

Crown Pastoral Land Tenure Review

Lease name : LITTLE VALLEY

Lease number : PO 354

Conservation Resources Report - Part 2

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

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

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

March

05

Appendix 1: Description of RAP 2: Greenland. From Fagan, B. and D. Pillai, 1992. Manorburn Ecological District: survey report for the Protected Natural Areas Programme. Department of Conservation, Wellington.

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MAN 2

Greenland

Area: 1970 ha
 Altitude range: 750 - 905 m
 Tenure: Pastoral lease
 Land system: Greenland

Vegetation types	% of RAP	Landforms
Red tussockland	75	hill slope hill crest gentle hollow floodplain talus slope
Fescue tussockland	15	hill crest hill slope
<i>Coprosma petriei</i> - <i>Raoulia subsericea</i> dwarf shrub turf	5	nivation hollow
Red tussock - <i>Coprosma ciliata</i> shrub tussockland	1	talus slope
Turfland	2	lakeshore
<i>Carex</i> / <i>Sphagnum</i> bog	1	bog
<i>Oreobolus</i> - <i>Phyllachne</i> cushionfield	<1	hill slope rock outcrop

Plot sheets: 2 / 1 - 30

Landform

Located at the southern end of Greenland Reservoir, this RAP consists of a gently undulating, mostly north-facing catchment. The area is part of a large gently rolling plateau representing an ancient peneplain surface that typifies the Greenland land system. A prominent fault trace with a north-east trend, situated near the eastern boundary of the RAP, separates the smooth rolling topography of the Greenland land system from the fretted rock-studded landscape of the South Rough Ridge land system. Schist dips gently to the north-east.

In the upper reaches of the catchment topography is subdued. Loess-capped colluvial slopes and hollows predominate. An abandoned water race and piles of sluicings from old gold mining activities occur in the mid-reaches of the catchment. Here, outcrops are restricted to the steep-sided banks of the creek. In the lower part of the catchment the valley broadens into a plain and includes a swampy area that discharges into Greenland Reservoir.

The RAP contains three landforms derived from periglacial processes, and three soil parent materials related to the action of wind (loess, deflated-slope and valley-infill materials) (McIntosh

1989). The RAP contains examples of asymmetrical valleys, probably formed in a periglacial environment. Snowbanks occur on hollows that face north to north-east, near the summit of colluvial slopes. Exposed north-facing spur terminations are subject to severe sheet wash and wind erosion.

Vegetation and flora

The extensive red tussockland in this area is present as a range of types on subtly different landforms, despite appearing fairly uniform. Most extensive are the open stands with considerable fescue tussock and *Raoulia subsericea*. These generally occur on the gentle hill slopes which make up much of the RAP. A much more dense red tussockland is found in the hollows that occur on gentle summits and gully heads, where drainage is poor. A third type, open red tussockland, is found on crests where the soil is thin and dry. These areas are used more heavily by sheep and this is reflected in the greater abundance of adventive-species such as sweet vernal, catsear and *Hieracium pilosella*. *Leucopogon jraseri* also is usually abundant at these sites. There are also areas dominated by fescue tussock, with a high diversity of plant species despite modification by sheep grazing.

Around Manorburn Stream there are areas where shrubs such as *Coprosma ciliata*, *Hebe rakaiensis* and *Muehlenbeckia complexa* are associated with the red tussockland. These shrubs represent some of the last examples of this type of woody vegetation in the District. Such shrubland apparently has been much more abundant in the past (Buchanan 1868).

One of the distinctive features of this RAP is the vegetation associated with the snow hollows. Typically, these are steep banks, devoid of red tussock, that have been formed by processes associated with snow accumulation and extended snow-lie. Snowbanks almost always have a north-easterly aspect, having accumulated snow deposited in south-westerly storms. The prolonged snow-lie probably contributes to the lack of red tussock.

There is a very diverse turf on these sites. *Coprosma petriei*, *Raoulia subsericea* and *Pemetya nana* tend to dominate. Also notable are *Stackhousia minima*, and *Plantago spathulata*. The tiny orchids *Pterostylis mutica* and *Microtis oligantha* are found on these snowbanks. While the landform of these sites is referred to as snowbank and the associated vegetation is very distinctive, their flora is not that typically associated with nivation hollows of adjacent districts, such as Old Man and Rock and Pillar, where snow persists well into summer. The lack of a typical snowbank flora is probably due to the lower altitude of the Manorburn sites and their reduced snow-lie compared with other mountain ranges in the Central Otago Region. Rabbits also prefer these snowbanks, probably because of the sheltered sunny aspect and the short stature of the vegetation for this altitude.

The lakeshore around Greenland Reservoir has a zonation described by Johnson (1986). Although the lakeshore vegetation clearly is an induced community, it comprises largely native species, which add to the floral diversity of the area. There are wetlands in this RAP that are dominated by *Carex diandra* and *Sphagnum* moss. Although the diversity of species is not high and this is not the largest area of such wetland in the District, the landform and wetland species add to the range of natural features of the area.

An interesting find was a small patch (30 x 10 m) of cushion vegetation which contained a range of species not seen elsewhere in the Greenland land system. These species included *Abrotanella*

caespitosa and *Phyllachne colensoi*. It is possible this is a vegetation type -that was once more common. The nearest site of similar vegetation is a large area on the west of South Rough Ridge Hill in the South Rough Ridge land system (Long Valley Ridge **RAP** (MAN 3)).

Rock outcrops in the vicinity of upper Manorburn Stream are sites for a large number of plant species, many of which do not occur in the surrounding area, e.g. *Chionohebe densifolia*, *Aristoleliajruvicosa*, *Melicytus* sp., *Polystichum vestitum*, *Clematis marata* and *Schizeilema haastii*. The rock outcrops provide specialised habitats for some species, as well as refugia for many species that most likely have been eliminated from the surrounding country by burning and grazing.

Soils

Soils were described on opposite sides of an asymmetrical valley. The soils at the described sites have been mapped in the Teviot set (55, 55H) by NZ Soil Bureau (1968). Around the reservoir Blackstone Hill soils (9H) were mapped (Appendix VI).

Soil classifications:

- R4 Teviot silt loam (high country yellow-brown earth)
- R6 Tawhiti silt loam (upland yellow-brown earth)

Soils on slopes facing north-west have more bare ground than soils on the east-north-east faces, probably as a result of deflation by north-westerly winds.

Fauna

"Spotted" and "striped" skinks, plus the common gecko, are found in Greenland RAP. Kahu are common, as are New Zealand pipits. Black shags were seen around the head of the reservoir, along with banded dotterels on the lakeshore.

Discussion

Greenland RAP contains the District's largest area of red tussockland in the most natural condition, spread over gently rolling uplands. The red tussock dominance over large areas of such terrain is a feature of Manorburn District, particularly because the more common habitat of red tussock is moist or poorly-drained ground. Adventive species generally are less abundant than in the surrounding land, perhaps due to less burning and more conservative land management. A range of other vegetation types is present, including snow hollow, wetland, shrubland, rock outcrop and short tussockland communities, all of which add to the natural values and diversity of the RAP.

Water races in the RAP are very overgrown by tussock grasses, leaving little evidence of the earlier gold mining activity.

Soils comments

Greenland RAP contains a valuable reference site for Tawhiti silt loam, not known to be present in any other reserve sites or RAPs. Tawhiti soils show signs of intense bioturbation and also have clay lamellae. Both features may be indicative of the climate during the last glaciation.

Criteria **summary**

Representativeness	high	An excellent example of the extensive red tussockland and associated vegetation typical of the Greenland land system.
Diversity	high	An excellent range of vegetation types and a high diversity of species within them.
Naturalness	high	The most natural area of red tussockland in the Greenland land system, with relatively few adventive species.
Special features		Nivation hollows; lakeshore.
Viability	high	A large area, mostly with catchment boundaries.
Buffering	high	Surrounded by similar semi-natural areas.
Threat	medium	Burning and overgrazing could result in the loss of tussock cover and/or invasion by adventive species as has happened in many areas to the north and south. Already <i>Hieracium pilosella</i> and catsear are present.
Landform		Typical of a large area of the Greenland land system. Gently rolling uplands. Stream with a meandering channel and occasional rock outcrops.

Appendix 2

- a) letter from Minister of Conservation dated 14 January 1997 confirming that once the Reserves Act covenant had been registered that his interest in RAP 2: Greenland would be settled;
- b) the Reserves Act Covenant document;
- c) a related deed outlining the management of the portion of the Greenland RAP outside the said covenant; and
- d) letter from LINZ dated 17 April 2003 suggesting a procedure for the inclusion of RAP 2: Greenland in the Little Valley pastoral lease tenure review.

File No. RML-1515
Drafted/Typed by - H Nicholson
Mini No. 97/8007
Wang No.
Date Lft: 13 - 1 - 1997

14 JAN 1997

J Williamson
Partner
Checketts McKay
Lawyers Central Otago
PO Box 41
ALEXANDRA

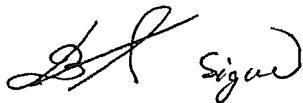
Dear Mr Williamson

I refer to your enquiries regarding the final implementation of the Little Valley Station agreement.

I am prepared to confirm the agreement made by my predecessor, Hon Denis Marshall, that upon the registration of the agreed conservation covenant under the Reserves Act 1977, apart from the 17 hectares referred to in Clause 5 of the agreement dated 27 August 1996, my interest in the Greenland RAP will have been settled.

I trust this meets your concerns.

Yours sincerely

A handwritten signature in black ink, appearing to be 'N. Smith', with the word 'signed' written in a smaller, cursive hand to the right of the signature.

Nick Smith
Minister of Conservation

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CONSERVATION COVENANT
(Section 77 Reserves Act 1977)

BETWEEN LITTLE VALLEY STATION LIMITED at Alexandra ("the Landholder")

AND MINISTER OF CONSERVATION ("the Minister")

BACKGROUND

A Section 77 of the Reserves Act 1977 provides that:

- i The Minister may agree with any owner or lessee of land that all or part of the land should be managed so as to preserve the natural environment or landscape amenity or wildlife or freshwater life or marine-life habitat or historical value of the land
- ii The terms of such agreement may be recorded in a Conservation Covenant which is registered against the title to the land or the lease so as to bind the land or the lease and its owner or lessee to the performance of the terms of the agreement, in perpetuity or for such other period as the parties may agree

B The Landholder is registered as lessee of the land described in the Schedule ("the Core Land"), consisting predominantly of a red tussock (*Chionochloa rubra* var. *cuprea*) grassland and associated native plant communities on the South Rough Ridge plateau to the south of the Greenland Reservoir.

C The Landholder and the Minister have agreed that the Core Land be managed with the following conservation objectives (called "the Objectives"):

- i Protecting the character of the Core Land, with particular regard to the natural functioning of ecosystems and to the native flora and fauna in their diverse communities and dynamic relationships with their earth substrate, water courses and the atmosphere

- ii Protecting and maintaining the Core Land and its vegetation as an area representative of a significant part of the ecological character of the Manorburn Ecological District's South Rough Ridge-Greenland Plateau land system
- iii Protecting and maintaining the landscape characteristics of the Core Land as an open, treeless, area of red tussock grassland largely unbound by fences, interspersed with sphagnum bog wetlands and meandering streams secreted among the folds of the terrain, representative of part of the Greenland Plateau landscape unit of the Manorburn Ecological District.

TERMS OF THIS DEED

In accordance with Section 77 of the Reserves Act 1977 the Landholder and the Minister MUTUALLY COVENANT in perpetuity to comply with the following respective conditions for the purpose of meeting the objectives detailed in Background C:

- 1 mE Landholder shall not do anything on the Core Land which shall interfere with or be contrary to the objectives and in particular:
 - a The Landholder shall not permit stock to graze the Core Land or to pass through the Core Land; and
 - b Notwithstanding Section 106 of the Land Act 1948, the Landholder shall not burn, damage, remove or disturb the vegetation or soil of the Core Land, and shall not permit any other person to do any of those things, except as may be approved by the Minister for the purposes or objectives of this Deed.
 - c The Landholder shall, as far as is practicable, avoid topdressing or the sowing of seed on the Core Land.

- 2 THE Minister shall, at the cost of the Crown:
 - a Erect a fence around the unfenced perimeter of the Core Land, the Minister to own the fence. The fence to be constructed using flat standards, galvanised posts or T Irons and 7 x No.8 wire provided that if the Minister is not able to procure flat standards then he may use waratahs; and
 - b Carry out mechanical line clearing/fire breaking as appropriate around the Core Land. It being intended by the parties that the existing vehicle track on the eastern boundary of the core land will be utilised as much as is possible as a fire break.

3 **THE** Minister shall, at his cost, maintain the fence erected pursuant to clause 2 except that routine day to day maintenance of a minor nature will be undertaken by the Landholder at the Landholder's own cost.

- 4 a **THE** Landholder shall ensure that the existing fence on the Core Land along the Little Valley Station property boundary is properly maintained to a stock proof standard.
- b **IN** the event of the Landholder being in breach of this obligation under paragraph a, the Minister, after giving 14 days notice to the Landholder of his intention to do so, may carry out necessary maintenance work on this fence and recover the Crown's reasonable costs in doing this, from the Landholder.
- c **PROVIDED** however that if the Landholder is taking action under the Fencing Act 1978 to recover a contribution of the cost of the boundary fence maintenance from the boundary fence neighbour then the period of notice under the preceding paragraph (b) shall be extended out for such reasonable period necessary to coincide with the timeframes under the Fencing Act relating to a recovery of a contribution from the boundary fence neighbour.

