

Crown Pastoral Land Tenure Review

Lease name : LOWBURN VALLEY

Lease number : PO 256

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.

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

4.3 Photographs

4.3 Photographs



Photo 1. Shrublands – Tongue Spur Creek Basin.



Photo 2. Hectors Tree Daisy (Nationally Endangered) Habitat – Roses or Duohys Creek – Lowburn Faces.



Photo 3. Cushion bog with *Plantago obconica* (Naturally Uncommon) – Mount Michael Ridge.



Photo 4. *Gaultheria parvula* fruits. Mount Michael Ridge.



Photo 5. *Crassula multicaulis* (Nationally Critical) – Near Mount Michael.



Photo 6. Lowburn Mt Pisa Conservation Area Boundary Near Mitre Rock



Photo 7. *Dracophyllum pronum* Upper Packspur.



Photo 8. Looking Down Skeleton Creek. Remarkables In Far Distance.



Photo 9. Looking North from Mitre Creek to Pisa Conservation Area. Tuohys Saddle (Cardrona Pack Track) in Centre.



Photo 10. Sheep Dip (GPS 132). View South.



Photo 11. Mt Pisa boundary riders (F41/337). View North-West.



Photo 12. Cardrona Roaring Meg Pack Track.



Photo 13. Towan's Water Races above McMillans Hut.



**Photo 14. Fluming pipe across Duohys Gully (GPS 028) above Towans Camp.
View South - West.**



Photo 15. Hut in Skeleton Stream (GPS 167).

4.4 NGO Comments

CENTRAL OTAGO RECREATIONAL USERS FORUM

Tenure Review Report: Lowburn Valley Lease, PO 256

CORUF thanks you for the opportunity to comment on this Lease.

I have visited the property by permission of the Lessees, in company with a wider group including Federated Mountain Clubs and Forest & Bird Dunedin and Central Lakes.

CORUF has the following comments to make, we hope that they are helpful to you.

Jan Kelly

Secretary

Central Otago Recreational Users Forum.

LOWBURN VALLEY Lease, PO 256.

- 1 CORUF is particularly interested in the opportunity to add substantially to the conserved area on top of the Pisa Range by the addition of the high part of this Lease to the land already conserved there.**
- 2 By adjoining its high land seamlessly to the two separate parts of the Pisa Conservation Area, the coverage of the Pisa CA becomes more coherent, as a natural, historic and landscape area of regional and international significance.**
- 3 CORUF believes that the high land of this lease, above about 1000m, is of such importance that it should without question be returned to Crown ownership and control for the benefit of and enjoyment by the public.**
- 4 With national highway on two sides and very visible front faces, this lease covers a prominent portion of the Range, and so its future is of valid public interest and concern.**
- 5 Historic remains from gold mining and early pastoral days are significant on this Lease.**



Natural values, landscape values and recreational enjoyment on Lowburn Valley lease (photographer with falcon), adjacent to the significant natural, landscape and historic values in Plsa Conservation Area (background), this is a cohesive landscape.

ACCESS:

- 6 According to the Crown Resources Report and the cadastral map, there are three un-surveyed legal roads through the property, and a marginal strip on the Roaring Meg. The routes are, the Lowburn Pack Track, the Mt Michael Pack Track (only some of which is on this Lease) and the Roaring Meg track.
- 7 The two long, un-surveyed roads, i.e. the historic Pack Tracks by Mt Michael and by the Lowburn valley, are only approximated by existing vehicle and walking tracks.
- 8 Both have already been secured for public access by easements, we ask that the Review confirms and guarantees the status of the track formations for public use.
- 9 The Pack Tracks are highly popular routes and will become more so. There is huge enjoyment to be gained from walking or riding up the Lowburn/Cardrona pack track, for the outstanding views on the way up, and the natural values on top.
- 10 Organised walking groups and horse riding groups in the Cromwell basin and from further afield regularly access the tracks.
- 11 The Cavalcade has used the Pack tracks and will no doubt do so again.
- 12 We recommend that public access is permitted on these tracks for foot, bike and horse at all seasons, with no "lambing closure" preventing access in spring.
- 13 A secure and easily identified public point of entry needs to be established at the Lowburn valley Homestead end of the track, to reduce the possibility of trespass on the privacy of the landowners.
- 14 We recommend that with permission, 4WDers may use the Loburn Pack Track route in the summer season as far as about the 1000m mark, that is, up to the top fence.
- 15 We recommend that parking area is built just below the water race at the top fence, so that older or less able recreationists may gain enough initial altitude to allow them to walk onwards to the top of the Plateau, in January, February and March when the tracks are dry.
- 16 It is a matter of fairness that a wider range of recreational users than just the superbly fit and able should have some access to important conservation land.

- 17 Within any conservation area created from this Lease, the same rules of access would apply as agreed upon for the Pisa Conservation Area, that is, that users may apply to DOC (and landowners where applicable) for permission, and receive a temporary permit.
- 18 If possible, an easement down the zig-zag into the Kawarau Gorge, exiting at the Roaring Meg, would make a wider range of "round trips" available to the recreating public.

HISTORICAL VALUES

- 19 Our members take a keen interest in the traces of history, and are frequently knowledgeable about them. CORUF supports the full protection of mining remains and water races, and the Pennycuik stone hut, as identified in the Conservation Resources Report and on the associated maps.
- 20 This includes all the water races, which should have protection orders on them. The gold mining remains, sluicings, dams, tailings and artifacts can shed significant light on our cultural history, and if properly protected can be reviewed at a later date should new understandings come to light.

NATURAL AND LANDSCAPE VALUES

- 21 We recommend that all land above 1,000m, approximately, should be returned to full Crown ownership and control, as conservation and recreational land.
- 22 While the land on the plateau is presently being grazed and has been burnt, it contains a rich mixture of native species that, given the opportunity in the absence of grazing, will recover their vigour and re-cover the ground. This is an argument for removing as much grazing as possible, for the health and survival of the native flora and fauna.
- 23 On our visit we saw a wide variety of small plants, and associated lizards and insects. There is a potential for a very satisfactory recovery of biodiversity on the plateau.
- 24 The front face of the Pisa Range is highly visible, and while lower altitudes are brier-infested, and some stretches of tussock clearly degraded by burning, care should be taken to preserve the natural appearance of the front faces.

- 25 CORUF sees an opportunity to create a protected altitudinal sequence of vegetative changes from near the lowland to the top, by, for example by Packspur Creek with its tight gorge and varied shrubs, and the good tussock in its



headwaters. Such protection will add to the impression of natural landscape cohesion on the face of this mountain (see *photo of repeating landscape on front faces of Pisa Range, Lowburn valley slopes In foreground.*)

- 26 The Conservation Resources report identifies two RAPS in the Roaring Meg catchment, we support their full protection for the biodiversity they contribute to the whole. We also support the removal of wilding pines.**
- 27 CORUF recognises that the Kawarau faces have been largely overcome by brier, and have lost value and interest as a result. Should brier control become a viable economic for farmers, the faces could support varied shrubland and associated fauna.**

Thank you for the opportunity to comment.

Jan Kelly,

Secretary,

CORUF

Central Otago-Lakes Branch of the Forest & Bird Society

RECOMMENDATIONS FOR TENURE REVIEW OF THE

LOWBURN VALLEY PASTORAL LEASE

INTRODUCTION

This report is presented by the Central Otago-Lakes Branch of the Forest & Bird Society as part of the consultation process conducted by the Department of Conservation (DOC) in preparation for tenure reviews to be initiated in 2012. It uses a framework provided by Section 24 of the 1998 Crown Pastoral Land Act (CPLA) to address issues of public interest, particularly in the areas of restoration and conservation of high-country renewable resources (biodiversity, soils, water, landscape), but also including other inter-related significant inherent values (SIVs) such as water storage, recreation and heritage, which are seen to be in the long-run interest of society. The five clauses of Section 24 are as follows:

S24(a)(i) To promote the management or reviewable land in a way that is ecologically sustainable

S24(b)(i) to enable the protection of significant inherent values of reviewable land by creation of protective mechanisms

S24(b)(ii) To enable the protection of significant inherent values of reviewable land (preferably) by the restoration of the land concerned to full Crown ownership and control

S24(c)(i) The securing of public access to and enjoyment of reviewable, and

S24(c)(ii) The freehold disposal of reviewable land

Given Forest & Bird's (F&B) mandate, its primary focus is on the objectives implicit in S24(a)(i) and S24(b)(i). The mechanism for achieving these objectives, covered by S24(b)(ii), is seen as critical.

