Toitu te whenua
Land Information
New Zealand

Crown Pastoral Land Tenure Review

Lease name : THE LARCHES

Lease number : PO 254

Conservation Resources Report - Part 2

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

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

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

October 02

Appendix 3

The Larches Station – Plant species list

Ferns

Blechnum penna-marina	little hard fern
Cheilanthes humilis	a fem
Cystopteris tasmanica	a bladder fern
Grammitis poeppigiana	a fern
Hymenophyllum villosum	a filmy fem
Hypolepis millefolium	a fem
Lycopodium australianum	a c1ubmoss
Lycopodium fastigiatum	a c1ubmoss
Ophioglossum coriaceum	adders tongue fern
Polystichum vestitum	prickly shield fern
Pteridium esculentum	bracken

Trees and shrubs

Carmichaelia petriei	a native broom
Coprosma atropurpurea	a creeping shrub
Coprosma cheesemanii	a shrub
Coprosma ciliata	a shmb
Coprosma niphophila?	a creeping shrub
Coprosma propinqua	mingimingi
*Crataegus monogyna	hawthorn
Discaria toumatou	matagouri
Dracophyllummuscoides	a creeping turpentine shrub
Dracophyllum pronum	a turpentine shrub
Gaultheria depressa val'. novae-zelandiae	snowberry
Hebe hectorii	a shmb
Hebe pauciramosa	a shrub
Helichrysum intem1edium	a shmb
Kelleria dieffenbachii	a sub-shrub
Kelleria palludosa	a sub-shrub
Kelleria villosa	a sub-shrub
Kunzea ericoides	kanuka
Leptospennum scoparium	manuka
Leucopogon fraseri	a sub-shrub
*Lupinus arboreus	tree lupin
Melicytus aff. alpinus	porcupiue shrub
Muehlenbeckia australis	pouhuehue
Muehlenbeckia axillaris	a slender creeping shrub
Muehlenbeckia complexa	a climber
Olearia lineata	a tree daisy
Olearia odorata	a shrub daisy
Ozothamnus vauvilliersii	cottonwood
Pimelea oreophila	a sub-shrub

*Rosa rubiginosa	briar
Rubus schmidelioides	a lawyer vine
*Salix fragilis	crack willow
*Sambucus nigra	elderberry
*Ulex europaeus	gorse

Herbs

Abrotanella caespitosa	a herb
Aciphylla aurea	golden speargrass
Acaena caesiiglauca	a biddibid
Acaana fissistipula	a biddibid
Acaena inermis	a biddibid
Acaena saccaticupula	a biddibid
Anaphalioides bellidioides	ever-dasting daisy
Anisotoll1e aroll1atica	a herb
Anisotome brevistylis	a herb
Anisotome flexuosus	a herb
Brachyscombe sp.	a daisy
Brachyglottis bellidioides	a daisy
Brachyglottis haastii	a daisy
Cardamine debilis agg.	a bittercress
Celmisia angustifolia	an alpine daisy
Celmisia gracilenta	a daisy
Celmisia sp. "gracilenta rhizomatous"	a daisy
Celmisia laricifolia	a daisy
Celmisia lyallii	false speargrass
Celmisia viscosa?	an alpine daisy
Chionohebe densiflora	a cushion
Colobanthus buchananii?	a herb
Colobanthus affinus?	a herb
Colobanthus strictus	a herb
Craspedia lanata	a woolly head
Craspedia sp.	a woolly head
Dolichoglottis lyallii	yellow snow marguerite
Drosera arcturi	a sundew
Epilobium atriplicifolium	a willowherb
Epilobium brunnescens	a willowherb
Epilobium elegans	a willowherb
Epilobium chionanthum?	a willowherb
Epilobium komarovianum	a willowherb
Epilobium macropus	a willowherb
Epilobium nunmmlarifolium	a willowherb
Epilobium tenuipes	a willowherb
Euphrasia dyeri	an eyebright
Euphrasia zelandica?	an eyebright
Galium perpusillum	a herb
Gaultheria parvula	a sub-shrub
Gentiana amabilis	a gentian
Gentiana bellidifolia	a gentian