5 **THE** following provisions shall apply with respect to the Landholder burning any land outside the Core Land:

- a The Landholder shall maintain the dozed fire break around the Core Land, including maintaining as a dozed [fire break the existing vehicle track on the eastern boundary which forms part of the fire break as referred to in clause 2 and will take such other steps as may be practicable to avoid the escape of fire into the Core Land from any adjoining Landholder's land. It being agreed that this Covenant shall not prevent the Minister from carrying out maintenance work on the dozed fire break around the Core Land including the section of the existing vehicle track on the eastern boundary used as part of the fire break. However if the Minister is intending to carry out such maintenance work, then he shall first consult with the Landowner.
- b Before carrying out any burn on land adjacent to the Core Land:
- i The Landholder shall back burn from the dozed fire break around the Core Land;
 - ii The Landholder shall, not less than one month before any anticipated burn date, write to the Minister's nominated agent advising of the Landholder's intention to burn with details of the area proposed to be burned.
 - iii As soon as the Landholder has an anticipated burn date, the Landholder shall phone the Minister's nominated agent advising of the anticipated burn date.
 - iv As soon as the Landholder has made a definite decision as to when the burn will be undertaken the Landholder shall phone the Minister's nominated agent to confirm when the burn will take place. It is acknowledged that climatic

conditions may require only a short time period between the decision to burn and the time that the burn takes place.

- c It shall be the Minister's responsibility to:
- i Provide the Landholder with a list of alternative names and contact phone numbers of the Minister's nominated agents to be contacted under the preceding paragraphs (b)(i), (iii) and (iv) and under paragraph (e) of this clause; and
 - ii Ensure that there will be a nominated agent available from that list to take the Landholder's call whether it be during or outside business hours.

For clarification it is acknowledged that the Landholder shall only contact one of the Minister's nominated agents on the list.

- d It is agreed that the Minister's agents may be in attendance during such fire on the Landholder's lands (at no cost to the Landholder) so as to safeguard the boundaries and interior of the Core Land against damage by fire but in such case the personnel attending do so in a firefighting capacity. It is acknowledged that firefighting is a hazard and should only be undertaken by appropriately trained personnel or untrained but appropriately supervised personnel and accordingly the Minister shall be responsible to make sure that any untrained personnel of the Ministers in attendance are appropriately supervised by trained personnel of the Minister. It is agreed that the Landholder shall not be responsible for the health and safety of the Minister's personnel attending the fire.
- e In the event of a fire upon the Core Land when the Minister's agents are not in attendance, the Landholder agrees to urgently notify by phone the Minister (through one of his nominated agents). The Minister may render assistance at any such fire at no cost to the Landholder unless the Landholder is responsible for the fire through wilful action or negligence (which includes the case where the fire or its escape is caused by non-adherence to the conditions of any permit or of this Deed).
- f Nothing in this Deed affects the Landholder's responsibilities under the Land Act 1948 or the Forest and Rural Fires Act 1977.
- g It is agreed that the Minister shall not allow to be brought about a situation whereby a "fire safety margin" (or other statutory fire buffer) would be imposed outside the boundary of the Core Land for the purpose of protecting the Core Land. For the purpose of clarification it is acknowledged that this paragraph is not intended to extend to any State Area, fire safety margin or other statutory fire buffer relating to land other than the Core Land.
- h The Minister agrees that any fire safety margin around land administered by the Department of Conservation, which may apply to the Landholder's land, will be administered with a view to securing the Department's land from the spread of fire on to it, and not to protect the vegetation on the Landholder's land for nature conservation purposes.

- i For clarification it is acknowledged that the provisions of this clause 5 are without prejudice to the Minister's rights under the Resource Management Act to object to any burn application by the Landholder or to seek special conditions on any consent to burn. Equally, the Landholder reserves its right to contest under the Resource Management Act any exercise by the Minister of such statutory power.
- 6 **THE** Landholder grants to the Minister a right of access onto the Core Land for the purpose of examining and recording or researching the Core Land or its species or natural attributes or for carrying out protection or maintenance work on the Core Land consistent with the objectives set out in this Deed. However in exercising this right, the Minister will consult with the Landholder in advance and have regard to all reasonable requests.
- 7 **WHERE** the Minister wishes to obtain access to the Core Land in terms of clause 6 through the balance of the Landholder's land because alternative access through the Manorburn Conservation Area (ex Moir land) is not able to be used, the Landholder's permission for access through the balance of the Landholder's land will be sought and this will not be unreasonably withheld. Provided however it is agreed that this clause shall only be used to obtain access during such times as alternative access is impassable and shall not be used as a permanent means of access to the Core Land.
- 8 **THE** Landholder agrees that the Minister may take other persons onto the Core Land for purposes broadly consistent with this Deed, in conjunction with access under clause 6.
- 9 **THE** Minister administers on behalf of the Crown the Manorburn Conservation Area land (ex Moil' land) which backs onto the Core Land. So as to clearly identify the boundary between the Manorburn Conservation Area and the Core Land, the Minister shall erect and maintain an appropriate sign on the boundary of the Manorburn Conservation Area and the Core Land advising the public of the boundary of the Manorburn Conservation Area, that the Core Land is private land and state arrangements for access (which arrangements shall include a requirement to obtain the Landholder's consent).
- 10 **THE** Minister shall take reasonable and practicable action to manage the Core Land in a way which meets the objectives and in particular (but without limitation) shall:
- a Carry out such weed and pest control on the Core Land as would be expected from a responsible neighbour.
 - b Keep the Core Land free of all exotic tree species.
 - c Meet all of the Landholder's obligations at law with respect to the Core Land.
- 11 **THE** parties agree that:

- a The covenants contained in this Deed shall bind the Landholder and the Landholder's heirs successors executors and assigns in perpetuity. On a renewal of the lease or if a new lease or fee simple title of the Core Land is granted to the Landholder or the Landholder's heirs successors executors or assigns the terms of this Deed shall continue to apply.
- b In the event that a fee simple title to the Core Land is granted to the Landholder then:
 - i the covenants contained in the Deed shall bind the Landholder and its executors administrators successors and assigns in perpetuity and shall bind any lessee for the term of any lease; and
 - ii the Landholder will, when requested by the Minister, execute a new conservation covenant on the same terms and conditions as this conservation covenant and will take all action required to enable such new conservation covenant to be registered immediately following the issue of the fee simple title with all costs in connection therewith to be met by the Minister.
- c The Landholder will not be personally liable in damages for any breach of covenant committed after it has parted with all interest in the Core Land in respect of which such a breach occurs.
- d Where there is more than one owner of the leasehold or fee simple title to the Core Land, the covenants contained in this Deed shall bind each owner jointly and severally.
- e Where the Landholder is a company the covenants contained in this Deed shall bind a receiver liquidator statutory manager or statutory receiver. Where the Landholder is a natural person this Deed shall bind the Official Assignee. In either case this Deed binds a mortgagee in possession.
- f The reference to any Act in this Deed extends to and includes any amendments to, or re-enactment of that Act.
- g Any notice required to be given in terms of this Deed shall be sufficiently given if made in writing and served as provided in Section 152 of the Property Law Act 1952.
- h Any notice required to be given by the Minister shall be sufficiently given if it is signed by the Regional Conservator, Department of Conservation, Otago. Any notice required to be served upon the Minister shall be sufficiently served if delivered to the office for the time being of the Regional Conservator, Department of Conservation, Otago.

12 THE Minister will throughout the term of this Deed, consult with the Landholder about:

- a the management of the Core Land by the Minister under this Deed; and
- b any proposed departure from such management proposals;

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and shall have proper regard to all reasonable requests of the Landholder made in relation to these matters;

- 13 THE Minister shall indemnify the Landholder against all liabilities and costs incurred by the Landholder by law or under the Landholder's Pastoral Lease cOlitract as a consequence of any action or inaction by the Minister in managing the Core Land.

- 14 IF any rate or other charge in relation to the Core Land significantly increases then the Minister shall pay such rates and other charges levied with respect to the Core Land. If such outgoings are not separately assessed for the Core Land, they shall be apportioned in a fair manner as shall be agreed and failing agreement then determined in accordance with the dispute resolution process detailed in this Deed.

- 15 IT is agreed that the Landholder may carry out its own monitoring on the Core Land. It is agreed that any monitoring information obtained by either the Minister or Landholder shall be provided, together with all base data, free of charge to the other party.

- 16 **THE** Minister shall meet the costs of surveying the core area and preparing and registering this Deed.

- 17 IF either party believes that a dispute between them has arisen regarding the rights or obligations under this Deed or compliance with such rights or obligations, such party may give written notice to the other party of the existence of such a dispute and the particulars of it and the following procedures shall apply:
 - a The parties shall then meet in good faith and seek to resolve the dispute and if it is not resolved within 14 days of the notice to the other party of the existence of the dispute, the parties shall seek to agree on a process for resolving the dispute through means other than litigation or arbitration, such as conciliation, or independent expert evaluation or determination, or mediation.
 - b If the parties cannot reach agreement on:
 - i the dispute resolution process and procedures to be adopted for resolving the dispute; and
 - ii the timetable for all steps in that process; and
 - iii the selection and compensation of the independent person required for such technique;
 they shall refer the dispute to mediation and for that purpose they shall use the assistance of a dispute resolution person or organisation (mutually agreed to) and failing agreement nominated by the President of the Arbitrators' Institute of New Zealand Inc.

Handwritten signatures and initials are present at the bottom left of the page, including a large signature that appears to be 'Sud' and several other initials and signatures.

- c Either party may elect that any statements made by that party during the alternative dispute resolution process shall have a "without prejudice" status.
 - d No party to the dispute may refer a dispute to arbitration or commence proceedings in any Court unless the dispute has been referred to a dispute resolution person or organisation in accordance with this clause and the dispute has not been resolved.
- 18 a IF, following the procedures to resolve any dispute between the parties contained in clause 17 the dispute has not been resolved, the dispute shall be referred to arbitration in accordance with the Arbitration Act 1996 or any enactment in substitution of that Act. If the Arbitration Act 1996 is used and the parties fail to agree on the person to be appointed as arbitrator the appointment shall be made by the President for the time being of the Otago District Law Society.
- b IF the dispute is referred to arbitration under this clause then:
- The arbitrator shall determine the matter in dispute in a manner which is fair and reasonable to all parties to the arbitration.
 - ii The cost of the arbitration and the award shall be fixed by the arbitrator who may direct that any party is to pay all or part of the costs and may make an order for costs in favour of any party.
- 19 IN this Deed:
- a A reference to "the Minister" includes the Minister's successors and transferees and includes the Minister's agents.
 - b A reference to "the Landholder" includes its successors assigns and transferees.
 - c A reference to "Core Land" includes the vegetation growing on the Core Land.
 - d A reference in clause 5(b)(ii) (ill) and (iv) to "burn" and a reference to "fire" in paragraphs d and e of clause 5 extend to any "back burn" and the fire resulting from a back burn.

DATED the 8th day of February 1997


SCHEDULE

All that parcel of land situated in the Otago Land District containing 317.2150 hectares more or less being that part of Run 566 Blocks V and VI Long Valley Survey District shown marked with the letter "A" on the copy of SO Plan 24593 attached and being part of the land comprised and described in Pastoral Lease P.80 recorded as Register Volume 386 folio 92 (Otago Registry) SUBmCT however to Land Improvement Agreement 806615 and Memorandum of Mortgage 937764.4.

LS
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B
Q
✓
/

SIGNED by Jeff Connell an officer of the Department of Conservation pursuant to a designation given to him by the Director-General of Conservation and dated the 30th day of June 1989 acting for and on behalf of the Minister pursuant to section 117 of the Reserves Act 1977 in the presence of:




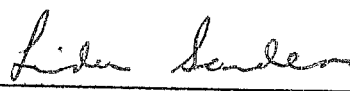
Witness: 
JESSE HOWARD BEARD

Occupation: SOLICITOR

Address: DUNEDIN

SIGNED by Little Valley Station Limited

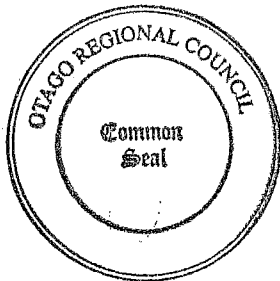

Director


Director

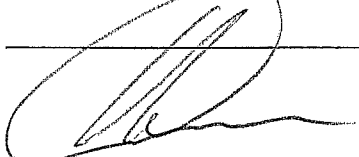
OTAGO REGIONAL COUNCIL the Grantor of Land Improvement Agreement 806615 **CONSENTS** to the within-written Conservation Covenant

Dated the 7 day of July 1999.

