Toitu te Land whenua Information New Zealand

Crown Pastoral Land Tenure Review

Lease name : Ferintosh

Lease number : Pt 043

Conservation resources report

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

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

Copied November 2002

DEPARTMENT OF CONSERVATION REPORT TO KNIGHT FRANK LIMITED ON TENURE REVIEW OF FERINTOSH STATION PASTORAL LEASE

PART I: INTRODUCTION

Ferintosh Pastoral Lease is 2777 hectares and is situated along the western shores of Lake Pukaki and backs onto the Rhoboro Hills and Ben Ohau Range.

Ferintosh lies between Pukaki Downs Pastoral Lease on its southern boundaries and Glentanner Pastoral lease on its northern boundary. Both these properties are undergoing tenure review. The homestead is just off State Highway 80 at the northern end of the property. Ferintosh Station backs onto an area of proposed conservation land which forms part of the Ben Ohau Range, and was surrendered under a run plan.

The property is elongated, covering some 15 kilometres along the shores of Lake Pukaki. There are small flat terraces above Lake Pukaki alongside State Highway 80. The land behind is an old morainic terrace and rises to approximately 900-1000m.

Ferintosh is located in the Tekapo Ecological District and was surveyed as part of the Protected Natural Areas Programme (PNAP) in 1983. The Survey only identified one recommended area for protection (RAP) on the property. This RAP was known as RAP 4, Boundary Stream.

As part of the Mackenzie Basin, Ferintosh Station forms part of the nationally recognised and regionally outstanding landscape.

PART II: CONSERVATION RESOURCE DESCRIPTION

2.1 Landscape

The Mackenzie Basin is New Zealand's largest intermontane basin. It is nationally unique and retains a number of predominantly natural values, including:

- the scale, diversity and extent of its glacial topography, a number of geopreservation sites, inland intermontane climate
- it constitutes its own ecological region, habitat to a number of endangered and rare indigenous flora and fauna, spectacular scenery, a highly valued natural setting and location for a range of tourist attractions and recreational pursuits.

- It is nationally and internationally known as the eastern setting for Aoraki (Mt Cook), New Zealand's highest mountain.

These natural features are highly valued in themselves for visual and scenic reasons. Many of the pastoral leases in the basin are visible from State Highways, canal roads, minor roads, settlements, tourist destinations and flight paths. The combination of physical features, their diversity and the distinctiveness of the area all contribute to the high inherent scenic and visual values.

Ferintosh Station is located in the middle section of the lower eastern slopes of the Ben Ohau Range above Lake Pukaki. The Ben Ohau Range defines the western limit of the Mackenzie Basin landscape and provides a continuous and frequently dramatic backdrop to the western side of Lake Pukaki. It frames views of Mount Cook and is well known as one of the highest feeder 'ribs' to the Southern Alps.

The Range is characterised by a broken skyline of high peaks (frequently over 2000m) with permament snow cover in the north. The eastern flanks are comprised of a series of eastward flowing side streams and ridges. The streams 'upper catchments' drain the Ben Ohau Range close to the ridgeline, adopting the very steep formation of earlier cirque basins (from glacial times) as well as the side ridges into which they are incised. They also "break" the continuity of glacial remnants associated with earlier advances of the Tasman Glacier on the lower slopes above Lake Pukaki. These ice carved terraces and lateral moraines (formed over sveral cycles of glaciation) are however, still very visible and are able to be seen from many parts of the Mackenzie Basin. Their visual continuity provides easy interpretation of the power of earlier glacial activity and they provide scientific value as a compliment to the more complex moraine deposits on the eastern side of Lake Pukaki (pers comm...)

Located largely on these lower glacially carved and derived landforms, Ferintosh Station is comprised of five main character types:

1) steep slopes of the adjoining upper range lands. *(This area constitutes a very minor part of the pastoral lease).

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ii) Glacially derived terrace areas running the full length of the property lay broken by streams. These areas are characterised by moraines, kettleholes and associated wetlands. Vegetation associations are a mix of indigenous and exotic with a trend to more modified exotic (including scattered wilding trees) towards the south.

iii) **Terrace Escarpments**

Rising approximately 200 metres, these steep and east facing escarpments are broken by four main (named) streams (Whale, Jacks, Boundary and Big Rock) and numerous un-named streams. Vegetation is predominantly mixed exotic/indigenous grassland with significant areas of indigenous woody shrubland and, especially in the south, conifer wildings (Ref reg section).

iv) **Lakeshore Areas**

Apart from the outwash fan areas associated with Whale and Jacks Steam, much of the lakeshore area consists of a very narrow strip at the base of the terrace escarpments. State Highway 90 traverses this narrow strip. Wilding conifers and other exotic tree species dominat this strip in the south and frequently obscure views of the lake from the highway.

v) **Stream Valleys**

These steep sided valleys contain streams of intermittent, high energy flow which grade steeply into their lake outfall.