Gentiana corymbifera	a gentian
Geranium microphyllum	a geramum
Geranium sessiliflorum	a geranium
Geum leiospeillium	ageum
Euchiton audax	a cudweed
Euchiton delicatum?	a cudweed
Euchiton laterale	acudweed
Hectorella caespitosa	a cushion
Helichrysum filicaule	an everlasting daisy
*Hieracium auranticum	orange hawkweed
*Hieracium lepidulum	tussock hawkweed
*Hieracium pilosella	mouse-ear hawkweed
*Hieracium praealtum	king devil
Hydrocotyle microphylla	a pennywort
Hydrocotyle novae-zelandiae val'. montana	a pennywoli
Hypericum aff. gramineum	a St Johns wort
Lagenifera cuneata	a daisy
Lagenifera petiolata	a daisy
Leptinella pectinata val'. villosa	a button daisy
Leptinella pusilla	a button daisy
Leptinella squalida val'. mediana	a button daisy
Lobelia linnaeoides	a creeping herb
Mentha cunninghamii	native mint
Montia fontanum	a herb
Myriophyllum sp.	a water milfoil
Neopaxia sessiliflora	a creeping herb
Nertera balfouriana	a creeping herb
Oreomyrrhis sp. "bog"	a herb
Oreomyrrhis colensoi	a herb
Oreomyrrhis colensoi val'. delicatula?	a herb
Oreomyrrhis ramosa	a herb
Ourisia caespitosa	a creeping herb
Ourisia glandulosa	a creeping herb
Ourisia glandulosa x ?	a creeping herb
Oxalis exilis	an oxalis
Plantago obconica	a plantain
Plantago triandra	a plantain
Plantago uniflora	a plantain
Pratia angulata	a creeping herb
Psychrophila obtusa	a herb
Ranunculus foliosus	a buttercup
Ranunculus glabrifolius	a buttercup
Ranunculus gracilipes	a buttercup
Ranunculus maculatus	a buttercup
Ranunculus royi	a buttercup
Raoulia australis	a mat daisy
Raoulia grandiflora	a mat daisy
Raoulia parkii	a mat daisy
Raoulia subsericea	a mat daisy
*Rumex acetosella	sheeps sorrel

Rumex flexuosus	a native dock
Schizeilema cockaynei	a slender herb
Schizeilema haastii val'. cyanopetalum	a creeping herb
Scleranthus uniflorus	a cushion
Senecio quadridentatus	a groundsel
Stackhousia minima	a herb
Stellaria gracilenta	a native chickweed
*Trifolium repens	white clover
Utricularia monanthos	bladderwort
Viola cmminghamii	a native violet
Wahlenbergia albomarginata	a harebell
Wahlenbergia colensoi	a harebell

Monocots

Grasses

*Agrostis capillaris	browntop
Agrostis muellerialla	a grass
Agrostis muscosa	a dwarf grass
Agrostis pallescens?	a slender grass
*Anthoxalltluull odoratum	sweet vemal
Chionochloa macra	slim-leaved snow tussock
Chionochloa rigida val'. rigida	narrow-leaved snow tussock
Deyeuxia aucklandica?	a grass
Dichelachne crinita	plume grass
Elymus rectisetus	a wheatgrass
Elymus sp.	a wheatgrass
Festuca matthewsii	alpine fescue tussock
Festuca novae-zelandiae	fescue tussock
Festuca sp.	a grass
Lachnogrostis sp.	a grass
Poa breviglumis	a grass
Poa cita	silver tussock
Poa colensoi	blue tussock
Poa pratensis	smooth meadow grass
Poa tonsa?	a grass
Rytidosperma australis	a grass
Rytidosperma pumila	a grass

Sedges

Carex breviculmis	a sedge
Carex buchananii	a sedge
Carex coriacea	cutty grass
Carex flagellifera	a sedge
Carex gaudichaudiana	a sedge
Carex maorica	a sedge
Carex secta	pedicelled sedge
Carex wakatipu	a sedge
Eleocharis acuta	a spike rush
Isolepis aucklandicus	a dwarf sedge

Oreobolus pectinatus	comb sedge
Schoenus pauciflorus	a sedge
Uncinia divaricata	a hook grass

Rushes

Juncus antarcticus	a dwarf rush
*Juncus articulatus	jointed rush
Juncus novae-zelandiae	a rush
Juncus pusillus	a dwarf rush
*Juncus sp.	a rush
Luzula banksiana	a wood rush
Luzula leptophylla	a wood rush
Luzula pumila	a wood rush
Luzula rufa	a wood rush
Luzula sp.	a wood rush

Other monocots

Centrolepis ciliata	a cushion
Cordyline australis	cabbage tree
Microtis uniflora	onion orchid
Potamogeton suboblongus	a water plant
Prasophyllum colensoi	leek orchid
Typha orientalis	raupo/bullrush

Appendix 4.