THE COMMON SEAL of the **OTAGO REGIONAL COUNCIL** was hereto affixed in pursuance of a resolution of the Council in the presence of:



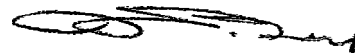

Chairperson


Director of Corporate Services

GRANT of

Correct for the purposes of the
Land Transfer Act

CONSERVATION COVENANT



Solicitor for the Minister

pursuant to Section 77 of the
Reserves Act 1977

LITTLE VALLEY STATION LIMITED

to

MINISTER OF CONSERVATION

Regional Solicitor
Department of Conservation
DUNEDIN

The COMMISSIONER OF CROWN LANDS pursuant to section 89 of the Land Act 1948
CONSENTS to the within-written Conservation Covenant

Dated the 1st day of December 2000
~~1999~~

SIGNED by the COMMISSIONER OF CROWN
LANDS in the presence of:

DJ Gullen

DJ Gullen

Commissioner of Crown Lands

Witness:

[Signature]

Occupation:

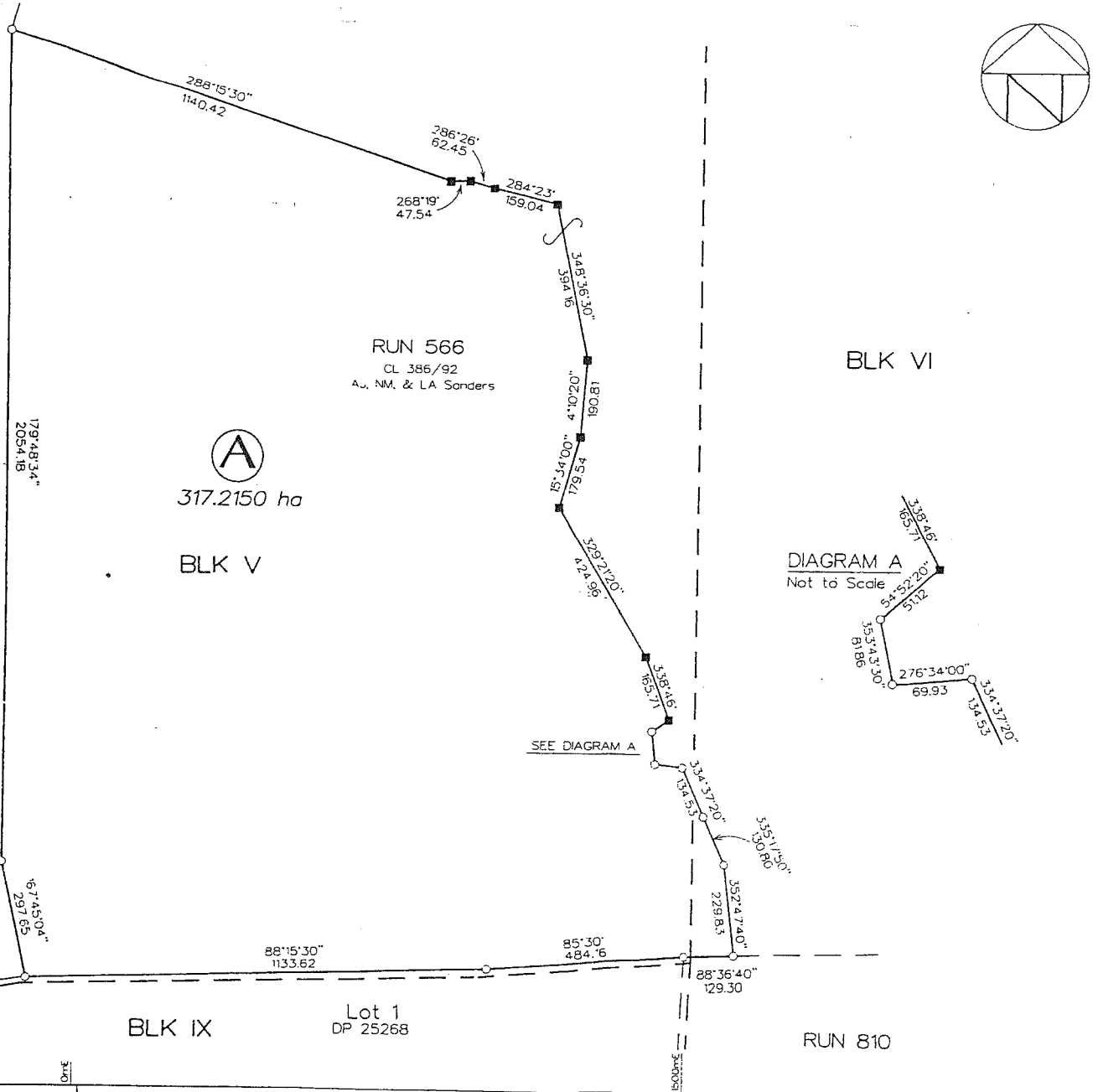
DAVID J EHLERS
SOLICITOR
DUNEDIN

Address:

Handwritten notes and signatures on the left margin.

1500m

RUN 567



Approved
Signed for and on behalf of Her Majesty
Queen as owner, by Murray Robert MacL
Manager Crown Property Services, LJI

Signature
28/5/97

CONSERVATION COVENANT		
SHOWN	DESCRIPTION	AREA
(A)	Pt Run 566 (Pt CL 386/92)	317.2150

NOTE
Boundaries adopted from SC 579
have been corrected to sea level

Total Area	317.2150 ha
Comprised in	Pt CL 386/92

DARRELL REX THOMSON
Registered Surveyor and holder of an annual practising certificate who
may act as a registered surveyor pursuant to section 25 of the Survey Act
1981 hereby certifies that this plan has been made from surveys executed
by me or under my directions that both plan and survey are correct and
have been made in accordance with the Survey Regulations 1972 or any
regulations made in substitution thereof

Dated at Dunedin this 5th day
of JUNE 1997

Field Book 2618 & 30-35 & 36
Reference Plans 50 579 917 & 920 DP 25268

Examined *Handwritten* correct

Approved as to Survey
28/5/97 *Signature*
Chief Surveyor

Deposited this day of 19....
District Land Registrar

File Received Instructions	LITTLE 16/6/97 12:37:38	SO 24593
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OTAGO DISTRICT
Long Valley SD
MS 261 Sheet G 43
Rcd Map No.

COVENANT OVER RUN 566

TERRITORIAL AUTHORITY CENTRAL OTAGO DISTRICT
Surveyed by TERRALINK NZ LIMITED
Scale 1 : 8000 Date MARCH 1997

APPLICATION

TO: The District Land Registrar, Dunedin (Otago Registry)

Re: Memorandum of Mortgage No: 937764.4

RABO WRIGHTSON FINANCE LIMITED hereby applies to be registered as proprietor of all the estate and interest as mortgagee under Memorandum of Mortgage referred to above in accordance with a declaration lodged under the applicable Abstract number appearing below.

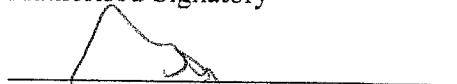
<u>Registry</u>	<u>Abstract No.</u>
Auckland (North Harbour Registry) under number	D269158.1
Blenheim (Marlborough Registry) under number	197427.1
Christchurch (Canterbury Registry) under number	A350308.1
Dunedin (Otago Registry) under number	947302.1
Gisborne (Gisborne Registry) under number	G220254.1
Hamilton (South Auckland Registry) under number	B479697.1
Hokitika (Westland Registry) under number	109815.1
Invercargill (Southland Registry) under number	257590.1
Napier (Hawkes Bay Registry) under number	670513.1
Nelson (Nelson Registry) under number	377265.1
New Plymouth (Taranaki Registry) under number	450724.1
Wellington (Wellington Registry) under number	B665327.1

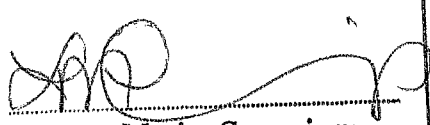
DATED this 23rd day of July 1999

Executed by)
RABO WRIGHTSON FINANCE)
LIMITED)
)



Authorised Signatory


 Authorised Signatory

Witnessed by:

 Leanne Marie Cummings
 Bank Officer
 Wellington

LITTLE VALLEY STATION LIMITED

and

MINISTER OF CONSERVATION

DEED

Solicitor
Department of Conservation
DUNEDIN

THIS DEED made the 2nd day of February 1999 between LITTLE VALLEY STATION LIMITED at Alexandra (hereinafter together with its successors and assigns called "the Landholder") and the MINISTER OF CONSERVATION (hereinafter together with his successors and assigns called "the Minister").

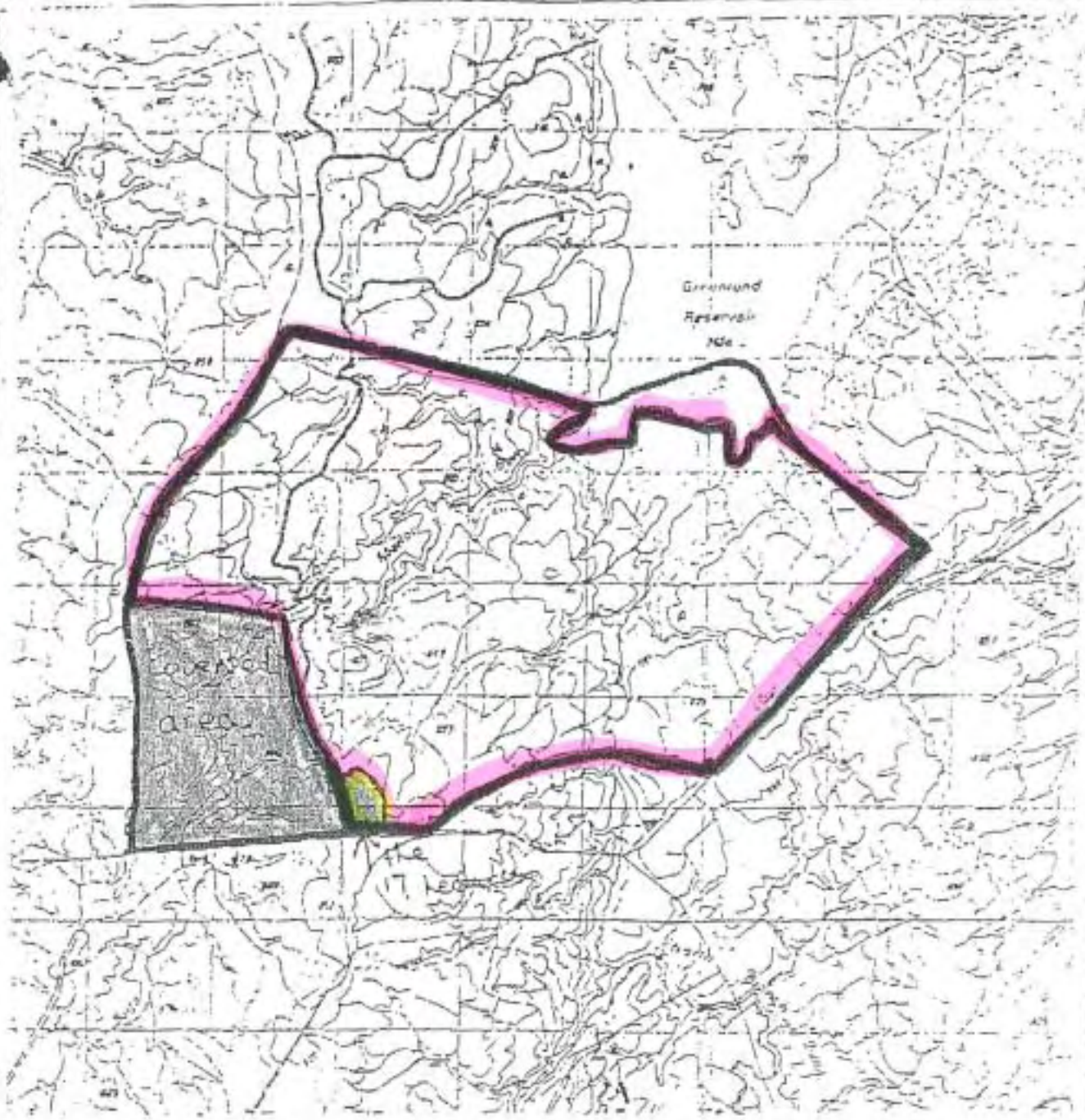
WHEREAS

- 1 On 4 October 1996 the predecessors in title to the Landholder and the Minister entered into an Agreement to grant a conservation covenant over part of the land comprised and described in Pastoral Lease P 80 recorded as Register Volume 386 folio 92 (Otago Registry) on the terms set out in the Agreement.
- 2 The Land Registrar for Otago has advised that clause 19 of the proposed covenant shown in the schedule to the Agreement is not able to form part of the covenant to be registered in the Land Titles Office.
- 3 The parties have agreed to enter into this Deed to ensure that the intent of clause 19 is binding on the parties and their successors and assigns.

NOW THEREFORE THIS DEED WITNESSES as follows:

- 1
 - a **THE** parties acknowledge that the Area outlined in red on the plan attached (called "the Area") (which is outside the land over which the conservation covenant referred to above is to be obtained) is an essential integral part of the Landholder's total farming operation. This Area also has ecological and landscape values.
 - b **SUBJECT** to giving full effect to its farming operation as the primary purpose, the Landholder shall consider the ecological and landscape values of the Area when making management decisions.
 - c **THE** parties acknowledge that the land coloured yellow on the plan attached may be fenced along the eastern edge by the Minister at his cost, the fence to be constructed using flat standard galvanised posts or T irons and 7 x No. 8 wire provided that if the Minister is not able to procure flat standards then he may use waratahs. If the fence is erected then the Minister will maintain it at his cost except for routine day to day maintenance of a minor nature which shall be carried out by the Landholder at its cost.
 - d **IF** the fence referred to in c is erected the Landholder will manage the land coloured yellow as a benchmark area for scientific monitoring of soil and vegetation.
- 2 A reference to "the Minister" includes the Minister's agents.

18



SCALE



GR CENTRE : G43 445230
 AREA : 1970 hectares
 ALTITUDE RANGE : 750m - 920mm
 NATURE : Pastoral Lease
 AVAILABLE SITES : 32 - 61

[Handwritten notes and scribbles]

1000

GEORGE McMILLAN

FAX 01 4 234 7727

27/03 86 10:06

[Handwritten signatures and initials]
 MS. fl 9 8

DEPT OF CONSERVATION
 OTAGO CONSERVANCY
 22 APR 2003
 RECEIVED

71

Our Ref:

Your Ref:



17 April 2003

Regional Conservator
 Department of Conservation
 Box 5244
 Dunedin

Attention Tony Perrett

*Bruce
to note*

CONS -	
A.M	
C.R.M	
B.S.M.	
T.S.M.	
H.R.A.	
H.C.T.R.M	<i>CP</i>

Dear Tony,

Little Valley—Tenure Review:

I refer to recent discussion with the Departments contractor for this Tenure Review regarding the Greenland R.A.P. that is situated on the review area.

