

DOC REPORT TO KNIGHT FRANK ON TENURE REVIEW OF WAITIRI STATION

PART I

INTRODUCTION

This report covers Waitiri (P 270 - 6358 ha) and Eastburn (P 257 - 5103 ha) pastoral leases owned by Waitiri Station Trust Ltd. They are farmed as one unit from the Waitiri homestead adjacent to the Victoria bridge. The property encompasses a substantial part of the southern Pisa range extending from the Roaring Meg river to the Crown Range road and northwards almost to Cardrona. It includes the major part of the true left faces of the Kawarau Gorge, and contains substantial areas of high conservation values including vegetative, landscape, recreational and historic components. The property is in the Pisa ecological district which was surveyed as part of the Protected Natural areas programme in the summer of 1984/1985. Areas recommended for protection were Pisa A7 Wrights Gully (630 ha) and Pisa B6 Deaf Bills (330 ha) plus narrow strips on the true right of Roaring Meg being parts of Pisa A6 and Pisa A8 which are mainly on the adjoining Lowburn Valley property. There are no reserves or covenanted areas within Waitiri however an area of approximately 200 ha of the heavily eroding Muddy Gully catchment has been permanently retired since about 1980.

PART 2

CONSERVATION RESOURCE DESCRIPTION AND ASSESSMENT OF SIGNIFICANCE

1 LANDSCAPE

DESCRIPTION OF LANDSCAPE CHARACTER

For descriptive purposes the property is divided into six separate areas (note they are not necessarily separate landscape types or units).

Cardrona Slopes

These are typical of the valley sides of the upper Cardrona. Landforms are ripply colluvial slopes with bands of rock bluffs and outcrops. Vegetation up to about 1000 metres is a mix of depleted short tussock and scattered tall tussock, introduced grasses and herbs, patches of tutu and exotic and native shrubland. Shrubland species include matagouri, *Coprosma*, *Olearia*, elderberry and briar. *Hieracium* is also present and increases with altitude. The upper limit for shrubland species is about 900 metres. At the head of the valley the property included both sides of the valley (and is

isected by SH 89). The valley becomes increasingly narrow and enclosed at its southern end. Short and tall tussock is the predominant cover. A small holding paddock is located near the saddle.

Summit Ridge

The summit ridge extends from Mount Hocken to the northern boundary of the property. Bands of schist outcrops, tussock and *Dracophyllum* are the main components. Stock camps occur along the ridge where green has replaced brown tussock.

Towards Quartz Knoll and Queensbury Hill periglacial action has affected the summit ridge with soil hummocks and few large tors.

Between Mount Allen and Mount Hocken the access track follows the ridge. The track has mostly 'grassed over' but is unsightly in places. Mount Hocken has several communications installations on its summit which degrade landscape value.

Roaring Meg

Contains east draining tributaries of the Roaring Meg - notably Plank Creek and Evan Roberts Creek. Landform is again slump topography. Generally tussock is in good condition on the upper slopes decreasing in density towards the bottom end of the tributary catchment. Lower parts of Plank Creek and Evan Roberts Creek catchment appear quite depleted with a high hieracium and exotic component. South facing slopes are noticeably less depleted than northern facing slopes. Evan Roberts Creek has a narrow alluvial valley floor with the creek meandering across it.

Disused water races from mining occur in the lower Evan Roberts Creek basin.

A small narrow rocky gorge is characteristic at the bottom end of the tributary creeks before they merge with the Roaring Meg.

Gentle Annie

Generally this catchment is highly modified with extensive briar and exotic grasses and herbs. Some historic/cultural features occur on the valley floor.

Kawarau Faces

The Kawarau faces extend from near the Kawarau Historic Bridge to the east faces opposite the Roaring Meg Dam.

At the western end they contain extensive regenerating native shrublands grading into snow tussock with altitude. Further downstream they are more modified with predominantly briar, some

herb and scattered sparse short tussock. The faces are highly erodible and rabbits have contributed to degradation.

Douglas fir and larch are spreading around and above Roaring Meg.

A new pipeline alignment from the dam to the power house has left bare areas from its installation.

Waitiri Bend is mainly rock, exotic pasture, briar and thyme.

Significance of Landscape Values

There are significant visual and scenic values on Waitiri/Eastburn. These are primarily to do with providing a context or setting for road corridors and recreational activities.

- a The Crown Range Saddle area is one of the few Central Otago alpine passes with intact tussockland. The Crown Range road is an increasingly used and high profile tourist corridor and provides the opportunity for the public and tourists to experience and appreciate this landscape.
- b The Kawarau faces provide part of the setting for the Kawarau Gorge which is recognised as a scenic corridor of national significance.
- c The Cardrona Roaring Meg Pack Track traverses the eastern boundary of the property. The Meg tributaries and the summit ridge within Waitiri/Eastburn form part of the Pisa Range and as such form part of the context and setting for the packtrack and other recreational use on the range.

2 LANDFORMS AND GEOLOGY

The property is on the southern end of the Pisa schist block mountain range where it dips into the Kawarau Gorge and River. The overall slope is easy but steep faces drop into the Kawarau River and Gentle Annie and Roaring Meg Creeks.

Periglacial phenomena are widespread. Soil hummocks in particular are widespread except on the most exposed sites where lag gravels have developed instead. The faces above the Kawarau Gorge and Roaring Meg are almost completely large land slide masses with floating block rock outcrops and extensive erosion (Muddy Gully and river faces) predominantly natural.

Soil

The property is predominantly Dunstan Yellow Brown Earth hill soil with Arrow steep land Yellow Grey Earths on the Kawarau and Roaring Meg Faces and a strip of Carrick Yellow Brown Earth hill soil along the Mt Allen to Queensberry Hill ridge.

There is one geopreservation site recorded on the property:

ID LAN 121	-	Gibbston Complex Landslide
Landform	-	Complex Landslide
District	-	Clutha
Importance	-	C (Regional)
Locality	-	Gibbston landslide and others adjacent to Gibbston and Kawarau River
Significance	-	An area illustrating a number of good examples Gibbston slide being the one studied
Vulnerability	-	3 (Unlikely)
Hazards	-	None
Morphogenic	-	Mass movement
Map reference F41 918706	-	In the Muddy Creek catchment

Landform and Geology was not of itself a significant feature in the choice of the RAPs in the PNA survey.

3 CLIMATE

Although close to Queenstown and the western ranges the climate is still typical Central Otago with hot dry summers and cold winters but with a higher than typical rainfall at 650 mm - 1250 mm. Snowfalls over the whole property are common in winter and snow lies on the main spur from May-September most years.

4 VEGETATION

The property is within the Pisa Ecological District as part of the broader Central Otago Ecological Region and was surveyed as part of the broader Lindis, Pisa, Dunstan Districts Protected Natural Areas Programme (PNAP) in 1985. Since then, a number of DOC specialists have visited the property to assess other conservation values. The Pisa PNAP survey highlighted two areas recommended for protection (RAPs). These are as follows:

Wrights Gully : Pisa A7

This RAP of 630 ha includes the entire catchment of Wrights Gully, one of the tributaries of the Cardrona River. Narrow-leaved snow tussock comprises about 60% of the vegetation of this

achment above 1000 m, with its vigour and density being greatest in the mid to upper catchment. *Festuca* occurs round the rocky bluffs and in the lower reaches below 900 m, along with a variety of pasture grasses. North facing slopes are also predominantly Fescue tussock with only scattered snow tussock. The upper reaches, along the 1372 metre contour line below the ridge crest is predominantly *Dracophyllum muscoides* cushionfield which extends to the ridge crest. This cushionfield is not continuous as periglacial activity has formed small soil hummocks and hollows. Scattered throughout this zone in the hollows are remnants of slim-leaved snow tussock *Chionochloa macra*.

Olearia odorata, *O. bullata*, *Hebe salicifolia* and *H. pimeleoides* occur in amongst the rocky outcrops on the lower sunny slopes along with matagouri and briar. *Carex echinata* and *Euphrasia dyerii* were recorded near a tarn close to the ridge crest.

Deaf Bills : Pisa B6

This second priority RAP of 330 ha adjoins Wrights Gully RAP (A7) and is analogous to it. As in A7, the altitudinal sequence is strong. Deaf Bills catchment is smaller and less representative than A7 and does not have the tors or wetland flushes of A7. The lower slopes of both catchments have been extensively oversown and topdressed.

Balance of Property

The property contains five major plant communities of which some 4000 ha is still relatively natural.

a Cushionfield

The cushionfields are largely confined to the narrow ridge extending from Mt Allen northwards to Queensberry Hill. This zone along the 1400 m contour is predominantly composed of *Dracophyllum muscoides* and blue tussock *Poa colensoi*. The surface is hummocky in some areas while in other areas on the crest, the ridge has been planed off to leave an essentially flat surface. The hummocks are small and very compact with the bare disturbed cushions often having *Poa colensoi* growing in their centres. In many areas the flat pebbled surfaces contain over 50% bare ground.