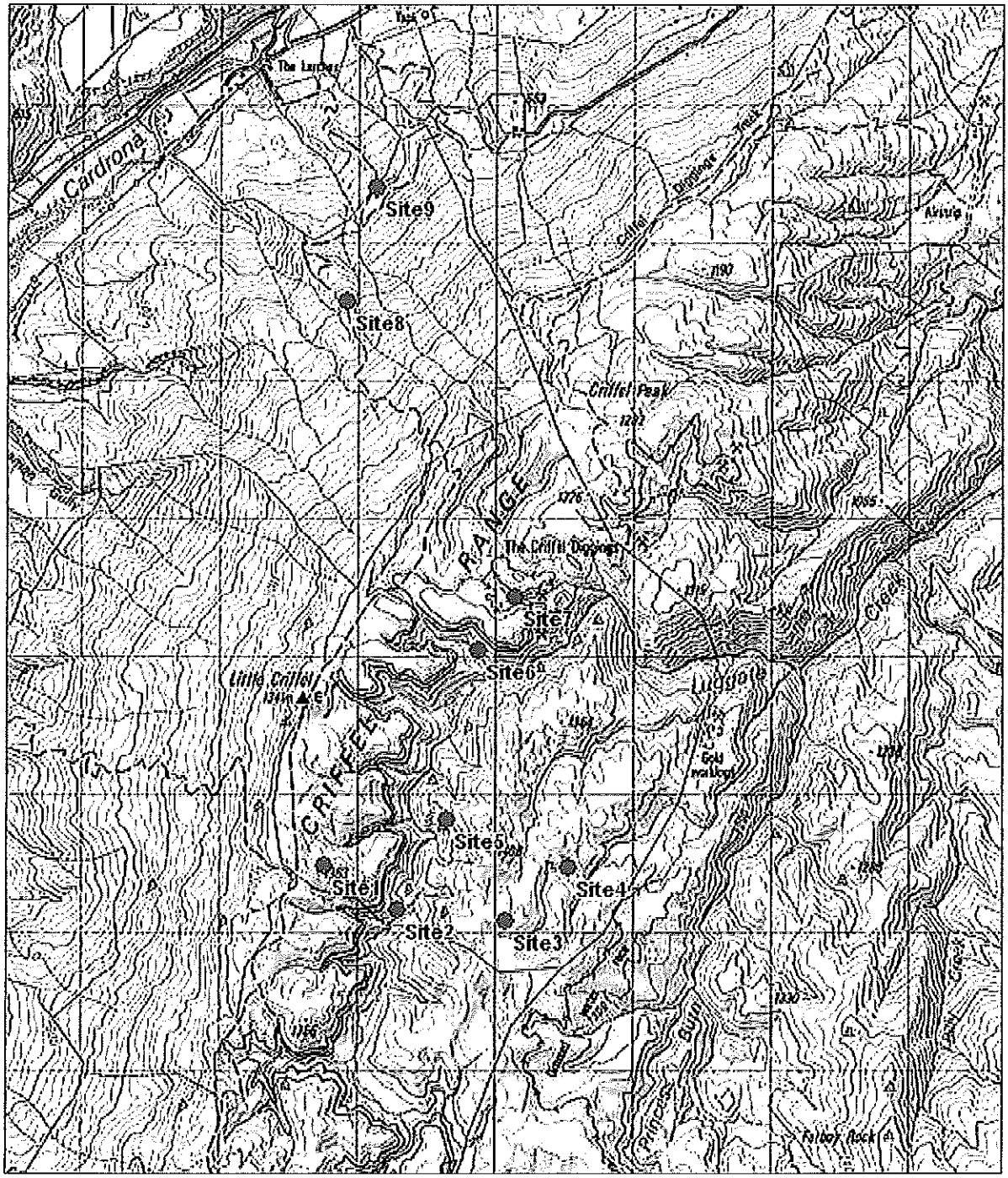
"Site locations of rare and endangered herpetofauna are recorded in the original report. Herpetofauna of this nature is at risk of illegal activities including damage and removal through unlawful interference and disturbance. Accordingly, information regarding the locations of any such herpetofauna has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

Lizard Survey Report
28th Jan.
Survey was carried out by two people (S. McQueen. L. McFarlane) for 5 hours. Area surveyed included land adjacent to access road. Weather was clear, still and warm and good conditions for lizard survey.
The land on the slopes overlooking the Cadrona Valley adjacent to the road is highly modified for livestock farming. There was little rock outcrop or scree, however a small rock bluff and scree was inspected (half an hour). McCanns skinks (*Oligosoma maccanni*) were seen but no geckos (genus *Hoplodactylus*) were found. For the area surveyed at higher altitude vegetative cover was mostly low growing native species often with significant bare ground and infested with *Hieracium lepidulum*. McCanns skinks, including gravid females and juveniles, were frequently observed on bare ground, in vegetation or on small rock screes. No geckos or other lizards were found under loose rock or on tors near Luggate Creek and its tributaries. Cat scats were seen at two locations in the vicinity of Luggate Creek and lizard scales were visible in one of these without magnification. There is a black backed gull nesting colony on some of the rock tors near Luggate Creek.