You will recall that the lessee's solicitor raised a number of points in his letter of 15/02/2003 to OPUS. One of the most significant was that no technical survey be undertaken by DOC of the Greenland RAP. This was agreed to by this office in an effort to allow the survey to continue on the basis that the issues raised in the letter-dated 15/2/2003 would be addressed before the review moved to D.P.P.

I have now had the case reviewed by my manager and the points raised are as follows which I put forward for your comment:

1. Since previous consideration and discussions the Crown Pastoral Land Act 1998 (CPLA) has been enacted and the current review is being undertaken under that Act.
2. Under the CPLA any initial assessment must be of all the land held under the lease and a Preliminary Proposal under the CPLA must deal with all the land under the lease.
3. Once the land is reviewed, the CPLA confers discretion as to how the land is to be dealt with, in terms of different designations of the land under tenure review.
4. Despite the fact that the Greenland R.A.P. has not been the subject of the recent survey I understand that DOC may be able to complete a "desktop" review without physically entering into the property. This may be sufficient for DOC to prepare its Conservation Resource Report (C.R.R.)
5. As a pragmatic solution it is suggested that D.O.C. provide a letter in addition to the C.R.R. formally advising of the background in relation to the Greenland RAP including any commitments that the Crown has already made, setting out recommendations and requesting that LINZ take these into account when making a decision on the tenure review designations.

Crown Property Management
 Christchurch Office
 Torrens House
 195 Hereford Street
 Private Bag 4721
 DX WP20033
 Christchurch
 New Zealand
 Tel 64-3-364-5944
 Fax 64-3-365 9715
 DDI 64-3-364 5944
 E-mail
 mmackenzie@linz.govt.nz
 Internet
 http://www.linz.govt.nz

6. These designations can then be used to form the preliminary proposal which the holder can accept or negotiate.

I would appreciate your early consideration of these points so I can enter into further discussion with the lessee's solicitor.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Murray Mackenzie', with a large, stylized flourish at the end.

Murray Mackenzie

Appendix 3: Vascular plant species list for Little Valley pastoral lease.

Indigenous trees, shrubs & mistletoes

Aristotelia fruticosa

Carmichaelia compacta

Carmichaelia crassicaule

Carmichaelia petriei

Carmichaelia vexillata

Clematis marata

Coprosma cheesmanii

Coprosma intertexta

Coprosma ciliata

Coprosma perpusilla

Coprosma petriei

Coprosma propinqua

Coprosma sp. 't'

Coprosma virescens

Corokia cotoneaster

Discaria toumatou

Dracophyllum longifolium

Dracophyllum politum

Dracophyllum uniflorum

Gaultheria antipoda

Gaultheria depressa var. novae-zelandiae

Gaultheria macrostigma

Gaultheria nubicola

Gaultheria parvula

Hebe pimeleoides var. rupestris

Hebe salicifolia

Helichrysum intermedium var. selago

Korthasella salicornioides

Kunzea ericoides

Leucopogon colensoi

Melicytus alpinus

Muehlenbeckia axillaris

Muehlenbeckia complexa

Olearia bullata

Olearia cymbifolia

Olearia lineata

Olearia odorata

Ozothamnus leptophyllus

Parsonsia capsularis

Pentachondra pumila

Pimelea aridula

Pimelea oreophila

Rubus schmidelioides

Sophora microphylla

Indigenous ferns

Asplenium flabellifolium

Asplenium richardii

Asplenium terrestre

Blechnum penna-marina

Blechnum vulcanicum

Cheilanthes sieberi

Cystopteris tasmanica

Grammitis poeppigiana

Lycopodium fastigiatum

Ophioglossum coriaceum

Pellaea calidrupium

Polystichum richardii

Polystichum vestitum

Pteridium esculentum

Indigenous grasses

Agrostis muscosa

Chionochloa rigida

Chionochloa rubra ssp. cuprea

Deschampsia caespitosa

Deyeuxia avenoides

Dichelachne crinita

Elymus apricus

Elymus falcis Connor

Elymus solandri

Elymus tenuis

Festuca novae-zelandiae
Lachnagrostis filiformis
Lachnagrostis lyalii
Poa breviglumis
Poa cita
Poa colensoi
Poa imbecilla
Poa lindsayi
Poa maniototo
Puccinellia cf. stricta
Rytidosperma b Buchananii
Rytidosperma clavatum
Rytidosperma gracile
Rytidosperma pumilum
Rytidosperma thomsonii
Rytidosperma unarede

Indigenous monocots other than grasses

Bulbinella angustifolia
Carex breviculmis
Carex coriacea
Carex diandra
Carex echinata
Carex gaudichaudiana
Carex secta var. tenuiculmis
Carex wakatipu
Carpha alpina
Eleocharis acuta
Herpolirion novae-zelandiae
Isolepis aucklandica
Juncus conglomeratus
Juncus distegus
Juncus gregiflorus
Juncus novae-zelandiae
Luzula banksiana var. rhadina
Luzula leptophylla
Luzula rufa
Microtis unifolia
Oreobolus pectinatus
Oreostylidium subulatum
Potamogeton cheesemanii

Prasophyllum colensoi
Thelymitra sp.
Typha orientalis
Uncinia divaricata
Uncinia elegans
Uncinia purpurata
Uncinia rubra

Indigenous dicot herbs

Abrotonella caespitosa
Acaena b Buchananii
Acaena caesiiglauca
Acaena novae-zelandiae
Acaena profundeincisa
Aciphylla aurea
Anaphalis bellidioides
Anisotome aromatica
Anisotome flexuosa
Brachyglottis bellidioides
Brachyglottis southlandicus
Brachyscome humilis
Callitriche petriei
Cardamine debilis
Celmisia argentea
Celmisia gracilentia
Celmisia viscosa
Chionohebe densiflora
Colobanthus brevisepalus
Colobanthus strictus
Craspedia sp.
Crassula tetramera
Dichondra repens
Drosera arcturi
Epilobium alsinoides var. atriplicifolium
Epilobium brunnescens
Epilobium hectorii
Epilobium pubens
Erodium cicutarium
Forstera tenella
Galium perpusillum
Gentiana amabilis

<i>Gentiana grisebachii</i>	<i>Raoulia subsericea</i>
<i>Geranium microphyllum</i>	<i>Schizeilema cockaynei</i>
<i>Geranium sessiliflorum</i>	<i>Scleranthus brockii</i>
<i>Geum leiospermum</i>	<i>Scleranthus uniflorus</i>
<i>Gingidia baxterii</i>	<i>Stackhousia minimus</i>
<i>Gingidia decipiens</i>	<i>Stellaria decipiens</i>
<i>Gnaphalium audax</i>	<i>Stellaria media</i>
<i>Gnaphalium laterale</i>	<i>Viola cunninghamii</i>
<i>Gnaphalium mackayi</i>	<i>Vittadinia australis</i>
<i>Gnaphalium ruahinicum</i>	<i>Wahlenbergia albomarginata</i>
<i>Gonocarpus micranthus</i>	
<i>Gunnera prorepens</i>	Lichens
<i>Helichrysum filicaule</i>	<i>Candelariella vitellina</i>
<i>Hydrocotyle heteromeria</i>	<i>Chondropsis semiviridis</i>
<i>Hydrocotyle novae-zelandiae</i> var. <i>montana</i>	<i>Rhizocarpon geographicum</i> agg.
<i>Hydrocotyle sulcata</i>	<i>Usnea arida</i>
<i>Kellaria dieffenbachii</i>	<i>Xanthoparmelia</i> cf. <i>conspersa</i>
<i>Kellaria laxa</i>	<i>Xanthoparmelia molliuscula</i>
<i>Lagenifera cuneata</i>	<i>Xanthoparmelia subnuda</i>
<i>Leptinella mediana</i>	<i>Xanthoparmelia tasmanica</i>
<i>Leucopogon fraseri</i>	
<i>Linum catharticum</i>	Mosses
<i>Montia fontana</i>	<i>Breutelia pendula</i>
<i>Myriophyllum propinquum</i>	<i>Ceratodon purpureus</i>
<i>Neopaxia</i> sp.	<i>Dicranaloma billardieri</i>
<i>Nertera balfouriana</i>	<i>Grimmia pulvinaris</i>
<i>Nertera depressa</i>	<i>Hypnum cupressiforme</i>
<i>Oreomyrrhis colensoi</i>	<i>Marchantia</i> sp.
<i>Oreomyrrhis ramosa</i>	<i>Polytrichum juniperinum</i>
<i>Oreomyrrhis rigida</i>	<i>Racomitrium lanuginosum</i>
<i>Oxalis exilis</i>	<i>Sphagnum cristatum</i>
<i>Phyllachne colensoi</i>	<i>Sphagnum falcatulum</i>
<i>Plantago raoulii</i>	<i>Sphagnum squarrosum</i>
<i>Plantago uniflora</i>	
<i>Pratia angulata</i>	Non-native trees & shrubs
<i>Pseudognaphalium luteoalbum</i>	<i>Cytisus scoparius</i>
<i>Ranunculus foliosus</i>	<i>Pinus</i> spp.
<i>Ranunculus glabrifolius</i>	<i>Populus nigra</i>
<i>Ranunculus mutiscapus</i>	<i>Ribes uva-crispa</i>
<i>Raoulia australis</i>	<i>Rosa rubiginosa</i>
<i>Raoulia beauverdii</i>	<i>Salix fragilis</i>

Sambucus nigra
Sorbus aucuparia
Thymus vulgaris
Ulex europaeus

Non-native grasses

Aira caryophylllea
Anthoxanthum odoratum
Arrhenatherum elatius
Bromus tectorum
Cynosurus cristatus
Dactylis glomerata
Elymus rectisetus
Festuca rubra var. commutata
Glyceria declinata
Holcus lanatus
Hordeum murinum
Lolium perenne
Poa annua
Poa pratensis
Rytidosperma racemosum
Vulpia myuros

Non-native dicot herbs

Acaena agnipila var. aequispina
Achillea millefolium
Anagallis arvensis
Anthriscus caucalis
Aphanes arvensis
Arctium minus
Cerastium fontanum
Cirsium arvense
Cirsium vulgare
Conium maculatum
Crepis capillaris
Digitalis purpurea
Dipsacus fullonum
Echium vulgare
Erophila verna
Eschschlozia californica
Euphorbia peplus

Galium aparine
Geranium molle
Gypsophila australis
Hieracium lepidulum
Hieracium pilosella
Hypericum perforatum
Hypochaeris radicata
Leucanthemum vulgare
Marrubium vulgare
Myosotis arvensis
Navarettia squarrosa
Plantago lanceolata
Prunella vulgaris
Reseda luteola
Rumex acetocella
Rumex crispus
Sedum acre
Senecio jacobaea
Sisymbrium altissimum
Sisymbrium polyceratium
Stellaria alsine
Stellaria gracilentia
Taraxacum officinale
Trifolium arvense
Trifolium dubium
Trifolium pratense
Trifolium repens
Urtica urens
Verbascum thapsus
Verbascum virgatum
Veronica verna
Vicia sativa
Vittadinia gracilis

Non-native monocots other than grasses

Juncus articulatus
Juncus effusus

Appendix 4: Invertebrate species list for Little Valley pastoral lease.

List of dry-pinned invertebrate species identified from Little Valley PL

Lepidoptera			
Noctuidae	<i>Graphania nullifera</i>	speargrass noctuid	widely distributed to alpine zone but local; larvae bore in taproot of speargrass
	<i>Agrotis ipsilon</i>	greasy cutworm	common & widely distributed to alpine zone; breeds on herbs in lowlands
	<i>Graphania mutans</i>	common noctuid	v common & widely distributed to montane; larvae on herbs
	<i>Graphania lithias</i>	<i>Melicytus</i> noctuid	widely distributed montane to alpine zone but local; larvae on <i>Melicytus alpinus</i>
	<i>Graphania lignana</i>		widely distributed and common in autumn; larvae grasses
	<i>Graphania phricias</i>		widely distributed and common; shrubland species
	<i>Graphania ustistriga</i>	large grey noctuid	common & widely distributed to montane zone; larvae on shrubs and herbs
	<i>Rictonis comma</i>	comma noctuid	common & widespread to montane zone; larvae on herbs
	<i>Aletia moderata</i>	<i>Raoulia</i> noctuid	common & widespread to alpine zone; larvae on <i>Raoulia</i>
	<i>Tmetolophota atristriga</i>	grass noctuid	common & widespread to alpine zone; larvae on grasses
	<i>Tmetolophota propria</i>		common & widespread, montane -alpine; larvae on grasses
	<i>Bityla defigurata</i>	<i>Muehlenbeckia</i> noctuid	common & widespread to alpine zone; larvae on <i>Muehlenbeckia</i>
	<i>Persectania aversa</i>	southern armyworm	v common & widely distributed to alpine zone; larvae on grasses
	<i>Heliothis armigera</i>	tomato armyworm	common & widespread to montane zone; larvae on herbs
Geometridae	<i>Gellonia pannularia</i>		widespread in forest/ shrublands; larvae unknown; montane-lowland
Geometridae	<i>Gellonia pannularia</i>		widespread in forest/ shrublands; larvae unknown; montane-lowland
	<i>Pseudocoremia colpogramma</i>	Tauwhinu looper	local and uncommon; larvae on <i>Ozothamnus</i> ; montane-alpine; good find
	<i>Pseudocoremia indistincta</i>	<i>Muehlenbeckia</i> looper	widespread & common to montane zone; larvae on <i>Muehlenbeckia</i>
	<i>Austrocidaria gobiata</i>	<i>Coprosma</i> looper	widespread & common to montane zone; larvae on <i>Coprosma</i>
	<i>Hydriomena rixata</i>	flush looper	common & widespread to montane zone; larvae on herbs incl <i>Gunnera</i>
	<i>Asaphodes chlamydota</i>	<i>Clematis</i> looper	widespread but local in forest/ shrubland; larvae on <i>Clematis</i>
	<i>Helastia corcularia</i>	rock moss moth	common & widespread to alpine zone; larvae on moss on rock
Crambidae	<i>Deana hybreasalis</i>		common & widespread to montane zone; larvae on lianes
	<i>Orocrambus ramosellus</i>	flush grassmoth	common & widespread in damp grassland; larvae on grasses
	<i>Orocrambus lewisi</i>	<i>Festuca</i> grassmoth	common & widespread to montane short grasslands; larvae on grasses
	<i>Eudonia manganeutis</i>	rock moss crambid	widespread & local in montane rocky areas; larvae on moss on rock outcrops
	<i>Orocrambus cyclopicus</i>	autumn grassmoth	common & widespread to montane grasslands in Autumn
	<i>Eudonia ejuncida</i>		local but widespread montane species; larvae unknown

