Toitu te whenua
Land Information
New Zealand

Crown Pastoral Land Tenure Review

Lease name : Mount Pember

Lease number : Pc 027

Conservation resources report

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

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

Copied November 2002

Conservation resource and values of Mt Pember Pastoral Lease, Canterbury

Unpublished Department of Conservation, Canterbury Conservancy, Christchurch, pastoral lease tenure review report to Knight Frank Ltd

6 June 1996

PART 1 INTRODUCTION

1.1 Background

The lessee of Mt Pember pastoral lease has applied to the Commissioner of Crown Lands for tenure review. The property was surveyed by the Department of Conservation in April and May 1995. This report describes the property's conservation resources, their significance, and the Department of Conservation's recommendations for protection of these. The report fulfills step 13 of the procedures for pastoral lease tenure review.

1.2 Mt Pember

Mt Pember pastoral lease (8166 ha) is located in Lees Valley, west of Oxford. Surrounding land is either conservation land (Puketeraki and Oxford Forests), pastoral lease (Snowdale, Mt White, Mt Oxford) or freehold (Kingsdown and Wharfedale). No other pastoral leases in the vicinity are under tenure review (i.e. north of the Waimakariri River and south of the Waiau River). Mt Pember is located in the Torlesse Ecological District, in the Puketeraki Ecological Region. This district has not been surveyed as part of the PNA Programme.

The property comprises two separate blocks. The southern block (referred to in this report as the Townsbend Block) covers an area of 3571 ha and includes the valley flats and hill slopes either side of the Townshend River and extends to the summit of Mt Oxford. The northern block (referred to as the Mt Pember Block) includes the Whistler and Lillburn catchments and extends to the top of the Puketeraki Range and covers an area of 4595 ha.

PART 2 - CONSERVATION RESOURCE DESCRIPTION

2.1 Landscape context

Mt Pember pastoral lease is located within Lees Valley - a small intermontane basin nestled between the Puketeraki Range and the Oxford-Okuku hills. The valley basically comprises four 8-10km long steep-sided river catchments, rising in the steep, dissected greywacke country of the Puketeraki Range to the north-west. These rivers flow east until they come up against the Oxford-Okuku hills enclosing the south-east side of the valley, building a large alluvial plain that forms the basin floor. The rivers coalesce to form the Ashley River

which flows out to the Canterbury Plains at the south-west end of the basin through the Ashley Gorge.

The predominant land cover in Lees Valley is modified tussock grassland with extensive areas of indigenous shrubland on hillslopes. This vegetation is largely a result of past clearance of the native beech forest, once extensive over the mountainslopes in the basin. Large dense tracts of beech forest still remain over the lower altitude slopes of the Puketeraki Range and on the eastern hills, largely protected in State Forest. At altitudes above approximately 1300m there is extensive tussockland, scree and rock outcrops.

Extensive pastoralism is the dominant landuse. Much of the land is still in a relatively undeveloped state including large portions of the flats and downlands. Plantations and shelter belts - so common in other low altitude farming areas - are largely absent. This absence of intensive lowland development and the overall dominance of natural forms, patterns and processes gives Lees Valley a distinctive "backblocks" character.

Lees Valley offers a semi-remote to remote landscape experience only 1.5-2 hours drive from Christchurch. Apart from the tops of the Puketeraki Range which are distantly visible from the Canterbury Plains and the Port Hills, the valley can only be experienced from the tops of the surrounding ranges and from within the valley itself. The only road access is via a 15km long winding shingle road through the Ashley Gorge, although there is a 4WD road leading out of the valley at its northern end, impassable in bad weather. The scale of the valley and its distinctive undeveloped character come as a surprise for the first time visitor, heightened by the half hour or more spent in the deep winding valley of the Ashley Gorge. A similar experience is gained from walking to the summits of Mt Oxford and Richardson and looking out over the Valley.

There are no similar valley landscapes in the region. The Canterbury Regional Landscape Study has identified most of the Valley as a regionally significant landscape (Boffa Miskell and Lucas Associates, 1993).

2.2 Landforms and Geology

The **Townshend block** consists of greywacke mountainslopes and downlands, glacial outwash, alluvial terraces and floodplain surfaces of the Ashley, Whistler and Townshend Rivers. The Townshend River is entrenched throughout most of its length, frequently enclosed by steep eroding slopes of exposed bedrock and gravels. Intrusive volcanic bedrock, which runs in a uniform width band approximately parallel to the Townshend River is exposed in low bluffs where it meets the Ashley River. Rising above the alluvial terraces on either side of the Townshend River are downlands of smooth, rolling topography. On the south side of the Townshend River these downlands ascend steeply into the dissected and more rugged mountainslopes of Mt Oxford. Rock outcrops, exposed bedrock and patches of sheet erosion are common at high altitudes. On the northern side of the river, the downlands merge into dissected hill country of numerous valleys with rounded to flattened hilltops, ridge summits and spurs.

The **Mt Pember block** consists of very steep and well-dissected greywacke mountain lopes with extensive screes, exposed bedrock and bluffs along the Puketeraki Range. Slips and gullying are frequent, and valleys are typically deep, narrow and moderately winding with

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very steep, broken sideslopes and narrow steep rocky stream beds. Along the northern boundary of the property the Puketeraki Range is gentler, more rectilinear in form with smaller, wider valleys and less dissection than the majority of the block. Along the Whistler River is a large, well-defined elevated river flat extending for about 2.5 km along the true left of the Whistler River from just east of Cunningham Stream downstream to the south-west corner of the "Whistler face", a triangular shaped hill-face at the south-east corner of the pastoral lease where the Whistler Valley opens out on to the Lees Valley flats. There is a small area of low, gently rolling greywacke downlands between the Whistler face and the Whistler River. The "Lillburn face" on the true left of the Lillburn River is a planar to rolling tussock covered hillslope with little dissection.

2.3 Vegetation

2.3.1 Townshend block

Much of the Townshend block, particularly the lower riverflats and hillslopes of the Townshend River is short tussock grassland of silver and hard tussock, with abundant exotic grasses, occasional low matagouri, patches of manuka and some areas of low sparse bracken. *Schoenus* flushes are frequent on lower hillslopes, particularly on south facing slopes. The majority of the riverflats between the lower Whistler and Ashley Rivers, have been developed into exotic pasture and fodder crops, although some patches of red tussock wetland and short tussock grassland remain amongst developed pasture. On terrace risers and talus slopes of the Townshend River, mixed shrublands of matagouri, small leaved Coprosmas, and *Corokia cotoneaster* are common.

Large patches of beech forest remain in the Harman and Moody Streams with small remnants in the Storm and Shifton Streams and in the gullies on the northern hillslopes of the Townshend River. These beech are similar to that throughout the Puketeraki Range with a low species diversity and open understorey, the main species being prickly mingimingi *(Cyathodes juniperina), Coprosma microcarpa, C. rhamnoides*, hookgrass, occasional marbleleaf and broadleaf and *Blechnum* ferns. Beech remnants are either surrounded by manuka shrublands or abut sharply with short tussock grasslands with a dense fringe of beech seedlings. In the Moody Stream the forest and shrublands have a large gap or open area of short tussock grasslands in the middle.

Above approximately 1200m the forests and short tussock grasslands grade into subalpine shrublands of *Dracophyllum uniflorum*, mountain tauhinu, *Hebe* spp., cotton daisy and snow tussock *(Chionochloa* sp.) Slips, bare ground and scree are common at these altitudes.

2.3.2 Mt Pember block

The Mt Pember block contrasts markedly with the Townshend in that the majority of the block (80-90%) has a cover of indigenous vegetation, particularly shrublands and remnant patches of beech forest with extensive snow tussocklands above 1300m.

