800m contour on the eastern face of the Rock and Pillar Range westwards to the back boundary of the property near the Loganburn Reservoir. The area includes the upper part of the Burgan Stream catchment and the lower reaches of McHardies Creek. An important area in its own right, the proposal is in addition an integral part of a wider landscape of regional significance.

Justification

The land is characterised by areas that have the following significant inherent values:

1. *Areas which alone or collectively sustain the special natural quality and integrity of the high country landscape especially the indigenous component.*

2. *Areas which sustain the most culturally valued attributes (e.g. scenic, aesthetic, recreational and historic) and their context within a natural high country landscape.*
3. *Habitats of threatened species (including those that are threatened regionally)*
4. *Areas which would currently meet the Protected Natural Areas programme (PNAP) criteria for selection as priority natural areas (eg RAPs).*
5. *Type localities and habitats of species and communities which are at their distributional limits and/or endemic or which have specialised habitat requirements in the high country, and species, communities, habitats and ecosystems which are uncommon and/or endemic in the ecological district.*
6. *Areas which make a special contribution to the overall quality, natural functioning and ecological integrity of significant values (e.g. linkages buffers etc.).*
7. *Settings of high natural value for outdoor recreational opportunities in the high country.*

Landscape

The landscape is dominated by the extensive rolling plateau that is slightly tilted towards the Loganburn Reservoir. The Burgan Stream is a distinctive natural feature with its main axis running parallel with the plateau's crest, with many of the stream's smaller tributaries being deeply indented into the land's surface. The origins of many of these tributaries are bog lands and wet flushes.

In the wider context and similar to the other adjoining properties the proposal forms an important physical and visual setting to the Loganburn Reservoir. The foreground also provides the historic Dunstan Road with an immediate natural setting. There are now very few examples in Otago where the public have the opportunity to view expansive tussocklands at such close proximity.

The proposal falls within the natural landscape category, with particular emphasis being placed on the protection of the integrity of the historic road (regionally significant heritage trail).

The Stonehurst portion of the extensive intact tussockland on the summit plateau is ranked as an outstanding natural landscape and makes a significant contribution to the landscape character of the Rock and Pillar Ecological District.

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.

Landform and Geology

The summit plateau forms part of a more extensive peneplain that is a distinctive Otago landform feature and is of regional significance. Rock bluffs bordering the Logan Burn are also noteworthy

Vegetation

The Rock and Pillar Ecological District has not been surveyed for the Protected Natural Areas Programme but a major part of the proposal would meet the current criteria for selection as a priority area for protection (Recommended Area for Protection). These areas are identified by assessment against seven primary criteria. The proposal is ranked against these same seven criteria as follows:

Representativeness	High
Diversity and Pattern	High
Rarity and Special Features	High
Naturalness	High
Long term ecological viability	High
Size and Shape	High
Buffering, Landscape and Boundaries	High

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The proposal is dominated by indigenous tussockland. The majority of it is narrow-leaved snow tussock (*Chionochloa rigida*) in comparatively intact condition. The homogeneity of the widespread snow tussock on rolling interfluvies is broken by the fingers of wetland vegetation, sharply delineated from the interfluvie tussock grassland.

The interfluvies have numerous shrubs sorted edaphically along soil moisture and disturbance gradients. These woody species link the present vegetation to the past when, before the onset of frequent burning over the last 800 years, the steady-state vegetation was dominated by these woody species above the regional treeline.

The summit and upper and mid valley slopes have impressive natural values by virtue of the extensive summit plateau, the solifluction lobed valley slopes, the intact vegetation communities, and the interconnectedness of the altitudinal sequence. The topographical and bioclimatic sweep is responsible for the wide vegetational diversity which is of regional significance. These values extend down the hill to the 800m contour with less intact native vegetation extending down to the 600m contour.

FAUNA

Invertebrate Fauna

The proposal 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 biogeographic 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, *Oxycerambus* and *Notoncus* 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 *Isoninus* 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.

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 familiar *Geometridae*, *Tortricidae* and *Hepialidae* are the most speciose.