S24(a)(i) PROMOTION OF ECOLOGICALLY SUSTAINABLE LAND MANAGEMENT

The prime issue here is the sustainability of grazing and land above 1000m, virtually all of which, from the Land Use Capability (LUC) Map is classified as Class VII. *This land has been grazed for more than 150 years, almost certainly without the application of fertilizer during that time. Although only very slow, there has been a continuous but, small, cumulative loss of essential nutrients from the soil reserves due to the removal, particularly P and S, in animal products (meat and wool) and in smoke where burning has been practised, and through natural leaching (which tends to increase with altitude). It is clear that such losses indefinitely and the losses accrued to date have already led to soil and plant degradation. This is a situation which is compounded by weed and animal pests.*

The answer might be to replenish losses with application of P and S in fertilisers but it is generally accepted that fertiliser use on such land cannot be economically justified because of slow

plant growth and limited response to nutrients.. Under these circumstances it is unlikely the land could be managed in a way that promotes ecological sustainability, as required by the CPLA>

It is therefore recommended that tenure review specify those areas over 1000m which have special characteristics which would enable sustainable stocking and return all other areas above this contour to Crown ownership. This action clearly will leave the potential freehold area divided – the Lowburn faces from the Roaring Meg faces. Thus, it will be important provide access for the lessee over the top of the range in the form of an easement for driving and possibly vehicles via the existing Cardrona-Cromwell Pack Track.

S24(b)(i) PROTECTION OF SIVs

The prime focus here should be to use the tenure review as an opportunity for establishing a continuum landscape/vegetation link between existing Conservation Areas (CAs) created by t6r 111 as a result on Mt. Pisa and Waitiri Stations. It is expected that much of this link will result from the CA above 1,000 m, and incorporation of RAP A6 along Skeleton Stream will help. However, there should be systematic examination of options to incorporate other areas below 1,000 m in the Roaring Meg catchment to enable coherent integration of the three CAs.

It is assumed that the “Recommended Areas for Protection” (RAPs) previously identified by the Protected Natural Areas Programme will be routinely incorporated into the Crown conservation area. Apart from the high altitude areas which will be automatically protected by restoration of Crown ownership, there are significant biodiversity and landscape values in Low Burn Gully, Tongue Spur, Rose Creek and Packspur Gully. These offer an opportunity for establishing reserves which reflect important altitudinal sequences from 350 m to the 1000 m lower CA limit. The tenure review should assess these options and design a Conservation Covenant where appropriate.

S24(b)(ii) THE MECHANISM OF CROWN OWNERSHIP FOR PROTECTION OF SIVs

The key question is whether restoration to full Crown ownership is the most cost-effective method of achieving the objectives set out in the first two clauses of Section 24 in the CPLA, i.e. both ecological sustainability and protection of SIVs. In our view, these objectives are unlikely to be met by a complicated system of covenants on land use covering such aspects as weed control, fertilizer application, grazing periods and stocking rates. The problems of setting a baseline “state”, defining and monitoring performance indicators, evaluating data, and above all enforcing the “contract”, appear insuperable for both institutional and economic reasons. If covenants are to be used, these problems should be explicitly addressed in the tenure review. In our opinion, covenants are not applicable to the sustainability issue; they may well apply to SIVs on selected sites in the areas below 1,000m mentioned above.

S24(c)(i) PUBLIC ACCESS

F&B is in full agreement with the intent of the CPLA that CAs and SIVs should be accessible to the public providing it does not significantly impinge on achievement of the objectives for conservation of natural values. In the tenure review, right of access (by foot, bike or horse) via the Cromwell-Cardrona and Roaring Meg Pack Tracks should be confirmed. Vehicles should be allowed: (a) on the Cromwell Cardrona Track as far as a car park at the 1,000 m gate (Lowburn face); and, (b) on the

Roaring Meg track from SH 6 in the Kawarau Gorge to a car park near Skeleton Creek. Public 4WD access above those levels is likely to cause wholly unacceptable damage to the environment. In tenure review, the issue of formalizing public access should be explicitly addressed either by recognizing existing tracks as legal roads or providing easements.

24(c)(ii) FREEHOLD

Sustainable management of land classified as LUC Class VI or better is considered perfectly feasible and therefore eligible for freehold disposal. The question of establishing covenants on some of these areas in gullies and spurs on the Lowburn face has been discussed above.

Lowburn Valley 30/04/12



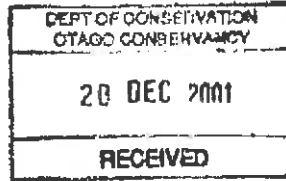
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CONSERVATOR	
AM	
December 18, 2001	
FROM	
TO	
NOTES	<i>CP</i>
KAA	
OTHER	

TENURE REVIEW OF PASTORAL LEASES

Dear David,

I wish to comment on three of the pastoral leases which your company is involved with (I understand from earlier discussion with you that two runs, Long Gully and Sandy Point have been sold and have been withdrawn from tenure review), as follows:

P122

GEM LAKE.

Based on my prior knowledge of this run (I was associated with Dr Katharine Dickinson in her PNA Survey of this property as part of the Umbrella Ecological District, published in 1986), my recommendation is that all of the Jordan or Black Creek catchment plus the upper Pomahaka catchment above the Jordan Stream junction that is within this property, be transferred to the Crown for its very high nature conservation values. A large part of this area was identified as a Recommended Area for Protection in the PNA Report of Dickinson (1986), but the additional area I now recommend is of comparable conservation value, and its additional value for water yield, if retained in its near-natural state, I believe, justifies its management for these important purposes. A legal road up the crest of The Nobbies main ridge from the Pomahaka Valley floor should also be retained for formal public access.

P373/374

WHITECOMB

Based on my knowledge of this run, as explained in the previous section, I recommend that the upper Jordan Stream section of this run be retained for its high nature conservation and water yield values, and be transferred to the Crown for to be managed for these purposes. If achieved, this, together with that part of the Gem Lake property recommended for conservation management, would secure the entire Jordan Stream catchment and retain its integrity for the most effective conservation management. Again I refer to the Umbrella PNA Report of Dickinson (1986) for confirmation of these extremely high nature conservation values.

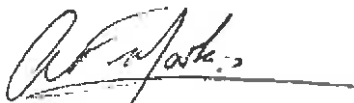
P256

LOWBURN VALLEY

The upper part of the Roaring Meg catchment, including Skeleton Creek and beyond, plus the adjacent upper slopes along about the 1200 m contour to Mt Michael, should be transferred to the Crown to be managed for its high conservation and landscape values. Part of this area was identified as a Recommended Area for Protection in the Pisa PNA Survey Report (Pisa RAP A6), published by the Department of Conservation in 1994. I feel this area is too small to be a viable conservation area in the long term and that the larger area, as recommended, is necessary in this regard.

I make these comments on the basis of some 40 years experience with tussock grasslands in the Central Otago region , particularly their ecology and its application to the sustainable management & conservation of the grasslands. I trust you will find these comments and recommendations useful in your important exercise.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Alan F. Mark', written over a horizontal line.

Alan F. Mark FRSNZ DCNZM.
Professor Emeritus

/ Mr Tony Perrett,
Department of Conservation.



LOWBURN VALLEY

Preliminary Report on the Conservation, Recreation and Historic Values and Recommendations for the Outcome of Tenure Review.

This submission is written on behalf of the **Dunedin Branch of the Royal Forest and Bird Protection Society** which has approximately 1000 members with strong interests in botany and natural history in general and in the High Country. Many of the members enjoy active recreation in the back country and are very aware of the need to ensure the protection of natural values, vegetation and landscape, historical sites and to improve public access through the tenure review process.

In making these recommendations we are mindful of the fact that under the CPLA Section 24 (b), significant inherent values must be protected by the creation of protective mechanisms (e.g. conservation covenants) with a preference to return to full Crown ownership and control.

This submission is made on the basis of an inspection trip in April 2012 and knowledge of the adjoining Conservation Area on the Pisa Range.

We have also consulted the old Conservation Resources Report (CRR) dated 2003, the Conservation Management Strategy (CMS) for Otago and the 1996 report to DOC done by Jill Hamel on 'Lowburn Valley Station, Its water races and other historic sites'.

Introduction

Lowburn Valley Lease.

Lowburn Valley is a lease of 5814ha on the southern end of the Pisa Range. The steep faces on the east side of the range above Lowburn have historically been oversown and toppedressed as have the steep faces in the Kawarau Gorge and the faces on the true left of the Meg Stream. There is a current easement to allow walkers and bikers to traverse the Cromwell - Cardrona Pack Track which mainly follows the line of the 4WD road that comes up from swann road.

Significant inherent values (SIVs)

Recommended areas for protection (RAPs)

There are two recommended areas for protection on the lease i.e. Pisa RAP A6 Skeleton Creek and Pisa RAP A8 Lower Meg.

A6 Skeleton Stream is approximately 330ha of predominantly shrubland with associated *Chionochloa rigida* snow tussock grassland. The values in Skeleton Stream are fully described in the relevant PNA Report.

Lower Meg is 20ha with a remnant of silver beech trees and a small area of Manuka – again fully described in the relevant PNA Report.