2.2 Landform and Geology

The property consists of greywacke hillslopes, morainic terraces and some smaller alluvial terraces.

Much of the lower portion of the property has been shaped by ice advances and retreats of the Tasman Glacier. Morainic deposition of silts and rocks is evident on the front terraces of the lease.

Glacially formed kettleholes are a feature of the Lake Pukaki lateral moraines. These kettleholes are found on the morainic terraces above State Highway 80.

The property is bissected by Big Rock Stream in the south, Boundary Stream, Jacks Stream in the middle, and Whale Stream in the north. This effectively divides the property into three parts.

2.3 Vegetation

The three topographical areas on Ferintosh all have slightly different vegetation communities. These are described as follows:

2.3.1 South Block (Between the Boundary and Big Rock Streams)

This block represents the most modified part of the property. It can be described in three zones:

- lower terrace with improved pastures (500 - 600m)
- modified, short-tussock grasslands (600 - 800m)
- *Chionochloa. rigida* grasslands (800 - 900m)

The grasslands in the lower part are modified by OSTD and through intensive use. The proportion of tussocks is very low. The upper terrace includes short-tussock grasslands with abundant introduced grasses *(A. capillaris, A. odoratum). H pilosella* fills up most inter-tussock spaces. The proportion of bare ground is low.

Steeper slopes below the retirement fence are occupied by sparse *C.rigida* grasslands. *C. rigida* tussocks are small and far apart. The inter-tussock vegetation is depleted. There is a high proportion of *H. pilosella* and bare ground. In this part of this property the grasslands above the retirement fence are not much better than below the fence. (It seems that these grasslands were grazed, or that recovery from previous depletion is extremely slow).

2.3.2 Central Block (Between Jacks and Boundary Streams)

This is the larger, ecologically and floristically most distinctive block. It can be described in three zones in different altitudes:

- lower terrace (500 - 700m)
- steep, east facing slopes (700 - 900m)
- upper plateau (900 - 1000m)

i) Lower Terrace

The grasslands on the flatter area of the foothills are highly modified. *Chionochloa rigida* (narrow-leaved snow tussock) is present only in remnants. The proportion of *Festuca novae-zelandiae* (hard tussock) is small. Grasslands are dominated by introduced grasses including *Anthoxanthum odoratum* (sweet vernal), *Agrostis capillaris* (brown top) and *Nardus stricta*. Other associated species are low growing and grazing resistant *(Hieracium pilosella, Pernettya nana, Leucopogon fraseri). Rosa rubignosa* (sweet briar) and *Discaria toumatou* (matagouri) are regular components of these grasslands. *N. stricta* is particularly abundant in moist places where it forms dense mats.

The wetlands on foothills of this block are often infested by *N. stricta* with a cover of more than 75%. *Nardus stricta* is associated with *A. capillaris, A. odoratum, H. pilosella* (mouse-ear hawkweed) and some rushes and sedges. *Oreobolus pectinatus* (comb sedge) is often present. On the edges of less accessible wetlands, matagouri has become quite dense and inpenetrable. Although matagouri scrub seems quite uniform, it includes species of *Coprosma* and *Olearia*.

ii) Steep East-Facing Slopes

Narrow-leaved snow tussock *(C. rigida)* grasslands occupying the steep hillsides are open and include about 20% of short tussocks. The cover of snow tussock rarely exceeds 50%. Inter-tussock vegetation is dominated by introduced grasses and *H. pilosella*. Matagouri is common. The areas in wet depressions and seepages surrounded by modified *C. rigida* grasslands are dominated by *N. stricta*. It reaches about 90% cover. It is associated with more robust wetland species such as *Schoenus pauciflorus* (sedge tussock), *Juncus effusus* (soft rush) and occasional hard tussock.

Within the cover of *N. stricta, C. rigida* remains only as chewed stumps. *H. pilosella* is suppressed within a dense mat of *N. stricta*.