29th Jan.
Survey was carried out by L. McFarlane for 4½ hours. The area surveyed included the lower Luggate Creek, surrounding tors and screes. Weather conditions during the survey was clear, still and warm with temperatures of 20º C. McCanns skinks were seen in scree filled gullies and on outcrops. The tors on the RHS of Luggate creek were also inspected – and although they appeared suitable with good deep crevicing in parts, no lizards were observed. There was very little in the way of vegetation on or around the tors.

A wetland area and duck ponds/raupo swamp was inspected. Weather conditions were hot and still with temperatures of 27º C. The common skink (*Oligosoma nigriplantare polychrome*) was abundant at these sites.

Appendix 5: Invertebrate collecting sites



Appendix 6: INVERTEBRATE FAUNA OF COLLECTING SITES

The coilecting sites are shown in Appendix Five, and details of each site are given below. The Larches PL coilection site details

Site	**Map reference** (NZMS 260: F40)	Altitude (m)	**Description**	Method
	2203970E,5593490N	t260	**Tussock and prostrate** *Dracophyll/llll*	Blower-Vac, pitfalls, **hand search, net**
2	2204230E,5593460N	1240	Luggate Creek valley floor grasses **and herbs**	Blower-Vac, pitfalls, hand search, net
3	2205070E,5593100N	1380	**Tussock**	Blower-Vac, hand **search, net**
4	2205510E,5593480N	1340	Upper wetland area	**hand search, net**
5	2204640E,5593820N	1300	Rocky outcrops and surrounding tussock vegetation	**hand search, net**
6	2204860E,5595060N	1250	Luggate Creek NW tributary; **stream-side vegetation and shr"ubs**	**hand search, net,** beating
7	2205130E,5595440N	1280	Gold diggings area, disturbed **ground**	**hand search, net**
8	2203900E,5597590N	800	**Tussock and *Hieracium lepidulum***	net
9	2204110E,5598410N	580	Lower wetland area, shrubland	**hand search, net,** beatiug

Appendix 7: INVERTEBRATE SPECIES LIST

Order	Family	Genus species author	Site	Comment	ID and info.
INSECTS					
Coleoptera	Anobiidae	*Leanobium flavomaculatum* Esp.	9	Native wood borer	BIPB
Coleoptera	Anthribidae	*Eucoides suturalis* Pascoe	9	Throughout most of NZ except SL, lowland to alpine; larvae feed in flower stalks of grass spp.; Australian	BIPB
Coleoptera	Byrrhidae	Byrrhidae sp.	1		BIPB
Coleoptera	Carabidae	?*Taenarthrus capito* (Jeannel)	6	Found dead under stone by side of small stream running in to Luggate Creek, typical habitat for the genus. Identity to be confirmed.	PMJ
Coleoptera	Carabidae	*Cicindela* sp. cf. *dunedinis* Cast.	7	Eastern and Central SI; lowland to alpine	BIPB
Coleoptera	Carabidae	*Holcaspis ovatella* (Chaudoir)	3	Remains only: southern SI; lowland to alpine	BIPB
Coleoptera	Carabidae	*Holcaspis* sp. cf. *egregialis* (Broun)	2	Not consistent with this species in all respects; striae not faint and elytral intervals moderately convex, but single pronotal basal impression	BIPB
Coleoptera	Carabidae	*Holcaspis sternalis* Broun	2	Southern SI species; lowland to alpine	BIPB
Coleoptera	Carabidae	*Mecodema lucidum* Cast.	1	Southern SI species; lowland to alpine	BIPB
Coleoptera	Carabidae	*Megadromus sandageri* (Broun)	1,2,3,7	Southern SI species; lowland to alpine	BIPB
Coleoptera	Carabidae	*Notagonum feredayi* (Bates)	3	Throughout SI; lowland to alpine in wet areas	BIPB