Dracophyllum muscoides grows primarily on the southern aspects, while *Poa colensoi* grows on the more northern aspects on the rounded ridge crest. Isolated plants of *Chionochloa macra* are present chiefly in small depressions off the main ridge crest. Other plants in this community are *Celmisia viscosa*, *Celmisia sessiliflora* C. sp., *Craspedia* sp., *Raoulia grandiflora* var. (a) and *Raoulia hectorii* ss. Away from the crest the occasional tall tussocks of *Chionochloa rigida* or *C. macra* occurs.

b Tall Tussock Grassland

The tall tussock grassland of *Chionochloa rigida* occupies the majority of the 4000 ha that is still in a relatively natural state. The narrow-leaved snow tussock of *Chionochloa rigida* is primarily found above the 1100 m contour on all the properties. With some exceptions below the 1100 m line, the snow tussock cover becomes sparser with decreasing altitude. The exceptions are the back, less accessible areas of the property where relatively good communities of snow tussock are found at lower altitudes to 900 m in the middle Roaring Meg.

The *Chionochloa rigida* vegetation has been affected by burning and grazing and is today highly variable. It presents a mosaic of snow tussock that varies from scattered snow tussock in amongst a natural short tussock grassland of *Festuca matthewsii* ss. and *F. novae-zelandiae* to dense snow tussock covering 90-100% of the ground and over one metre tall. The cover and stature of the snow tussock generally improves with altitude on both of the properties. The faces above the Kawarau River, being the catchments of Muddy Creek and the Spring Burn, contain one of the most extensive and dense stands on the whole of the Pisa Range. The remaining areas of good intact snow tussock are found in Gills Creek, Wrights Gully and above Plank Creek in the Roaring Meg catchment. Elsewhere the general trend is denser snow tussock on the south-westerly aspects or shady slopes with good regeneration in places, to the sunny slopes and ridges having depleted narrow-leaved snow tussock in amongst the short tussock grassland.

Along the crest of the Mt Allen Range, slim-leaved snow tussock *Chionochloa macra* occurs in small depressions or as isolated plants and only occupies 1-5% of the ground cover. Off the range in the western catchments of Eastburn, *C. macra* is scattered in amongst *C. rigida* and has also hybridised quite extensively. The occasional hybrid of *C. flavescens* type also occurs in these catchments, but was not noted elsewhere on the property.

As with the tussock cover the interspecies diversity is highly variable, reflecting the usual pattern found in the Otago block mountains. In some areas of dense snow tussock there is dense leaf litter with virtually no inter tussock species growing. In the more open depleted areas or drier ridges and crests the natural species diversity increases considerably. The most common plants are *Dracophyllum muscoides* and *D. pronum* on the drier ridges and hollows, with *Aciphylla aurea* being common throughout the properties and in some cases becoming the dominant plant in amongst the tussock grassland. Maori onion *Bulbinella angustifolia* was prominent on a large number of sites.

Mountain cottonwood, *Cassinia vauvilliersii* plants are scattered throughout along with *Carmichaelia petrei*, *Corallospartium crassicaule*, *Dracophyllum longifolium*, *Olearia odorata* and whipecord. An area of greatest woody shrubland and tussock grassland diversity is in the headwater

̄ Muddy Creek, which has been fenced and destocked for a number of years. One plant of *Brachyglottis cassinioides* has been recorded in this steep eroding gully. Mats of *Gaultheria depressa* occupy inter tussock spaces above the 1100 m contour, along with *Celmisia gracilentia*, *C. lyallii* and *C. viscosa*. The occasional *Dolichoglottis lyallii* occurs occasionally at the higher altitudes alongside stream margins. The overall species diversity varies widely, but a common thread is the remarkable degree of naturalness that prevails on the higher country.

c Short Tussock Grassland

The short tussock grasslands on Waitiri, predominantly composed of *Poa colensoi* and *Festuca novae-zelandiae* and represent a transitional zone from tall tussock to a short tussock grassland. *Chionochloa rigida* is scattered throughout this induced mosaic. *Poa colensoi* is scattered from a low level (900 m) throughout the tall tussock grassland through to the higher (1500 m) cushionfields. *Festuca novae-zelandiae* occupies the lower slopes below 1100 m and the sunnier slopes that are more depleted. This vegetation type extends below the tall tussock grassland zone of 1100 m and generally grades into the oversown and topdressed country below 800 m on into the shrubland communities.

Silver tussock *Poa cita* is not common on the property being confined to the lower OSTD areas below 900 m. Small patches of *Poa cita* occur in the lower Spring Burn surrounding matagouri, *Discaria toumatou* scrub under Mt Malcolm.

The induced short tussock grasslands have the highest plant diversity range, as the open nature of the grasslands have allowed the inter tussock species to grow without the competition presented by the taller snow tussocks. The dwarf heath *Leucopogon fraseri* is common throughout along with the *Celmisia* spp. *Brachyglottis bellidioides*, whipcord Hebe, *Pimelea aridula*, *Craspedia* spp., *Wahlenbergia albomarginata*, *Euphrasia zelandica* and *Gentiana bellidifolia* type.

Scattered throughout the short tussock land are patches of hawkweed *Hieracium lepidulum* and *H. pilosella*. The latter is not common, only forming small mats covering bare soil patches, while the tussock hawkweed of *Hieracium lepidulum* is scattered throughout.

d Seepages

These are confined to a few areas in terrain depressions found primarily in the remote western parts of the property between 1200-1300 m. The largest flush and tarn was found in Wrights Gully while lesser ones were noted in Deaf Bills and Gills Creek. These seepages have a variety of wetland plants

at still survive despite some grazing pressure. The main plant species are *Carex echinata*, *C. gaudichaudiana*, *C. sinclairii*, *Oreobolus pectinatus*, *Drasera arcturi*, *Acaena* spp., as well as the normal tussock grassland herbs growing nearby.

The lower section of Evan Roberts Creek contained the only other wetland, where remnants of *Carex* spp. and *Juncus* spp. survive in amongst a variety of exotic grasses. The terraces around Plank Creek have all been mined and only a few sedges survive in amongst the tussock grassland.

e Shrubland

The shrubland component is the most prominent vegetation community. It almost completely surrounds the boundaries covering an altitude bank from 300 m to 700-800 m in places. The Kawarau faces under Mt Gilroy and opposite Gibbston are the most prominent. The vegetation is a mixture of dense briar, matagouri and *Coprosma propinqua*. This mixture of briar and matagouri dominate the lower valley and gully systems, especially the Gentle Annie and Spring Burn. the briar tends to thin out at the 800 m level and has completely disappeared by the 1000 m mark.

A history of fires in the area has dictated the shrubland diversity which remains today. Refugias in gorges, gullies or around rocky outcrops have a good species diversity, while other areas present a monoculture of briar.

The steep slopes above the Kawarau are predominantly a briar/matagouri mix except in the vicinity of Muddy Creek, and above the bluffs near the historic Kawarau suspension bridge. These areas contain a dense shrubland of *Olearia odorata*, *O. avicenniifolia*, *Coprosma propinqua*, *Hebe rakaiensis* and possibly broadleaf, *Griselinia littoralis*, all growing amongst the matagouri and briar. The *Olearia* is well scattered and appears to be spreading with isolated plants growing well up into the *Chionochloa rigida* tussockland at 1000 m.

In the Cardrona Valley, briar and matagouri dominate the lower hillslopes and entrances to the gullies running back on to the main ridge. Alongside some of the creek beds *Olearia odorata*, *Coprosma* spp., and *Hebe salicifolia* grow. The only remnant shrubland of significance was noted in the RAP of Wrights Creek growing in the rocks under Mt Allen at 1300 m. Scattered throughout the shrubland are the occasional pine tree, patches of sycamore and elders. The shrublands either grade into the short tussock/tall tussock grasslands or are a mosaic within the lower improved country.

f Lowland Grassland

This broad zone occurs primarily below 1000 m and includes improved and unimproved grassland, as well as the shrubland community. Large areas on Waitiri have been OSTD and in some areas clover is found up near the main ridge of Mt Allen at 1400 m. The lowland grassland is composed of scattered fescue tussock, the occasional patch of *Poa cita* in amongst clover and introduced pasture grasses.

Significance

While recreation and landscape aspects are also important vegetation is the most significant single conservation feature on this property.

The key areas are the back basins above the Roaring Meg, the Queensberry Hill to Mt Hocken ridge crest and the shrubland faces above the Kawarau River particularly at the western end of the property.