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Noctuidae	<i>Tmetolophota lissoxylo</i>	alpine noctuid	common & widespread in good snowgrass in alpine zone
	<i>Graphania rubescens</i>	autumn noctuid	common & widespread to montane zone; larvae on herbs
Geometridae	<i>Zermizinga indocilisaria</i>	matagouri looper	widespread but local in dry shrublands - montane; larvae on herbs & shrubs; female flightless
	<i>Declana junctilinea</i>	shrubland looper	widespread & common in shrublands to montane zone; larvae polyphagous on shrubs
	<i>Homodotis megaspilata</i>	litter looper	common & widespread to montane zone; larvae on litter
Satyridae	<i>Argyrophenga antipodum</i>	tussock butterfly	widespread and locally common to alpine zone; larvae on <i>Chionochloa</i>
Crambidae	<i>Tawhitia pentadactyla</i>	dryland grassmoth	widespread in drylands of montane zone; larvae on grasses; female flightless
Crambidae	<i>Eudonia sabuosella</i>	sod webworm	common & widespread to montane zone; larvae on grasses - open areas
	<i>Orocrambus vittellus</i>	grassmoth	common & widespread to montane zone; larvae on grasses - open areas
	<i>Austrocidaria similata</i>	green <i>Coprosma</i> looper	common & widespread to montane zone; larvae on <i>Coprosma</i>
Crambidae	<i>Eudonia cataxesta</i>	riverbed scopariid	widespread & common; open areas; larvae on <i>Raoulia</i>
by day			
Lepidoptera			
Lycaenidae	<i>Antipodalycaena</i> new sp.	copper butterfly	common and widespread; larvae on <i>Muehlenbeckia</i> ; diurnal
Geometridae	<i>Asaphodes abrogata</i>	diurnal geometrid	common & widespread to montane zone; larvae on <i>Plantago</i>
Hemiptera			
Cicadidae	<i>Kikihia angusta</i>	grassland cicada	common & widespread to alpine grasslands
Pentatomidae	<i>Dictyotus caenosus</i>	shield bug	widespread but local to alpine zone; native predator
Coleoptera			
Tenebrionidae	<i>Mimopeus rugosus</i>	darkling beetle	good find; uncommon species in open country; dry areas
	<i>Mimopeus opaculus</i>	darkling beetle	widespread & common; open areas; larvae on roots
	<i>Artystona species</i>	darkling beetle	widespread & common; open areas; larvae on roots
	<i>Prodontria modesta</i>		
Scarabaeidae	(carapace)	flightless chafer	local chafer of this region; emerge in spring; good record lower Hopes Ck area
Pentatomidae	<i>Dictyotus caenosus</i>	shield bug	widespread but local to alpine zone; native predator
Hymenoptera			
	<i>Leioproctus</i> sp.	native bee	widespread and locally common in open montane areas of Otago
Diptera			
Asilidae	<i>Scropogon extenuatus</i>	robber fly	widespread and locally common in open montane areas of Otago

Appendix 5: Lizard records on Little Valley pastoral lease. Records include only actual sightings, not other signs of presence such as droppings, movement and skin sheds.

“Site locations of rare and endangered herpetofauna are recorded in the original report. Herpetofauna of this nature is at risk of illegal activities including damage and removal through unlawful interference and disturbance. Accordingly, information regarding the locations of any such herpetofauna has been deleted from this version of the report. The Department of Conservation has put in place mechanisms to ensure that such information can be released for genuine scientific and research purposes. Please contact the Department of Conservation directly to determine whether the information can be released.”

Appendix 6: Site details and records for aquatic fauna

Location	G.P.S Reading	Species Recorded
Farm pond	2237173 / 5537569	No fish
Hopes Creek	2238850 / 5536436	Brown trout (Rare), koura (common)
Hopes creek	2238890 / 5535381	Brown trout (Rare), koura (common)
Hopes creek	2239730 / 5535715	Creek dry
Hopes creek	2240531 / 5537059	Creek dry
Hopes creek	2240171 / 5538598	Creek dry
Hopes creek	2241759 / 5539353	Creek dry
Hopes Creek	2240762 / 5541161	Creek dry
Hopes creek	2240073 / 5536289	SpD Galaxiids
Hopes Creek	223915 / 5536876	SpD Galaxiids
Hopes creek	2237560 / 5538753	Creek dry
Little creek	2236501 / 5538877	No fish
Hopes Creek	2240729 / 5534849	Isolated pool, no fish
Hopes Creek	2241753 / 5534373	Creek dry
Trib of Manorburn	2244034 / 5530298	Creek dry
Trib of Manorburn	2243732 / 5529782	Creek dry
Hopes Creek	2242497 / 5526922	Isolated pools no fish
Trib of Manorburn	2243718 / 5526889	Creek dry
Trib of Manorburn	2244744 / 5526434	Creek dry
Trib of Manorburn	2243683 / 5525667	Isolated pool, no fish
Nth Branch Teviot R	2245291 / 5520734	Brown trout (Rare)
Hopes Creek	2241729 / 5539912	Creek dry
Hopes creek	2241975 / 5532346	Creek dry
Hopes creek	2240934 / 5532095	SpD Galaxiids
Hopes Creek	2237282 / 5543102	Brown trout
Little Valley Creek	2233165 / 5538845	No fish

Appendix 7: Geopreservation site No. 348: Greenland. Excerpt from Arand, J.; Basher, L.; McIntosh, P.; Heads, M. 1991. Inventory of New Zealand Soil Sites of International, National and Regional Importance. Part 1- South Island and Southern Offshore Islands (1st Edition). New Zealand Society of Soil Science Occasional Publication 1.

(347) Deakers

REGIONAL/CITY COUNCIL(S): Otago **ECOLOGICAL DISTRICTS(S):** 67-06 Manorburn
LOCALITY and GRID REFERENCE: 24 km NW of Ranfurly H41609745
AREA{ha}: 40 **ALTITUDE**(m): 700-890 **RAINFALL**(mm): 600-800
TOPOGRAPHY: steep colluvial hillslopes with tors **PARENT MATERIAL:** schist and derived colluvium **VEGETATION:** snow tussock grassland; short tussock grassland; rockland
SOILS: upland yellow-brown earths (Dunstan Teviot)
IMPORTANCE: 2 SIGNIFICANCE: (i) outstanding example of tall tussockland on a strongly acid upland yellow-brown earth (McIntosh 1989).(ii) low altitude site for intact snow tussock grassland association.
VULNERABILITY: 2 MODIFICATIONS/THREATS:- has been burned, grazed, topdressed and oversown; large rabbit numbers in the past
TENURE: private land, recommended area for protection **OWNER/MANAGER:** Mr Deaker
CONTACT PERSON: Peter McIntosh **DATE OF INFORMATION:** April 1990
NOTES: Valuable for measuring erosion rates. The site is now in the process of being sold to P and D Young.
REFERENCES: McIntosh (1989a) Fagan and Pillai (1990)

(348) Greenland

REGIONAL/CITY COUNCIL(S): Otago **ECOLOGICAL DISTRICTS(S):** 67-06 Manorburn
LOCALITY and GRID REFERENCE: 24 km NE of Roxburgh G43456222
AREA(ha): 1970 **ALTITUDE**(m): 750-920 **RAINFALL**(mm): 600-800
TOPOGRAPHY: gently undulating colluvial hillslopes; nivation hollows; fault trace **PARENT MATERIAL:** loess; loess on schist colluvium **VEGETATION:** red tussock grassland; short tussock grassland; dwarf turf-shrubland
SOILS: upland yellow-brown earths (Teviot Tawhiti), yellow-grey earths (Blackstone)
IMPORTANCE: 2 SIGNIFICANCE: (i) moderate range of soils on periglacial landforms.(ii) valuable reference site for Tawhiti silt loam (not present in any protected natural areas).(iii) useful site for measuring erosion rates on rolling land.
- VULNERABILITY: 2
TENURE: pastoral lease, recommended area for protection **OWNER/MANAGER:** Mr G Sullivan
CONTACT PERSON: Peter McIntosh **DATE OF INFORMATION:** April 1990
REFERENCES: McIntosh (1989a) Fagan and Pillai (1990)

(349) Long Valley Ridge

REGIONAL/CITY COUNCIL(S): Otago **ECOLOGICAL DISTRICTS(S):** 67-06 Manorburn
LOCALITY and GRID REFERENCE: 32 km SE of Alexandra H42568318
AREA(ha): 1690 **ALTITUDE**(m): 860-1170 **RAINFALL**(mm): 600-800
TOPOGRAPHY: gently-sloping to steep colluvial hillslopes; rock outcrops; terraces; seepage slopes; floodplain
PARENT MATERIAL: loess on schist colluvium **VEGETATION:** red tussock grassland; short tussock grassland; sedge mossfield; cushionfield
SOILS: upland yellow-brown earths (Teviot)
IMPORTANCE: 2 SIGNIFICANCE: (i) largely unmodified compared with other east Otago uplands. Outstanding site for studying natural distribution of soils and vegetation. (ii) unusual mosaic of wetland soils and vegetation.
VULNERABILITY: 2
TENURE: recommended area for protection, private land **OWNER/MANAGER:** Mr J Gibson, Mr K Heckler, Mr D Blakely
CONTACT PERSON: Peter McIntosh **DATE OF INFORMATION:** April 1990
REFERENCES: McIntosh (1989a) Fagan and Pillai (1990)

(350) Maori Creek

REGIONAL/CITY COUNCIL(S): Otago **ECOLOGICAL DISTRICTS(S):** 67-06 Manorburn
LOCALITY and GRID REFERENCE: 32 km E of Alexandra H42591461
AREA(ha): 60 **ALTITUDE**(m): 640-790 **RAINFALL**(mm): 600
TOPOGRAPHY: steep colluvial hillslopes; rock outcrops; valley floor **PARENT MATERIAL:** schist and derived colluvium and loess **VEGETATION:** matagouri-broadleaved rock shrubland; short tussock-introduced grassland; matagouri shrubland; matagouri-short tussock shrubland
SOILS: upland yellow-brown earths (Dunstan), yellow-grey earths (Arrow)
IMPORTANCE: 3 SIGNIFICANCE: (i) valuable for soil and landscape studies because it shows the influence of aspect on soils and vegetation (yellow-grey earths on sunny faces, yellow-brown earths on shady faces).
VULNERABILITY: 2
TENURE: private land, recommended area for protection **OWNER/MANAGER:** Philip Horrex
CONTACT PERSON: Peter McIntosh **DATE OF INFORMATION:** April 1990
REFERENCES: McIntosh (1989a) Fagan and Pillai (1990)

Appendix 8: Federated Mountain Club report.



FEDERATED MOUNTAIN CLUBS OF NEW ZEALAND (Inc.)
P.O. Box 1604, Wellington.

PASTORAL LEASE TENURE REVIEW

Preliminary Report on
Recreational and Related Significant Inherent Values

LITTLE VALLEY STATION

September 2003

Compiled for Federated Mountain Clubs (FMC) of NZ (Inc.)
By Dr Michael J S Floate, High Country Consultancy,

RECREATIONAL AND RELATED SIGNIFICANT INHERENT
VALUES of LITTLE VALLEY STATION

A Report for FMC based on map and literature research
to assist in the Crown Pastoral Lease Tenure Review Process

September 2003

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Fig. 1 The three homesteads, Little Valley, Mt Campbell and Matangi are situated close together in a broad basin (at about 400m above sea level) where there is a prominent bend in Little Valley Creek. The land within the basin appears suitable for freeholding but the semi-arid, bony landscape surrounding the basin has as much scenic appeal as productive value.

Fig. 2 At its extreme eastern end Little Valley Station adjoins the Upper Manorburn Conservation Area which contains a range of biodiversity. The broad ridges are characterised by High Country Yellow-Brown Earth soils which carry extensive tussock grasslands while the drainageways contain an interesting mix of plants. The southern end of Little Valley, already identified as an important RAP, would be a worthy addition to this Conservation Area.

Fig. 3 Little Valley Station occupies a rolling plateau (described in the PNA survey, as part of the wider Greenland Plateau). The plateau can be seen here stretching away to Pinel Heugh, with the Old Man Range in the distance. This central part of the property, between about 700 and 800m in altitude has been classified LUC Class VI and with appropriate maintenance should be capable of ecologically sustainable pastoral use.

Fig. 4 The southern part of the property is somewhat higher and has greater limitations to pastoral use. The area has however, very significant inherent values, which were identified in the Manorburn PNA survey. Almost 2000ha were recommended for protection (Manorburn RAP 2, Greenland) and would be complementary to the Manorburn Conservation Area seen in this view, immediately to the south of Little Valley.