Coleoptera	Carabidae	*Scopodes edwardsi* Bates	1,2,3,4	Common at Site 4 running on surface of wetland mat cushion plants; found throughout NZ, lowland to alpine	BIPB
Coleoptera	Cerambycidae	sp.	9	Larva only	BIPB
Order	**Family**	**Genus species author**	**Site**	**Comment**	**ID and info.**
Coleoptera	Chrysomelidae	*Chaetocnema nitida* (Broun)	1		BIPB
Coleoptera	Coccinellidae	?*Diomus* sp.	1,2,3		BIPB
Coleoptera	Coccinellidae	*Coccinella leonina* F.	2		BIPB
Coleoptera	Coccinellidae	*Rhizobois forstieri* (Muls.)	9		BIPB
Coleoptera	Coccinellidae	*Scymus* sp.1	9		BIPB
Coleoptera	Coccinellidae	*Scymus* sp.2	9		BIPB
Coleoptera	Colydiidae	?*Notoulus* sp.	1		BIPB
Coleoptera	Corticariidae	*Melanopthalma gibbosa* (Herbst)	2		BIPB
Coleoptera	Corylophidae	*Holopsis* sp.	1,2		BIPB
Coleoptera	Curculionidae	?*Eugnomus* sp.	3		BIPB
Coleoptera	Curculionidae	*Baeosomus* sp. 1	1,2	Genus of very small weevils usually associated with mosses and liverworts; large number of species which are poorly known	BIPB
Coleoptera	Curculionidae	*Baeosomus* sp. 2	1,2	as above	BIPB
Coleoptera	Curculionidae	*Baeosomus* sp. 3	1	as above	BIPB
Coleoptera	Curculionidae	Cryptorhinchinae sp.	2		BIPB
Coleoptera	Curculionidae	*Eugnomus dispar* (Broun)	2,3	as above	BIPB
Coleoptera	Curculionidae	*Eugnomus durvillei* Schonherr	2,6	Common in tussock grassland, adults often associated with *Aciphylla* flowers	BIPB
Coleoptera	Curculionidae	*Irenimus* sp.	1,2	Undescribed species, distribution unknown	BIPB
Coleoptera	Curculionidae	*Irenimus* sp. cf. *egens* (Broun)	2	Biology as above but also collected from South Canterbury	BIPB

Coleoptera	Curculionidae	*Irenimus* sp. nr. *curvus* Barratt & Kuschel	1,2,3	Broad-nosed weevil, root-feeding larvae; this species is also known from Coronet Peak and eastern ranges such as Rock & Pillar and Lammermoor	BIPB

Order	**Family**	**Genus species author**	**Site**	**Comment**	**ID and info.**
Coleoptera	Curculionidae	*Listronotus bonariensis* (Kuschel)	3	Exotic pasture pest, Argentine stem weevil, ubiquitous in grassland, larvae are stem borers in grass tillers	BIPB
Coleoptera	Curculionidae	*Nicaeana* sp.	3	Broad-nosed weevil, root-feeding larvae; this undescribed species also known from the Old Man Range	BIPB
Coleoptera	Curculionidae	*Nonnotus* sp. cf. *albicans* (Broun)	3	One of few endemic broad-nosed weevils that are alate – adults feed on pollen of grasses	BIPB
Coleoptera	Curculionidae	*Peristoreus veronicae* (Broun)	1,2,3	Common flower weevil associated with *Hebe* and *Cassinia*	BIPB
Coleoptera	Curculionidae	*Praolepra* sp. cf. *squamosa* Broun	9	Widespread weevil found on shrubs	BIPB
Coleoptera	Leiodidae	*Isocolon* sp.	1		BIPB
Coleoptera	Leiodidae	Leiodinae sp.	1,2		BIPB
Coleoptera	Melyridae	*Acantharthrus* sp. cf. *planifrons* (Broun)	6		BIPB
Coleoptera	Scirtidae	Scirtidae sp.	9		BIPB
Coleoptera	Staphylinidae	?*Microsilpha* sp.	1	Only one genus in the Microsilphinae	BIPB
Coleoptera	Staphylinidae	Aleocharinae sp.	2		BIPB
Coleoptera	Staphylinidae	Staphylininae sp.	2		BIPB
Coleoptera	Tenebrionidae	*Lorelus tarsalis* Broun	1	SI distribution; often found in dead *Aciphylla* flower stems	BIPB
Diptera	Agromyzidae	*Cerodontha* sp.	2,3		BIPB
Diptera	Agromyzidae	*Liziomyza* sp.	2		BIPB
Diptera	Bibionidae	sp.	1		BIPB