FAUNA

Aquatic Vertebrates

Previous NIWA database records record brown trout (*Salmo trutta*) at two sites in the Roaring Meg. Anecdotal information also reports brown trout from the roaring Meg hydro-electric impoundment. There were no records of native species on Waitiri.

Fish surveys of the Roaring Meg collected brown trout and brook char (*Salvelinus fontinalis*). Brown trout were restricted to areas below the confluence of Plank Creek and the Roaring Meg. Brook char occurred in Plank Creek and the Roaring Meg upstream of the Plank Creek confluence. No fish were found in Gentle Annie Creek or Spring Creek, although brown trout could be expected in this catchment.

The NIWA database records six fish species in the Cardrona River catchment, three introduced species - brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*) and brook char (*Salvelinus fontinalis*) - and three native species - common river galaxias (*Galaxias vulgaris*), koaro (*Galaxias brevipinnis*) and longfinned eel (*Anguilla dieffenbachii*). Most previous survey sites are below the Eastburn property and do not include tributary streams of the Cardrona river.

Six sites were surveyed on the Eastburn property and in the Cardrona River.

- 1 Roadmans Gully - upstream of Crown Range Road
- no fish present.

- 2 Cardrona River at Roadmans Gully confluence
- brown trout were common, adults only.
- 3 Tyre Creek
- brown trout were common, including juveniles and adults.
- 4 Wrights Creek
- occasional brown trout and koaro.
- 5 Gills Creek, 500 m upstream from confluence with the Cardrona River
- no fish present.
- 6 Gills Creek, 150 m upstream from confluence with the Cardrona River
- occasional brown trout

It was considered that fish densities were lower than could be expected due to recent flood disturbances in these streams.

The presence of koaro in the upper Cardrona catchment was unexpected. Koaro, although a threatened species, is widespread in the upper Clutha River basin and requires little conservation effort. Similarly, brown trout are extremely common in this region.

Terrestrial species were not surveyed.

6 HISTORIC VALUES

From a 1991 report by Jill Hamel

The Kawarau Faces

The true left bank is heavily bluffed between Roaring Meg and Gentle Annie Creeks but opens between Gentle Annie and the Waitiri bend. On gentler flats beside and above the road, both miners and rabbiters worked up until the 1960s. They planted weeping willows, black and Lombardy poplars and hawthorns. Placing their huts of wood, corrugated iron and stone back against the hillside, the rabbiters dug kennels for their dogs into the clay banks or buried 44 gallon drums for them S133/534,

GR880702). Of the half dozen structures which used to be there in the 1950s, there are now only the remains of two - the foundations of a stone house and a dilapidated concrete hut upon which a tree has fallen.

Water races coming down behind the concrete house and some scrub filled channels further south along the terrace edge give little hint of the extent of workings out of sight from the road on the terrace above. Stretching several hundred metres from the Waitiri Station driveway is a very complex set of sluice pits, races, tailings, reservoirs and habitations (S133/530-533, 537-539). The workings extend from a lone chimney (S133/530) on the south side of the entrance to Waitiri farmstead for over a kilometre to sluice pits (S133/539) above the rabbiters' huts described above. These workings are reasonably clear and distinct on level terraces, but they are echoed by workings (S133/335) probably nearly as large below the road which are on steeper ground and obscured by briar and other weeds. Both sets were worked by water drawn by an elaborate race system from the Springburn, coming in over the saddle north of Waitiri farmstead (GR875709). The Springburn draws on a larger catchment than the head of the Gentle Annie and there is no clear evidence of the latter being utilised.

A tail race out of a small pit above the Waitiri driveway has been carefully revetted to carry it north parallel to the driveway, suggesting that this is the old road alignment which used to carry traffic over the narrow neck of land to the true left side of the river before the Victoria Bridge was built. A long winding pit runs north towards an intact stone house under a tor, the whole of its western edge neatly revetted. The tail races out of these pits have been cut down 2-3 m to allow deep working of the terrace.

The stone house, 5 x 4 m, under the tor is in remarkably unmodified state and could be very easily restored. It has a nicely corniced chimney set within the thickness of the end wall and two cupboard recesses built in on either side of the fireplace, similar to the pattern of the Mitchell houses at Fruitlands. In the front wall there is the usual symmetry of a four-panelled wooden door and two double hung, six-paned sash windows. Unfortunately the door is not secure and stock can enter the building. There are two rooms inside on the standard butt and ben pattern, with a wooden floor and tongue and grooved coved ceiling. There was some sort of out building with two walls dug out of the terrace and two built up with stone, making a shed about 2.5 x 3 m. A standard wooden dunny still leans against the tor.

Continuing up the line of the Kawarau River, all the known sites around the Waitiri bend to Victoria Bridge lie below the road on a strip of land which becomes wider and flatter around the head of the bend. This area was checked for the many sites recorded during the 1978 survey. There must have

then a village in the rocky outcrops immediately opposite the Nevis River confluence. The 1978 survey found a group of six fireplaces and a lone chimney.

Field Evidence in the Gentle Annie

Two side creeks entering the Kawarau within five kilometres of each other have evocative miners' names of Gentle Annie and Roaring Meg. From the road they both appear to be equally precipitous and troubled with gorges, but once through the entrance gorge of the Gentle Annie it does indeed become gentle. The creek flows down through flats which, though only 100-200 metres wide, provide a sheltered Shangri-la of levelness in this countryside. A major tributary, the Springburn, erodes gold bearing rock (in which at one stage somebody thought he had found a reef) and inevitably where the Springburn meets the main stream and on the easier gradients of the flats, the gold has dropped out. The main workings are at the Springburn junction (S133/626-9, GR 867728), and consist of a race/reservoir complex, sluicings, tailings, a drive and at least three stone hut remains.

Field Evidence in the Roaring Meg

The Roaring Meg has an unexpectedly large catchment, bisecting the Pisa massif from the south and running north to head with the Luggate Burn. Most of the mining sites lie within the middle section of the valley above the confluence of Evan Roberts Creek, though this does not seem to relate to the gradients of the valley but rather to the presence of a narrow band of Tertiary non-marine gravels. This band extends in a gentle arc from a tributary of Evan Roberts Creek, up the line of the Roaring Meg to a hairpin bend and north east through Tuohys Gully.

As might be expected there are some gold bearing gravels in the lower part of the Roaring Meg, the lowest recorded being those found by Neville Ritchie in 1979. They consist of small sets of tailings in the creek bed above and below the hydro dam (S133/617, GR888779, S133/619, GR886785; and S133/620, GR884785), in a relatively precipitous part of the valley. The largest at the site below the dam is only 40 m long. Associated with the few tailings at S133/620 above the dam is a rock shelter about 3.5 x 5 m and possibly a second hut (Fig. 55, S133/621) of mud mortared schist blocks with a chimney still standing 1.9 m high in 1979. Three fragments of opium pipe suggest that this was a Chinese site. These sites were not revisited, but another site was found in this section, consisting of a 90 m length of revetted river bank, the revetting being up to 1.5 m high. Presumably it functioned as part of a wing dam/diversion system.

Up Plank Creek, gravels have been sluiced directly where they lie perched on the hillside and the secondary deposits in the creek bed have also been worked (Fig. 56). A race brought down the true right of Plank Creek was used to work the high level gravels about 300 m up the creek, and down where the creek meets the Roaring Meg it was thought worthwhile to create about 100 metres of stone revetted diversion channel for the Meg. There are two living sites in the creek near the junction. The lower one is only a heap of stone from the chimney and the back of a coal range.

The upper one consists of the remains of a stone hut, 8 x 4 m, a stone walled enclosure, 8 x 11 m, and a separate fireplace which may have been part of a second hut. Among the domestic debris, there were pieces of piping, corrugated iron, old billies and dixies and broken bottles and ceramics. Considering that Ballingal and Paton worked here as late as 1913-17, it is not surprising that so much evidence of habitation remains.

Roaring Meg - Cardrona Pack Track

This pack track was an important link in the gold mining era. Much of the formation still remains. From the Roaring Meg power house at the junction with the Kawarau River the first 6 km, predominantly in good order, passes through the adjoining Lowburn Valley property before crossing into Waitiri at the junction of Roaring Meg and Plank Creek. The next 2 km are in Waitiri but although undisturbed the track is not particularly obvious for much of the way because little formation was required. At the hairpin bend of Roaring Meg the track goes into the adjoining property leading up to Tuohys Saddle then down Tuohys Gully to Cardrona. This track has recently been stiled and marked for tramping by agreement with the landholders involved.

Before the coming of Europeans the route was regularly used by Maori and as with time a visible track on the line of least resistance would form - it is probably that the pack track largely followed the older trail.

Significance of Historic Sites

The sites here are important remainders from the gold mining era. They form an interconnecting whole joined by races, tracks and at the time by the communities that worked them.

Iwi Perspective

The Roaring Meg trail was part of a complex system of routes and trails but not of any significance of itself.