The grasslands, wetlands, tors, shrublands and freshwaters of the area 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 proposal contains strong elements of many of the key features of the Great Moss Swamp area. These are:

- (i) *Chionochloa rigida* grasslands with an extensive and dense admixture of *Oxycerambus fuscicollis* shrubland. Inter-tussock herbfield is generally rich with open heathland areas of particularly high diversity.
- (ii) Riparian grassland and shrubland of *Hebe adnata*, mountain flax, etc,

- (iii) A range of freshwater systems from running streams, tarns, wetlands, particularly moss-bogs and seepages.
- (iv) Summit crest low shrubland of *Leonochebe propinqua* associated with open areas of alpine herbfield particularly of *Cabrusia prorepens*. The large mountain weta *Hemideina maori* is found here.
- (v) Tors both on the plateau crest and tumbling down the sides to the base. These tor systems have acted as important refugia for native biota, as well as adding a distinctive landscape element.

The *L. propinqua* shrubland is impressive and together with other diminutive shrubs are rich in a wide range of native insects including bugs, flies, moths and beetles. Patches of the shrub *Olearia bullata* frequenting damp areas on the plateau are similarly rich in native insects including moths, bugs and wasps. All of these groups have species particular to one host shrub species.

A schist rock bluff in a tributary of the Logan Burn is used for roosting by New Zealand falcon. Falcon (*Falco noviseelandiae*) have a threatened species status of Category B (Molloy and Davis, 1994).

Aquatic Fauna

Native flathead galaxiid fish are present in a small tributary contained entirely within the area between the Old Dunstan Road and the Logan Burn. This galaxiid species (*Galaxias depressiceps*) was once widespread in Great Moss Swamp and its feeder tributaries prior to invasion by trout but is now a category I (indeterminate) threatened species (Molloy and Davis 1994).

The high faunal values reflect the diversity and condition of the habitats present.

Recreation

Access

The proposal stretches from the Old Dunstan Road in the west to within 3 km of Gladbrook Road in the east. With the establishment of one easement over that 3 km, these two roads will give good access to each end of the proposal.

A 4WD farm access track extends from the homestead up the eastern faces across the summit plateau and joins the Old Dunstan Road south of Howells Huts. Deep bogs are a hazard on the summit plateau section of this track

Uses

There are extensive opportunities for walking and mountain biking with formed tracks suitable for both purposes.

Linkages

See attached extract from the Otago Conservation Management Strategy

The proposal is located on the southern end of the Rock and Pillar Range, an area identified as a Special Place in the Otago Conservation Management Strategy, and contains many of the values, biota and recreational, highlighted as important.

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Apart from its contribution in its own right, the proposal is enhanced significance because it is one of a number of pastoral lease properties in the Rock and Pillar Range with areas of high conservation value. Six have already been reviewed and have signed agreements. The subject property, Stonehurst, and Burnside and Kelvin Grove (held by the same lessees) are currently being reviewed and it is likely that agreement will be reached on these three also, giving a continuous conservation area of almost 40km along the range when combined with existing conservation area/scenic reserves.

The long term goal for this extended area is the creation of a Rock and Pillar Conservation Park.

Objectives in CMS

To nurture and encourage study of the natural processes to allow healing of the vegetation after grazing and fire and to improve landscape values. To continue to determine the values and permit research where it will lead to conservation benefits. In the case of the Rock and Pillar range, to extend the protected area along the summit and to take in altitudinal sequences and secure access where opportunities arise.

Priorities in CMS

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.

Both the Objectives and Priorities for Rock and Pillar Special Place are applicable to the proposal.

Management and Boundary Issues

Problem Plants

These are not a major issue in this proposal. Two small patches of gorse beside the track leading down the eastern facing slopes require spraying and follow up monitoring. A row of mature pine trees grow directly behind Howells Huts. They do not appear to have produced any wildings but should be removed to eliminate this threat and for landscape impact reasons.

Problem Animals

Signs of hare grazing is abundant. Rabbits are seasonal visitors but not in large numbers at this altitude. Pigs pass through the proposal from time to time but do not occur in sufficient numbers to represent a problem. There are no other problem animals

Fencing

Generally fences comprised six wires plus one barbed wire with flat standards. The fences are fairly old but in adequate condition to contain stock in most cases. The majority of the boundary is fenced, with exceptions being the section surrounding Howells Huts and a small section of the Loganburn Stream. Internal fences include one along the east side of the Old Dunstan Road and one along the crest of the range. These are of a similar age and condition to the boundary fences

Fire

Summer droughts occur regularly, and with easy vehicle access and high visitor numbers in the locality, fire will be a significant risk.