Fig. 5 In the northern part of the property the major creeks, including Little Valley Creek, are deeply incised into the plateau with steep, rocky and very arid slopes, especially those with a sunny aspect. In this part of the property the plateau has a greater altitude range from about 400 to 700m with the Manor Burn itself cutting down to an altitude of only 200m above sea level.

Fig. 6 The arid character of the property is most severe in the north and especially on the steep rocky north-facing slopes which are characterised by Conroy and Chapman Hill Brown-Grey Earth soils. Conroy Hill soils, seen here on the rocky faces above the homestead, are classified LUC Class VII, with severe limitations to pastoral use. Some 1,500ha of Chapman Hill soils have been recognised in Hopes Creek with such severe soil limitations (LUC Class VIIIs), that the area is entirely unsuitable for pastoral use.

Fig. 7 Little Valley Station is situated very close to several important fishing spots on the Manorburn plateau including the Manorburn Dam, immediately to the east of Little Valley boundary. Access for fishing is one of the major issues in this tenure review. Access is good to the Manorburn Dam via the Upper Manorburn Road, but access to Greenland Reservoir is more difficult, and could be improved through tenure review.

Fig. 8 Access to both Manorburn and Greenland would be more convenient, and shorter, via Little Valley Road and the fire track along the central spine of Little Valley Station, than by Moa Creek and the Upper Manorburn Road. The Little Valley track passes close by an old stone hut which would add significant historic interest to the trip.

Fig. 9 Map of the Manorburn RAP 2 Greenland.

Fig. 10 The back country of the Greenland RAP (Evidence of Alan Petrie).

Fig. 11 Landscape attributes (Evidence of Alan Petrie).

Fig. 12 Landscape attributes (Evidence of Alan Petrie).

Fig. 13 Greenland RAP vegetation (Evidence of Peter Johnson).

INTRODUCTION

This report has been prepared following the Early Warning Meeting in September 2001 at which the properties entering the tenure review process in 2001 were introduced. Despite providing an explanation to the landholder, it has unfortunately proved not possible to arrange an on-site inspection of Little Valley Station. This Report has therefore been compiled from as much data and information as we have been able to gather from other sources. This report is offered as a contribution to the statutory consultation process undertaken by the Department of Conservation.

The government has recently (August 2003) published revised and extended objectives for the South Island high country [EDC Min (03) 5/3; CAB Min (03) 11/5 refer]. FMC fully supports these objectives and particularly notes the following:-

- *to promote the management of the Crown's high country in a way that is ecologically sustainable.*
- *to protect significant inherent values of reviewable land by the creation of protective measures; or preferably by restoration of the land concerned to full Crown ownership and control.*
- *to secure public access to and enjoyment of high country land.*
- *to ensure that conservation outcomes for the high country are consistent with the NZ Biodiversity Strategy.*
- *to progressively establish a network of high country parks and reserves.*

There is an important opportunity during this tenure review to advance these objectives.

The report focuses on those features of Little Valley Station which are important for public recreational interests. It should be noted that while interest focuses on access, the natural and historic values and landscapes of the areas concerned have a fundamental impact on the recreational value of the property and greatly influence the quality of recreational experience enjoyed. It is for this reason that reference is also made to natural, historic and landscape values in this report.

Little Valley Station is situated on the Manorburn plateau and extends over about 11,000ha in a relatively narrow band between about 300m (in the north) and 900m (in the south) in the Manorburn catchment. The main recreational interests in the area focus on the Upper Manorburn Dam and on Greenland Reservoir for fishing, and at the Lower Manorburn Dam for skating in winter. It should be noted that these water bodies are not actually on Little Valley leasehold property, but they are close to its eastern boundary. Another recreational interest, with historic overtones, is following the old coach road over the Knobies from Roxburgh to Alexandra.

METHODS OF SURVEY AND ASSESSMENT

Despite attempts to arrange a field inspection and writing to the landholder to explain why an inspection would be desirable, it has not been possible to arrange a visit to Little Valley. This report is therefore, written without the benefit of on-site information and instead relies on observations from outside the property and on map and library research. Information has been gathered from other sources. Those sources include studies of topographical and Land Use Capability (LUC) maps, and consultation with other recreational users and NGOs. The Conservation Management Strategy for Otago and the Reports of the Protected Natural Areas (PNA) surveys have also been used as a source of reference.

GENERAL DESCRIPTION OF LITTLE VALLEY STATION

Little Valley is a long narrow property stretching for over 20km from about 220m in the lower reaches of the Manorburn below Hopes Creek confluence, to 900m on the south boundary in the headwaters of the Manorburn above Greenland Reservoir. It is bounded to the north by Galloway Station, to the south by Mt Campbell, and to the west by Matangi. The three homesteads, Little Valley, Mt Campbell and Matangi are situated close together in a broad basin (at about 400m) where there is a prominent bend in Little Valley Creek (Fig. 1). At its extreme eastern end, Little Valley pastoral lease adjoins the Upper Manorburn

Conservation Area (Fig. 2), and the Onslow Block of The Knobbies which has been proposed as conservation land in the tenure review of The Knobbies pastoral lease.

Little Valley Station occupies a rolling plateau (described in the Manorburn Ecological District Protected Natural Area (PNA) survey, conducted in 1989, as part of the wider Greenland Plateau, Fig. 3). That part of the plateau occupied by Little Valley Station lies between Hopes Creek and the Manor Burn which both flow from south to north and are roughly parallel until they meet very close to, but just outside, the northern boundary of Little Valley Station. The southern part of the property is gently rolling with an average altitude of about 800m (Fig. 4). In the northern part of the property the major creeks, Hopes Creek, Little Valley Creek and the Manor Burn itself are deeply incised into the plateau, with steep, rocky and very arid slopes, especially those with a sunny aspect (Fig. 5). In the north the plateau has a greater altitude range from about 400 to 700m with the Manor Burn itself cutting down to an altitude of only 200m above sea level.

Land Resources of Little Valley Station

The overall impression of the property is of a semi-arid rolling landscape with steep valley sides to the incised river system (Fig. 5). The arid character of the property is most severe in the north and especially on the steep rocky north-facing slopes which are characterised by Alexandra, Conroy and Chapman Hill and Steepland Brown-Grey Earth soils. Some 1,500ha of mainly Chapman Hill soils have been classified LUC Class VIII, with such severe soil limitations that this area is entirely unsuitable for pastoral use (Fig. 6).

Most of the remainder of the northern part of Little Valley is characterised by similar Conroy Hill and Chapman Hill Brown-Grey Earths and Cairnhill Brown-Grey Nellow-Grey Intergrade soils which have only slightly less severe limitations for pastoral use. This area of some 2,500ha has been classified Class VII.

There is another large area (about 3,500ha) on the higher rolling plateau land (700 to 900m) at the south end of Little Valley which has also been classified LUC Class VII, and of similarly limited suitability for pastoral use. This area is characterised by Teviot, Tawhiti and Carrick High Country Yellow-Brown Earth soils (Fig. 4).

Although the areas at the north and south ends of the property have serious limitations for pastoral use and may not be capable of being managed in a way that is ecologically sustainable, they are important for their biodiversity and significant inherent natural and landscape values. Significant areas were identified in the PNA programme as Recommended Areas for Protection (RAP). Tenure review presents an opportunity to protect such areas either by return to full Crown ownership, or under covenant.

Between the two areas referred to above is situated the best farm land on Little Valley Station. This area covers some 3,500 ha in the central part of the property between about 700 and 800m above sea level, and lies to the west of the Manorburn Reservoir (Fig. 3) and around the fringe of the Greenland Reservoir. It has been classified LUC Class VI and is characterised by Cairnside Brown-Grey Nellow-Grey Intergrade soils, Blackstone Hill Yellow-Grey Earth soils and Pinelheugh Yellow-Grey Nellow-Brown Earth Intergrade soils. There is also a small area (perhaps 200ha) of wet Paerau Gley Recent soils at the southern end of Greenland Reservoir.

RECREATIONAL ACTIVITIES AND POTENTIAL

Little Valley Station is situated very close to several important fishing spots on the Manorburn plateau. These include the Manorburn Dam (Fig. 7) and Greenland Reservoir which are immediately to the east of Little Valley boundary. Access to this important recreational resource is one of the major issues in this tenure review. There is access to the Manorburn Dam via Moa Creek and the Upper Manorburn Road, but access to Greenland Reservoir is more difficult.

Access to both Manorburn and Greenland would be more convenient, and shorter, via Little Valley Road and the farm track along the central spine of Little Valley Station, than by Moa Creek and the Upper Manorburn Road. The Little Valley track leads to two huts near the reservoir and public use of either of these would be valuable for recreational users (Fig. 8).

There is an extensive network of tracks all over the Manorburn Plateau between the Clutha and Taieri River Valleys. This network could provide almost endless opportunities for mountain bike enthusiasts and a good start to developing such a network could be made by providing public access for foot, mountain bike and perhaps also horse use over the main North-South track from the homestead to the southern boundary. This would also provide access to the huts near Greenland Reservoir.

As a result of intervention by the Minister of Conservation in 1993, a reserve was designated to protect a very significant area of mid altitude red tussockland near Greenland Reservoir. Originally 1,970ha was recommended by the PNA survey as a Recommended Area for Protection (See map of Manorburn RAP 2, Greenland, Fig. 9). The Designation was appealed and as a consequence only 307ha are currently protected under covenant. Tenure review offers an opportunity to consider protection of a wider area. If the general public are to be able to enjoy the outstanding natural values of the protected area, public access to it must be assured. Tenure review also presents an opportunity to enhance the use and enjoyment of the tussockland by providing secure access as required by the Crown Pastoral Land Act 1998. This could be provided using the Little Valley Road and an easement for foot, mountain bike and horse use over the North-South farm track through the middle of the property referred to above.

An increasing problem for people wishing to make trips involving overnight stays in the backcountry is security of car parking at road ends. Consideration should be given during the tenure review process to making provision for car parking, where possible off highways, in the most secure places possible near the start of new easements over land which becomes freehold through tenure review. In the case of Little Valley, consideration should be given to the provision of a parking area at some location acceptable to the landowner, not too far from the end of Little Valley Road.

Finally, it is argued that the recreational significance of Little Valley should be assessed not only on its present usage but also on potential. This is because current usage is much less than its potential for a number of reasons. Because of the current land tenure under pastoral lease, and because access to some parts of the Manorburn Plateau (particularly the Greenland Reservoir), has not been easy in the past, the recreational use of this area is much less than it might have been if access was easier. Where there are suitable settings (as for example along the main North-South track for mountain bike use, around the reservoirs and at the red tussock reserve) there is significant potential for greater use and it is the full range of possibilities which should be considered during this tenure review.

In summary, this assessment indicates that there is considerable scope for greater recreational use, particularly mountain bike use, fishing at Greenland and horse trekking. It is recommended that public access to and along the main North - South track should be secured for foot, mountain bike and horse use as an outcome of the tenure review of Little Valley Station.

SIGNIFICANT INHERENT VALUES AND THEIR IMPORTANCE FOR RECREATION

This report focuses on those features of Little Valley Station which are important for public recreational interests. It should be noted that while interest focuses on access, the natural and historic values and landscapes of the areas concerned, and the views to be had from vantage points, have a fundamental impact on the recreational value of the back country and greatly influence the quality of recreational experience enjoyed. It is for this reason that reference is also made to natural, landscape and historic values of this property. The values which most commonly have the greatest impact on recreational enjoyment are usually those of landscape and vegetation, although it is recognised that some individuals are passionate about other natural values such as insects and fungi.

Because it has not been possible to carry out an on-site inspection of Little Valley Station, this report of the natural and landscape values of the property has had to rely on published material. Sources include the PNA Report for the Manorburn Ecological District (1992) and evidence presented at the Planning Tribunal Hearing relating to a designation placed by the Minister of Conservation on an area of red tussockland near Greenland Reservoir on Little Valley Station in 1993. Extracts of that evidence are reproduced below and collectively the information provides a good overview of the natural and landscape values of Little Valley Station. Inevitably not all the significant inherent values are referred to in this material and any omissions are regrettable but unavoidable in the absence of a first hand inspection.

Alan Petrie gave evidence on Manorburn landscapes and Figs. 10, 11 and 12 are reproduced from his evidence. The following are extracts from Alan Petrie's evidence:-

The methodology used for this survey was to divide the Manorburn Ecological District into 27 landscape character units. The boundaries for each unit was based on recognisable changes in landform, land cover, and land uses. In this Ecological District many of the boundaries between the units were hard to distinguish due to the subtleties in the physiographic features of the area. The inherent character of each of the units was recorded using quite descriptive terms. Petrie quoted from Paula Smith *"The Greenland Plateau unit is the most natural in the Manorburn Ecological District. Gently rounded, sculptured landscape swathed in a mantle of tall tussocks stretch rhythmically away into the distance largely unbounded by fences, apparently limitless. From within this expanse, exposed to the sky, ever changing cloud formations become almost important as landform in defining the character of this unit"*.

Petrie used a further quotation from Paula Smith as a justification for reserve status:-
"Condition of the grassland varies from property to property according to the management philosophies of individual leaseholders and owners, but overall the effect is a natural one. Pressure from these influences will be ongoing. In a unit as predominantly natural as this one [Greenland Plateau] tracks, airstrips, firebreaks burnt areas, fences and solar panels are glaringly obvious. While a few of these elements can be absorbed by a landscape this powerful, too many can destroy the "wilderness" quality which makes this unit so memorable".