The mountain beech forests that remain are in the head of the Whistler River, Chest Peak, Cunningham, and Pember Streams, tributaries of the Lillburn and an unnamed creek on the true left of the Whistler, downstream of Cunningham Stream. The forests are typical of

Canterbury foothill mountain beech forests - floristically simple with a sparse understorey of small leaved Coprosmas, Hebes and occasional ferns and patches of beech seedlings where there are canopy gaps.

In most areas forests grade into, or remain as pockets surrounded by, shrublands of manuka and/or *Dracophyllum*. In the upper Whistler and Chest Peak Streams the beech forest gives way to snow tussock at between 1200 and 1300m

Manuka shrublands are extensive over much of this block, particularly in the Cunningham and Lillburn catchments and in the lower Whistler. Typically, very little else grows beneath the manuka except occasional hard tussock, browntop, *Hebe* spp., small leaved Coprosmas, bracken and prickly mingimingi. Wet flushes of *Schoenus pauciflorus* are frequent on some of these lower altitude shady slopes, particularly in the Whistler. Toe toe are also often growing on lower altitude slopes particularly in slumps and hollows and disturbed ground. Similarly tutu is scattered throughout on disturbed areas such as track edges and streamside washouts.

Amongst the manuka at altitudes below 900m, there are small areas of talus or coarse rock with mixed shrublands of small leaved Coprosmas, mountain wineberry *(Aristotelia fruticosa)*, porcupine shrub *(Melicytus alpina)*, Hebes (mainly *H. odora*, and *H. venustula)*, matagouri and occasionally also mountain ribbonwood *(Hoheria lyalli)*. Mixed species shrublands, commonly with beech, also occur on terrace risers or alongside stream margins . in the Whistler and Lillburn. Alongside the Lillburn, kowhai groves are also common. In the south-eastern corner of the Mt Pember block at the downstream end of the Whistler flats these mixed shrublands merge into an alluvial fan of dense tall matagouri. Matagouri of this height and cover are not common in the District.

Over much of the Mt Pember block manuka commonly merges into *Dracophyllum* shrublands, as altitude increases . Manuka as a dominant shrub extends further upslope on sunny faces - up to 1000m on north facing slopes but only around 700m on south-facing shady slopes, with the two commonly intermixing in a band between. These mixed areas are often more open than the pure manuka stands with scattered shrubs of *Olearia nummularia* and tauhinu and a ground cover of cotton daisy *(Celmisia spectabilis)*, browntop, hard tussock, lichens, mosses and clubmoss (*Lycopodium fastigiatum)*.

As *Dracophyllum* becomes more dominant with altitude, snow tussocks of *Chionochloa flavescens* and *C. macra* also start appearing. The diversity of other species also increases particularly above 1000m. The main species in this subalpine belt beside the Dracophyllum are *Hebe odora, Gaultheria crassa*, golden spaniard, *Olearia nummularia, Leucopogon colensoi* and scattered *Hebe lycopodoides* with a ground cover of cotton daisy, bristle tussock *(Rytidosperma setifolium), Pentachondra pumila* mat and sprawling Coprosmas, *Raoulia subsericea*, mosses, scattered native daphne (*Pimelea traversii)* and occasional dwarf turpentine *(Dracophyllum pronum)* on open rocky ground. Above approximately 1300m slim-leaved snow tussock *(Chionochloa macra)* becomes increasingly dominant and most shrubs have faded out by 1400m.

The *Chionochloa macra* tussocklands are extensive along the slopes of the Puketeraki Range and the ridge leading south from Mt Pember beneath and between patches of scree and fellfield. Tussock cover is moderately dense - around 50-60% with a relatively diverse

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mix of intertussock species - particularly bristle tussock and herbs of *Celmisia* spp., *Raoulia grandiflora, Kelleria dieffenbachii,* snowberry *(Gaultheria novae-zelandiae)* and the dwarf spaniard *Aciphylla monroi.* In hollows, where snow obviously remains the longest, occasional patches of snow patch grass *Chionochloa oreophila* are evident, and on some sideslopes *Chionochloa pallens* appears to be more prominent that *C. macra.*

Short tussock grasslandsare much more limited on this block compared with the Townshend - they cover hillslopes and terraces in the lower Whistler, Cunningham and in parts of the Lillburn. The short tussock is principally hard tussock, with occasional siliver tussock on river flats in the Whistler and Lillburn. On the true left of the Lillburn a large unforested block of short and red tussock extends virtually from the valley floor to subalpine shrublands (the "Lillburn face"). The red tussock tends to be in the damper and less steep sites above a shelf that cuts across the face at approx. 800m altitude. The main species associated with the red tussock are bog rush *(Schoenus pauciflorus)*, occasional tauhini shrubs, rautahi *(Carex coriacea),* small native herbs and the native daphne *Pimelea oreophila* with scattered odd small leaved Coprosmas and *Olearia odorata.* In one part there are also some sparse and heavily browsed native broom plants *(Carmichaelia* sp.). Below this shelf, at the northern end of this tussock face, and on slopes directly opposite (across the Lillburn River), the vegetation cover is short tussock grasslands of mainly browntop and scattered hard tussock with bog rush in flushes. Dissecting these slopes are a number of hollows and trickles with bog rush, shrubs of *Olearia virgata, Coprosma rugosa, C.* sp. 't', *C. propinqua,* bidibids and prickly shield fern *(Polystichum vestitum), Blechnum penna-marina,* occasional toi toi and bush lawyer *(Rubus schmidelioides).*

Screes are extensive along the tops of the Puketeraki Range, particularly between Chest Peak and Mt Pember. There was very little sign of the perennial scree plants at the time of the inspection but fellfield plants on more stable ground were plentiful. These include *Dracophyllum pronum, Luzula pumila, L. traversii, Phyllachne colensoi, Hebe pinguifolia, Colobanthus acicularis, H. ciliata, Anisotome flexuosa* and grasses of *Trisetum spicatum* and *Rytidosperma* spp. Also associated with rocky knolls along the Puketeraki Range were occasional edelweiss and some scattered plants of vegetable sheep *(Raoulia mammillaris).*

Evaluation: Much of the Townshend block has lost its indigenous vegetation cover through burning, grazing and the introduction of exotic grasses and herbs. What remains are beech forest patches, confined principally to steeper larger catchments which are naturally protected from fires, riparian shrublands, subalpine shrublands and small patches of red tussock wetland. Because of their remnant nature and highly indigenous content these are the most valuable natural areas in the Townshend block.

In contrast the Mt Pember block retains large areas of indigenous vegetation. The 'original' cover of beech forest has been much reduced from its former extent, but instead there are extensive areas of shrubland, and tussockland, largely weed free and expanding into short tussock grassland areas which have a higher exotic component.

2.4 Landscape

As part of the landscape assessment the pastoral lease was divided into 16 landscape character types, 9 in the Mt Pember block and 7 in the Townshend block. They are:

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Mt Pember block

1. Puketeraki Range
2. North Puketeraki Range
3. Pember Stream Valleys
4. Lillburn Face
5. Whistler-Lillburn tussock faces
6. Cunningham-Lillburn tussock faces
7. Whistler Face
8. Whistler Downs
9. Whistler Flats

Townshend block

1. Whistler-Ashley Flats
2. Whistler-Ashley Downs
3. Townshend Valley floor
4. Storm Hill
5. Townshend Downs
6. Oxford Range
7. Oxford Forest

A summary of the physical characteristics, vegetation and human modification of each type is tabled in Appendix 1 along with an accompanying map showing the boundary and extent of each type.