The areas covered by these two RAPs should be returned to Crown ownership and control and designated Conservation Areas

The 4WD track up from Swann Road follows the line of the Lowburn Pack Track which can be used in the first instance to get up to the Deep Creek Hut, just inside the Pisa Conservation Area that resulted from the tenure review of Waiorau Station. Up to about 860m there is little natural vegetation except for shrublands down in the Packspur Creek gully. Above this height some tussock is seen but above 1000m where there is a fence line and an old plank bridge (gate and rough bridge NZTopo50 GR 959 122 at a height of 1011m, (Figures 3.4) over a water race, tussock is more evident and then with a further gain in height, tussock, extensive patches of *Dracophyllum* and sub-alpine plants and herbs are seen (Figures 4-6). The amount of *Aciphyll aurea* present is indicative of frequent burning by past lessees.

The tors/rock outcrops themselves (eg. Figures 9,11,12) are host to various forms of vegetation eg. *Brachyglottis haastii*, *Helichrysum intermedium*, *Anisotome caudicola*, *A. brevistylis* and *Hebe pimeleioides* as well as a number of others. They also host thriving lichen communities.

A pair of falcons were seen at NZTopo50 GR 94627 12942, height 1325m and some time later one appeared on a high tor just where the track goes down to the Deep Creek Hut and followed us north along to the range almost to the boundary.

We also saw large number of pipits and understand that banded dotterels are seen along the range crest in the spring and summer months

Towards the southern end of the summit plateau there are numerous wetlands and flushes and extensive patches of *Dracophyllum prorum*. (Figures 10,11).

Above 1000m there is considerable biodiversity with the subalpine vegetation, the wetland plants, plant cover on many of the tors, the presence of falcons and other native birds all of which would be best protected by designation of a Conservation Area which would allow regeneration of tussock and other vegetation that has been affected by fires in the past.

Packspur Gully, below 1000m.

Packspur Gully as viewed for the 4WD track on the true right of the Gully (Figure 1) appears to have shrublands and bluffs which we did not have time to investigate closely but which may be worthy of some protection by Covenant

Landscape values are high with amazing spectacular rock tors which obviously attract the falcons and gulls in the breeding season. There are extensive views in all directions.

Thus, above 1000m where we understand the soil is classified as LUC Class VII, not capable of supporting sustained pastoral activity, we suggest that the land should be returned to the Crown as a Conservation Area to allow recovery from the extensive burning and grazing of the past.

Gradual improvement in the tussock cover should then eventually be of great benefit in terms of water conservation, surely of major importance on this type of country.

The above recommendations are entirely compatible with the CPL Act clauses -
S24 (b) (i) To enable the protection of significant inherent values of reviewable land by the creation of protective mechanisms

S24 (b) (ii) To enable the protection of significant inherent values of reviewable land (preferably) by the restoration of the land concerned to full Crown ownership and control

Historical values

The Lowburn Valley lease has a large range of historic water races and other sites which are more than adequately described in *Hamel, Jill. Lowburn Valley Station. Its water races and other historic sites, 1996.*

The high sites in the Roaring Meg, Mitre Creek and Skeleton Stream and the Boundary Workings surely deserve the highest level of protection through the Historic Places Trust and this review if that has not already happened. The water races too are of major importance in the mining history of the area and some covenants to ensure they are never re-routed or destroyed through cultivation activities by future lessees seems desirable.

We strongly advocate that in order to protect the historic sites etc on the lease that the recommendations on p22 of the Hamel Report be adopted during the review process.

Access

The landscape and vegetation, especially on the higher part of the lease are such that we believe there should be access that will allow not only the Pack Track walkers and bikers but people of all ages to get far enough by 4WD vehicle to be able to enjoy a day on the summit plateau or exploring the mining sites. More mature botanical trampers deserve easy access to the summit. To that end we recommend that there be two points of vehicle access.

Firstly we believe there should be vehicle access up the track from SH 6 in the Kawarau Gorge to Skeleton Creek where there is room to create a car park.

Secondly, there should be vehicle access up the 4WD track alongside the Pack Track route up from Swann Road, through use of a key system if need be, to the point where there is a rickety bridge straddling a water race (Towan's Race) at about 1000m GR Topo50 959 122. The summit plateau is then in walking distance for a day trip or to the Deep Creek Hut to use as a base for botanical exploration.

These two access recommendations are in keeping with the CPL Act S24 (c) (i) *The securing of public access to and enjoyment of reviewable land [including recreation]*

We suggest that the recommendations we have made here are in line with the Otago CMS objectives for this area:- *"To protect representative low altitude lands and high altitude lands in the area for their landscape, nature conservation and historical values; the latter lands on an extensive basis providing enhanced public recreational opportunities complementary to those already being provided commercially."*

Acknowledgements

We wish to thank LINZ for making available the contact details for the runholders of Lowburn Valley pastoral lease are also very grateful to the runholders, David McLean and family, for permission to inspect the property, and for advice about which tracks to use on the property.

Janet Ledingham

For the Dunedin Branch of Forest and Bird
PO Box 5793, Dunedin, 9010

April, 2012

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Appendix 1. Recreational and Related Significant Inherent Values on LowburnValley

A Preliminary Report for FMC, July 2002

LIST OF FIGURES

The following Figures form part of the current (2012) FMC Report on Lowburn Valley

Fig. 1 The highest point on Lowburn Valley Station is about 1,400m on "The Tops" above Mitre Creek. This view is from about 1,350m in the headwaters of Skeleton Stream. At this altitude, on soils classified LUC Class VIIe, and in a landscape characterised by Spaniard and degraded tussocklands, there is no possibility that this area could support ecologically sustainable pastoral production.

Fig. 2 This view is from the southern end of the Pisa Range looking across the Kawarau Gorge to the Nevis River. It represents the landscape between the Pisa Conservation Area (ex Waiorau pastoral lease) and the former Waitiri Station pastoral lease. The Roaring Meg Valley is on the right. It is important that conservation land emerging out of the review of Lowburn Valley maintains a landscape link between these areas.

Fig. 3 The lower slopes of Lowburn are characterised by Blackstone Hill and Arrow Yellow Grey Earth soils classified LUC Class VI. With regular maintenance fertiliser to replenish nutrient losses in animal products (meat and wool) these soils should be capable of being managed in a way that promotes ecological sustainability as required by the CPL Act.

Fig. 4 Near the head of Packspur Gully, at about 1,000m there is an important transition from Yellow Grey Earth to High Country Brown Grey Earth Carrick Hill and Dunstan Steepland soils, and a change from LUC Class VI to VIIe with serious limitations for pastoral production. It is generally agreed that the response to applied S and P above 1,000 to 1,100m is not economically justified so replacement of nutrients removed in animal products does not occur and the soil is gradually depleted. Under these conditions ecologically sustainable pastoral use is not possible, and the CPL Act requirements cannot be met.

Fig. 5 Recreation includes far more than the active pursuits such as tramping and mountain biking. Lowburn Valley offers opportunities for a wide range of more passive forms of recreation such as photography, painting and botanising. Here a keen photographer is capturing an image of *Carmichaelia* among an infestation of briar.

Fig. 6 Many forms of passive recreation can be enjoyed on Lowburn Valley because of the wide range of resources that are present on the property. Here a keen naturalist member of the NGO tenure review team is 'stalking' a NZ Falcon perched obligingly on a nearby rock tor.

Fig. 7 Not only do the Lowburn uplands offer grand scenery and tor-studded landscapes but they also provide grandstands from which trampers and those seeking less demanding forms of recreation can enjoy spectacular views of the valleys below. This view is from near Mitre Rocks, looking down onto Cromwell and Lake Dunstan.

Fig. 8 Although unsuitable for ecologically sustainable pastoral use, the uplands on Lowburn Valley Station have many important natural and other values, including the sub-alpine shrubland community seen here from the Cardrona–Cromwell Pack Track at about 1,200m.

Fig. 9 The significant inherent values on the Lowburn Uplands include a variety of sub-alpine features such as this high altitude flush area with a central bog community which is important for water retention. Features like this are important for their ecological values, and ecosystem services, as well as adding significantly to the scenic value of the area.

Fig. 10 Close to the boundary of the Lowburn Valley uplands and the Pisa Conservation Area at the head of Skeleton Stream, are good examples of the tor-studded landscape which characterises so much of the Pisa Range and the Pisa Conservation Area. These landscapes are closely associated with the underlying geology and geomorphic processes. It is hoped that as an outcome of this tenure review, these landscapes will soon be united within the Pisa Conservation Park, foreshadowed in the CMS for Otago. In this view can also be seen part of the historic Towan's water race at about 1,300m.

Fig. 11 In places the tors are much larger and more spectacular, and consequently have even greater landscape significance when they appear as "castles" in the mist. On the occasion of our inspection we were fortunate to have clear skies. This view is looking across the Lowburn Upland and the valley of the Roaring Meg to the crest of the ridge which includes Mt Allen, Quartz Knoll and Queensberry Hill, all high above the Crown Range Road.

Fig. 12 Characteristic of the uplands are the extreme northerly winds which scream over the tops causing deflation of the shallow topsoil and exposure of stony pavements. In places these are being colonised by very low growing cushion plants giving rise to interesting patterned ground.