The major site of great importance here is the natural bridge and the land around it.

7 EXISTING LAND STATUS

The property consists of two pastoral lease titles. Previously the property also included land of different tenures but this has been sold off. There are a number of legal roads and marginal strips on the property and these are shown on the attached cadastral map. Not shown is the marginal strip up the Roaring Meg for the full distance of the property and beyond.

The position with the marginal strips crown land reserved from sale and legal roads between the present highway and the river is complex and can only be shown on large scale plans and maps, however this is only of significance in the areas of the natural bridge and the gold workings near Victoria Bridge and the detail can be addressed in the event agreement is reached on the protection if any to be put in place.

There appear to be no current prospecting or mining licenses registered on the titles. There is a registered Land Improvement Agreement (RLMP) and also one major and one modest communication structure which have not registered easements or agreements but are liable to remedy the probable oversight if tenure change proceeds. None of these issues will impact on conservation aspirations.

RECREATION/ACCESS

The Cardrona-Roaring Meg pack track provides public access through the back part of Waitiri. While parts of the pack track formation have been destroyed by farm tracks or the Roaring Meg Power Station road, the public does use the track as a walking route from Cardrona to the Roaring Meg. Currently, the power station road at the Roaring Meg is locked, but the public can walk up the road.

The pack track is signposted and marked along its length, with stiles over the fences. This development has been in co-operation with the lessees. Usage is low currently, but as the track traverses a natural tussock grassland landscape with an historical setting, the popularity will increase. The track can be treated as either a one-day or a two-day trip, with camping or the option of staying at the Meg Hut on Waioarau.

A legal road part surveyed runs through the Kawarau Faces from the Waitiri homestead to Eastbourne road. The formed road has fallen into the river in a number of places and the route is now of little practical use.

Although not on a legal road, there is some use being made of a farm track that meets State Highway 89 at the Crown Range Saddle. This track traverses the ridge along the tops of Mt Hocken, Mt Allen and along to Queensberry Hill, coming out at Tuohys Saddle. Walkers use part of the route and mountain bikers utilise the majority of the track and in some cases ride down Tuohys Gully back into the Cardrona Valley.

As the property lies outside the higher main Pisa Range, the level of recreation activity is currently low. Potential does exist for this to change. The Mt Hocken-Mt Allen Ridge could provide ski touring opportunities in the right conditions, as well as providing walking, horse riding and mountain

king access. The areas around the middle Roaring Meg, provide opportunities for tramping and horse trekking as the tussock grassland environment is one of the more spectacular areas in Otago's block mountains.

9 EXISTING MANAGEMENT ISSUES

Wild Animals

There are several species of wild animals present on the property, occupying a variety of habitat and in varying numbers.

Wild Animals Present

Red Deer	-	very low numbers
Goats	-	medium numbers
Chamois	-	in low numbers but increasing
Pigs	-	in low numbers but increasing rapidly

Red Deer

Red deer are in very low numbers and generally occupy the scrub belts and high tussock basins. These animals would not be a problem for management although they could possibly be monitored for TB by MAF or ORC. They could easily be controlled by commercial game recovery or search and destroy by helicopter.

Goats

A previous station owner released large numbers of goats on to Waitiri in an effort to control briar. However, fences proved inadequate and goats free-ranged over most of the station and spread on to Eastburn, the Muddy Creek Faces, Springburn and Wrights Gully carry the most goats (71 goats seen in this area during a recent survey).

Goats have also been encountered in the head of the Roaring Meg and Crown Range, Saddle area.

Goats have now populated the extensive scrub and briar belts in the Springburn and the faces from the Crown Range to the Gentle Annie Creek. They also use the rolling uplands and high rock bluffs during summer.

Chamois

Chamois have slowly been colonising the Pisa Mountain Range and are increasing in numbers (last year 22 chamois were observed over two days in the head of Roaring Meg catchment). Chamois are present in the Muddy Creek, Rock Peak Area and the Lower Roaring Meg Gorge. Chamois have proved to be very adept at occupying a wide range of habitat.

They will need monitoring to observe habitat colonisation and population levels. Some form of control maybe needed in the future.

Pigs

Pigs were illegally released in the Roaring Meg in the early 1980's. The NZ Forest Service and later into the 1980's. The Ministry of Agriculture and Fisheries continued control because of the incidence of tuberculosis in domestic stock. Pigs were found to carry TB and 30% of pigs checked carried TB. MAF targeted pigs on the Pisa Range using various methods, as well as Judas Pig Trial and pigs in the early 1990's were reduced to a very low level.

Feral pigs are now increasing in numbers and a recent survey revealed pigs are increasing their range and quite extensive pig rooting was noticed in the Springburn, Muddy Creek Faces, TR of Gentle Annie. Pig sign was also noted in Plank Creek and the Queensberry Hill lower faces.

Pests

Animal pests present on the property are rabbits, possums, hares, stoats, ferrets and feral cats.

Rabbits

The property has a major problem with rabbit infestation, especially in the pastoral country and is included in the RLM Programme. Even with major expenditure they cannot be consistently controlled with present technology.

Possums

Possums are present throughout and favour the briar and shrub belts, lower rock bluff areas and areas bordering cultivated paddocks. Possums were targeted by MAF in their TB control programme but populations are now building up again.

Hares

..ares are present mainly in the tussocklands, alpine areas and on the cultivated paddocks. The population does not seem to be as large as on the adjacent Remarkables Range. However, little hard data is available on the effects hare have on the Central Otago tussock and alpine areas.

Stoats, Ferrets, Feral Cats

Because of the high rabbit population the above predators are quite numerous, especially ferrets and feral cats. The populations fluctuate with the rabbit population and it is unknown if control measures would be needed. MAF have previously targeted these animals in relation to their TB programmes.

Weeds

Weeds present are briar, hieracium, small areas of broom and gorse, a small area of Old Man's Beard (by the power station), wilding trees, Hawthorn and Hemlock.

Briar

The briar rose has colonised large areas of the Waitiri Station and has caused problems for the runholders. Control of this species would be very expensive and possibly futile.

Because briar provides food, shelter and protection to wild animals and pests, it not only takes over clean country but furthers the increase, and expansion of the animal pests. Some spraying could control boundaries but in areas of this size of infestation, possibly biological control is the only viable method for the future.

Hieracium

Areas of note for this weed are the upper faces between Muddy Creek and Mt Malcolm, Upper Springburn and patches in the Gentle Annie catchment. Isolated patches have been noted in the Upper Roaring Meg catchment. The spread is definitely linked with degradation by large rabbit populations of the above areas.

Broom Gorse

Broom and gorse were noted in patches along the Kawarau Riverside and terraces and isolated patches were noted around Tyre Creek. These weeds would need to be monitored, as large areas of favourable country for these weeds to colonise, are available. There is also small patches of broom in the Upper Roaring Meg on a four wheel drive track. These were poisoned with prills during a wilding tree operation last summer.

Old Man's Beard

A small patch of Old Man's Beard exists above the Queenstown-Cromwell highway about 300 m up from the Roaring Meg Power Station. This is being controlled by the Otago Regional Council and is at this stage being contained. If control methods are not successful the weed will rapidly colonise the exotic tree plantings and the scrub belt between Gentle Annie and Roaring Meg.

Hawthorn

This plant is rapidly covering an area from the Victoria Bridge and downstream around the Waitiri Peninsula to the farm entrance. This plant forms thickets of dense impenetrable cover and excludes most plants from growing.

Hemlock

This weed has been noted growing in areas covered with briar and on areas of pig rooting and rapidly covers areas of bare or disturbed soil.

Wilding Trees

The major and most important weed threat is from wilding trees. Several species are present on these stations the most invasive are the *pinus contorta* sp., Douglas fir and larch. Other species are present but do not represent the same threat to the tussock country. These species are *pinus radiata*, sycamore, poplar, will and elder berry.

There are presently three invasion routes for wilding trees:

- 1 The head of the Roaring Meg has two plots of seeding *contorta* and seed throw is reaching as far as the Evan Roberts Creek. Some tree control has been carried out in the Roaring Meg but needs follow up. The two plots will need to be removed to stop further seedthrow. One large seeding *contorta* was noticed in Plank Creek.
- 2 The Muddy Creek area has a large ~~contorta~~ *concolor* or *mugo* planted area above 800 metres as well as various deciduous species further down into the creek.
- 3 Douglas fir and larch species have been planted around the Lower Roaring Meg and seedthrow is allowing trees to slowly advance up the Meg and across the Kawarau River on to Mt Difficulty. One large larch species was noticed with seeding cones 900 metres in the true left head of the Springburn.

Douglas fir and pine species are established and seeding along the faces from Crown Terrace to Mt Malcolm.