2.4.1 Landscape assessment

The **Townshend block** has a range of landscape values. The Storm Hill, Oxford Range and Oxford Forest LCTs all have high degrees of naturalness and intactness - visible human modifications of these areas are minimal and insignificant with the landforms and surface cover virtually unfragmented by fences, tracking or sudden changes in vegetation. For Storm Hill and Oxford Range these attributes are important because they contribute to the special character of Lees Valley, in particular their role as part of the "introductory" or "gateway" landscape to Lees Valley. Oxford Forest LCT is visually continous with the large forested areas beyond. The appearance of the vegetation in the Oxford Forest LCT is also very attractive, with the beech forest being uniform, soft-textured, and dark green along with the soft, tawny reddish-grey-green colours and texture of the sub-alpine vegetation.

The Townshend Valley floor landscape character type (LCT) has a moderately high degree of naturalness and intactness. Obvious man-made features are fencelines, a footbridge, the Townshend Hut and in localised places, tracks are highly visible, reducing the areas intactness. This LCT also has some well-defined glacio-fluvial landforms and a variety of vegetation cover providing visual interest and variety of experience. The large riverflat at the confluence of the Townshend and Ashley River is considered to be of particular landscape significance because of its highly intact and largely natural appearance. Its vivid curving terrace risers and simple, expansive nature relies upon its continuous low tussock grassland cover. Being a significant part of the landscape first seen on entering the valley through the Ashley Gorge, this area is very important in introducing the special "backblocks" character of Lees Valley.

The Whistler-Ashley flats LCT is not considered to have significant natural landscape value as a whole but there are features of landscape interest within this area such as the three small low greywacke hills that rise above the otherwise flat surface and the remnant short tussock and wetland vegetation.

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The Puketeraki, North Puketeraki Range and Pember Stream Valleys LCTs of the **Mt Pember block** all have a very high degree of naturalness and intactness. There are no visible human modifications and no internal fences. The landscape of the Puketeraki and North Puketeraki Range LCT continues uninterrupted over the boundaries and is integral with the landscape beyond, whereas there is a strong contrast between the Pember Stream Valleys and Puketeraki Range LCTs. These LCTs together have a distinctive, vivid landscape with a remote wilderness character created by the steepness and ruggedness of the country, its large scale and its clear vegetation patterns with altitude, its lack of human modification, its rawness and dominance of natural processes. The Mt Pember peak is a distinctive scree covered cone shape and the ridge rents landforms, caused by differential gravity-induced sliding of slabs of rock below it are also striking landscape features.

Other areas of the Mt Pember block such as the Lillburn face and Whistler-Lillburn hills have a high degree of naturalness and intactness. In these LCTs there is very little sign of human intervention except two 4WD tracks in the Whistler which are slowly disappearing and signs of stock tracking on the Lillburn face. In contrast the Cunningham-Lillburn tussock faces LCT has a moderate degree of apparent naturalness and intactness. Here, a 4WD track in the Whistler River catchment visibly slices across the hillslope and the boundary fence with Snowdale breaks up the intactness of the landscape as it cuts across the hillsides in an unsympathetic straight line. Still within this LCT, is an area of special character in the way of a small isolated, enclosed and "secret" flat in the Lillburn River.

The Whistler face has a high degree of naturalness and intactness, with a simple appearance and distinctiveness due to the clarity of the landforms enchanced by the tussock cover. The Whistler Flats have a high degree of naturalness and intactness with the added feature of an impressive, densely covered matagouri fan extending up on to the Whistler face LCT. The Whistler Downs LCT also has a high degree of apparent naturalness. The Whistler face and upper part of the Downs are of significance to the wider Lees Valley landscape particularly the undeveloped nature of the Downs which is relatively uncommon, in contrast to areas of similar topography elsewhere in Canterbury.

2.5 Fauna

2.5.1 Birds

The tenure review survey focused on vegetation and landscape. A thorough investigation of fauna was not undertaken as part of the field inspection. However, any birds heard or seen were noted. Those noted were:

Mt Pember Block

- Kea
- NZ Falcon
- Rifleman
- Tomtit
- Bellbird
- Grey Warbler
- Pipit

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Townshend Block

- NZ Falcon
- Harrier Hawk
- Paradise Shelduck
- Bellbird
- Fantail
- Grey Warbler

Surveyors on a 1994 kiwi survey in adjacent Puketeraki Forest reported hearing two Great-Spotted kiwi, one male and one female in the Youngman Stream. What was surprising about this discovery was that the Youngman Stream is well away from the traditional range of Great-spotted kiwi, although they have been recorded in an adjacent valley, the Esk/Cox Streams. As the property is situated geographically between the Esk/Cox and the Youngman Stream and has similar habitat to these areas there is a possibility that some areas of Mt Pember pastoral lease, such as the Lillburn valley, may also contain these kiwi.

Wild animal (pigs, possums and deer) numbers are reported to be low to medium, with lower numbers in the Townshend block particularly in areas adjacent to Oxford Forest which was poisoned by 1080 in the 1995.

2.5.2 Freshwater Fish

The extent and abundance of native fish in the area are not well known. The only records from the NZ Freshwater Fish database that cover the property are for the Whistler River. Species recorded in the Whistler are torrent fish, upland bully and common river galaxias. Long-finned eels would also be expected. In the numerous smaller volume streams that drain the steep topography of the lease there could also be upland bully, common river galaxias and long-finned eels. Koaro, long-jawed galaxias and alpine galaxias are also possibilities, but are less likely to.

2.6 History

Mt Pember Station, except for the portion between the Whistler and Ashley Rivers originated from the Snowdale run. Snowdale was taken up by C O Torlesse in 1858 but one year later he disposed of his lease to T S Mannering and A H Cunningham. Mannering and Cunningham, as well as having Snowdale, also held Birch Hill and Fernside. Cunningham managed Fernside and Mannering, Birch Hill from which he worked Snowdale. Mannering moved Snowdale weather flocks in and out via the Blowhard Track which he cut. There were no buildings erected at Snowdale except for a small hut, in the vicinity of the current Snowdale homestead. Snowdale was subdivided in 1919.

There are no recorded archaeological sites on Mt Pember. Research indicates that there are no historic places of interest to the Department. There was no information available on Maori cultural values at the time of writing this report.

2.7 Existing land status

The lessees of Mt Pember have never sought or applied for a run plan agreement. The Mt Pember block is predominantly Class VIIe and VIII land with limited IV and VI land at the

southeast end of the block. On the southern block there is approximately 250 haof Class VIIe and VIII and 350 ha of bush. At the lease renewal in 1985 there was a recommendation that the CCL negotiate for the exclusion of bush areas "identified as being worthy of preservation and the rationalisation of boundaries generally" and "the exclusion of areas not capable of sustained grazing."

Mt Pember is in the Waimakariri District, currently covered by a transitional District Plan prepared under the Town and Country Planning Act. This will be replaced by a District Plan prepared under the Resource Management Act over the next 2-3 years. Future RMA provisions are unknown and unpredictable as the District Plan is in the very early stages of preparation.

2.8 Recreation/Access

2.8.1 Access

Marginal strips (Sec. 24 Conservation Act) extend up either side of the Townshend River from the Ashley River to the Oxford Forest Conservation Area boundary. A legal, partly formed road (Wharfedale Track) runs from the Lees Valley road near the Mt Pember homestead through to Oxford Forest in the Townshend. At the Lees Valley road end the formed road deviates south from the legal road crossing pastoral lease for 1.5 - 2 km. This is locked at the road end permiting only foot and mountainbike access, but with the lessee's permission vehicle access is allowed as far as the Townshend Hut.