Vehicles

There is potential for 4WD use on existing tracks although due to the vulnerable nature of the surrounding vegetation and the high number of boggy stretches on the summit plateau section of the main access track, it would be desirable to exclude vehicles except for emergency or maintenance purposes.

Huts

There are two small huts located just off the Old Dunstan Road near the McHardies Creek culverts. They are of relatively recent origin but have been regularly vandalised. One has been repaired, the other is virtually derelict. Despite the strategic location, handy to both the road and the lake, the likelihood of ongoing vandalism makes ownership and maintenance by DOC impractical.

2.2 Land to be Restored to or Retained in Crown Control
Not applicable

2.3 Existing Reserve
Not applicable

2.4 Existing Conservation Area
Not applicable

2.5 Land being Disposed of subject to a Protective Mechanism

2.5.1 Name	Public Foot and Bicycle access
Existing Status	Pastoral Lease
Authority	Sec. 40 (i) (c) Crown Pastoral Land Act

Proposal

(f) → (b)
It is proposed to create an easement to provide for public access by foot or bicycle from Gladbrook road to the proposal 2.1.1

Justification

The easement will provide public access through the reviewable land to the proposed conservation area on a practical route at a point where it is only 3 km from the road to the conservation area, and one of the shortest distances between a public road and the summit on the eastern side of the range.

Management and Boundary Issues

Signs and five or six stiles will be required. Other than this there are no significant management issues.

Type of Mechanism

Section 7 (2) Conservation Act 1987 easement.

Attachment

Terms and conditions.

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2.6 Other Qualified Designations

2.6.1 Name	Department of Conservation access
Existing Status	Pastoral Lease
Authority	Sec 36 (3) (b) Crown Pastoral Land Act

Proposal

That the designation of land under Section 35 (2) (c) Crown Pastoral Land Act for disposal be subject to an easement to provide for vehicle access for the Department of Conservation to proposal 2.1.1 for the purpose of conservation management.

Description

This access will be on an existing good track.

Justification

It is very important for DOC to have vehicle access to the proposed Conservation Area for maintenance, weed and pest control, monitoring and management in general.

Management and Boundary Issues

Other than gate locking arrangements and possibly contribution to track maintenance, there are no significant management issues.

Type of Qualification

Section 7 (2) Conservation Act 1987 easement.

Attachment

Terms and conditions.

3 Exemption or Variation of a Marginal Strip Width

Not applicable

4 Other Matters

4.1 NGO comment

A meeting was held on 6/3/97 to enable representatives from NGOs to give their comments.

The above proposals meet all the aspirations of the NGOs that have been identified, except for the provision for horse trekking. This is not supported because of the extensive and vulnerable wetlands within the proposal.

5 Attachments

5.1 Additional Information

Otago Conservation Management Strategy August 1998 extract, Rock and Pillar Special Place No.15 .

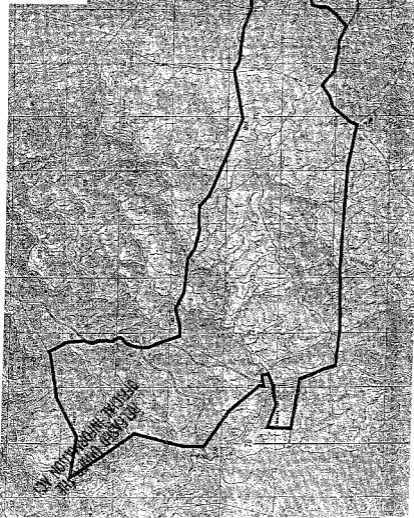
5.2 Illustrative Map



Proposed Conservation Land

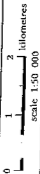


Easements for Public (2.5.1)
And DOC (2.6.1)



MAP 1

STONEHURST PASTORAL LEASE PROPOSED DESIGNATION BOUNDARIES



File Ref : P 276, Map Ref : H 43