Fig. 13 Towan's water race, cut in the 1860s, starts high on the range in the Roaring Meg catchment before crossing the range and being used first for gold mining, and later for irrigation. This view of the race is not far from Mitre Rocks at about 1,300m, where a trace of an earlier (and lower race which was not quite high enough to cross the range crest—another "duffer") can be seen.

Fig. 14 When climbing the Packspur Track, Towan's race is first encountered at about 1,000m where it is obvious that the flowing water is still used for irrigation.

Fig. 15 The gorge in Packspur Gully runs from about 350m up to around 700m and encloses a variety of natural vegetation communities, biodiversity and rock outcrops on the valley sides which are near vertical in places. In the upper section of the gorge the shrublands on the true right are on a relatively gentle slope while those on the true left occupy refuges among the rock outcrops.

Fig. 16 In the lower section of the gorge the near vertical valley sides and rock outcrops occur on the true right, while the true left carries a mix of vegetation communities. We recommend that the biodiversity values and landscape of the entire gorge between about 350m and 700m should be protected under a conservation covenant.

Fig. 17 This former musterer's hut on Mt Pisa Station is situated in a gully at the head of Skeleton Stream. This location is now within the Pisa Conservation Area and is therefore available for public use. Although not actually on Lowburn Valley Station it would provide very useful accommodation for those using the Packspur route on the Cardrona—Cromwell Pack Track.

Fig. 18 DOC have recently carried out an extensive rebuild of the old hut, parts of which were in a bad state of repair. Here members of the NGO tenure review team are discussing the improvements with Paul Hellebrekkers, the Manager of the DOC Wanaka Area.

The following Figures were included as part of the original (2002) FMC Report on Lowburn Valley

Fig. A/1 Lowburn Valley Station occupies a prominent position near the southern end of the Pisa Range and dominates the skyline above Cromwell and Lake Dunstan. It extends from Mt Michael, the high point to the left of this view, to Mitre rocks at the head of the Low Burn to the extreme

right. The skyline ridge provides spectacular views of the Upper Clutha, and the snowline approximates to an appropriate boundary between conservation land and freehold to the runholder.

Fig. A/2 Lowburn Valley homestead is situated at about 300m, close to the Low Burn which flows into the Lowburn Inlet of Lake Dunstan. The property rises to over 1,400m on the crest of the Pisa Range above Mt Michael and offers increasingly expansive views to those who enjoy recreation on foot, mountain bike or horse riding.

Fig. A/3 The historic Cromwell-Cardrona Pack Track across the southern end of the Pisa Range was used by gold miners, and the packers who provided their supplies, in the 1860s and 70s. It is a legal road and is now increasingly popular as it becomes more well known for tramping, mountain biking and horse trekking.

Fig. A/4 The Roaring Meg Pack Track is another historic route over Lowburn Valley which follows the valley of the Roaring Meg before climbing over Tuohys Saddle and down Tuohys Gully to the Cardrona Valley. This too is increasing in popularity among trampers, mountain bike enthusiasts and horse riders.

Fig. A/5 The Roaring Meg Pack Track traverses some interesting terrain including the tussock slopes of the Roaring Meg valley, and a crossing of the Meg, leading into the tributary valley of Plank Creek in the middle distance in this view. The land to the left of the Meg is on Waitiri Station which is also under tenure review.

Fig. A/6 Looking across the Roaring Meg at its junction with Plank Creek. Trampers and other recreational users cross the Meg at this point and head up through a narrow rocky defile which leads to a former alluvial gold working area on Waitiri Station. The crossing of the Meg is usually safe but can be difficult with high water flow.

Fig. A/7 Both the Cromwell-Cardrona Pack Track and the route up from Mt Michael, which joins it near the head of Skeleton Stream, are high level crossings of the southern end of the Pisa Range. Here, trampers are seen making their way up from Mt Michael towards the junction with the more usual Packspur route.

Fig. A/8 Before descending to the Meg Hut (on Waiorau Station) trampers and other recreational users get fine views towards Mt Cardrona from a point at the northern extremity of Lowburn Valley, on the boundary with Mt Pisa Station. The rolling short tussock grasslands, dotted with schist tors, are typical of the landscapes at the southern end of the Pisa Range which should be returned to full Crown ownership and control.

Fig. A/9 An extensive area of mixed shrubland in the lower reaches of the Skeleton Stream, containing many uncommon species of flora as well as specimens of Halls totara, celery pine and bog pine, has been recognised as an RAP. It can be seen in the middle distance, in this view across the Roaring Meg from Mt Allen on Waitiri Station. This RAP should be included within the area to be restored to full Crown ownership and control .

Fig. A/10 There is a small area in the lower Meg which contains about 30 mature silver beech trees and is one of only two areas of manuka in the district. This was recognised as RAP Pisa A8, and should be protected through tenure review either as a Conservation or Scenic Reserve. Wilding pines and firs are threatening the beech and should be removed, both on Conservation land, and on neighbouring land which may become freehold.

Fig.A/11 At higher altitudes (above 1,200m) on the Pisa Plateau within Lowburn Valley Station there are plant communities of dwarfed cushion fields and herbfields dominated by *Drachophyllum* and *Celmisia*. Such communities are not capable of being grazed in a way which is ecologically sustainable so should be returned to full Crown ownership and control and managed for conservation and recreation purposes.

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Fig. A/13 At the foot of the track leading up to Tuohys Saddle, near the hair pin bend in the Meg are various gold mining relics. These consist of hut sites and ruins, as well as races and workings. These features add interest for recreational visitors and would be protected if this area were returned to full Crown ownership and control.

Fig. A/14 Public vehicle access is required up the road to the power station, and along the track (seen in this view) to a point above the dam at the mouth of Skeleton Creek, where there is room to park vehicles. Provision should be made in this tenure review for the public to be allowed to park vehicles at this point.

INTRODUCTION

This report has been prepared following the Early Warning Meeting in September 2011 at which the properties entering the tenure review process in 2011/2012 were introduced. This report is offered as the contribution from Federated Mountain Clubs of NZ Inc. (FMC) to the statutory consultation process undertaken by the Department of Conservation (DOC).

A report entitled "Preliminary Report on Recreational and Related Significant Inherent Values – Lowburn Valley Station" was prepared by Federated Mountain Clubs of NZ (FMC) in July 2002. We reproduce that Report as an Appendix to this Report, together with the illustrations that accompanied the original report. It was unfortunate that the 2002 report was written without the benefit of a field inspection of the property as the then runholder would not grant access for the purpose of a tenure review inspection. That report was also deficient because we grossly underestimated the significance of the heritage values on Lowburn Valley Station, It is our intention that those deficiencies will be corrected in this Report.

The 2002 report was based on knowledge of the property gained from an inspection carried out in 1997 and from earlier tramping trips (for which the runholder had given permission) and in part on information gathered from other sources listed in the report.

We believe that much of the 2002 report and most of its conclusions are still valid in 2012, but believe that it was appropriate to conduct another inspection in 2012.

An inspection of the Lowburn Valley pastoral lease was therefore conducted in April 2012, with the kind permission of the new (since 2005) lessee. The purpose of this inspection was to update the earlier 2002 report on the same property.

This Report focuses on those features of the property which are known to be important for public recreational interests. It should be noted that while much of this interest focuses on access, the natural and historical 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 the natural, historical and landscape values in this Report.

It is to be hoped that this tenure review can be completed without undue delay, not only because the property has been under review before, but also because it is one of the very few properties on the Pisa Range where reviews have not yet been completed. When this is done

the final stages of recognising and gazetting the Pisa Range Conservation Park will be able to be completed.

METHODS OF SURVEY AND ASSESSMENT

This report is based on the author's April 2012 field inspection and, in part on information gathered from other sources. These include studies of topographical and Land Use Capability (LUC) maps, consultation with recreational user groups, an Archaeological Report "Lowburn Valley Station" by Jill Hamel, and a personal knowledge of the area.

A survey of the Pisa Range was undertaken by the Protected Natural Area (PNA) Programme in the mid 1980s and published in 1986 (Ward et al.1994, Lindis, Pisa and Dunstan Ecological Districts). This has been used as a source of reference for significant inherent values on Lowburn Valley pastoral lease. .

A study of "Outdoor Recreation in Otago" was undertaken by Mason (1988) and published by FMC. Reference is made below to this Recreation Plan for Otago. The Otago Conservation Management Strategy (CMS) has also been used as a source of reference.

GENERAL DESCRIPTION OF LOWBURN VALLEY PASTORAL LEASE

Lowburn Valley is a moderately large (5,800ha) pastoral lease occupying a prominent position at the southern end of the Pisa Range (Fig. A/1). It straddles the Pisa Range from the homestead near the Lowburn Inlet on Lake Dunstan, to the Roaring Meg (Fig. A/2). It rises from about 300m at the homestead to 1,400m at the highest point on "The Tops" above the headwaters of Mitre Creek (Fig. 1).