Access to the Mt Pember block is gained via a legal formed road which runs from the Lees Valley Road up the western side of the Whistler River, crosses the river and runs for approximately another 3-400 metres. A locked gate on the far side of the crossing keeps vehicles from further up the valley. The only legal access beyond this point is a marginal strip either side of the Whistler River to where the Mt Pember/Snowdale boundary leaves the Whistler River (see attached map 1).

Access to the the northern end of the Mt Pember block is only available through the adjacent Puketeraki Forest Conservation Area. Marginal strips extend up either side of the Ashley River from the Lees Valley road end but there is no legal access from the Ashley River directly to the Lillburn River catchment. This requires permission from the owner of the adjacent freehold property, Kingsdown.

2.8.2 Recreation opportunities

The main area of recreation activity on the property is the Townshend Valley. Up to 5,400 people each year use the Wharfedale Track in the Oxford Forest Conservation Area for tramping, mountain-biking and for hunting access. Many commonly start or finish their trip at Lees Valley, requiring access through the Townshend Block.

The Townshend Block is also used by hunters to gain access to the recreational hunting area in Oxford Forest Conservation Area. Little hunting activity actually occurs on the pastoral lease itself. The property does from time to time, however, attract numbers of Canada geese and Paradise shelducks, providing limited opportunities for gamebird hunting.

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There is considerable scope in Lees Valley for more passive recreation such as picnicking and scenic driving. Parts of the Townshend block are attractive for picnickers such as alongside the Ashley and Townshend Rivers.

The Mt Pember Block is currently not so well known for recreation, but with its high landscape and remote experience qualities, it is particularly well suited to activities such as tramping, hunting, cross-country skiing and to a limited extent, mountain-biking. The main tramping route is up the Whistler Valley to Chest Peak. From there a traverse of the Puketeraki Range in either direction is possible - north to 'Puketeraki' and then a descent is possible into the Lillburn or Ashley rivers, or by travelling south access can be gained to Red Saddle and Black Hill (Oxford Conservation Area). More extensive trips can be made into the Waimakariri River catchment. Similarly there is potential for ski-touring along the Puketeraki Range, using the Whistler as access. The eastern basin of Chest Peak was considered as a possible ski area in the 1960s. A 4WD track was formed to approximately 1000m. No further development occurred and it is unlikely that any such developments would be viable today. This track is not drivable by 4WD beyond the Cunningham Stream.

The sports fishery values of the area are documented in the North Canterbury Fish and Game Council's (NCFGC) report (see appendix 2). The Ashley Trout Fishery, in which the streams of Mt Pember are included, is regarded as a high quality trophy fishery with a reasonable population of large resident brown trout. "The waterways of Mt Pember form an essential part of the available spawning areas for trout." (Fish and Game Council, 1995).

The upper Ashley also has a small but developing Quinnat salmon (*Oncorynchus tshawytscha*) run. It has been limited in the past by low flows in the lower reaches of the river, but the NCFGC consider that suitable spawning sites would be available given adequate flows. On October 1st, 1995 it was designated a catch and release zone in recognition of its value and its fragile state.

The actual angling use of the property is considered to be moderate and centred on the largest waterways, the Whistler and Townshend Rivers. The principal angling river in the area is the main Ashley river (located outside the property) into which the Whistler and Townshend Rivers flow. A submission from "Trout Unlimited" supports the statements of the Fish and Game Council (Appendix 3).

N.B. Further information on native freshwater fish is included in Section 2.5.2 of this report.

For horses trekkers, there are opportunities within parts of Mt Pember, particularly in the main valley systems and over formed tracks. At least one guided horse trekking group has used the Pember Block in recent years. Over the summer, crossings have been made from Mt White Station to Lees Valley, via the Puketeraki Range.

There are currently two huts located on the pastoral lease - Townshend Hut (administered by DoC) and an A-frame owned by Catholic Cathedral College in the Whistler Stream catchment. The Catholic Cathdral College Trust Board wrote to the Department in February 1996 wishing to explore with the Department "the idea of gifting the College hut to the public, whilst still retaining access to, and use of, the hut if required by the College". The

Manager (Recreation, Tourism and Historic) and the field centre is currently investigating this proposal.

2.9 Management Issues

2.9.1 Pastoralism

The property is currently being grazed by sheep and cattle. Access to grazing on the Mt Pember block is becoming increasingly difficult as shrublands are spreading and thickening. In the next 10 years it is likely the growth of shrublands will close up altogether, making grazing virtually impossible unless areas are burnt or tracks are cut or dozed. Both management practices would severely affect the conservation values of the area. The regeneration of manuka shrublands is happening to a lesser extent on the Townshend block, but is an issue for the runholder around Storm Stream, the forest remnants on the north side of the Townshend River and on the downlands and lower reaches of the Harman and Moody Streams on the south side of the Townshend. These are the main areas where burning consents are regularly applied for. Past fires and overburns have burnt or scorched beech forests on the north side of the Townshend River and red tussock on the flat topped ridge above, increasing their vulnerability and reducing their overall extent. If the objectives for conservation are to allow shrublands to regenerate and successional processes to continue, the use of fire is in conflict with these objectives. The continued use of fire as a pastoral management tool also means continued future management input and difficulties with fire control on land adjoining Conservation Land.

Other pastoral activities which affect inherent values, particularly wetlands and tussocklands are the intensification of land on the Ashley flats, including drainage and cultivation. In response to applications from the lessee to cultivate part of the flats between the Ashley River and the Lees Valley Road in 1989 and 1991, the Department identified a number of wetland sites worthy of protection. The most important area was a red tussock wetland in the north-eastern corner of the block. The protection of this area was agreed to by the runholder, a draft management agreement was drawn up and the area fenced with Departmental funding. The agreement has not, however, been signed or registered. Two further areas were identified by subsequent inspection as having significant conservation values and it was recommended that these areas not be developed in the future. This information was given to the lessee by the Department and Landcorp, but it appears agreement to formally protect any further areas was only reached on the north-eastern patch of red tussock.

2.9.2 Weeds

Gorse is the main weed problem, particularly on the hillslopes south of the Townshend River (Townshend Downs and Oxford Range LCTs). The gorse occurs as regular circular patches, some up to 2 ha in extent dotted across the hillslopes. They have proven difficult to control in the past and would require a large effort and expense to get and keep under control. Gorse also occurs along the sides of the bulldozed track in the Whistler, leading up towards Chest Peak, but is much more manageable, if something is done about it now. Broom is much more isolated in extent and appears to be less of a problem on Mt Pember. It occurs on some slopes around the Townshend River and as patches on the riverflats of

the Whistler as well as along the bulldozed track. Gorse and broom occurs extensively on the riverbeds of the Ashley and lower Whistler Rivers which are mainly Conservation land.

In the Department's 1991 report on the red tussock wetlands of Mt Pember, the presence of an introduced tussock, *Nardus stricta*, or mat grass was noted. This is known from Europe as a species present in areas of intensive use, with an ability to survive and spread under a wide range of environmental conditions. Because of the plant's growth habit and form it has a tendency to crowd out other species, is resilient to grazing and very difficult to control. Knowledge of the plant's ecology has only recently come to hand, however, and its physical extent on Mt Pember was not investigated at the time of the tenure review survey, but is of concern when considering the maintenace of red tussock wetlands.