In the gullies, *N. stricta* forms a margin alongside the streams. Near to the water *N. stricta* is very dense and vigorous, growing around species such as *S. pauciflorus* and *Rosa rubiginosa*. *C. rigida* tussocks remaining within *N. stricta* cover are usually heavily grazed. The grasslands are most modified below the fence dividing the steep slopes from the plateau above. Concentration of stock in this area has resulted in depletion of tussocks and dominance of *H. pilosella*. *N stricta* is present on these slopes in relatively high abundance.

Within the area known as the Jack's Stream Block, a larger area of dense 'grey' scrub is present. Within thick matagouri cover, species of *Coprosma, Hebe, Olearia* and *Cassinia* were found. towards the Boundary Steam, in altitude around 800m, manuka *(Leptospermum scoparium)* is spreading into degraded *C. rigida* grasslands on eroded shingly slopes. There are pockets of native beech forest remaining in the deeper and more inaccessible gullies. Especially in the area closer to the Jacks Stream, the remnants include robust stands of mountain beech. Edges of the forest pockets are often buffered by matagouri.

The shrubland community of Matagouri and Coprosma was identified as RAP 4 Boundary Stream in 1983. It was described as a typical scrub community of approximately 60 hectares.

iii) Upper Montane Plateau

The most numerous wetlands are present on the lateral moraines of the central block. The majority of these wetlands are infested by *N. stricta*. The wetland species such as *Juncus* and *Oreobolus* are embraced by *N. stricta*. The bogs with a thick layer of *Sphagnum* are overgrown with *N. stricta*. Within its cover, species of *Juncus, Carex, Schoenus, Drosera* and occasional *C. rigida* tussocks are present. In the bogs with standing water, large tussocks of *N. stricta* are partially submerged in water with the canopy of tussocks closing above the water.

Shallow depressions with remnant *C. rigida* grasslands include *F. novae-zelandiae, A. capillaris, Holcus lanatus*, and a high percentage of *N. stricta*. Infestation by *N. stricta* is less severe towards the north part of the central block. A large tarn on the lateral moraine, closer to the Jacks Stream, is infested by *N. stricta* only on one side where the shore is shallow and boggy.

The short tussock grasslands around the tarns and wetlands, particularly on the exposed convex slopes, are depleted and dominated by *H. pilosella*. *C. rigida* is present only in remnants. A cover of *F. novae-zelandiae* is only about 20-30%. The proportion of bare ground is around 20%. *N. stricta* is present with about 5% cover.

On the moraines above the tarns, closer to the retirement fence, *C. rigida* is present with relatively good cover (50-70%). Inter-tussock vegetation however, is dominated by *H. pilosella* and *H. praealtum* (king devil hawkweed). The remaining native species are semi-woody dwarf shrubs such as *Gaultheria depressa* (snowberry) and *Pernettua nana*. Above the retirement fence, *C. rigida* grasslands show spectacular recovery since the cessation of grazing.

2.3.3 North Block (Between the Jacks and Whale Streams)

This block consists of:

- steep, east facing slopes (600 - 1000m)
- glacial plateau with wetlands (1000 - 1050m)
- tussock grasslands (1050 - 1200m)

i) East Facing Slopes

The slopes above the highway are steepest in this part of the property. The lower part includes modified grasslands with matagouri, sweet brier and *Coprosma*. The slopes are mostly covered by open *C. rigida* grasslands. Inter-tussock vegetation is formed by brown top, sweet vernal and mouse-ear hawkweed. Recently a substantial area of *C. rigida* grasslands above the homestead, at around altitude 800 - 1000m, was burnt. This is an extremely steep and exposed area. Fire has had a devastating effect on vegetation

and soils. Heavy grazing following the fire has contributed to destruction of *C. rigida* grasslands and to severe erosion.

ii) The Wetlands on Glacial Plateau

In this part of the property, the lateral moraine includes shallower but extensive wetlands. Most of them are accessible for grazing, at least during a dry period of the year. Most of these wetlands are occupied by depleted *C. rigida* grasslands and a layer of *Sphagnum*. *C. rigida* is mostly reduced to chewed tussock bases. *Schoenus pauciflorus*, *A. capillaris* and *H. praealtum* are the most common species.