Lowburn Valley lies between Mt Pisa Station to the northeast and Waitiri Station to the southwest, both of which have been through the tenure review process. Lowburn forms an important landscape link between these neighbouring properties. It is likely that part of Lowburn Valley pastoral lease will become part of the Pisa Conservation Area, foreshadowed in the CMS for Otago, and which may eventually be developed as the Pisa Range Conservation Park. It is important that there is a landscape/vegetation continuum along the crest of the range. Conservation land emerging out of the tenure review of Lowburn Valley Station should provide that connecting link (Fig. 2).

There are two historic routes on the property which are important for modern recreational use. These are the Cardrona Cromwell Pack Track (Fig. A/3), and the Roaring Meg Pack Track (Fig. A/4).

The lower slopes on this property are characterized by Blackstone Hill and Arrow Steepland Yellow Grey Earth soils (Fig. 3) classified LUC Class VI while Carrick and Dunstan Steepland High Country Yellow Brown Earth soils (classified LUC Class VII) occur on the higher slopes (Fig. 4). The boundary between the Class VI and VII land generally follows around the contour at about 1,000 to 1,100m. This is an important boundary because it is most unlikely that the Class VII land (especially that land above 1,100m) can be managed in a way that is ecologically sustainable. The reasons for this assertion will be explained in the sections on Conservation Values and Areas to be Protected

Although the Lowburn uplands (generally above 1,000 to 1,100m) cannot support ecologically sustainable pastoral use, they have very high natural and significant inherent values, considerable biodiversity and even the degraded tussocklands have potential to recover their former glory following the cessation of grazing and burning. Other important values of the Lowburn uplands include tor-studded landscapes and skylines, with spectacular views from the tops to the valleys below. Important ecosystem services include water harvesting and retention, while historic values include the historic Pack Tracks and systems of water races.

The Pack Tracks in particular and the uplands in general provide opportunities for active recreation such as tramping and mountain biking while there are also opportunities and subjects for more passive forms of recreation such as photography and birdwatching. All these values of the uplands will be dealt with in more detail in following sections of this report.

There are two areas on the property which were identified by the Protected Natural Areas Programme (PNAP) as Recommended Areas for Protection (RAPs). These are RAP A6 Skeleton Stream (Fig. A/9) and RAP A8 Lower Meg (Fig A/10). Both RAPs are situated in the catchment of the Roaring Meg.

There are also natural values concentrated within the Packspur gully which, because of its proximity to the Cardrona Cromwell Pack Track, can be readily observed and enjoyed the members of the public using the Pack Track.

LOWBURN VALLEY FROM A RECREATIONAL AND CONSERVATION PERSPECTIVE

Recreational Use

The two historic routes on Lowburn Valley were very important for travel between the goldfields in the late 19th Century, and are increasingly important today for recreation (Figs. A/3 and A/4).

Recreational use was discussed in the earlier (2002) FMC Report and was also well illustrated (Figs. A/5, A/6, A/7 and A/8). When that report was written it was clear that they were both fast becoming popular tramping and particularly mountain bike routes. That trend is continuing today and the most important outcome of this tenure review will be the establishment of secure public access over both these routes.

It is understood that a third access route starting from SH 6 at Ripponvale, and linking with the Cardrona Cromwell Pack Track above Mt Michael also follows a legal road. However, the alignment of the legal road and the formation on the ground do not coincide and some landowners occupying that part of the road below the Lowburn Valley boundary do not permit public access. This situation needs to be resolved, at least so far as that part of the road on Lowburn Valley is concerned, by the establishment of an easement for public access on foot, bike and horse, or preferably by formal recognition of the road formation as the legal road.

It is important that public access for recreational use on foot, bike, or horse is secured as an outcome of this tenure review in order to conform with the CPL Act.

As well as the more active forms of recreation it is important to realise that the natural values and landscapes of the Lowburn uplands and gullies offer excellent opportunities for more passive forms of recreation such as photography (Fig. 5), painting, bird watching (Fig. 6) and botanising, as well as the enjoyment of spectacular views from the crest of the range down to the valleys below (Fig. 7)

Conservation, Ecological and other Values

Two RAPs were identified during the PNA Programme surveys. These RAPs are respectively Pisa A6 Skeleton Stream and Pisa A8 Lower Meg (Figs A/9 and A/10 respectively). Both of these are in the catchment of the Roaring Meg Creek and are situated on the true left of the valley. As its name implies the Skeleton Creek RAP is in the catchment of Skeleton Creek, while the Lower Meg RAP is close to the main stem of the Roaring Meg and includes a small stand of mature Silver Beech trees which is being invaded by wilding pines.

These RAPs were described in some detail in the 2002 FMC Report on Lowburn Valley and the description is not repeated here. Those wishing to see the detail are referred to Appendix 1. where the earlier report (including the Figures) is reproduced.

In addition to the special areas identified in the PNA Programme there are many features of the land above 1,000m which are of high natural, historic, landscape and ecosystem value. It is important to recognise that these values are particularly significant because most of the Lowburn Valley uplands (above 1,000 to 1,100m) cannot be managed in a way that promotes ecological sustainability. The LUC classification of these uplands is Class VII related to exposure, severe climatic constraints and potential for erosion coupled with the slow and progressive depletion of soil nutrient reserves that happens where nutrient removals in animal products (meat and wool) are not replenished by fertiliser use. This is because it is generally agreed that the small response to fertiliser application (due to slow plant growth at high altitude) cannot be economically justified. Under such conditions progressive depletion of nutrient reserves and degradation of the vegetation is inevitable, and ecological sustainability is impossible .

However, the uplands of Lowburn Valley have many other important values which can be grouped as follows:- conservation including biodiversity, landscape, historic values, ecosystem services and opportunities for a wide range of recreational activities and enjoyment.

Conservation values of the plateau area, undulating between about 1200 and 1400m, include sub-alpine shrubland communities (Fig. 8) with significant biodiversity and extensive areas of Spaniard and Drachophyllum, with Hebes and Gentians, together with the presence of sub-alpine bogs, flush areas and snowbank communities in depressions (Fig. 9),

Much of the upland plateau area on the crest of the Pisa Range, above about 1200m, is characterised by dramatic tor-studded landscapes with occasional major rock outcrops which resemble small castles (Fig. 10). In places the tors are much larger and more spectacular and sometimes appear as "castles" in the mist for those who have vivid imaginations (Fig. 11). These features are really a continuation of similar landscapes and rock tor features already protected within the adjoining Pisa Conservation Area (Fig. 10). It is strongly recommended that these sub-alpine areas on Lowburn Valley Station should be returned to full Crown ownership and control to be managed for conservation and recreation purposes and added to the adjoining Pisa Conservation Area, as was foreshadowed in the CMS for Otago. Even the depleted and degraded areas of tussock grassland, currently dominated by Spaniard (Fig. 1), should gradually recover following the establishment of this Conservation Area and the retirement from grazing.

One of the characteristics of the uplands are the extreme northerly winds which scream over the tops causing deflation of the shallow topsoil and exposure of stony pavements. In places these are being colonised by very low growing cushion plants giving rise to interesting patterned ground (Fig.12).

Additional features of the upland area include the spectacular views to be obtained from the crest of the range looking down on valley features such as Lake Dunstan and the Sugar loaf terraces in the east and the Kawarau Gorge with a special view up the Nevis River to the west (Figs. 2 and 7). These views greatly enhance the recreational experience of walking the historic Pack Tracks.

The historic features of the property include the Pack Tracks established in the days of the gold rushes in Central Otago, and the water races which were cut by hand because water was essential to recover the gold from the ore-bearing gravels and to power the sluice guns and

stamping batteries. These races have been recognised as having important heritage values and have been comprehensively described by Hamel in her archaeological account of Lowburn Valley Station. There are four race systems which constitute networks of water supplies between about 300m near the homestead to Towan's Race complex (Figs. 13 and 14) which starts above 1,300m and brings water across the range from the Meg catchment to the Lowburn face and the Kawarau workings. Most of these races were originally intended to supply the gold workings but have since been used for irrigation. Perhaps the earliest of such changes in function was on Towan's Race which provided water first for gold mining and then for irrigation on Towan's Farm. The earliest and lowest of the race systems was cut in 1863 and is situated in the lower reaches of the Low Burn, and collects water from a number of side creeks including Pennycooks Creek and Packspur Gully.

Nowadays, these old water races serve a valuable service in association with the water harvesting ecosystem function performed by tall tussock grasslands. In fact the capture of rain and mist by vegetation (Fig. 4), the storage of water in subalpine flushes and bogs (Fig. 9), and its distribution by the network of races (Figs.13 and 14) together combine to perform a vital function in a semi-arid area like Central Otago.

Another race system which serviced the eastern area was known as the Ripponvale Settlers Race. This race was cut about the same time as the Lowburn Race and runs for some 20km from the Low Burn, the first 5km across Lowburn Station, starting at about 1,150m and dropping some 120m on Lowburn before terminating at about 1,000m, as its name implies, at Ripponvale.

These historic races cross an area which is likely to be designated for disposal to the lessees as freehold land. In general the water races are still in use for irrigation and are well maintained and do not require special protection. We believe that if their historic value becomes generally known, the existing lessees who will probably become future freehold owners, are likely to respond positively to requests to visit these features, so long as such visits do not interfere with farming operations.