Conifera species will grow in tussock country up to and above 1600 metres, so a considerable amount of Eastburn and Waitiri is under threat from wilding trees, of this type if not controlled.

Fire

This area would have a high fire risk during summer and the Crown Range Road would be one area of concern, with the high public usage adjacent to tussock grasslands. The majority of the property is covered by the Lakes District Council Rural Fire Authority. However, there are some areas of small reserves that have the one kilometre safety zone that impinge on the Lower Eastburn and Roaring Meg.

PART 3

Consultation

An "early warning" meeting was held with the NGOs on 23 May 1996 covering this and other parties. Most were not familiar with the property but general issues were raised plus a more specific submission in writing.

Issues raised in regard to this property were:

- 1 Foot access from Crown range road to Mt Allen down ridge to Gentle Annie and out to SH 6.
- 2 Foot mountain bike and horse access Crown range road to Mt Allen to Mt Queensberry.
- 3 Foot access up to Mt Scott from Crown range road and then along Crown range ridge.
- 4 Top of Cardrona faces (including the two RAPs) down to the existing subdivision to become conservation land.
- 5 Back block (Queensberry) to become conservation land.

Attachments

Two conservation resource maps

Cadastral map

Copy of Federated Mountain Club submission

Extract from important places section of CMS report.



MAP 2
WAITIRI / EASTBURN
CONSERVATION RESOURCE



File Ref : P 257/270 Map Ref : P41




Extent of Ecological Values
RAPS
Recreational Access



N





-  Historic Areas
- Landscape Descriptive Areas**
-  Priority One
-  Priority Two

0 1 2
kilometres
scale 1:50 000
File Ref.: P 257/270 Map Ref.: F41

MAP 3 WAITIRI / EASTBURN CONSERVATION RESOURCE



N



CROWN

PART 4

JUSTIFICATION AND RECOMMENDATIONS

Some 4800 ha on Waitiri contain significant high natural values warranting protection as conservation land in public ownership. The mix of ecological, landscape, historic and recreational use result in these high values. The property's location has the potential to provide a contiguous area that could adjoin existing conservation lands to the north on the Pisa Range, and possible further acquisitions on properties to the east.

Waitiri/Roaring Meg

The areas of high inherent value in this catchment are the immediate environs of the Roaring Meg Stream, the tops, and back block of Waitiri.

The back block, or Queensberry Block on Waitiri is an area of very high value. This broad catchment of mainly tall tussock grassland extends from 900 m to 1593 m and includes an altitudinal range of ecosystems from shrubland in the gorge, tall tussock grassland and the *Poa coiensoi* cushionfield on the tops. The catchment fulfils six of the seven criteria that are used to assess areas of nature conservation value, ie Representativeness, Diversity, Naturalness, Long-term Viability, Size and Shape, and Buffering are all good. The unknown criteria is the rarity issue and that is probably a feature of the lack of survey time. A Landscape Assessment of the area recommended that the Upper Meg be a priority area for protection given the area's naturalness, remoteness, historical context and recreation value. The historic setting of the Cardrona Roaring Meg Pack Track is important and is still being used as a recreational access route today. This pack track passes remote gold workings that are old, quite remote, and have not been disturbed by tracking. This recreational access route is one of the few low level walks through tussock grasslands that is available in Central Otago. Protection of the route and its setting is of prime importance.

It is envisaged that an existing fence down the Evan Roberts Creek could be shifted to the ridge between Evan Roberts and Plank Creek. From here there are two fencing options. One, run fence up the spur to Quartz Knoll to join the ridgeline fence along to Mt Allen and then back down the Gentle Annie/Spring Burn fence. Or, two, run a new fence across the catchment of Evan Roberts Creek at 1000 m where the conservation values grade out. A more practical line probably exists lower down the hill. This well vegetated catchment is steeper than others on the property making practical lines difficult. The conservation values have been modified by OSTD with clover extending throughout the

per basin to the ridge and Mt Allen (1492 m). Location of a practical line in this area would not affect historic or recreation values. It would have some landscape impact with a changeover time to pasture grass regime, but this green affect already exists.

Kawarau Faces

While the Kawarau Faces on Waitiri form part of the Kawarau Gorge scenic corridor, the areas of high inherent value proposed for conservation land are the upper catchment of the Spring Burn above 1100 m, the entire catchment of Muddy Creek and the adjacent steep shrubby faces above the Kawarau River to the old suspension bridge. This proposal would require a new fence along the 1100 m contour level from Muddy Creek through to the Spring Burn/Evan Roberts Creek. This fence would link in with the existing retirement fence down Muddy Creek and link in with fences on the terraces above the Kawarau River. Fences would be required above the shrubland from the suspension bridges linking in with the Crown Range saddle proposals. Protection of this area would protect some of the best *Chionochloa rigida* on the Pisa Range in the head of Muddy Creek and the Spring Burn. The shrubland communities of *Olearia/Coprosma* and matagouri are well developed and have a relatively good species diversity for this type of low altitude shrubland in this dry environment. The other shrublands on the Kawarau faces are predominantly briar and some have a mix of other exotic species such as pine trees which would be difficult to control. The faces and the Muddy Creek catchment have been largely destocked for some time and this process has allowed a good representative shrubland to develop. This area also hosts two local herbs *Myosotis goyenii* and *Ischnocarpus novae-zelandiae*. There are also two species of moths that do not occur anywhere else in Otago.

Protection of this area provides ecologists with one of the few opportunities to protect a sequence of vegetation in Otago through a broad altitudinal range from 350 m-1492 m.

This area being proposed for protection has high landscape values. It is part of the scenic corridor of the Kawarau Gorge, and provides scenic backdrop to the historic Kawarau suspension bridge.

An area of management contention is located in the head of Muddy Creek. In 1974 the Otago Catchment Board retired this creek seeking to stabilise the steep eroding gully. Willows and poplars were planted in the lower reaches, while at approximately 1000 m Douglas fir was planted. The survival rate of the latter has not been spectacular, nor have they grown to any height. However, their removal is highly desirable in order to protect the remaining high-conservation values. These trees bear cones, but few seedlings are currently apparent. Regardless of whether this area becomes conservation land or not these pines would in time affect nearby conservation land, therefore their

removal is a necessity. Removal of these pines is realistic as they only occupy a small area which is accessible from the Mt Hocken 4WD track.

Cardrona Catchments

The area of conservation interest on this portion of Waitiri is the area around Mt Scott above the Crown Range saddle, and all the upper portions of the catchments draining into the Cardrona River. A snowline fence traverses through all these catchment at about the 1100 m level and would provide a practical boundary between conservation land and freehold. This fenceline effectively protects part of the RAPs of Wrights Gully and Deaf Bills Creek. Below this fenceline 800 m in the gully floor the land has been extensively OSD and has, since the PNAP survey, become highly modified. Above the snowline fence the upper catchments are still in a natural condition. elements of the shrubland identified in the PNAP survey are still well represented in the gullies on the property. The catchments of Wrights Gully and Gills Creek contain the best wetlands on the property. Wrights Gully has the only tarn and lake margin herbs of the three.

The tussock grasslands are variable with good *Chionochloa rigida* occurring in Wrights Gully and Gills Creek, while the latter has scattered *Chionochloa macra*. The cushionfields of *Poa colensoi* and *Dracophyllum pronum* are the most extensive on the property along the main ridge. South from Wrights Gully the proposed conservation land could follow an existing fence along the Tyre Gully ridge to the Cardrona Road. The Tyre and Roadmans Gully under Mt Hocken have a mix of short and tall tussock and primarily fall within a landscape corridor identified above State Highway 89. State highways that traverse through tall snow tussock grasslands are rare and protection of this landscape is important from a cultural viewpoint. While the stature and density of this grassland has been modified, removal of stock should allow the area to recover into tall tussock. Other areas of landscape tussock grassland significance in Otago have been lost through management practices.

The faces under Mt Scott also fall into this landscape zone and should be protected. A block fence from the Glencoe/Eastburn boundary down to the Crown Range road is a practical boundary for the landscape zone. The road itself would be a boundary until approximately the 1000 m contour when the vista of a tussock grassland on the Kawarau faces opens up. A new fence along the 1000 m contour would link in with the proposals on the Kawarau faces.

The entire area that is proposed for conservation would also provide a recreational link from the Crown Range saddle up along the main Mt Allen-Queensberry Ridge to eventually Tuohys Saddle and the Cardrona-Roaring Meg Pack Track in the north. This link through proposed conservation land along a 4WD track would provide opportunities for tramping, mountain biking, horse trekking and

oss country skiing. Securing Mt Scott on the opposite side of the road would in the longer term provide access on to the Crown Range itself which is of considerable interest to skiers in the winter.