Diptera	Cecidomyidae	Cecidomyidae sp.	2		BIPB

Order	Family	Genus species author	Site	Comment	ID and info.
Diptera	Dolichopodidae	sp.	9		BIPB
Diptera	Drosophilidae	*Scaptomyza fuscitarsis* Harrison	1		BIPB
Diptera	Empidae	sp.	1		BIPB
Diptera	Helomyzidae	*?Allophylopsis* sp.	1		BIPB
Diptera	Muscidae	sp.	3		BIPB
Diptera	Mycetophilidae	sp.	1,2,3		BIPB
Diptera	Phoridae	3 spp.	1,2		BIPB
Diptera	Sciaridae	2 spp.	1,2,9		BIPB
Diptera	Stratiomyidae	?*Odondomyia* sp.	2		BIPB
Diptera	Syrphidae	sp.	2		BIPB
Diptera	Tachinidae	*Avibrissa brevipalpis* Malloch	1,2	Parasitoid of scarabaeid larvae, widely distributed in eastern SI, open shrubland/ grassland uplands to subalpine	JSD
Diptera	Tachinidae	*Medinella albifrons* Malloch	2	Described from Cass MC; widespread	JSD
Diptera	Tachinidae	new genus new species	1,2	Distribution and host unknown	JSD
Diptera	Tachinidae	*Peremptor' modica* Hutton	1,2	Parasitoid of scarabaeid larvae, widely distributed in SI, open shrubland/ grassland uplands to subalpine	JSD
Diptera	Tachinidae	*Plagiomyia* sp.	3	Parasitoids of ground-dwelling moths and butterflies	JSD
Diptera	Tachinidae	*Zealandotachnia latifrons* Malloch	1,2	Hosts possibly crambid caterpillars in turf; throughoput NZ; lowland - subalpine, forest edge and shrub/grassland	JSD
Hemiptera	Aphidae	spp.	1,2,3,6		BIPB
Hemiptera	Cercopidae	sp.	3		BIPB
Hemiptera	Cicadellidae	spp.	1,2,3,6		BIPB
Hemiptera	Cicadidae	*Kikihia angusta* (Walker)	3,7		BIPB

Order	Family	Genus species author	Site	Comment	ID and info.
Hemiptera	Lygaeidae	spp.	1,3,4,6,9		BIPB
Hemiptera	Nabidae	spp.	2,3,6		BIPB
Hemiptera	Pentatomidae	sp.	9		BIPB
Hemiptera	Pseudococcidae	spp.	1,2,3		BIPB
Hemiptera	Psyllidae	sp.	1,3		BIPB
Hemiptera	Saldidae	sp.	2		BIPB
Hemiptera	Tingidae	sp.	2		BIPB
Hymenoptera	Braconidae	gen & sp indet	6		JE
Hymenoptera	Braconidae	Microgastrinae gen & sp. indet	1		JE
Hymenoptera	Colletidae	*Leioproctus* sp.	1		JE
Hymenoptera	Colletidae	*Leioproctus fulvescens* (Smith 1876)	1		JE
Hymenoptera	Diapriidae	*Stylaslista* sp.	2		JE
Hymenoptera	Diapriidae	*Trichopria* sp.	2		JE
Hymenoptera	Diapriidae	*Basalys* sp.	1		JE
Hymenoptera	Encyrtidae	*Austrochoreia antipodis* Noyes 1988	1,2	Common, particularly in tussock grasslands where they are parasitoids of mealybugs, probably on tussock and grass roots	JE
Hymenoptera	Encyrtidae	*Odiaglyptus biformis* Noyes 1988	1,2		JE
Hymenoptera	Gasteruptiidae	*Pseudofoenus unguiculatus* (Westwood 1834)	1		JE
Hymenoptera	Halictidae	*Lasioglossum sordidum*	2		JE
Hymenoptera	Pompilidae	*Priocnemis conformis* (Smith 1876)	1,2		JE
Hymenoptera	Pompilidae	*Priocnemis crawi* Harris 1987	2		JE
Hymenoptera	Proctotrupidae	?*Oxyserphus* sp.	1	Brachypterous; seems to be a Central Otago endemic, few specimens known, could be a new genus	JE
Hymenoptera	Pteromalidae	?*Eupteromalus* sp.	3		JE
Hymenoptera	Scelionidae	*Baeus* sp.	1		JE
Hymenoptera	Scelionidae	*Idris* sp.	2		JE
Hymenoptera	Scelionidae	*Telenomus* sp.	2		JE