Petrie concluded that: *"(It was apparent that the Greenland Plateau landscape unit was rather special, being the most representative of what much of the Manorburn Ecological District was once like The Greenland Plateau is very much the nucleus of a cluster of special landscape units which reinforces the findings of the initial field work"*.

The scale and impression of vastness of the landscape has impressed many observers ever since Vincent Pyke described it in 1887: *"A continuous and apparently interminable expanse of lofty hills - range succeeding range in monotonous uniformity"*. To capture the very essence of this broad scale landscape it was recommended in the final landscape report that a Landscape Management Zone be established which enveloped a core area of the most distinctive tussock grasslands.

References:

- Smith, Paula, 1989 : Manorburn Ecological District Landscape Evaluation, Unpublished DOC Report.
- Pyke, Vincent, 1887 : History of the Early Gold Discoveries in Otago, reprinted in 1962.

In his evidence Peter Johnson described the Manorburn Ecological District as follows:-
Fig. 13 is from Peter Johnson's evidence.

"(The Manorburn Ecological District encompasses the gently rolling hill country) of the Teviot, Manorburn and Poolburn catchments, and the block-floated ridges of the Knobby Range, Raggedy Range, Rough Ridge and North Rough Ridge. The rock is mostly schist and the climate semi-arid with annual rainfall ranging from 400 mm up to 800 mm on the higher country)",

The Manorburn Ecological District contrasts with its neighbours. To the north and east are the very dry, wide basins of the Manuherikia, Ida Valley and Maniototo, all in the Maniototo Ecological District. To the south is the wetter Waipori Ecological District, and to the west and south west are the higher, steeper, and colder block mountains of the Old Man and Umbrella Districts.

Evidence including that from the soils, charcoals, and pollen analysis points strongly to a cover of coniferous broadleaved forest, and a moister climate in much of Central Otago until widespread fires approximately 3000 - 2500 years ago. Scrub and tall tussock grassland would have spread to occupy the formerly forested land. In the Manorburn Ecological District as elsewhere in the region, these vegetation types would themselves have been diminished by the more frequent fires of Polynesian and then European settlers.

*Today the vegetation of the Manorburn Ecological District is mainly lowland short tussock grassland, of hard tussock (*Festuca novae-zelandiae*) and silver tussock (*Poa cita*). At lower altitudes this is replaced by induced communities of thyme, scabweed, and haresfoot trefoil, while upslope there is a gradation to remnant red tussock grassland and in places to narrow-leaved snow tussock grassland.*

*As noted in the PNA report, one of the distinctive features of the Manorburn District is the extensive red tussock grassland (*Chionochloa rubra*) on well-drained hill slopes. Red tussock usually prefers waterlogged or at least permanently moist soils. Exactly why red tussock should dominate on sites more characteristically dominated by narrow-leaved snow tussock (*C. rigida*), is not clear. The distribution may be related to the fairly gentle topography of the overall area or some historical or biogeographic feature, most probably the occupation by red tussock of sites where forest had once been present.*

It is this distinctive feature of the Manorburn Ecological District which is best represented within the Greenland RAP, and for which preservation is sought through the Designation.

My knowledge [Johnson] of the Greenland RAP stems from a botanical survey in April 1986, which concentrated on the wetlands of the upper Manorburn catchment on the southern ends of Little Valley, Mt. Campbell, and Matangi Stations. (Johnson, 1986). The area was found to contain a diversity of valley wetlands (Fig. 2), lake edge communities, red tussock as a major component of both wetland and hillside communities, red tussock in an interesting association with hard tussock on drier sites (Fig. 1), dry turf land, and rock tor vegetation. Condition of the vegetation was assessed as being good, with few exotic species and no intensive development by way of oversowing and topdressing. Botanical values were concluded to be high. An area of approximately 5900 ha stretching from Pinelheugh and Green Swamp to the Greenland Reservoir was delimited for consideration as a natural area and encompassing botanically valuable sites where further study was needed. It was recommended that pending full PNA survey of the Ecological District, moves be taken to secure as reserve a natural area for protection."

The Manorburn RAP 2 (Greenland) is described in the Survey Report for the PNA Programme (1992) as follows:-

Located at the southern end of Greenland Reservoir, this RAP consists of a gently undulating, mostly north-facing catchment (Fig. 9). The area is part of a large gently rolling plateau representing an ancient peneplain surface that typifies the Greenland land system. A prominent fault trace with a north-east trend, situated near the eastern boundary of the RAP, separates the smooth rolling topography of the Greenland land system from the fretted rock-studded landscape of the South Rough Ridge land system. Schist dips gently to the north-east.

In the upper reaches of the catchment topography is subdued. Loess-capped colluvial slopes and hollows predominate. An abandoned water race and piles of sluicings from old gold mining activities occur in the lower reaches of the catchment. Here, outcrops are restricted to the steep-sided banks of the creek. In the lower part of the catchment the valley broadens into a plain and includes a swampy area that discharges into Greenland Reservoir.

The RAP contains three landforms derived from periglacial processes, and three soil parent materials related to the action of wind (loess, deflated-slope and valley-fill materials). The RAP contains examples of asymmetrical valleys, probably formed in a periglacial environment. Snowbanks occur on hollows that face north to north-east, near the summit of colluvial slopes. Exposed north-facing spur terminations are subject to severe sheet wash and wind erosion.

The Manorburn RAP 2 in the Greenland land system contains no less than 7 of the 11 general vegetation types recognised in the Manorburn Ecological District, and 75% of the total area of 1,970ha is characterised by red tussockland.

The extensive red tussockland in this area is present as a range of types on subtly different landforms, despite appearing fairly uniform. Most extensive are the open stands with considerable fescue tussock and *Raoulia subsericea*. These generally occur on the gentle hill slopes which make up much of the RAP. A much more

dense red tussockland is found in the hollows that occur on gentle summits and gully heads, where drainage is poor. A third type, open red tussockland, is found on crests where the soil is thin and dry. These areas are used more heavily by sheep and this is reflected in the greater abundance of adventive species such as sweet vernal, catsear and *Hieracium pilosella*. *Leucopogon fraseri* also is usually abundant at these sites. There are also areas dominated by fescue tussock, with a high diversity of plant species despite modification by sheep grazing.

Around Manorburn Stream there are areas where shrubs such as *Coprosma ciliata*, *Hebe rakaiensis* and *Muehlenbeckia complexa* are associated with the red tussockland. These shrubs represent some of the last examples of this type of woody vegetation in the District. Such shrubland apparently has been much more abundant in the past.

One of the distinctive features of this RAP is the vegetation associated with the snow hollows. Typically, these are steep banks, devoid of red tussock, that have been formed by processes associated with snow accumulation and extended snow-lie. Snowbanks almost always have a northeasterly aspect, having accumulated snow deposited in south-westerly storms. The prolonged snow-lie probably contributes to the lack of red tussock.

There is a very diverse flora on these sites. *Coprosma petriei*, *Raoulia subsericea* and *Pernettya nana* tend to dominate. Also notable are *Stackhousia minima*, and *Plantago spathulata*. The tiny orchids *Pterosrylis mulica* and *Micronis oligantha* are found on these snowbanks. While the landform of these sites is referred to as snowbank and the associated vegetation is very distinctive, their flora is not that typically associated with nivation hollows of adjacent districts, such as Old Man and Rock and Pillar, where snow persists well into summer. The lack of a typical snowbank flora is probably due to the lower altitude of the Manorburn sites and their reduced snow-lie compared with other mountain ranges in the Central Otago Region. Rabbits also prefer these snowbanks, probably because of the sheltered sunny aspect and the short stature of the vegetation for this altitude.

The lakeshore around Greenland Reservoir has a zonation described by Johnson (1986). Although the lakeshore vegetation clearly is an induced community, it comprises largely native species, which add to the floral diversity of the area. There are wetlands in this RAP that are dominated by *Carex diandra* and *Sphagnum* moss. Although the diversity of species is not high and this is not the largest area of such wetland in the District, the landform and wetland species add to the range of natural features of the area.

An interesting find was a small patch (30 x 10m) of cushion vegetation which contained a range of species not seen elsewhere in the Greenland land system. These species included *Abrotanella caespitosa* and *Phyllachne colensoi*. It is possible this is a vegetation type that was once more common. The nearest site of similar vegetation is a large area on the west of South Rough Ridge Hill in the South Rough Ridge land system (Long Valley Ridge RAP (MAN 3)).

Rock outcrops in the vicinity of upper Manorburn Stream are sites for a large number of plant species, many of which do not occur in the surrounding area, e.g. *Chionohebe densifolia*, *Aristotelia fruticosa*, *Melicytus* sp., *Polystichum vestitum*, *Clematis marata* and *Schizeilema haastii*. The rock outcrops provide specialised habitats for some species, as well as refugia for many species that most likely have been eliminated from the surrounding country by burning and grazing.

Greenland RAP contains the District's largest area of red tussockland in the most natural condition, spread over gently rolling uplands. The red tussock dominance over large areas of such terrain is a feature of Manorburn District, particularly because the more common habitat of red tussock is moist or poorly-drained ground. Adventive species generally are less abundant than in the surrounding land, perhaps due to less burning and more conservative land management. A range of other vegetation types is present, including snow hollow, wetland, shrubland, rock outcrop and short tussockland communities, all of which add to the natural values and diversity of the RAP.

Water races in the RAP are very overgrown by tussock grasses, leaving little evidence of the earlier gold mining activity.

Criteria Summary for Manorburn RAP 2 Greenland

Representativeness HIGH	An excellent example of the extensive red tussockland and associated vegetation typical of the Greenland land system.
Diversity HIGH	An excellent range of vegetation types and a high diversity of species within them.
Naturalness HIGH	The most natural area of red tussockland in the Greenland land system, with relatively few adventive species.
Special Features	Nivation hollows; Lakeshore.
Viability HIGH	A large area, mostly with catchment boundaries.
Buffering HIGH	Surrounded by similar semi-natural areas.
Threat MEDIUM	Burning and overgrazing could result in the loss of tussock cover and/or invasion by adventive species as has happened in many areas to the north and south. Already Hieracium is present.
Landform	Typical of a large area of the Greenland land system. Gently rolling uplands. Stream with a meandering channel and occasional rock outcrops.

AREAS TO BE PROTECTED

The foreword to the PNA Survey Report on the Manorburn Ecological District states that "A Recommended Area for Protection is as much a recommendation to the Department of Conservation as from it." The tenure review of Little Valley Station presents the Department with an opportunity to carry out its own recommendation.

We understand that only 307ha of the original Greenland RAP (MAN 2) covering a total of 1,970ha, are so far protected under covenant as a consequence of the challenged designation in 1993. The description of RAP 2 Greenland makes it abundantly clear that the area is dominated by highly significant inherent values. Of the recognised criteria for assessing the value of the RAP, no less than 5 were ranked in the highest category - 'high'. This entire area should be returned to full Crown ownership and control, both on account of its significant inherent values and to enhance the government's recently declared objective (*to ensure that conservation outcomes for the high country are consistent with the NZ Biodiversity Strategy.*)

There is also an area of some 1,500ha of semi-arid lands on steep, rocky north-facing slopes in the northern part of the property, in the lower reaches of Hopes Creek, which has been classified LUC Class VIII and is totally suited to pastoral use so it could not be managed in a way that is ecologically sustainable. Consequently, this area would be much better managed for conservation purposes in order to protect a good example of the low-stature plant communities which characterise such habitats. This area should be returned to full Crown ownership and control to be managed as discussed above.

ACCESS REQUIREMENTS

In summary, this assessment indicates that there is considerable scope for greater recreational use, particularly mountain bike use and fishing at Greenland. It is recommended that public access to and along the main North - South track should be secured for foot, mountain bike and horse use as an outcome of the tenure review of Little Valley Station.

Public access for 4WD vehicle use with the landowner's consent would be a great advantage to those with less ability of movement but who still enjoy the recreational values of fishing and landscapes around water bodies in such a semi-arid location. This inevitably brings to mind 'Graham Sydney' landscapes and the notion that lack of mobility should not be a limitation on who can enjoy the beauty of such landscapes.

CONSERVATION MANAGEMENT STRATEGY FOR OTAGO

There are important statements in the Conservation Management Strategy for Otago, in which the Upper Manorburn and 'The Drylands' are recognised as a Special Places. The southern part of Little Valley is typical of the Upper Manorburn while the northern, semi-arid plateau and steep sliding face are characteristic of 'The Drylands'. The objectives for these Special Places include the following:-

- *“To protect the special landscape and biodiversity resources of the [Upper Manorburn] and to maintain the historic resources of land administered by the Department, while providing for appropriate public access”.*
- *«To protect a full range of Central Otago lowland semi-arid indigenous landscapes, ecosystems and species along with significant historic resources associated with them, and to provide and manage appropriate recreational opportunities in those settings”.*

Implementation statements include:-

- *“Attempt to negotiate the protection of....., important native ecosystems and key historic sites in the area as they become available, particularly in the context of tenure review”.*
- *«Pastoral lease tenure review on adjacent or nearby properties may provide opportunities to acquire management of additional areas of significant natural and historic resources”.*

The declared priority for Upper Manorburn is *«implementation of current protection negotiations is the immediate priority in this Special Place. In the longer term, fire protection and improved public access will be priority activities. »*

Priorities for 'The Drylands' include: *“ to protect priority low-stature indigenous communities ».*

These objectives and implementation statements accord very closely with the recommendations made in the present report. If these are put in place during the current tenure review of Little Valley Station, significant progress towards the attainment of the objectives and priorities will have been achieved.