Few management issues of particular concern are apparent in the Cardrona Valley. Recreational use will require signs and information panels. The higher altitude fences should be removed as they would no longer be required. Access from the Crown Range saddle would be unrestricted through to the northern boundary. The lessee may require stock access easements through the conservation land from the Cardrona Valley into Waitiri and this could be accommodated along existing 4WD tracks. An airstrip under Mt Hocken would also require an access easement and should not affect the conservation proposals. The upper reaches of the Cardrona near the saddle have been subject to an ongoing weed control programme for broom and providing this programme is maintained this deal would not impose extra costs on the department.

Recommendation regarding the historic resources

Upstream of the Roaring Meg confluence, the sites around the Natural Bridge and the bridge itself probably all fall within the marginal strip. The Natural Bridge could be appropriately protected under Objects and Places in the Queenstown-Lakes District Scheme, just as the prominent Judge and Jury Rocks further upstream are. Maori interest in the Bridge may bring it under the Traditional Site legislation of the Historic Places Act, and this area is also specifically mentioned in the recent Ngai Tahu claim settlement.

The hotel site near the Victoria Bridge is historically worth preserving. Since it is over 100 years old, it is legally protected under Historic Places Act. Though the Springburn Race and the workings above the Waitiri Station gateway are spectacular. They are outside any marginal strip, cannot be determined to be over 100 years old by the records and are worthy of protection as an intact system, including the very nice stone house. There should be discussions with the Waitiri station lessees about their protection, the clearance of the rubbish dump from the sluicings and stabilisation of the stone house.

The sites along the sheltered flats of the Gentle Annie have been partly disturbed by road making and other farming activities, and not only is it difficult to detect separate workings now, they probably always were fairly diffuse.

All these sites are within Waitiri pastoral lease, but there is no marginal strip up the Gentle Annie Creek to give any additional protection. They could appropriately be recorded in such a way, that whenever earth disturbance permits are required they can be readily identified and avoided.

ie Roaring Meg sites are better protected by their remoteness than are those of Gentle Annie Creek, but still need protection from farm roads and related activities. The most interesting area is the complex of sites at and below the Meg Huts, with its mix of old and new musterers' huts, miners' huts, the Cromwell Cardrona pack track, and races and tailings running down valley across the boundary between Waioarau, Lowburn Valley and Pine Hill. The section around the Hairpin Bend forms an interesting secondary complex. Above the Plank Creek confluence, there are races and sites all up the valley as far as the gully immediately north west of the Meg Huts. Except for some minor damage to the Roaring Meg Cardrona pack track, removal of pipes and damage to huts, this is a relatively intact mining landscape, from which much could be deduced about the mining communities that it held. It would be worth covenanting an area if the proposed conservation area is not achieved.

Issues Raised By NGOs

Excepting for horse access all the issues raised by the NGOs have been accommodated in the DOC recommendations.

OTHER ISSUES

Adjoining Waitiri to the north is a pastoral occupation licence leased by Tim Scurr. This POL of 440 ha straddles the Queensberry Hill ridge above the Cardrona Valley and drops into the Roaring Meg. This block of land was acquired from Eastburn and Waitiri in 1974 in order to rationalise property boundaries. Upon expiry of the POL, discussions have centred around the proposal that the majority of the Cardrona block (160 ha) be freeholded while the Roaring Meg block (280 ha) becomes conservation land and is destocked.

The relinquishing of part of the 280 ha impinges on the visibility of Tim Scurr's current farming operation and goes against a previous promise that the 280 ha can always be grazed. While legally the land can be destocked, the Department of Conservation is keen to explore the option of providing alternative grazing land in order to make good a promise of continued grazing made by a previous agency. The subject block also has public access significance providing a link from Mt Queensberry to the Cardrona - Roaring Meg track.

As part of this tenure review exercise it is proposed to investigate the possibility of making available alternative grazing land that can be freeholded. This land would make up for the grazing land lost in the Roaring Meg catchment. A logical area to investigate for this exchange is the lower catchment of Rodies Gully.

There are no major weed or pest costs contingent in the recommended DOC acquisition but there will be some rabbit control required particularly on the lower country at the western end.

RECOMMENDATIONS

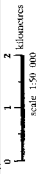
- 1 That to protect the principal conservation values contained on Waitiri/Eastburn (see attached map), some 4800 ha, be transferred to the Department of Conservation to be managed as conservation estate. This area includes the RAPs of Wrights Gully Pisa A7, Deaf Bills B6 and narrow strips of Skeleton Stream Pisa A6 and Lower Meg Pisa A8.
- 2 Access requirements would largely be satisfied by the proposed DOC ownership excepting :
 - i A foot access easement would be required from below Mt Allen to the Springburn-Gentle Annie junction then down Gentle Annie to SH6.
- 3 That Section 77 Reserves Act conservation covenants to protect the historic features in Gentle Annie Creek and to the east of the Waitiri homestead be put in place.

Attachments:

Map of proposals



Proposed Conservation Area
Conservation Covenants
Eastburn Forest Management



Title Ref: P 257/270 Map Ref: 141

MAP 4 WAITIRI / EASTBURN RECOMMENDATION





CRDWH

WAITIRI/EASTBURN PASTORAL LEASE TENURE REVIEW
REVISED CONSERVATION RESOURCES REPORT
RECOMMENDATIONS (MAY 1999)

PART 4 (FOR OFFICIAL USE ONLY)

RECOMMENDATIONS AND JUSTIFICATION

4.1 RECOMMENDATIONS

- 4.1.1 That the proposals described below be submitted to the CCL's agent during the consultation process on the preliminary proposal for this tenure review as representing the views developed under delegated authority from the Director-General of Conservation.
- 4.1.2 Note that statutory consents will be required before the CCL can include the following proposals in the preliminary proposal for this tenure review.
- 4.1.3 Note that any land freeholded is subject to section IVA Conservation Act 1987 marginal strip requirements.

4.2 PROPOSALS AND JUSTIFICATION

4.2.1 Areas to be Restored to Full Crown Ownership and Control

- 4.2.1.1 **Name:** Pisa Conservation Area
Existing Status: Pastoral lease
Authority: Section 35(2)(a)(i) Crown Pastoral Land Act

Proposal

To restore approximately 5000 ha to full Crown ownership and control as a conservation area under DOC management. It is intended that grazing be excluded and this would require the erection of approximately 9 km of new fences.

Summary Description

The conservation area would consist of three contiguous parts:

- i The tops including Mounts Scott, Hocken and Allen, Quartz Knob and Queensberry Hill plus the back block of Waitiri.
- ii The Kawareau faces from Muddy Gully to the historic (bungy) bridge.
- iii The riparian strip along the lower Roaring Meg.

Justification

Part (i) Mt Scott, Hocken + Allen, Quartz Knob + Queensberry Hill.

Vegetation

The area ranks high for 6 of the 7 primary criteria under which natural areas are recommended for protection, namely:

- representativeness
- diversity and pattern
- naturalness

- long-term ecological viability
- size and shape
- buffering, surrounding landscape and boundaries.

The only criteria not identified in the surveys undertaken is rarity and special features.

The area contains RAPs Pisa A7, Pisa B6 and parts Pisa A6 and Pisa A8.

The back block, or Queensberry block on Waitiri consists of mainly tall tussock grassland extending from 900 m to 1593 m and includes an altitudinal range of ecosystems from shrubland in the gorge through tall tussock grassland to *Poa colensoi* cushionfield on the tops.

The main ridge and upper Cardrona faces from Queensberry Hill to Mt Hocken also ranks high in the same six primary criteria as the Waitiri block. The area contains the major part of RAPs A7 and B6. A snowline fence traverses the area at about 1100 m. Below this fenceline the land has been extensively oversown and toppedressed and has since the PNA survey become highly modified. Above the snowline fence the upper catchments are still in a natural condition. Elements of the shrubland identified in the PNAP survey are still well represented in the gullies on the property. The catchments of Wrights Gully and Gills Creek contain the best wetlands on the property. Wrights Gully has the only tarn and lake margin herbs of the three.

The tussock grasslands are variable with good *Chionochloa rigida* occurring in Wrights Gully and Gills Creek, while the latter has scattered *Chionochloa macra*. The cushionfields of *Poa colensoi* and *Dracophyllum prunum* are the most extensive on the property.

From Mt Hocken through the Crown Saddle up on to Mount Scott, while still predominantly having the appearance of a tussock grassland the stature and density of the tussocks are considerably reduced and the inter-tussock species significantly modified. However, retention in Crown ownership and control is justified on landscape grounds.

Landscape

State Highway 89, an important tourist route soon to be upgraded by straightening and sealing, passes through the Crown Saddle. State highways that pass through tall snow tussock grassland are rare and what few areas there are are deteriorating. For this reason it is important that the landscape in the vicinity of Wrights Gully, Mt Hocken and Mount Scott is protected and managed for enhancement of the tussock grassland which is of major significance in sustaining the special natural quality and integrity of this high country landscape.