2.9.3 Animal pests

Animal pests are not considered to be a major problem. Possums have never really been high in numbers, but from an animal health point of view were poisoned on land adjoining Mt Pember last year. Pigs are moderate to low in number and are spread throughout Lees Valley. According to the Regional Council, rabbits are increasing in number and may need attention in the future but are still only in moderate numbers. Chamois and hares are low to moderate in number and Canada geese do occur on riverflats and above Lillburn Face, but do not overall attract large flocks.

PART 3 - CONSULTATION

On 5 May 1995 a meeting was held with representatives from Forest and Bird, FMC, NZ Deerstalkers Association, North Canterbury Fish and Game Council, North Canterbury Conservation Board, the Environment Centre, and the Four Wheel Drive Association to discuss Mt Pember. A number of areas important for conservation were identified in the meeting:

- The entire catchments of the Moody and Harman Rivers. On lower slopes, a gradual phasing out of grazing was recommended.
- Two forest remnants on the true left of the Townshend Stream.
- Tall mountain beech, manuka and broadleaf in the creek above the homestead.
- Red tussock on flat topped hill/plateau above the homestead.
- Riparian areas in the Whistler catchment.
- Two wetland areas in the Whistler.

Further comments recorded at the meeting were:

That above Townshend Hut, stock were penetrating the bush. That any boundary for protection in the Storm Stream catchment be along the stream (true left could be freehold, but true right to be protected). There was a need for buffer zones in the Whistler and Townshend to protect the bush edge.

For access - the Townshend River arrangement works well at present, but there were concerns that if there are different landowners in the future there was a need to secure vehicle access and to sort out legal status of road. The Four Wheel Drive Association requested that 4WD access be freely available to Townshend Hut and above the locked gate in the Whistler.

Forest and Bird have also prepared a report containing a number of recommendations (Appendix 4). These were that:

1. "Freeholding is not supported for the slopes on the true right of the Storm Stream. Areas of existing pasture on the lower slopes of this face could be made available to the runholder through a grazing licence which prohibits any burning. Furthermore, a significant area of forest lies within the current pastoral lease toward the head of the valley which deserves to be part of the conservation estate."

2. "To include some large stands of mountain beech forest at the head of Moody and Harman Streams with any seasonal grazing of the grassland area between being phased out after a negotiable period."

3. "Either to exclude from freehold, or covenant three forest remnants located in gullies within the rolling downlands to the north of the Townshend River."

4. "A large patch of tall red tussock on poorly drained soil exists on the flat hill top above two of the forest remnants (mentioned in 3) and that this be protected by means of a conservation covenant."

5. "The silver tussock riverflats in the mid and lower reaches of the Townshend River should be protected through a restriction on stock numbers in the area."

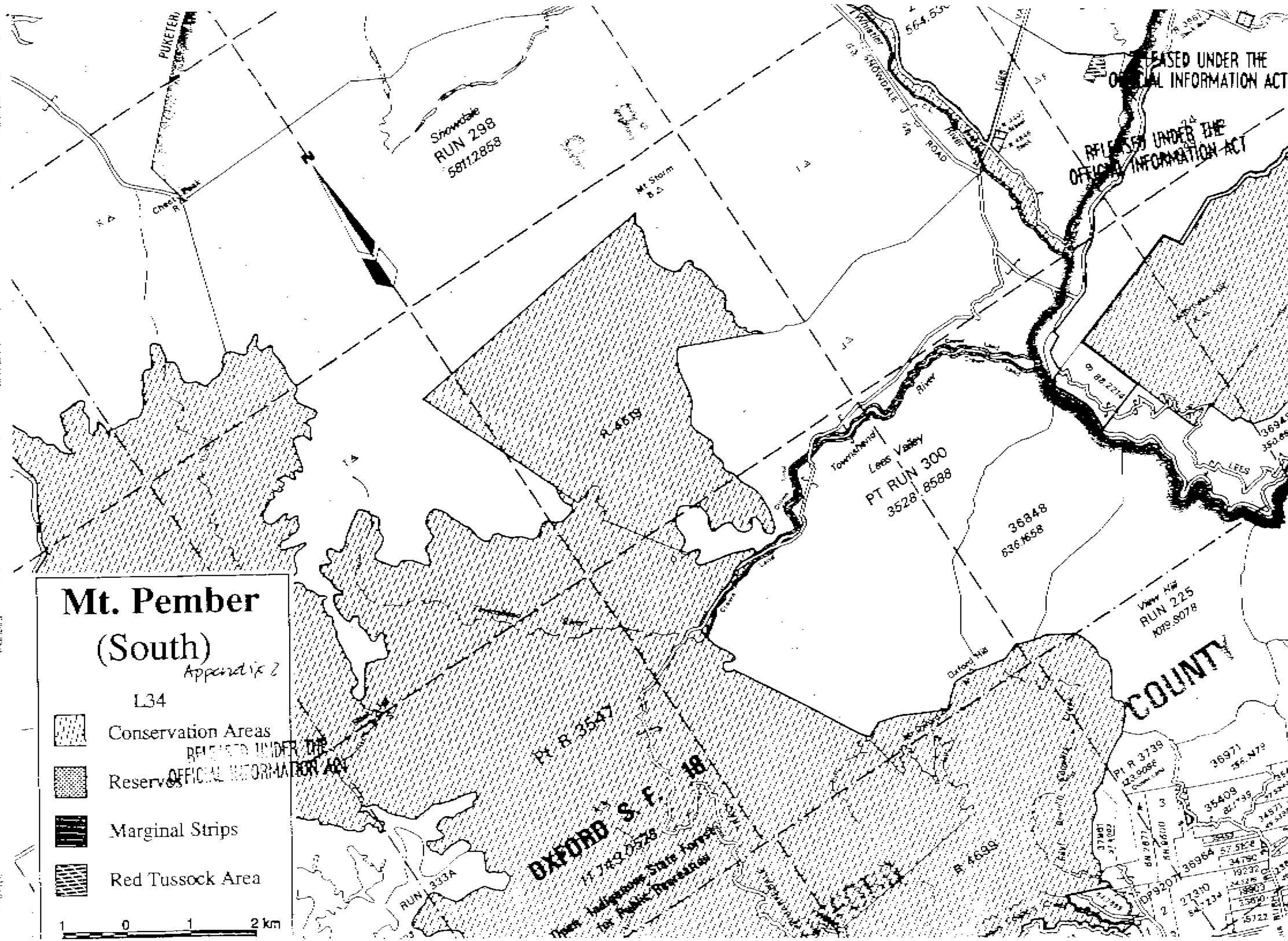
6. "The fenced out area of red tussock on the flats which has been looked at previously for a management agreement should be formally protected."

7. "A buffer zone should be established in the upper Townshend River to protect the forest margins of the current conservation estate in the area, and ecologically sensitive areas to be added to the estate."