The other two water race systems are much higher on the range and add considerable interest for recreational users of the Cardrona Cromwell Pack Track which crosses Towans Race (original date unknown, but certainly before 1893) at about 1,300m in the headwaters of Skeleton Creek, and the Moonlight Race (1865) at the same altitude in the headwaters of Mitre Creek. The latter crossing is in an area described by Hamel as the "Boundary Workings" where there is plenty of evidence of former gold workings, as there is too in the upper catchment of Skeleton Creek.

All these historic features have significant heritage value which is appropriate for an area which should be included in the new Conservation Area on Lowburn Valley, and subsequently added to the adjoining Pisa Conservation Area..

It would be particularly fitting if the features described above were to be incorporated into the Pisa Conservation Area which itself, upon completion of all the adjoining areas subject to tenure review were to be consolidated into a new Pisa Range Conservation Park extending from just above Cromwell to the slopes above Queensberry and Luggate at the northern end of the range.

Within the gorge of Packspur Gully are conservation values which may be suitably protected under covenant. The gorge extends from about 350 to 700m and its upper part is characterised by significant shrublands with considerable biodiversity and steep rocky outcrops on the true left, (Fig. 15) while the lower section has near vertical rock walls on the true right and a variety of vegetation throughout. (Fig. 16).

AREAS TO BE PROTECTED

In the sections above we have recommended that the RAP areas identified by PNA surveys in the 1980s should be designated as new Conservation Areas. We have also recommended that much of the plateau area on the Pisa Range has natural, historic heritage and landscape values which qualify as Significant Inherent Values. These should all be protected by returning the area to full Crown ownership and control, to be managed for conservation and recreation purposes. The Pisa Range also performs an important ecosystem service function in water harvesting. This is particularly important, situated as it is in the driest part of New Zealand, and already well serviced by extensive networks of water races which serve well as a water collection and distribution system.

We have not, as yet defined the area which should be designated as the new Conservation Area.

This poses a problem because application of the general rule of thumb - that the split between freehold and Conservation Area might use the 1,000m contour - could divide Lowburn Valley Station into units which may be difficult or impossible to manage as an efficient farm..

The only solution we can see to this problem (of two isolated, and widely separated areas of farmland) is to provide, through tenure review negotiations, an effective and practical management corridor (Easement) across the crest of the range in the vicinity of Mt Michael. We realise that there is no vehicle track across the range at this point but there would be no problems in driving mobs of stock over this access corridor. There is existing vehicle access up the Packspur track to a point only about 3km away from Mt Michael. If an improved vehicle track proved necessary this could be put in at a later stage. Alternatively, mustering stock across the range could be done with the traditional use of horses.

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We therefore recommend that all that land of LUC Class VII above about 1,000 to 1,100m on the Pisa Range plateau and in both the Meg catchment and on the Lowburn face should be returned to full Crown ownership and control to be managed for conservation and recreational purposes.

We are aware of the need for accommodation for recreational users of the Cardrona-Cromwell Pack Track and we are also aware of the recent work done by DOC to restore the historic Musterers hut

known as the Deep Creek "Inn" (Figs 17 and 18). This hut was situated on former Mt Pisa Station pastoral lease land which was designated as a new Conservation Area in the tenure review of Mt Pisa and is now in the Pisa Conservation Area. This newly restored and rebuilt hut at the head of Skeleton Creek will soon provide valuable accommodation for users of the Cardrona Cromwell Pack Track

Finally there are natural and landscape values in Packspur Gully (Figs, 15 and 16) which require protection. In this case a Conservation Covenant over the entire gorge section (between about 350m and 700m) would be appropriate..

ACCESS REQUIREMENTS

As stated in the introduction to this report, the greatest need for access on Lowburn Valley Station is to ensure secure public access for walkers, mountain bike riders, and horse trekking on the Cardrona Cromwell Pack Track and the Roaring Meg Pack track.

This is because both tracks are legal roads but the actual formation does not conform exactly with the legal alignment of the "paper road" so that public access is not guaranteed. The ideal solution would be to formally recognise the existing track as the legal road, but an easement for public foot, bike and horse access would be an alternative. The track along the range crest to the property boundary at Mt Michael should be treated in the same way to enable the use of the track up from Ripponvale, should access through other properties become available in the future.

We recommended in our earlier report in 2002 that public access with vehicles should be permitted on the track from SH 6 in the Kawarau Gorge to a car park near Skeleton Creek should also be established (Fig A/14). We repeat that recommendation as an outcome of the current review.

OTAGO CONSERVATION MANAGEMENT STRATEGY

There are important statements in the Conservation Management Strategy for Otago, in which the Pisa Range is recognised as a Special Place. The objectives for this area, which includes Lowburn Valley include:-

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

provided commercially.”

Implementation includes:-

“Seek opportunities arising out of pastoral lease tenure review negotiations to protect extensive high altitude areas of high landscape, nature conservation, recreational and water and soil conservation significance.

- *As tenure reviews are concluded, keep under consideration the unifying concept of a high altitude Pisa Range Conservation Park.*
- *Ensure appropriate public access, both vehicular and by horse where appropriate and on foot, to lands administered by the Department.*

These objectives and implementation statements accord very closely with the recommendations made in the present report. Furthermore, it should be noted that the priority for the Pisa Special Place is: *“Completion and continuation of protection negotiations at both high and low altitudes, including tenure reviews, will be a priority in this Special Place”*

We understand that the Otago Conservation Management Strategy (CMS) is currently being reviewed but we also believe that the strategic analysis and setting of long term aims and objectives in 1998 represented the considered DOC and public views on conservation and recreation at that time. We believe that to a large extent those long term aims and objectives are still relevant today.

It is clear that the tenure review of Lowburn Valley presents an excellent opportunity to advance the objectives and priorities for the Pisa Special Place stated in the CMS.

ISSUES AND RECOMMENDATIONS

In this section, the resources described above, and the issues and options for their future management and allocation between freehold disposal and public interests are discussed in relation to the Crown Pastoral Land Act, 1998. The issues and recommendations are presented in sections related to Section 24 of the Act as follows:-

S24 (a) (i) To promote the management of reviewable land in a way that is ecologically sustainable

S24 (b) (i) To enable the protection of significant inherent values of reviewable land by the creation of protective mechanisms

S24 (b) (ii) To enable the protection of significant inherent values of reviewable land (preferably) by the restoration of the land concerned to full Crown ownership and control

S24 (c) (i) The securing of public access to and enjoyment of reviewable land [including recreation] and

S24 (c) (ii) The freehold disposal of reviewable land

S24 (a) (i) To promote the management of reviewable land in a way that is ecologically sustainable

The soil and the Land Use Capability (LUC) Classification of Lowburn Valley has been considered carefully. Above about 1,000m, the soil and land types have been classified in LUC Class VII, with the remainder of the property classified LUC Class VI (between about 300 and 1,000m). It is most unlikely that the high country (above about 1,000m and classified LUC VII) could be managed in a way that promotes ecological sustainability as required by the CPL Act, especially where there has been no attempt to replenish losses of soil nutrients in animal products (in meat and wool, or by burning and leaching) and to maintain soil nutrient reserves by the application of fertilizers. We therefore consider all this land unsuitable for freehold disposal.

All that land below about 1,100m, classified LUC Class VI or better, should be capable of being managed in a way that is ecologically sustainable, and therefore suitable for freehold disposal.

S24 (b) (i) To enable the protection of significant inherent values of reviewable land by the creation of protective mechanisms

We firmly believe that most areas of conservation value on Lowburn Valley should be protected by return of the land to full Crown ownership for reasons discussed in the body of this report. There are however, natural values in the gorge section of Packspur Gully which may be appropriate for protection under a Conservation Covenant.

S24 (b) (ii) To enable the protection of significant inherent values of reviewable land (preferably) by the restoration of the land concerned to full Crown ownership and control

Environmental NGOs generally agree with the preference expressed in the CPL Act for "*protection of significant inherent values of reviewable land (preferably) by the restoration of the land concerned to full Crown ownership and control*". For reasons discussed above the preferred solution to this tenure review is to return all high country LUC Class VII (generally above about 1,000 to 1,100m) areas to full Crown ownership and control, to be managed for conservation and recreational purposes.

We consider that earlier PNA surveys and our recent inspection have indentified areas of the Lowburn Valley pastoral lease which should be protected by return to full Crown ownership and control. These areas are listed above in the section entitled "Areas to be protected".

S24 (c) (i) The securing of public access to and enjoyment of reviewable land [including recreation]

Access issues have been discussed in the "Access Requirements" section of this report. It is strongly recommended that secure public access for users on foot, mountain bike or horse should be confirmed by recognising the actual formations of the two historic Pack Tracks as the legal road alignment. Alternatively a formal easement for public access on foot, bike or horse should be established over the same routes.