Recreation

The area has significant inherent value for recreation as a setting of high natural value with good access. In particular the ridge route from the Crown Range saddle via Mt Allen and Queensberry Hill (leading to Tuoahys Gully in the neighbouring property) and the part of the old Roaring Meg pack track passing through the back of the property (approximately 4 km) are of regional importance. Part of the Mt Allen ridge track passes through land recommended for disposal and will require easement protection.

Part II : The Kawarau Faces

Landscape

This area has high landscape values. It is part of the scenic corridor of the Kawarau Gorge. It is highly visible from the major tourist route to Queenstown and also provides the backdrop to the historic Kawarau suspension bridge. The indigenous shrubland in particular contributes significantly to the special nature of the local landscape.

Fauna

The shrubland is host to a number of rare and local insects including moths, some feeding specifically on *Olearia odorata*, others on associated plants. Notable amongst these insects are the moths *Tbeoxena scissaria*, *Meterana grandiosa*, *Proto synaena* (new species), *Sanara acutata*, *Maoritenes modesta*.

Botanical

The vegetation is the most significant inherent value in this part of the proposed conservation area and ranks high in all seven primary criteria. This area includes the upper catchment of the Springburn above 1100 m, the entire catchment of Muddy Creek and the adjacent steep shrubby faces above the Kawarau River between Muddy Creek and the old suspension bridge. Transfer of this area to DOC and removal of grazing would protect some of the best *Chionochloa rigida* on the Pisa Range in the head of Muddy Creek and the Spring Burn. The shrubland communities of *Olearia/Coprosma* and matagouri are well developed and have a relatively good species diversity of this type of low altitude shrubland in this dry environment. The other shrublands on the Kawarau faces are predominantly briar and some have a mix of other exotic species such as pine trees which would be difficult to control. The faces and the Muddy Creek catchment have been largely destocked for some time and this process has allowed a good representative shrubland to develop. This area also hosts two local herbs, *Myosotis goyenii* and *Ischnocarpus novae-zelandiae* (Category B Threatened Species (Molloy and Davis)).

This area provides ecologists with one of the few opportunities to protect a sequence of vegetation in Otago through a broad range from 350 m-1492 m.

Part III : Lower Roaring Meg

This area is the steep faces on the true right of the Roaring Meg from Plank Creek almost to the confluence with the Kawarau River.

Landscape

This face is a major part of the setting for the frequently used pack-track tramping route, dominating the scenery for the lower part of the track in the adjacent Lowburn Valley property until it crosses into Waitiri at Plank Creek. While the lower end of the face has a substantial briar component overall the cover is a predominantly natural shrubland/tussock grassland mosaic. Major scarring between the dam and power houses by the associated pipeline and tracking is healing and becoming softened quite rapidly by the regenerating shrubland. Because of the proximity to urban settlement (Queenstown, Cromwell) and frequent use, this largely natural landscape is of at least district (Pisa) significance.

Fauna

As with the Kawarau faces this shrubland/grassland mosaic has its own endemic population of insects, many specific to a restricted number of host plants.

Botanical

The area contains parts of two RAPs.

Pisa A8: The part of A8 on Waitiri is predominantly mixed shrubland of *Olearia avicenniaefolia*, koromiko, mountain ribbonwood, *Coprosma psopinqua*, matagouri and briar and while these have some significance in their own right the major importance in terms of the RAP is as a buffer area for the small stand (approximately 30 trees) of silver beech trees on the opposite side of the stream. This remnant is the furthest remnant towards the dry interior of Central Otago.

Pisa A6: The part of A6 on Waitiri is an integral part of the RAP. It contains a mix of diverse shrubland fescue tussock and tall tussock grasslands. The narrow leaf snow tussock here is at the lowest altitude still remaining in the Pisa ecological district. This mix is now distinctively unusual but would once have been typical in the locality.

This area while having a major exotic component (briar) at the lower end is increasingly natural upstream and is demonstrating a strong recovery to the original shrubland cover in the absence of burning and low grazing pressure (cold aspect, shrubland cover).

In terms of primary criteria, representativeness, diversity, long-term viability, and buffering are all high. Size, shape and rarity are medium.

On the scale of the ecological district, the area has high significant inherent values of both vegetation and landscape.

Management and Boundary Issues

a Fencing

The Roaring Meg faces (part iii) will not require fencing but for the balance, despite utilising as far as possible existing fences, 9 km of new fencing will be required.

Where State Highway 89 passes through the proposed conservation area the road fencing will become redundant and should be removed.

The above proposal will involve DOC acquiring 40 km of half share boundary fence to maintain. Existing fences are overall in good condition and on good lines.

b Grazing

Apart from the possibility of some weed control grazing in future on the State Highway 6 strip, management for the enhancement of conservation values on the balance of the area would require the exclusion of grazing.

c Problem Animals

Rabbits: At the time of the Rabbit and Land Management Programme significant parts of this property had an extreme rabbit infestation. The programme plus a change in lessee has dramatically reduced numbers. The area recommended as a conservation area is predominantly the less rabbit prone country but a regular ongoing control programme will be necessary.

Pigs, deer, chamois, goats: All of these animals are present from time to time. Numbers of pigs and goats can increase rapidly. Not a major problem and recreational hunting has a significant effect on numbers. DOC control of goats and possibly pigs will be required periodically.

Stoats, ferrets and feral cats: Those animals have fluctuated with rabbit numbers and have both TB and native bird implications. It is not known at present whether DOC control will be necessary.

Problem Plants

Briar: This plant occurs extensively over much of the property. Of the area recommended for transfer to DOC only the lower Roaring Meg and the strip between State Highway 6 and the Kawarau River are badly affected. Briar has become an integral part of the shrubland in this locality and with the expense and unreliability of control it is not considered that any attempt to remove it from these two areas is warranted. The lower slopes between Muddy Gully and the historic suspension bridge have significantly less briar amongst a higher quality native shrubland and an ongoing control programme should be implemented in this area.

Broom and gorse: Patches are present along the Kawarau River and isolated patches around Tyre Gully and in the Roaring Meg. These plants have the potential to spread on much of the area recommended for conservation. Elimination of the patches plus containment of the Kawarau River areas will be necessary.

Old Mans Beard and Hawthorn: These plants are present on the property though not on the proposed conservation areas. Monitoring for spread will be necessary.

Wilding Trees: These represent only a minor problem at present but a major threat. Douglas fir and larch in the lower Roaring Meg and *Pinus contorta* in the upper Roaring Meg are seeding on to the proposed conservation area from neighbouring properties. Isolated seeding trees occur in Plank Creek and Spring Burn and should be removed.

Pinus contorta, *Pinus mugo* plus deciduous species were planted with mediocre results for soil conservation in Muddy Gully. These do not appear to be spreading but have the potential to do so and long term removal is desirable.

Fire

In a summer-dry climate with high public use close to shrubland and tussock grassland there will be a significant fire risk, particularly November-April.

..2.1.2	Name:	Kawarau Gorge Recreation Reserve
	Existing Status:	Pastoral lease
	Authority:	Section 35(2)(a)(ii) Crown Pastoral Land Act

Proposal

To restore approximately 10 ha to full Crown ownership and control as a recreation reserve under DOC management.

Summary Description

A narrow strip between the main highway (SH 6) and the Kawarau River south of the Roaring Meg confluence.

Justification

Landscape

Bounds State Highway 6, a major tourist route, for approximately 1 km. From the road little is visible and most of that dominated by exotic (briar and rank pasture grasses). However, there are a number of stopping places for people viewing the river, the gorge and the general scenery and this strip then becomes an important component of the local landscape.

Botanical

The dominant vegetation is mixed briar/native shrubland of no particular significance.

Public Recreation

The dominant use of this strip is for parking and for scenic viewing but limited walking also occurs. Present use is limited but likely to increase. The recommendation to transfer to DOC to be managed to protect the recreational access and to improve the shrubland, applies to a strip of approximately 1 km in length but less than 10 ha in area.

Conservation Management Strategy

The subject area lies within CMS Special Place 24 - Kawarau Gorge. Extracts relevant to the recommended reserve are:

"The Kawarau River for most of its course from the outlet of Lake Wakatipu to its confluence with the Clutha Catchment at Lake Dunstan is incised in a spectacular gorge. From Gibbston to Lake Dunstan steep mountain sides prone to erosion and landslips rise up to 1500 m on either side."

"The valley carries State Highway 6, the main access from the east to Queenstown and the Wakatipu Basin so is of special significance for tourism."

Management and implementation issues are:

"Managing the river margins to retain natural character of the river".

"Pastoral lease tenure reviews in the area will be utilised to improve negotiated protection and public access to key areas."