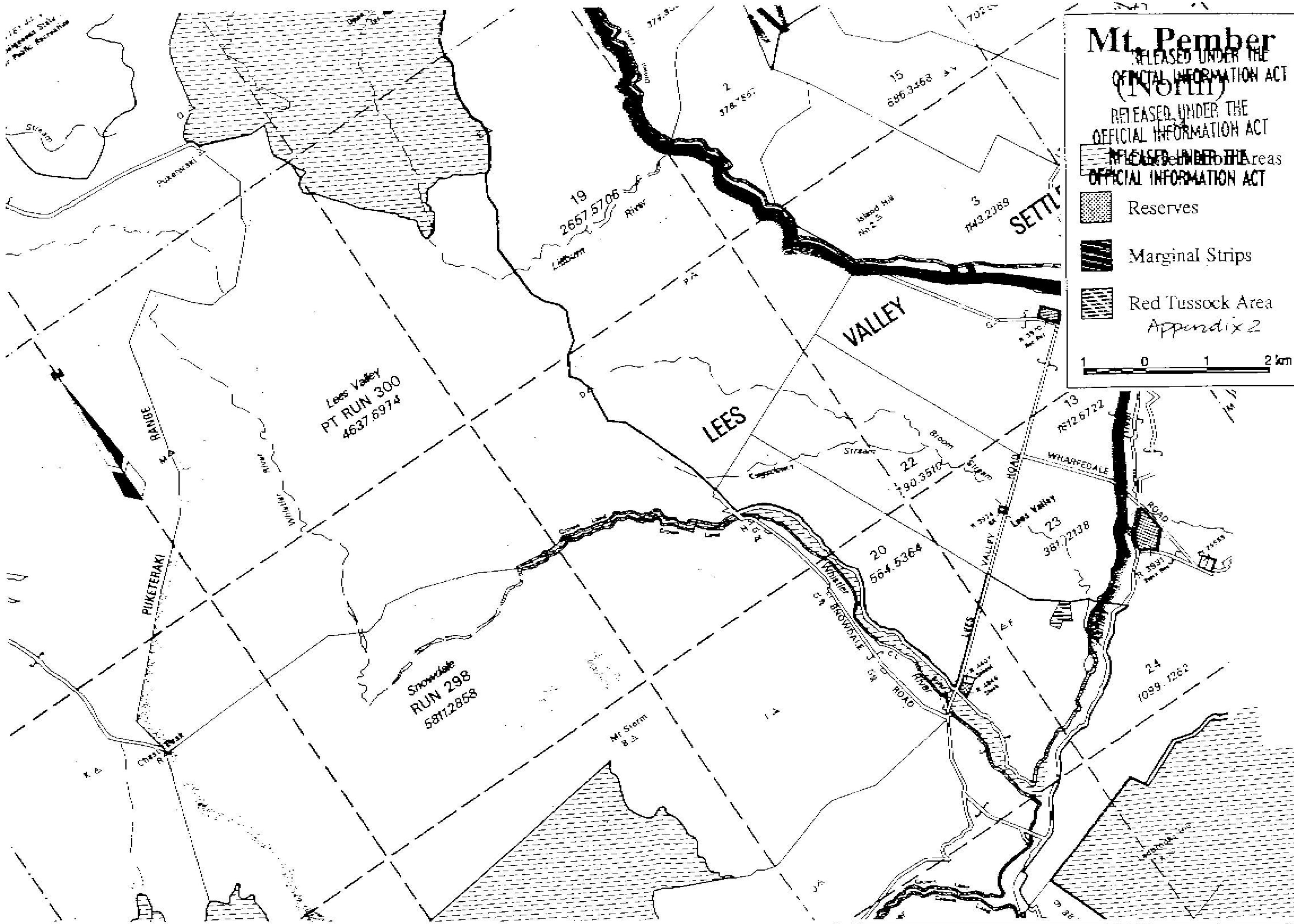
8. "The Upper Whistler catchment and the Cunningham Stream should be returned to full Crown control without any grazing."

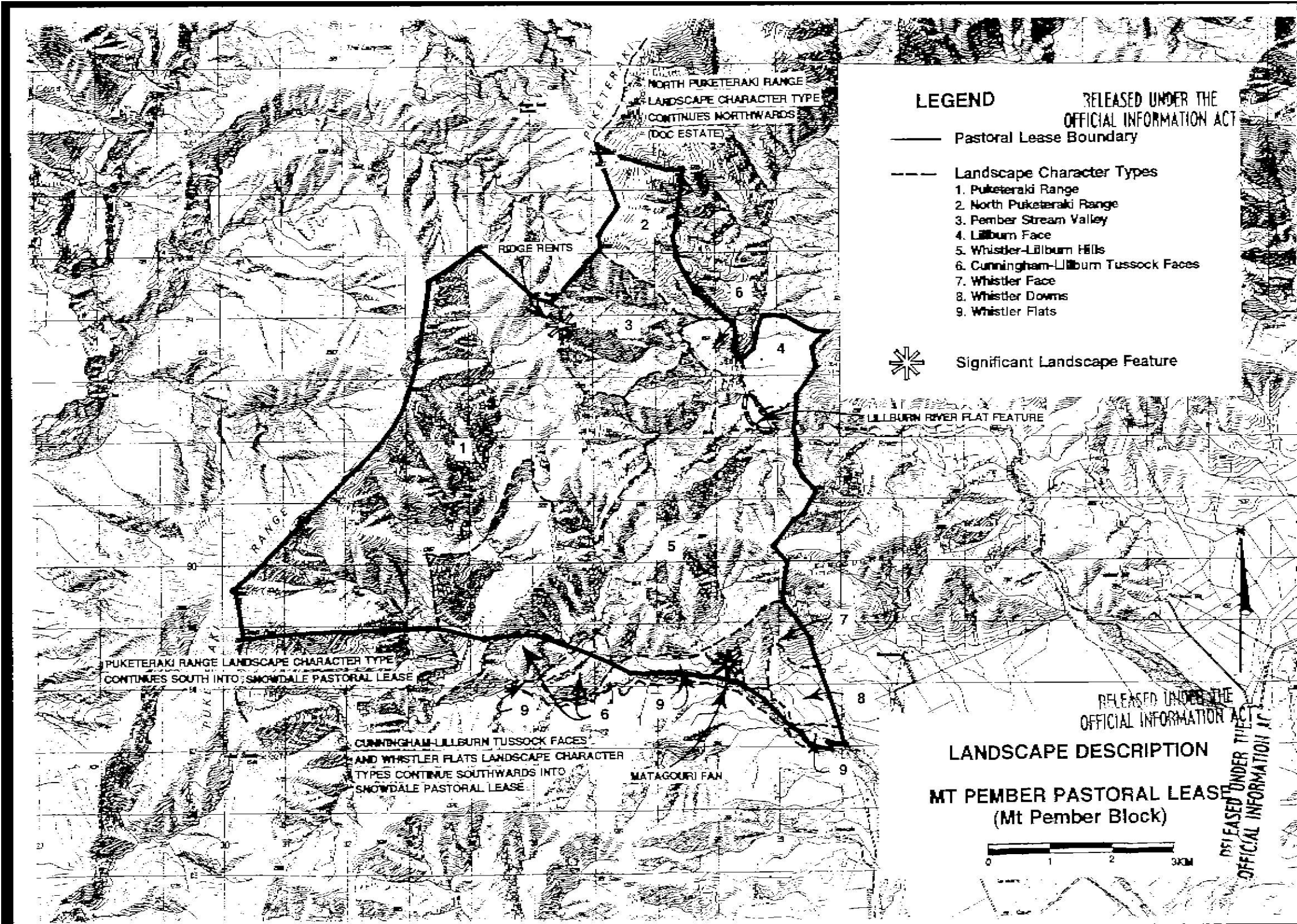
9. "The protection of a riparian corridor of forest and shrublands along the Whistler River. This could be undertaken within the context of a review of Snowdale pastoral lease."

10. "To fence out three wetlands in the Whistler River valley and protect two of them in the larger area to be retained by the Crown and for the third (located approximately 1 km downstream), for it to be placed under a conservation covenant."