Large areas of bogs are dominated by *Oreobolus pectinatus*. These bogs include *C. rigida* tussocks which are usually heavily grazed. The majority of species in these bogs are characterised by low growing habit or small stature (*Pratia*, *Oremyrrhis*, *Gnaphalium*, *Drosera*, small rushes and sedges). In the bogs of this part of the property *N. stricta* was not found.

iii) Tussock Grasslands Below Retirement Fence and Shrublands

In the north block, the area of grasslands between the wetlands on the plateau and the retirement fence is more extensive that in the central and the south blocks. This area carries modified *C. rigida* grasslands transformed partially to short tussock grasslands with *F. novae-zelandiae*. The proportion of adventive species including *H. pilosella* is high. Bare ground is on average about 20%.

South facing slopes above the Jacks Stream were previously occupied by the matagouri *Coprosma* communities similar to shrubland in the RAP 4 above the Boundary Stream which has similar aspect and topography. These shrublands were lost in an accidental fire a year ago. The north facing slopes above the Whale Stream are occupied by open scrub communities dominated by matagouri and sweet brier. Vegetation on these slopes is sparse and disturbed.

2.4 Fauna

The streams, shrublands, bush remnants and tussock grasslands host a range of fauna on Ferintosh Station. Some 31 species of bird have been recorded on the property. On the Rhoboro Hills the New Zealand Falcon is relatively common, along with the Australian Harrier Hawk. Skylarks and pipits are common in the tussock grasslands while the shrublands and bush remnants host the pied fantail, grey warbler and tomtit. New Zealand scaup, paradise shelduck, grey duck and New Zealand shoveller have been observed on the tarns and wetlands of the property. The black-fronted tern, South Island pied oystercatcher and pied stilt have also been observed on the property.

The common gecko, McCann's skink and jewelled gecko have been found on the property near Jacks and Boundary Stream. The latter has a limited distribution and is considered to be relatively rare.

The invertebrate fauna of Ferintosh Station is largely unknown, but five species of endemic butterflies have been noted on the property along with a number of wetland insects in the streams and seepages.

Two species of endemic freshwater fish have been noted. These are the Koaro, which was found in Whale Stream, Boundary Stream and Jack Stream and is relatively common, while the other is the upland bully which is found in the lower reaches of Whale and Boundary Stream.

2.5 Historic Values

Ferintosh was originally part of Glentanner Station which was settled in 1858. In 1913 Glentanner was divided into three parts, being Ferintosh, Glentanner and Birch Hill. At the southern end of the property between Boundary Stream and Big Rock Stream there is an area that is known as the Dusky Run that was added to Ferintosh in 1963. Today there are no known historic features surviving on the property as the original homestead was drowned when Lake Pukaki was raised in 1976.

2.6 EXISTING LAND STATUS

Ferintosh Station is bounded by Pukaki Downs pastoral lease land to the south, and Glentanner Station to the north. Along its eastern edge above Lake Pukaki there is a strip of land that was taken for hydro operating purposes. There is currently no marginal strip along the Lake Pukaki foreshore.

None of the streams on the property have had marginal strips laid off. There is a section of conservation land which transects the pastoral lease at Boundary Stream. This enables public access from State Highway 80 through to the conservation land behind Ferintosh Station. State Highway 80 is the only legal road that runs through the property. There are no unformed or paper roads on the property.

The Mackenzie District Scheme became operative in 1986. This zone identified the majority of the property as being within the Rural 1 Zone, which is the general farming zone. Predominant uses include agriculture and pastoral farming and forestry up to a maximum of 50 hectares. A small portion of the property is classified as Rural 2, (erodible high country). Land in this zone is generally classified as class 8 or severely eroded, class and was considered unsuitable for grazing or commercial forestry. The District Scheme has now become a Transitional District Plan due to local government restructuring. A new plan is due to be publicly advertised in December 1996.

2.7 RECREATION ACCESS

2.7.1 Access

State Highway 80 is the only legal road which passes through the property. Ferintosh Station is relatively accessible from all of State Highway 80. There are a number of 4WD tracks on the property that climb to the top of the lateral moraine terrace. Most of these are steep, rough and usually quite wet, which makes vehicle access difficult.

2.7.2 Uses

Currently Ferintosh Station is utilised by trampers, skiers, and hunters. It is usually traversed to gain access into the conservation land behind the property where climbing,

guided walks and heliskiing occur. Potential uses on the property are guided natural history trips, and the moraine escarpment is ideal for paraponting.

2.7.3 User Issues

Public access to the shores of Lake Pukaki needs addressing. Maintenance of 4WD tracks is an issue if vehicle access is allowed. Any access points need to have signs and styles.