CONCLUSIONS

The tenure review of Little Valley pastoral lease presents an important opportunity to enhance the recreational potential and use of Central Otago. There is also an opportunity to increase the quality of recreational experience on those lands by recognising and protecting the significant natural and landscape values described above. This property is strategically located, immediately to the north of, and adjoining the existing Upper Manorburn Conservation Area, and the proposed conservation land on the Onslow Block of The Knobbies. A significant part of this pastoral lease land is likely to become freehold as a result of tenure review. Consequently, secure public access for foot, mountain bike use, and possibly horse riding and 4WD use is the most important recreational issue in the tenure review of Little Valley Station.

The outcome of the tenure review of Little Valley, if it includes the important recreation and conservation recommendations included in this report, could contribute significantly to the advancement of the recently declared government objectives for the South Island high country. It could also assist in the achievement of the objectives declared for the Upper Manorburn and Drylands Special Place in the Conservation Management Strategy for Otago.



Fig. 1 The three homesteads, Little Valley, Mt Campbell and Matangi are situated close together in a broad basin (at about 400m above sea level) where there is a prominent bend in Little Valley Creek. The land within the basin appears suitable for freeholding but the semi-arid, bony landscape surrounding the basin has as much landscape and scenic appeal as productive value.



Fig. 2 At its extreme eastern end, Little Valley Station adjoins the Upper Manorburn Conservation Area which contains a range of biodiversity. The broad ridges are characterised by High Country Yellow-Brown Earth soils which carry extensive tussock grasslands while the drainageways contain an interesting mix of wetland plants. The southern end of Little Valley, already identified as an important RAP, would be a worthy addition to this Conservation Area.



Fig. 3 Little Valley Station occupies a rolling plateau (described in the PNA survey, as part of the wider Greenland Plateau). The plateau is seen here stretching away to Pinel Heugh, with the Old Man Range in the distance. This central part of the property, between about 700 and 800m in altitude, has been classified LUC Class VI and with appropriate maintenance should be capable of ecologically sustainable pastoral use.



Fig. 4 The southern part of the property is somewhat higher and has greater limitations to pastoral use. The area has however, very significant inherent values, which were identified in the Manorburn PNA survey. Almost 2000 ha were recommended for protection (Manorburn RAP 2, Greenland) and would be complementary to the Manorburn Conservation Area seen in this view, immediately to the south of Little Valley.



Fig. 5 In the northern part of the property the major creeks, including Little Valley Creek, are deeply incised into the plateau with steep, rocky and very arid slopes, especially those with a sunny aspect. In this part of the property the plateau has a greater altitude range from about 400 to 700m with the Manor Burn itself cutting down to an altitude of only 200m above sea level.



Fig. 6 The arid character of the property is most severe in the north and especially on the steep rocky north-facing slopes which are characterised by Conroy and Chapman Hill Brown-Grey Earth soils. Conroy Hill soils, seen here on the rocky faces above the homestead, are classified LUC Class VII, with severe limitations to pastoral use. Some 1,500ha of Chapman Hill soils have been recognised in Hopes Creek with such severe soil limitations (LUC Class Vilis), that the area is entirely unsuitable for pastoral use.



Fig. 7 Little Valley Station is situated very close to several important fishing spots on the Manorburn plateau. These include the Manorburn Dam, immediately to the east of Little Valley boundary. Access for fishing is one of the major issues in this tenure review. Access is good to the Manorburn Dam via the Upper Manorburn Road, but access to Greenland Reservoir is more difficult, and could be improved through tenure review.



Fig. 8 Access to both Manorburn and Greenland would be more convenient, and shorter than the Moa Creek route, via Little Valley Road and the farm track along the central spine of Little Valley Station. This passes close by an historic stone hut which would add significant historic interest to the trip.

Appendix 9: Royal Forest and Bird Society report



**FOREST
& BIRD**

ROYAL FOREST AND
BIRD PROTECTION
SOCIETY OF
NEW ZEALAND INC

22.9.03

Mr T. Perret
Department of Conservation
Dunedin

Dear Mr Perret

Tenure review of Little Valley station

This branch of Forest & Bird made a written request to visit Little Valley station in order to prepare a report in response to tenure review of the property but, as the land holders refused permission, it has been virtually impossible to prepare a first-hand report, hence this report relies largely upon the written observations commissioned from scientists. The lessees, in their reply to our request for permission to go onto the property, wrote "...The Commissioner of Crown Lands consults the Department of Conservation on a whole range of issues, particularly conservation, in which you expressed an interest. We consider that this adequately represents the public interest in the tenure review and therefore there is no need for your organisation to visit our property...." Given that the Department of Conservation is an agent of the Crown, we do not consider that it adequately represents the public interest.

However, we did visit the area and observed the property from three vantage points on its boundaries.

RAP 2 GREENLAND

The Manorburn Conservation Area: vegetation assessment (Johnson, P. N.; 1995), prepared for the Department of Conservation, describes the comparative values of the RAP 2 Greenland - which lies within the Little Valley station - with those of the Manorburn Conservation area. The Manorburn PNA survey report (Fagan, B., & D. Pillai, 1992) also makes reference to the vegetation of the RAP Greenland. While emphasising the extent and natural condition of the red tussock within the RAP Greenland, both reports also recognise the variety of vegetation, for instance; *Hebe rakaiensis*, *Coprosma ciliata*, *Muehlenbeckia complexa* comprising the shrubland, as well as small herbs of the turf and both wetland and cushion plant communities. Johnson (Little Valley Designation: Botanical Evidence prepared for the Department of Conservation, 1993) acknowledges a covenant within the RAP, but recommends that the tussock cover of the surrounding area also be preserved. He subsequently goes further (Johnson; Little Valley - Greenland RAP: vegetation assessment, 1994), recognising that the diversity and condition of the area warrants protection of the entire RAP. He concludes that the Greenland RAP provides the best representation of the lower altitudinal sequence, containing red tussock and hard tussock. The value of these low altitude areas as a part of a fuller altitudinal sequence has been increasingly

acknowledged in the years since these reports were written; consequently, we recommend that the tenure review extend the covenant accordingly.

The RAP 2 Greenland area, of 1970 hectares, was surveyed during the Protected Natural Areas programme in the summer of 1998/99. In the foreword to 'The Manorburn Ecological District' - the result of that survey - the Otago Regional Conservator stated that "...A recommended Area for Protection is as much a recommendation to the Department of Conservation as from it..." Our branch of Forest and Bird urges that this recommendation be heeded in its entirety, not rejected or amended in any way. While we have recently seen the opening of the Te Papanui tussock reserve, that reserve has nowhere near the intact area of red tussock which this RAP contains. It is essential that it be reserved.

Furthermore, Together, the Manorburn Conservation Area and the Greenland RAP make for a more robust, diverse, and representative prospect to serve biological conservation, than would either area on its own. Neither area could be seen as totally standing in for the other.' (Johnson 1995).

It is probable (although we have not been granted the opportunity of observing this at first hand) that the Hopes Creek area contains similar values to those of the RAP 6, Walters Gorge, which appears to be adjacent to the boundary of Little Valley station. Should this prove to be so, this area should be given the same protection as recommended for Walters Gorge.

The recreational values of the Greenland and Manorburn area include mountain biking and four-wheel driving, covering routes between Manorburn and Alexandra, Greenland and Manorburn, and Little Valley and Greenland. Access for both types of recreational vehicle in the tenure review is recommended.

1) On the map with which you supplied us there appears to be a legal road extending northwards from the Manorburn reservoir towards the Little Valley homestead. During the process of this review, this road should be fully secured for public access.

2) Access should also be fully secured southwards from the Manorburn reservoir via the road, shown on the map as 'unsealed', to the southern boundary of the property where it joins the present Manorburn Conservation area. This would then allow the public to walk, appreciate and fully enjoy the only large area of red tussock left in New Zealand.

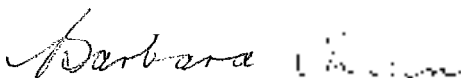
There is a legal road on the southern boundary of the Manorburn Conservation area. The Knobbies, which is situated alongside, is also in tenure review and submission has been made on the preliminary proposal.

The present marginal strip around the Manorburn and Greenland reservoirs is inadequate and impractical.

The landscape values, including those of the Knobby Range, the Poolburn South Rough Ridge, open grassland and rocky gullies with their own characteristic vegetation are such that we also urge their recognition and protection as a result of the tenure review.

We hope that these comments are helpful in the process of tenure review.

Yours sincerely



Barbara Chinn
Chairperson.

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27.5.03

Tony Perrett
Department of Conservation
Dunedin

Dear Tony Perrett

Little Valley – Significant Inherent Values

Introduction

Unfortunately I have not been able to personally view Little Valley Station as a consequence of it entering tenure review. This means that in order for Forest and Bird to comment upon the potential significant inherent values we have had to rely upon past botanical and PNA surveys. These reports date back to 1992 – 1995 and are inadequate in terms of the criteria now used under the CPLA. Since these reports were completed scientists have presented new research information that significantly improves our understanding of the vegetation history of the indigenous ecosystems of the eastern South Island. We are now also more aware of the conservation value of low altitude shrublands and remnant indigenous vegetation, and recognise that these are not well represented in Conservation areas.

Unless the lessee is more forthcoming in allowing access to NGO's it is likely this tenure review will be fraught with difficulties and consequentially is unlikely to be resolved for years. NGO's are aware that there are considerable significant inherent values on Little Valley Station (including landscapes), which under the CPLA are required to be protected and preferably returned to full crown ownership and control.

This report summarises the reported conservation values that existed over parts of Little Valley Station in the 1980's - 1990's.

Manorburn Ecological District - PNA Report

The Manorburn PNA survey report (1992)¹ identified some 1970 ha on Little Valley Station, which it recommended for protection - known as RAP 2 Greenland. The report describes the Greenland RAP as containing the District's largest area of red tussockland

¹ Fagan, B., and Pillai, D. 1992. Manorburn Ecological District - Survey Report for the Protected Natural Areas Programme.

in the most natural condition spread over gently rolling uplands from 750 m to 905 m. In addition to red tussock there are a range of other vegetation types including some of the last examples of *Coprosma ciliata*, *Hebe rakaiensis* and *Aluehlenbeckia complexa* shrubland in the district, diverse turfs with orchids and small herbs, wetlands around the lake shore, a small area of cushion vegetation (which was not found elsewhere in the Greenland System) and diverse native vegetation around rock outcrops. The Greenland RAP also contains a valuable reference site for the Twhiti silt loam, not known to be present in any other reserve sites or RAP's.

The Covenant Area

A covenant was established over some 307ha of the far southwestern corner of the original proposed RAP in 1996. This represented between 1/6th - 1/8th of the original proposal. Johnson² described the original Greenland RAP as having an ideal boundary design as it followed catchment watersheds, had a relatively compact shape and was of sufficient size to maintain a core area and was representative of landforms and soil types. He further argued that the land surrounding the RAP should also be maintained in a predominantly tussock grassland cover, in order to maintain tussock grassland at a landscape scale. In a later report³ Johnson stated that the "the whole Greenland RAP proposal warranted protection, due to its diversity and condition. He also noted" ... *there are no obvious portions that one could identify; as having lesser importance.*"

Johnson in this report recognised "*the need for maintenance on a large scale of the landscape values of the red tussock system in the aesthetic and scenic sense.*"

It is clear from these reports that the current covenant area does not protect all the significant inherent, botanical or landscape, values that were identified on this end of the lease. Forest and Bird looks to the tenure review to correct this.

Full Altitudinal Sequences and Low Altitude Ecosystems

There is possibly also an opportunity to protect an altitudinal sequence running from a "*semi-arid inland basin, very gradually as altitude increases to the south and east, to much cooler and wetter uplands*".⁴ This may involve a corridor from the Lower Manorburn to the upper Greenland reservoir catchment. Such a sequence would be a very valuable addition to the Manorburn Conservation Area.

The Manorburn PNA report identifies a variety of shrublands occurring typically in rocky gullies or around rock outcrops, through out the Manorburn Ecological District. Neither the current covenant, nor the Manorburn Conservation Area contains adequate

² Johnson, P.N. 1993: Little Valley Designation: Botanical Evidence prepared for the Department of Conservation.

³ Johnson, P.N. 1994: Little Valley - Greenland RAP: Vegetation assessment. Landcare Research report prepared for the Department of Conservation

⁴ Johnson P.N. 1995: Manorburn Conservation Area: vegetation assessment. Landcare Research prepared for the Department of Conservation.

representations of shrublands. It is likely that more extensive surveys will identify further shrublands that will qualify as significant inherent values. It will be important that these areas are protected from grazing. There is no point protecting shrublands without excluding grazing. Continued grazing will degrade them and will prevent their regeneration.

Recreation and Landscape Values

Forest and Bird is aware that there are also significant recreation values associated with the Manorburn and Greenland Reservoirs in particular and that there are significant landscape values on land surrounding them. Given the importance of the Greenland and Manorburn Reservoirs and streams we believe there should be a wide riparian margin protected, both for recreation purposes and also for ecologically sustainable purposes. The standard marginal strip will not be wide enough. Stock access to waterways is also not ecologically sustainable.

The lease includes portions of the Knobby Range, Poolburn South Rough Ridge and Greenland land systems identified in the Manorburn PNA report. Although this report did not assess landscapes it is obvious that Little Valley contains extensive open landscapes, over a variety of landforms; from dissected fretted landscapes with entrenched rocky gullies, upland plateaus, and fretted montane plateaus, all with areas of relatively intact indigenous vegetation. (Land management subsequent to these reports may have altered some areas).

We also believe this lease offers significant and extensive potential for mountain biking, particularly from the Manorburn through Little Valley, to the Upper Manorburn Conservation Area and from Alexandra.

We consider 4 wheel drive and mountain bike access should be provided through the lease to Greenland Reservoir.

We trust you will find these comments useful.

Yours sincerely

Sue Maturin
Southern Conservation Officer