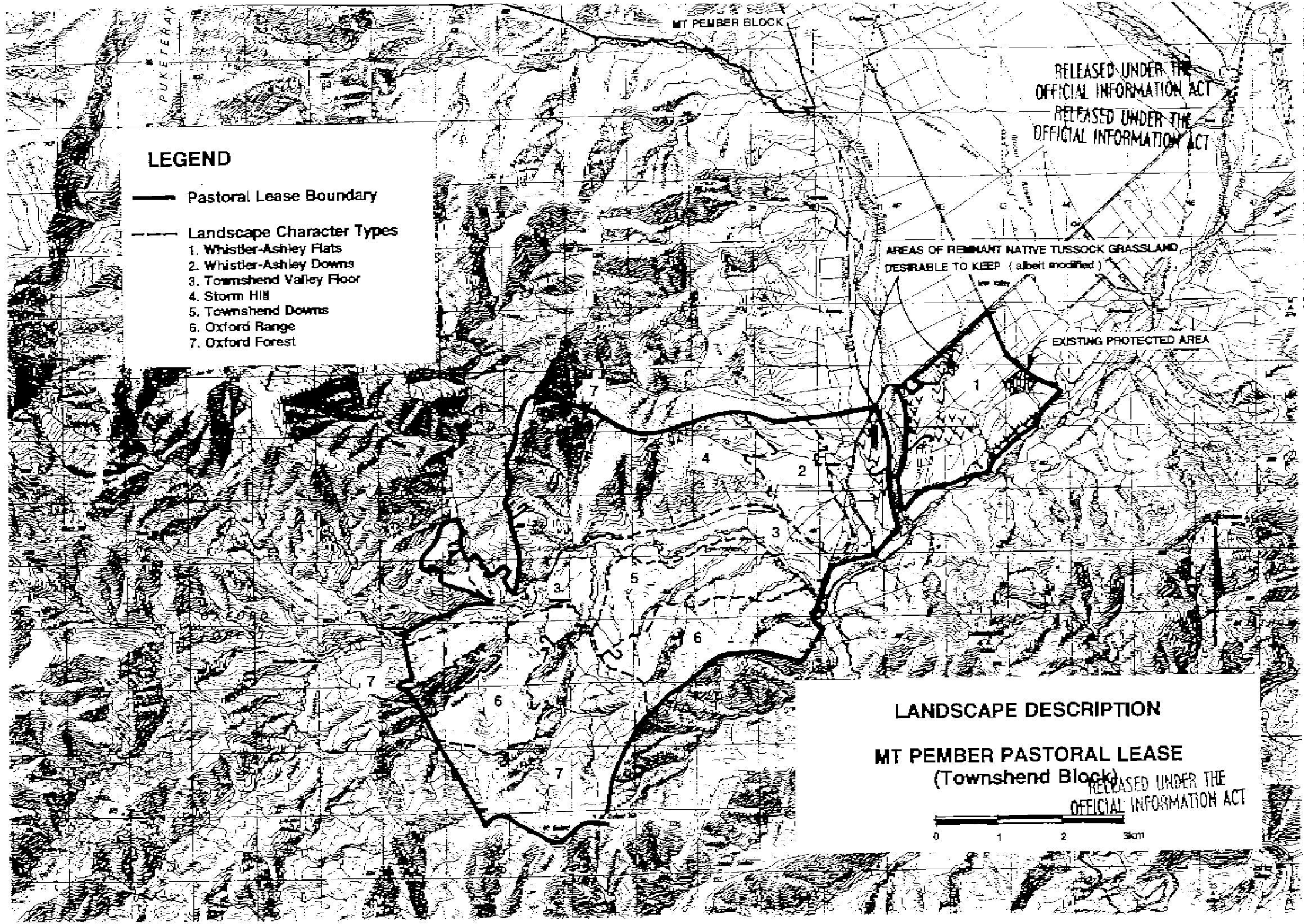
Mt. Pember
(South)
Appendix 2
L34
Conservation Areas
Reserves
Marginal Strips
Red Tussock Area
1 0 1 2 km
Snowdale
RUN 298
5811.2858
PUKETERI
Mt Storm
R 4619
Lees Valley
PT RUN 300
3528 8588
36848
636.1658
View Hill
RUN 225
1019.8078
COUNTY
Pt R 3547
OXFORD S. F. 18
Open Indigenous State Forest for Public Recreation
R 4699
RUN 333A
SNOWDALE ROAD
RELEASED UNDER THE OFFICIAL INFORMATION ACT





LANDSCAPE DESCRIPTION

MT PEMBER PASTORAL LEASE
(Mt Pember Block)


PUKETERA
MT PEMBER BLOCK
RELEASED UNDER THE OFFICIAL INFORMATION ACT
RELEASED UNDER THE OFFICIAL INFORMATION ACT
LEGEND
Pastoral Lease Boundary
Landscape Character Types
1. Whistler-Ashley Flats
2. Whistler-Ashley Downs
3. Townshend Valley Floor
4. Storm Hill
5. Townshend Downs
6. Oxford Range
7. Oxford Forest
AREAS OF REMNANT NATIVE TUSSOCK GRASSLAND DESIRABLE TO KEEP (albeit modified)
EXISTING PROTECTED AREA
LANDSCAPE DESCRIPTION
MT PEMBER PASTORAL LEASE
(Townshend Block)
RELEASED UNDER THE OFFICIAL INFORMATION ACT
0 1 2 3km

Appendix 1 : Landscape Character types

The Townshend Block comprises 7 distinct landscape character types:

LCT Name	Physical	Vegetation	Human modification
Whistler-Ashley Flats	Flat to undulating glacial outwash, alluvial terrace and floodplain surfaces. 3 major greywacke ridges - low, smooth and rounded in shape rise above the plain surface.	Large rectilinear paddocks, developed into exotic pasture and fodder crops. Some areas of dense red tussock wetland, other areas open short tussock cover, and occasional stunted matagouri. Small wetland areas of *Schoenus* and cutty grass alongside the Whistler. Dense gorse and broom on Whistler and Ashley riverbeds.	Drains, 4WD, coniferous shelter belts and willows. Homestead and associated buildings and yards. Lees Valley Road.
Whistler-Ashley Downs	Low greywacke downlands of smooth, rolling topography, well-defined around southern edge with short steep side slopes. Elsewhere merge more smoothly with flat areas and low hill range behind.	Predominantly moderately dense short tussockland with *Schoenus* flushes on hillslopes. Low scrubby manuka patches. Some low matagouri scattered across flats. Dense gorse on some short steep edge slopes on south side of river.	2-3 fencelines partly bulldozed and 4WD tracks visibly traverse the downs in straight lines.
Townshend Valley floor	Small to moderately large glacial outwash surfaces, river terraces and floodplain landforms on valley floor. Entrenched river, with steep eroding slopes of exposed bedrock and gravels. A number of sideslopes show fresh stream bank erosion. Intrusive volcanic bedrock, which runs in a uniform width band across this part of the Townshend is exposed in low bluffs where it meets the Ashley River.	Moderately dense and modified short tussock grassland with varying densities of matagouri over flat surfaces. Remnant patches of manuka. Terrace risers - dense matagouri/*Coprosma*, and occasional remnant clumps of beech.	4WD across the valley flats up to the Townshend huts, particularly noticeable where straight unnatural line across the plain surface opposite Storm Stream. Fencelines. Footbridge.
Storm Hill	Greywacke hill country. Well-dissected with a few larger deep, steep-sided valleys and numerous wider, shallower gullies and swales. Spurs are rounded, with generally smooth sideslopes broken by the occasional rock exposure or outcrop with small talus deposits in places. One hill summit on true left of Storm Stream and the ridge summits descending east from it are flat-topped and	Moderately dense short tussock grassland, with extensive low matagouri and *Schoenus* wetland patches. Some large isolated, sharp-edged, dense patches of beech forest and mature manuka in bigger valleys. Some scattered younger manuka plus grey "rash" of burnt manuka. Pockets of mixed hardwood shrubland associated with rocky	Two 4WD tracks up eastern spurs.