Hymenoptera	Scelionidae	*Trimorus* sp.	1		JE

Order	Family	Genus species author	Site	Comment	ID and info.
Hymenoptera	Scelionidae	*Scelio* sp.	2	Probably a grasshopper egg parasitoid; JL notes that he has not seen the species before	JE
Hymenoptera	Sphecidae	*Podagritus ?albipes*	1		JE
Lepidoptera	Crambidae	*Orocrambus crenaeus* Meyrick	5	Common, widespread, ♀ brachypterous	BHP
Lepidoptera	Crambidae	*Orocrambus thymiastes* Meyrick	3,4	Rare, although locally abundant; found on wetland; southern species	BHP
Lepidoptera	Geometridae	*Aponotoreas anthracias* Meyrick	1	Widespread alpine; diurnal; larvae on prostrate *Dracophyllum*	BHP
Lepidoptera	Geometridae	*Asaphodes clarata* Walker	1,3	Common and widespread; montane to alpine; larvae on *Ranunculus*	BHP
Lepidoptera	Geometridae	*Notoreas* n. sp.	1,3	Widespread in CO, OL, MK; montane to alpine; larvae on *Pimelea*	BHP
Lepidoptera	Geometridae	*Paranotoreas brephosata* Walker	3	Widespread; coastal to high alpine; larvae on *Epilobium*	BHP
Lepidoptera	Lycaenidae	undescribed sp.	2	Boulder copper butterfly, undescribed but common and widespread in CO. Larvae feed on *Muehlenbeckia axillaris*	BHP
Lepidoptera	Lycaenidae	*Zizina labradus oxleyi* Felder & Felder	9	Southern Blue; larvae on prostrate *Carmichaelia* or *Trifolium*	BHP
Lepidoptera	Noctuidae	*Aletia virescens* Butler	1	Widespread in SI, larvae feed on herbs	BHP
Lepidoptera	Nymphalidae	*Argyrophenga antipodum* Doubleday	1,3,8	Tussock butterfly; widespread on native and exotic grasses	BHP

Order	Family	Genus species author	Site	Comment	ID and info.
Lepidoptera	Pyralidae	*Eudonia chalara* Meyrick	1,2,3,5	Grassland sod webworm; common	BHP
Lepidoptera	Pyralidae	*Heliothela atra* Butler	1	Widespread, biology unknown, open country montane to low alpine	BHP
Mantodea	Mantidae	*Orthodera novaezealandiae* (Colenso)	9		BIPB
Orthoptera	Acrididae	*Alpinacris tumidicauda* Bigelow	2,3,7	Described from the Old Man Range; southern SI distribution	BIPB
Orthoptera	Acrididae	*Phaulacridium marginale* (Walker)	9	Common in open grassland at lower altitude	BIPB
Orthoptera	Acrididae	*Sigaus* sp. cf. *australis* (Hutton)	2,3,7	Common higher altitude species; Otago and Canterbury	BIPB
Orthoptera	Stenopelmatidae	*Hemiandrus focalis* (Hutton)	1,2	Widespread weta in CO	PMJ
Thysanoptera		spp.	1,2,3		BIPB
OTHER INVERTEBRATES					
Chilopoda		*Henicops maculatus* Newport	6	Very widespread centipede species	PMJ
Arachnida	Pseudoscorpionidea	sp.	3		
Araneae	Amauroboidae	sp.	6		RC
Araneae	Amphinectidae	*Akatorea gracilis* Marples	6	Lower South Island species	
Araneae	Anapidae	sp.	9		RC
Araneae	Araneidae	*Colaranea brunnea*	2		RC
Araneae	Araneidae	*Eriophora pustulosa* Walckenaer	9	Australian sp. which has become one of the commonest orbweb spiders in NZ (Forster and Forster 1999)	RC
Araneae	Araneidae	sp.	9	Juvenile	
Araneae	Corrinidae	*Supunna picta* (L.Koch)	2	Common Australian ground spider, established here in warmer areas	RC
Araneae	Desidae	*Badumna longiques*	7	Australian grey house spider	RC
Order	**Family**	**Genus species author**	**Site**	**Comment**	**ID and info.**

Araneae	Desidae	*Laestrygones* sp.	7		RC
Araneae	Gnaphosidae	*Anzacia gemmea* (Dalmas)	2	One of the most common representatives of the family in NZ (Forster and Forster 1999)	RC
Araneae	Idiopidae	*Misgolas (=Cantuaria)* sp.	2	Trapdoor spider; not found in "Spiders of New Zealand" suborder Myaglomorphae (RC)	RC
Araneae	Linyphiidae	*Diplocephalus cristatus* (Blackwall)	1	Introduced species	
Araneae	Linyphiidae	*Erigone prominens* Bos. & Str	2	Money-spider	RC
Araneae	Linyphiidae	*Erigone wiltoni*	3	Widespread in NZ	
Araneae	Lycosidae	sp.	9		RC
Araneae	Lycosidae	two spp.	1,2,3		RC
Araneae	Micropholcommatidae	sp.	1		RC
Araneae	Opiliones	Palpatores sp.	2	Long legged group of harvestmen	RC
Araneae	Opilionidae	Laniatores sp.	2	Short legged group of harvestmen	RC
Araneae	Opilionidae	sp.	1		RC
Araneae	Orsolobidae	sp.	1		RC
Araneae	Salticidae	*Euophrys parvula* Bryant	1,2,3	Very common jumping spider, often called the 'house hopper' (Forster and Forster 1999)	RC
Araneae	Salticidae	*Trite auricoma* Urquhart	1,9	Common jumping spider	RC
Araneae	Segestridae	sp. (juvenile)	1		RC
Araneae	Tetragnatidae	*Tetragnatha* sp.	3,6		RC
Araneae	Theridiidae	sp. 1	1		RC
Araneae	Theridiidae	sp. 2	3		RC
Araneae	Theridiidae	sp. 3	6		RC
Araneae	Thomisidae	sp. 1	3		RC
Araneae	Thomisidae	sp. 2	9		RC
Gastropoda		ID not yet received			GB