Vehicle access should also be permitted over the track from SH 6 in Kawarau Gorge to a carpark near Skeleton Creek

S24 (c) (ii) The freehold disposal of reviewable land

For all the reasons discussed in several sections of this report we do not consider freehold disposal of the highest land, and land with significant inherent values and land which has been classified LUC Class VII is appropriate. All that land classified LUC Class VI or better, appears to be capable of being managed in a way that promotes ecological sustainability, and may therefore be suitable for freehold disposal.

ACKNOWLEDGEMENTS

FMC is grateful to the Portfolio Manager at LINZ for making available the contact details for the runholders of Lowburn Valley pastoral lease. We are also very grateful to the runholders, David McLean and family, for permission to inspect the property, and for his advice about which tracks to use on the property.

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LIST OF FIGURES

Fig. A/1 Lowburn Valley Station occupies a prominent position near the southern end of the Pisa Range and dominates the skyline above Cromwell and Lake Dunstan. It extends from Mt Michael, the high point to the left of this view, to Mitre rocks at the head of the Low Burn to the extreme right. The skyline ridge provides spectacular views of the Upper Clutha, and the snowline approximates to an appropriate boundary between conservation land and freehold to the runholder.

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Fig. A/11 At higher altitudes (above 1,200m) on the Pisa Plateau within Lowburn Valley Station there are plant communities of dwarfed cushion fields and herbfields dominated by *Drachophyllum* and *Celmisia*. Such communities are not capable of being grazed in a way which is ecologically sustainable so should be returned to full Crown ownership and control and managed for conservation and recreation purposes.

Fig. A/12 At slightly lower altitudes (1,100 to 1,200m) there are tussock grasslands such as these on the steep eastern scarp face of the range below Mitre Rocks. Because the application of nutrients to replenish removals is not likely to be economically justifiable, these lands, above about 1,100m, should also be included in the area to become conservation land. The boundary between freehold and conservation land should harmonise with the corresponding boundary on Mt Pisa Station at about 1,100m.

Fig. A/13 At the foot of the track leading up to Tuohys Saddle, near the hair pin bend in the Meg are various gold mining relics. These consist of hut sites and ruins, as well as races and workings. These features add interest for recreational visitors and would be protected if this area were returned to full Crown ownership and control.

Fig. A/14 Public vehicle access is required up the road to the power station, and along the track (seen in this view) to a point above the dam at the mouth of Skeleton Creek, where

there is room to park vehicles. Provision should be made in this tenure review for the public to be allowed to park vehicles at this point.

INTRODUCTION

This Report has been prepared following the Early Warning Meeting in October 2001 at which the properties entering the tenure review process in 2001 were introduced. Federated Mountain Clubs of NZ (FMC) were unable to attend that meeting so this report is offered as a contribution to the statutory consultation process undertaken by the Department of Conservation (DOC).

The Report focuses on those features of the property which are known to be important for public recreational interests. It should be noted that while much of this interest focuses on access, the natural and historical 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 the natural, historical and landscape values in this Report.

Lowburn Valley is a moderately large pastoral lease (almost 6,000ha) at the southern end of the Pisa Range, bounded to the south and west by the Kawarau Gorge and the Roaring Meg.

The Pisa Range has been described by Mason (1988) as *"the most western of Central Otago's block mountains. It is a distinct geographic unit, separated from other high country by major river valleys and basins. The Clutha Valley is to the north and east, and the Cardrona Valley and Kawarau Gorge provide western and southern boundaries respectively."*

"Unlike other block mountains the Pisas present distinct fault scarps on either side, with a wide sloping summit plateau between. The eastern scarp is higher and steeper, rising 1,500m above the river terraces of the Clutha Valley.....The Roaring Meg drains the southern end of the Range becoming deeply incised in its lower reaches, but retaining a shallow intricate sub-catchment in its headwaters. Overall the plateau landscape is characterised by gentle, rounded forms. It lies between 1,700 and 1,964m."

METHODS OF SURVEY AND ASSESSMENT

In 1997, the then runholder provided the key for access up the access road to the Meg power station, and gave permission for access up Packspur to Mt Pisa Station. It is unfortunate that since then it has not proved possible to gain access to this property to carry out an on-site inspection specifically to assess its recreational and significant inherent values prior to the completion of this preliminary report. This report is based on knowledge of the property gained from visits in 1997 and earlier tramping trips (with the runholders permission) and in part, on information gathered from other sources. The other sources include both publications and accounts by members of local tramping and outdoor recreation groups that have been consulted about trips undertaken in the area. A study of "Outdoor Recreation in Otago" was undertaken by Mason (1988) and published by FMC. Reference is made to this recreation plan for Otago in the recreational opportunity discussion below. The Conservation Management Strategy (CMS) for Otago has also been used as a source of reference. Because

NGOs have not as yet been permitted to carry out on-site inspections this report lacks the depth of information which would have resulted from closer inspection.

GENERAL DESCRIPTION OF LOWBURN VALLEY

Lowburn Valley is a moderately large (5,800ha) pastoral lease occupying a prominent position near the southern end of the Pisa Range (Fig. 1). It straddles the Pisa Range from the homestead near the Lowburn inlet to the Roaring Meg (Fig. 2). It rises from about 300m at the homestead to 1,400m at the highest point on "The Tops" around the headwaters of Mitre Creek.

Lowburn Valley lies between Mt Pisa Station to the northeast and Waitiri Station to the southwest, both of which are in the tenure review process. Lowburn forms an important landscape link between these neighbouring properties. Lowburn will become part of the Pisa Range Conservation Park, foreshadowed in the CMS for Otago. It is very important that there is a continuous corridor of vegetation along the crest of the range. Lowburn will be the connecting link.

Two historic goldminers' routes cross the property: the Cardrona-Cromwell Pack Track (Fig. 3) climbs the eastern scarp adjacent to Packspur Gully and follows the Lowburn Pisa Station boundary across "The Tops". The Roaring Meg Pack Track (Fig. 4) follows the valley of the Roaring Meg before climbing over Tuohys Saddle to the Cardrona. These two historic routes are becoming increasingly well used for recreation by trampers, mountain bike enthusiasts and for horse trekking.

Both these historic routes, and another route up the spur from Ripponvale to Double Rock and Mt Michael, which joins the Cromwell-Cardrona Pack Track at the head of Skeleton Stream, are all legal roads. As part of tenure review, the alignment of the actual formation of these tracks should be checked against the alignment of the legal road. If there is any discrepancy the formation should be recognised as the legal alignment.

Much of this property consists of Blackstone and Arrow Steepland Yellow Grey Earth soils on the lower slopes (Classified LUC Class VI) and Carrick and Dunstan Steepland Upland Yellow Brown Earth soils (Classified LUC Class VII) on the higher slopes. The boundary between the Class VI and VII land generally follows around the contour at about 1,000 to 1,100m. This is an important boundary because it is difficult to see how the Class VII land (especially that land above 1,100m) can be managed in a way that is ecologically sustainable

RECREATIONAL ACTIVITIES AND POTENTIAL

The recreational significance of the property is mainly associated with the two historic Pack Tracks across the property (Figs 3 and 4). These tracks were traditionally used by gold miners travelling between the Dunstan and the diggings in the Cardrona, and by the packers who kept them supplied with essential goods and services. Nowadays they are being

increasingly used by tramping parties because it makes for a good weekend trip, and also by mountain bikers and for horse trekking (Figs. 5, 6, 7 and 8).

Both ends of the Pack Tracks are easily accessible from Queenstown and Wanaka which are both fast-growing tourist centres in an area becoming known as the adventure capital of New Zealand.

Mason (1988) has written extensively about winter recreation on the higher parts of the Pisa Range but has not said much about the southern end of the range except for the following: *"There is potential for horse riding, particularly along the Roaring Meg, Cromwell-Cardrona and Criffel pack tracks. The Cardrona-Roaring Meg pack track has been proposed for walkway designation. There are no physical difficulties with this route [other than crossing the Meg under some conditions, Fig. 6]. Its identification and use as a walkway will be desirable as Cardrona develops into a holiday resort."*

That view was expressed some 14 years ago and the forecast increase in use was prophetic but not because of the development of Cardrona itself, but rather because of the rapid development of the whole Queenstown-Lakes District.

Mason (1988) stated that the major recreational potential of the Pisa Range was for cross country (Nordic) skiing. That has proved true for the higher ground further north (where a commercial Nordic ski area has been developed) but is only applicable on Lowburn Valley as a route to and from the higher ground.

SIGNIFICANT INHERENT VALUES AND THEIR IMPORTANCE FOR RECREATION

This report focuses on those features of Lowburn Valley which are known to be important for public recreational interests. It should be noted that while much of this interest focuses on access, the natural values and landscapes of the areas concerned have a fundamental impact on the recreational value of the back country. Furthermore, the views to be had from the many vantage points also greatly influence the quality of recreational experience enjoyed. It is for this reason that reference is also made to both natural and landscape values of this property.

In many places, the assessment of the significance of such natural values is aided by the reports of Protected Natural Area (PNA) surveys and the Recommended Areas for Protection (RAPs) which they highlight. A PNA Survey of the Lindis, Pisa and Dunstan Ecological Districts was conducted in 1984-85 and published by DOC in 1994. Two RAPs—Pisa A6 (Skeleton Stream) and Pisa A8 (Lower Meg) were identified on Lowburn Valley.