2.8 EXISTING MANAGEMENT

Management issues that affect the high inherent values on Ferintosh Station are:

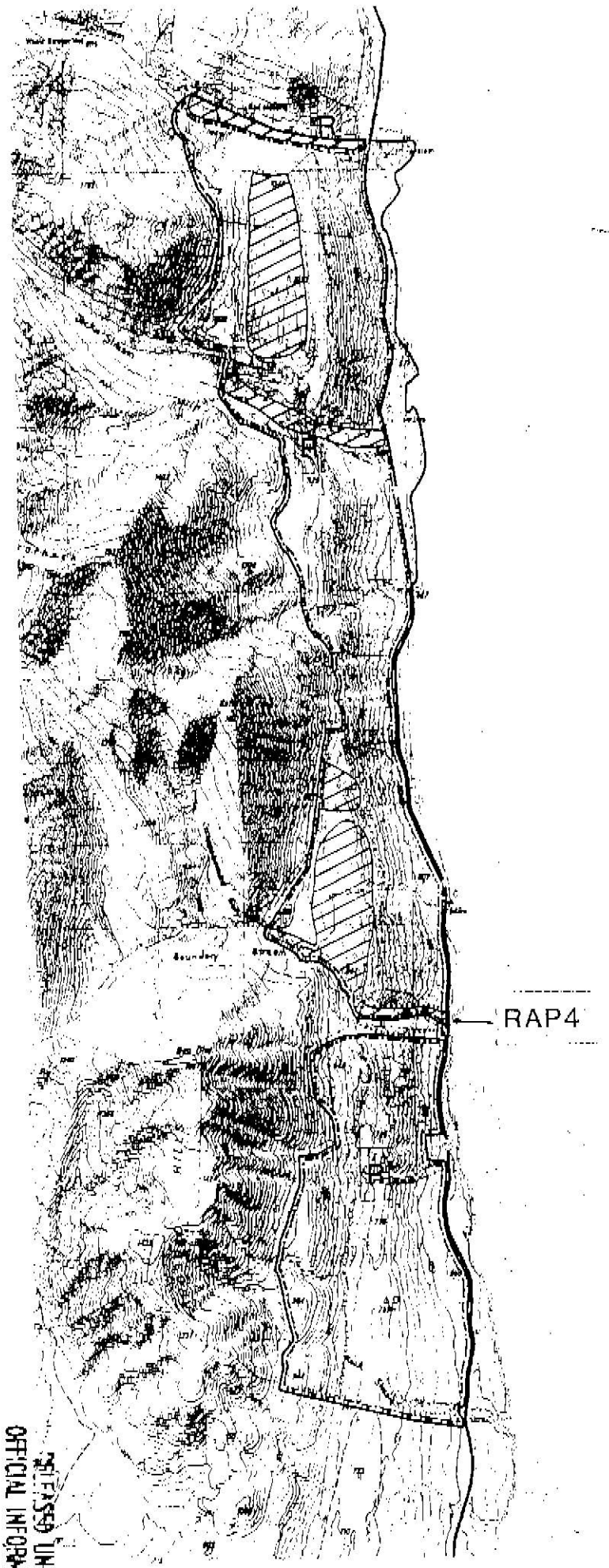
1. Weeds

Wilding pines are a major problem on the escarpment above the Mount Cook highway. Their spread over the Rhoboro Hills and Ben Ohau Range requires management.

Nordus stricta infestation represents a serious modification along with a subsequent loss of conservation values. Its spread appears to be linked with grazing.

PART III CONSULTATION

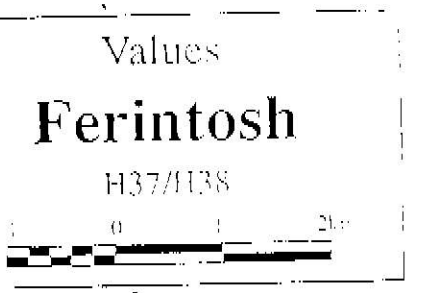
On 28 November 1996 an NGO meeting was held in Timaru. This meeting was attended by Tramping Clubs, Federated Mountain Clubs, Forest and Birds and New Zealand Deer Stalkers Association. At this meeting the issue of protection of the tarns and wetlands was raised. Along with public access through the property into the adjoining conservation land, comment was also made on the bad condition of Whale Stream Hut and what were the Department's aspirations with the hut.



Values

Ferintosh

H37/H38



Key

- Landscape value
- Ecological value
- R Recreation value
- R.A.P.
- Legal boundary