LCT Name	Physical	Vegetation	Human modification
	rounded.	outcrops and talus.	
Townshend Downs	Well-dissected low greywacke hill spurs, forming strongly rolling downlands. Valleys are deep and narrow with steep sideslopes. Spurs end in high eroding rocky bluffs at the Townshend River.	Predominantly grassland, induced from recent burning of once widespread manuka, of which numerous remnant pockets still exist.	No obvious human modifications
Oxford Range	High greywacke hill range. Steep to very steep, well-dissected and quite rugged. Numerous rock outcrops, small bluffs and exposures of berock and patches of sheet erosion. Where hill slopes descend into the Ashley there are high rock bluffs. A band of intrusive bolcanic rock crosses the range from the SE to the NW, but is not very evident on the surface.	Short tussock grassland, mixed with Schoenus wetlands, patches of bracken fern, gorse on lower slopes, manuka and occasional pockets of remnant beech in the deeper valleys. Groups of cabbage trees on the face opposite Townshend Huts.	4WD track cutting across lower slopes near the Ashley confluence.
Oxford Forest	Steep rugged greywacke range slopes. Extensive scree, slips and bare ground above approximately 1200m.	Beech forest, manuka shrublands, subalpine shrublands and short tussock grassland clearings.	

Mt Pember block comprises 9 distinctive landscape character types.

Name	Physical	Vegetation cover	Human modification
Puketeraki Range	The country is generally very steep, previously glaciated, well-dissected greywacke mountain range running roughly north-south. There are extensive screes, exposed bedrock and bluffs. Slips and gullying are frequent over the whole area. Valleys are typically deep, narrow and moderately winding, with very steep, broken side slopes and narrow steep rocky stream beds.	Surface cover comprises a vegetation sequence from beech forest in the valley floors through subalpine dracophyllum shrubland up into snow tussock grassland and rock mantle/fellfield vegetation on the range summit. The whole is interspersed with long fingers of scree and gully erosion, patches of sheet erosion, and rock outcrops.	There are no obvious human modifications over the entire area most of which is only occasionally and very extensively grazed by sheep.
North Puketeraki Range	The range slopes are gentler, more rectilinear and less dissected than the Puketeraki Range LCT, the small valleys tending to be wider and shallower with short, steep side slopes. The landscape has a much simpler, less rugged appearance, especially in contrast to the Pember Stream valley's adjacent (see below). The continuity of both the tussock	It has a similar beech forest/dracophyllum shrubland/snow tussock vegetation sequence to the area above. However the beech forest (DOC estate below the boundary) is much denser forming an unbroken tract along the lower slopes of the Lillburn Valley. There is relatively very little erosion over the upper slopes, even on the range	

Name	Physical	Vegetation cover	Human modification
	and the dense beech forest below contribute significantly to the simplicity of character, and the landform features are enhanced by the low golden unbroken tussock cover.	summit, and the snow tussock flows largely unbroken over the lands surface.	
Pember Stream Valleys	extremely eroded and very steep, presenting a very rugged appearance with extensive exposed bedrock, bluffs, scree and sheet and gully erosion. This is particularly evident at the upper ends of the valleys. Within the valleys, landforms tend to be sharply defined	Similar in composition to the areas described above, but is far more patchy. Remnants of snow tussocsk grassland remain on sharp edged pedestals and islands rising above the scree and eroded surfaces around them.	very extensively grazed and has no visible human modifications.
Lillburn face	The face comprises a planar to rolling, mostly tussock clad surface with limited dissection.	Moderately dense short and tall tussock grassland. An open coprosma/manuka/tauhinu shrubland covers the upper slopes, with a higher proportion of bare ground and exposed rock. Snow tussock mixed with subalpine shrubland on the slope summit. Shrubs scattered or forming localised patches over the mid to lower slope tussocklands. Occasional single trees or clumps of beech , often surrounded by a thicket of saplings. At the very base of the slope, a more continuous shrubland cover with beech remnants , kowhai and toi toi.	The hill face is extensively grazed. Grazing is more evident here, with smaller tussocks, presence of exotic pasture species and stock tracking. There are no obvious human modifications.
Whistler-Lillburn Hills	comprises the steep, rugged greywacke hill country to 1200-1300masl The country is well-dissected, comprising a number of deep, narrow, steep-sided stream valleys feeding into the Whistler and Lillburn rivers. Spurs tend to be sharp and narrow crested, and ridge summits narrowly rounded. There are large areas of exposed bedrock and bluffs and extensive scree slopes.	Predominantly remnant beech forest, extensive manuka and, higher up, Dracophyllum shrubland mixed with some snow tussock on the upper slopes and ridge summits and some short tussock on the lower slopes. Mixed broadleaf shrubland occurs in pockets on moister aspects on the lower slopes, often associated with talus, including brighter green herbs and broadleaf, flax, matagouri and *Coprosma* species.	Very extensive grazing occurs over this area largely restricted to the more open areas with more tussock cover.
Cunningham-Lillburn tussock faces **2 areas - (i) Cunningham, (ii) Lillburn**	(i) Cunningham - no description (ii)Lillburn - steep slopes are planar but broken by several large rock outcrops with associated talus. One slope runs out into a small enclosed flat area bordering the Lillburn River.	(i) manuka and occasional tauhinu scattered in individual large bushes over steep, smooth grassy slopes. Some Schoenus wetlands, forming reddish patches. (ii) manuka and beech occur mostly in patches, as well as spaced individuals.	(i) Extensive sheep grazing. 4WD track and boundary fence cut across slopes forming clearly visible linear scars. (ii) Only visible human modification - faint foot track zig zagging up a slope to its summit on true right of the Lillburn.

Name	Physical	Vegetation cover	Human modification
Whistler face	Steep, moderately dissected, hard-rock greywacke south facing hill slope with one large stream valley, which has a large area of scree and rock outcrop at its head, and several smaller gullies. Part of the hill slope runs out in long spurs to the Whistler River itself, ending in steep bluffy faces.	Moderately dense short and, higher up, tall tussock is the predominant surface cover. Low stunted matagouri is also common scattered across the lower slopes, forming small patches in places, and there are also a few patches of remnant manuka.	The hill face and spurs are extensively grazed. A fence and 4 wheel drive track cross the area but these cultural features are well absorbed by the landscape which retains a high degree of naturalness and intactness.
Whistler Downs	small area of low, gently rolling greywacke downlands between the Whistler Face and the Whistler River.	A sparse to moderately dense, short tussock/browntop grassland, with scattered stunted matagouri in places with Shoenus and red tussock wetlands.	The area is fenced off from the slopes above and is semi-intensively grazed by sheep and cattle.
Whistler Flats	A large, well-defined elevated river flat extending for about 2.5km along the true left of the Whistler river from just east of Cunningham Stream Valley downstream to the south-west corner of the Whistler face. Two smaller river flats in the Cunningham Valley and at the very south-east corner of the lease between the Whistler Downs and the Whistler River itself. Only a small portion of the Cunningham Valley floor/river flats occur within Mt Pember. The boundary fence cuts straight across the top end of the valley and the remainder is in Snowdale.	Surface cover consists of short tussock grassland and schoenus wetlands, with a large patch of wetland on the true left of the stream. Short tussock and patches and ribbons of wetland continue as the surface cover further downstream, over the boundarySurface cover is similar to the Cunningham Valley, but also includes scattered manuka and matagouri in places across the surface. Denser, taller matagouri grows in the stream gullies at the eastern downstream end..	