Objective for Kawarau Gorge:

"To protect the values of the Kawarau Gorge as a scenic corridor along with associated natural and historic resources with a small range of recreational and commercial opportunities provided which are compatible and sustainable."

Priorities for Kawarau Gorge:

'Landscape protection and enhancement of public appreciation of the area will be priorities in this Special Place.'

Management and Boundary Issues

a Fencing

The State Highway is already fenced. Because of possible weed control and rabbit control implications, this fence may be utilised and should be retained at least in the short term.

b Grazing

It is most likely that for enhancement of the botanical values grazing should be excluded though some grazing in the future for weed control purposes is a possibility.

c Problem Animals

At the time of the Rabbit and Land Management Programme this area had a moderate to high proneness to rabbit infestation. Implementation of the programme plus increased effort by a new lessee have achieved a major drop in numbers but ongoing control measures will be necessary.

Stoat, ferret and cat numbers have fluctuated with rabbit numbers. These animals have both TB and native bird implications. It is not known at present whether DOC control will be necessary.

d Problem Plants

Briar: This plant occurs extensively through the area and has become an integral part of the shrubland. With the expense and unreliability of control it is not considered any attempt to remove it is warranted. Long term some form of biological control is the only practical solution.

Broom and gorse: These are both present in patches. Containment is necessary and preferably elimination over a period.

Old Mans Beard: Present nearby above Roaring Meg power station. The proposed recreation reserve is an ideal habitat for this weed and monitoring for any establishment is essential.

Wilding trees: There are larch, Douglas fir and *Pinus* species nearby. Wildings are not at present a problem in the subject area but regular inspection will be necessary.

e Fire

In a summer dry climate. With high public use there will be a significant fire risk, particularly November-April.

4.2.1.3

Name:	Whatatōrere Historic Reserve
Existing Status:	Pastoral lease
Authority:	Section 35(2)(a)(ii)

Proposal

To restore approximately 9 ha to full Crown ownership and control as an historic reserve for vesting in Te Runanga o Ngai Tahu under section 26 of Reserves Act.

Summary Description

Part of the strip between State Highway 6 and the Kawarau River is adjacent to the historic reserve created under section 156 of the Ngai Tahu Claims Settlement Act.

Part of the recommended addition in this proposal includes the vehicle access, parking area and foot access to the river for rafting and water tobogganing. A condition preserving this access should be included as should a condition ensuring public foot access throughout the reserve.

Justification

The proposed additional reserve separates the present Whatatorere (natural bridge) Historic Reserve from the highway and has particular access and viewing significance.

Management Issues

Provided conditions of vesting safeguard the existing vehicle access and include provisions for public foot access, there should be no management implications for DOC.

4.2.2 Not applicable

4.2.3 Not applicable

4.2.4 **Existing Conservation Area to be Disposed of by way of Exchange**

Authority: Section 37(1)(c) Crown Pastoral Land Act

Proposal

That two existing small sections, currently stewardship land, be disposed of as freehold in part exchange for the area transferring to DOC from the pastoral lease.

Summary Description

Section 2 Block II Kawarau SD, 1037 square metre. Stewardship land held under section 62 of Conservation Act 1987. Map bridge reserve allocated to DOC.
Section 5 Block VI Kawarau SD, 2428 square metres. Stewardship land held under section 62 of Conservation Act 1987. Map gravel reserve (mining) allocated to DOC.

Justification

Both these small sections are fenced within existing farm land and have no significant conservation values.

Section 2 is recommended in the Otago Conservation Management Strategy Land Inventory for disposal or exchange. Section 5 is not listed.

4.2.5 **Land being Disposed of Subject to a Protective Mechanism**

Authority: Section 40(1)(c) Crown Pastoral Land Act

Proposal

That the part of the pastoral lease disposed of as freehold be subject to the following access easements.

4.2.5.1 **Gentle Annie, Mt Allen Ridge Route**

Type of easement: Public foot, mountain bike and horse access easement under section 7(2) Conservation Act 1987. Shown as easement 2 on attached map 3.

Justification

Although little used at present the proposed route is a practical alternative access (other than from Crown Range Road) to the main ridge of the proposed conservation area. It also passes through the major part of the old gold workings in the Gentle Annie Gully.

Management Issues

The route crosses five or six fences, is through the middle of the proposed freehold farm area and people on it are out of sight of the homestead. Uncontrolled as of right access will be a major concern to the lessee/proposed owner.

4.2.5.2 Mt Allen Ridge

Type of easement: Public foot, mountain bike and horse access, shown as easement 1 on attached map 3. Section 7(2) Conservation Act 1987.

Justification

A formed track plus main access for other purposes exists from the Crown Range Road summit along the Mt Hocken, Mt Allen, Queensberry Hill ridge. A short distance of this (approximately 500 m) passes through proposed freehold north of Mt Allen. To avoid truncation of travel within the proposed conservation area an as of right access easement is required.

Management Issues

Being against the boundary and of relatively short distance there should be no significant management issues other than gate closure.

4.2.5.3 Mt Allen Ridge

Authority section 36(3)(b) Crown Pastoral Land Act.

Type of easement: DOC vehicle access for management purposes under section 7(2) Conservation Act 1987. Shown as easement 1 on attached map 3.

Justification

The only practical vehicle access to the proposed conservation area passes through this part of the land proposed for disposal.

4.2.6 NGO and "Umbrella" Group Aspirations

An "early warning" meeting was held with the NGOs on 23 May 1996. Issues raised in regard to this property were:

- 1 Foot access from Crown Range Road to Mt Allen down ridge to Gentle Annie and out to State Highway 6.
- 2 Foot, mountain bike and horse access, Crown Range Road to Mt Allen and Queensberry Hill.
- 3 Foot access up to Mount Scott from Crown Range Road and then along Crown Range Ridge.
- 4 Top of Cardrona faces (including the two RAPs) down to the existing subdivision to become conservation land.
- 5 Back block (Queensberry) to become conservation land.

Eastburn (Po 257)B

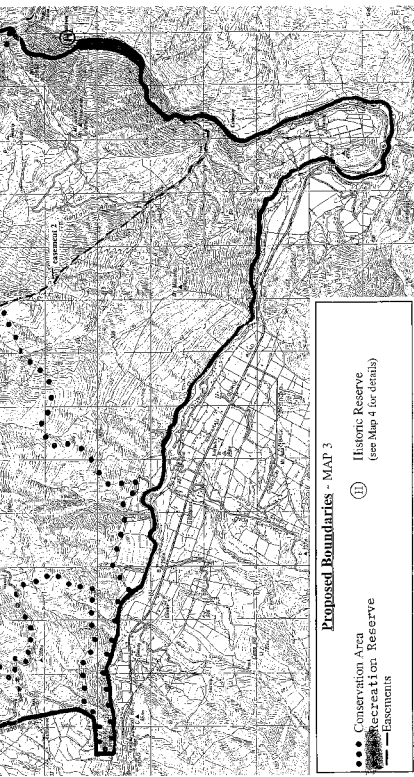
- Land above 1000-1100 m to go to DOC
- All LUC Class VIII and most Class VII to go to DOC
- DOC/freehold boundary to be consistent (landscape) with neighbouring/related runs.
- Access for foot and mountain bikes via 4WD track from Crown Range Road to Mt Allen, linking with access from Tuohy's Gully and Meg Hut (Waiorau) via 4WD track over Queensberry Hill and Quartz Knoll along the boundary between Eastburn and Waitiri.
- Possible continuation from Mt Allen (on foot) via fence line on spur to Gentle Annie Valley and 4WD track to State Highway 6 (on Waitiri).
- All water courses greater than 3 m to have marginal strips laid off.

Waitiri (Po 270)

- Land above 1000-1100 m to go to DOC
- All LUC Class VIII and most Class VII land to go to DOC
- DOC/freehold boundary to be consistent (landscape) with neighbouring/related runs.
- Foot and mountain bike access via Cardrona-Meg pack track
- Access for foot (and mountain bikes?) from Tuohy's Gully and Meg Hut (Waiorau) via 4WD track over Queensberry Hill and Quartz Knoll along the boundary between Eastburn and Waitiri
- Possible continuation over Mt Allan (on foot) and via fence line on spur between Spring Burn and Gentle Annie Creek, leading to Gentle Annie 4WD track and SH 6.
- Possible route (day trips?) to Mt Gilray.
- All water courses greater than 3 m to have marginal strips laid off.

All the above aspirations are met by the recommended proposals excepting to the east of Mt Allen a small area (approximately 110 ha) above 1100 m is recommended for freeholding for reasons of modification to exotic pasture and practical fencelines.

Note: The issue of horse access within the proposed conservation area will be addressed after the area transfers to DOC (Conservator decision 18 June 1997).



EASTBURN - WAITIRI



File Ref: P257 / 270
 Map Ref: INFOMAP 260 Sheet F41