The RAP in the Skeleton Stream area covers some 300ha and encompasses the lower reaches of Skeleton Stream and its tributary subcatchments, and the steep slopes adjacent to the Roaring Meg upstream of the dam feeding the power station. There is an extensive area of diverse mixed shrubland which occupies the riparian slopes close to Roaring Meg and the lower Skeleton Stream (Fig. 9). Numerous uncommon species of flora (including *Ischnocarpus novae-zelandiae* and *Hebe subalpina*) are present in this RAP. Bluffs and ledges support Halls totara with celery pine and bog pine (Fig. 9). The RAP has been ranked high for representativeness and viability, and medium for all other qualifying criteria.

RAP Pisa A8 in the Lower Meg is small (20ha) but contains about 30 mature silver beech trees and one of the only two areas of manuka in the district (Fig. 10). This area is an

important silver beech remnant, being the most extreme outlier of the beech forests of NW Otago, closest to the dry interior of Central Otago. Koromiko and an unusual species of *Olearia* are also present within the RAP which is ranked high for representativeness, special features (beech and manuka), and threats from development and engineering maintenance works. The area is also ranked medium for diversity, naturalness, and viability.

There is a problem of wilding pines and firs within and around the Pisa A8 RAP, so the control of wilding trees on any land to become freehold in the Roaring Meg catchment should be a condition of tenure review (Fig. 10). Wilding tree control within Conservation land should be the responsibility of DOC.

Outside of these RAPs the plant communities on the Pisa Plateau consist of dwarfed cushion fields and herbfields dominated by species such as *Dracophyllum* and *Celmisia* (Fig. 11) at higher altitudes with short tussock grasslands at slightly lower elevations (Fig. 12). Due to grazing pressures in the past there is remarkably little tall snow tussock grassland on the Pisa Range.

Most of the land above about 1,000 to 1,100m has been classified LUC Class VII, with limited suitability for pastoral farming. Because sheep grazing on high country soils is a depletive process, the land cannot be managed "*in a way that is ecologically sustainable*" (as required by the CPL Act 1998) unless nutrient removals are replenished by fertiliser applications. Such applications are not likely to be economically justifiable above about 1,000m because of climatic limits on growth potential. The alternative is that these lands be restored to full Crown ownership and control and be managed by DOC for conservation and recreation purposes (Figs. 11 and 12). The removal of grazing and burning would allow recovery of formerly more extensive ecosystems such as shrublands. FMC favours this approach.

The land above about 1,100m described above (and indicated on the map following page 8) also includes most of the historic goldmining relics which exist on Lowburn. These include Towan's Race out of Mitre Creek, Henderson's Race out of Mitre Creek, Hepburn's Race in the top of Skeleton Creek and other races out of Colour and Winters Creeks which are all considered by Hamel to be archaeological sites. These features add significant interest for recreational users of the area as also do the high altitude gold workings in the heads of Mitre Creek and Skeleton Stream. These features provide additional justification for return to full Crown ownership and control.

AREAS TO BE PROTECTED

There are two major reasons why FMC believes that significant areas of Lowburn Valley, above about 1,000 to 1,100m should be restored to full Crown ownership and control. The first of these is the potential of the existing herbfields, short tussock grasslands and dwarf shrublands to recover from past grazing and burning and regain their former ecological status. The second is that we do not believe they can be managed in a way that is ecologically sustainable (as required by the Act) without nutrient replenishment. Furthermore, we have serious doubts about the economic viability of fertiliser applications to restore the nutrient balance in situations where potential growth is severely limited by climatic constraints.

FMC therefore recommends that these lands (generally of LUC Class VII, above about 1,000 to 1,100m) be restored to full Crown ownership and control and be managed by DOC for

conservation and recreation purposes. The boundary on the eastern scarp face of the Pisa Range should harmonise with the corresponding Conservation land/freehold land boundary on the neighbouring Mt Pisa Station, at about 1,100m, below Mitre Rocks (Fig. 12). The boundary in the Roaring Meg catchment should be to the south of Skeleton Stream so that RAP Pisa A6 is included with the bulk of land to be retained in full Crown ownership and control (as indicated on the map following p8 of this Report). RAP A8 should be protected as a small Conservation (or Scenic) Reserve.

At the northwestern corner of Lowburn Valley, at the foot of the track leading up to Tuohys Saddle, near the Hairpin Bend are other gold mining relics. These consist of hut sites and ruins, as well as races and workings (Fig. 13). Sites are scattered along the Roaring Meg from a large set of tailings below Meg Huts to a set of Chinese workings just below the Plank Creek confluence. These features, together with the complete set of hut, races, reservoirs and workings in the head of Skeleton Stream add interest for recreational visitors and would be protected if this area were returned to full Crown ownership and control. This is further justification for this area to be managed for conservation and recreation purposes.

ACCESS REQUIREMENTS

The following access provisions will be required:-

- Unrestricted public foot, mountain bike, and horse trekking access over the 2 historic pack tracks which cross Lowburn Valley viz: the Cardrona-Cromwell Pack Track, and the Roaring Meg Pack Track, should be confirmed through this tenure review.
- Both these historic routes, and another route up the spur from Ripponvale to Double Rock and Mt Michael, which joins the Cromwell-Cardrona Pack Track at the head of Skeleton Stream, are all legal roads. As part of tenure review, the alignment of the actual formation of these tracks should be checked against the alignment of the legal road. If there is any discrepancy the formation should be recognised as the legal alignment.
- FMC recognises that by recommending that land above 1,000 to 1,100m should become Conservation land, the property is in danger of being isolated into two separate farm units. To overcome this problem we recommend that an easement be established through land to become Conservation Land in the vicinity of Mt Michael. This would link intended freehold land in the Meg catchment with the remainder of the freehold on the eastern scarp of the Pisa Range. This easement should permit the movement of stock over Mt Michael as close to the southeastern boundary of the property as possible.
- An easement for vehicle access to the foot of the Packspur track should be provided, together with provision for car parking nearby in a place not inconvenient for the runholder.
- Vehicle access will be required up the road to the power station, and along the track to a point above the dam at the mouth of Skeleton Creek (Fig. 14). There is an existing parking area at this point and provision should be made in this tenure review for the public to park vehicles at this point.

CONSERVATION MANAGEMENT STRATEGY FOR OTAGO

There are important statements in the Conservation Management Strategy for Otago, in which the Pisa Range is recognised as a Special Place. The objectives for this area, which includes Lowburn Valley include:-

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

Implementation includes:-

"Seek opportunities arising out of pastoral lease tenure review negotiations to protect extensive high altitude areas of high landscape, nature conservation, recreational and water and soil conservation significance."

- *As tenure reviews are concluded, keep under consideration the unifying concept of a high altitude Pisa Range Conservation Park.*
- *Ensure appropriate public access, both vehicular and by horse where appropriate and on foot, to lands administered by the Department.*

These objectives and implementation statements accord very closely with the recommendations made in the present report. Furthermore, it should be noted that the priority for the Pisa Special Place is: *"Completion and continuation of protection negotiations at both high and low altitudes, including tenure reviews, will be a priority in this Special Place"*

CONCLUSIONS

The tenure review of Lowburn Valley is important as it provides an opportunity to enhance the recreational opportunities and use of the southern end of the Pisa Range in general, and to integrate with recreational opportunities arising out of tenure reviews on the neighbouring Mt Pisa and Waitiri Stations. It also provides an opportunity to increase the range of opportunities available in the Cromwell and Upper Clutha area generally. Furthermore, it is also an opportunity to improve the quality of recreational experience on those lands by recognising and protecting the significant natural, historic and landscape values described above.

The outcome of the tenure review of Lowburn Valley, if it includes the important recreation and conservation recommendations included in this Report, could contribute significantly to the achievement of the objectives declared for the Pisa Special Place in the Conservation Management Strategy for Otago.

ACKNOWLEDGEMENTS

FMC is grateful for assistance from authorities in making the assessment possible. Although a recent site inspection for the purpose of tenure review was not permitted by the runholder, FMC is grateful for access in 1997, and for permission granted by earlier runholders for club tramping trips in the

past. Experience and knowledge gained from those trips has helped in the compilation of this Report.

4.5 Botanical Species List

RELEASED UNDER THE OFFICIAL INFORMATION ACT

Table with 17 columns: Old name, Current name, Group 1, Group 2, Family (Latin), Abundance at site, Notes, Threat ranking (SRR), Common name, Native country, Distributional status (Canada/US), Abundance zones, Exotic abundance on leaves, Threat status on leaves, Threat status on stems. Rows list various plant species like Abies balsamea, Pinus strobus, etc.

Table with 12 columns: Scientific Name, Common Name, Family, Growth Habit, Flower Color, and other botanical characteristics. The table lists numerous plant species such as Dianthus barbatus, Dianthus barbatus, Dianthus barbatus, etc., with their respective details.