KEY: BHP Brian Patrick; BIPB Barbara Barratt; JE John Early; JSD John Dugdale; PMJ Peter Johns; RC Robert Clark

Appendix 8: INVERTEBRATE SPECIMEN HOLDING AND LOCATION

Taxa	Holding
Coleoptera, Diptera (except Tachinidae), Hemiptera and other miscellaneous groups	B.I.P. Barratt (AgResearch, Invenllay)
Hymenoptera	John Early (Auckland Museum)
Lepidoptera	B.H. Patrick (Otago Museum)
Olthoptera, Myriapoda	Peter Johns (Canterbury Museum)
Diptera: Tachinidae (specimens ofthe new genus and species)	NZAC (Landcare Research, Auckland)
Molluscs	Gary Barker (Landcare Research, Hamilton)
Araneae	Robert Clark (Agresearch, Ruakura)

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PASTORAL LEASE TENURE REVIEWS

Preliminary Report on Recreational and Related Significant Inherent Values

THE LARCHES

December 2001

Compiled for Federated Mountain Clubs ofNZ (Inc.)
By Dr Michael J S Floate
High Country Consultancy

RECREATIONAL AND RELATED SIGNIFICANT INHERENT VALUES ON THE LARCHES

A Preliminary Report to FMC based on field inspection and other research to assist in the Tenure Review Process

December 2001

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Fig. 1. The Larches property consists of two distinctly different land forms. In this view can be seen the western scarp faces which form the true right of the Cardrona Valley. The view here is from near the Little Criffel Trig at 1,341m at the top of the scarp slope. The road in the valley is an increasingly popular tourist route, both in summer and winter, between Queenstown and Wanaka.

Fig. 2. The other distinctive landform on the Larches is the rolling plateau which lies between about 1,300 and 1,400m. The plateau rises gently towards the summit of the Pisa Range and includes the headwaters of the Luggate Creek catchment. This view is from near Little Criffel looking towards the Pisa tops.

Fig.3. The Larches homestead is situated on a low terrace beside the Cardrona River (extreme left in this view) just where the Cardrona Valley opens out into tlle Upper Clutha basin. The lower slopes are mainly improved pasture but there are some important areas of shrubland which add significantly to the biodiversity of the property. Lake Wanaka and the township can be seen in the distance.

Fig. 4. The homestead lies jnst across the Cardrona River from the Cardrona Valley Road which can be seen in this view. The lower to mid-slopes above the homestead are LUC Class IV and VI land which, with appropriate maintenance, should be capable of supporting sustainable pastoral use and therefore be suitable for freeholding up to about 1,000m, or about 3/4 of the way up the skyline slope in this view.

Fig. 5. The upper slopes and rolling plateau are LUC Class VII and by definition have a low suitability for sustainable pastoral use. They are heavily infested with tussock hawkweed *(Hieracilim lepldllillm)* but also contain important wetland conll1lUnities which are rich in biodiversity.

Fig. 6. The upper slopes, skyline scarp and rolling plateau have significant inherent values which enhance their value for recreation and conservation. The upper slopes between about 1,000 and 1,100m carry short tussock grassland among a steep landscape dotted with schist tors and bluffs.

Fig. 7. Near the eastern boundary of the plateau block of The Larches, Luggate Creek is deeply incised and is bounded by steep rocky valley sides which contrast with the gently rolling surface of the plateau, and add greatly to its landscape appeal.

Fig. 8. Above the Criffel Diggings, Luggate Creek flows over more gentle gradients and its many tributary branches and localised wetlands are tlle gathering grounds for the network of races which lead to the diggings. This complex network of races is of considerable historical significance and offers a multitude of opportunities for exploration by those who have an interest in goldmining relics.

Fig. 9. A group of walkers on the Otago Goldfields Heritage Trust Cavalcade is approaching the historic Criffel Diggings. The Diggings are situated near the northern boundary of the plateau block. In the distance, across the Cardrona Valley, can be seen the snow on the Cardrona Skifield.

Fig. 10. The farm track on The Larches would be preferable to the steep access over Avalon to the skyline ridge of the Criffel Range Such alternative access would also create opportunities for round trips, which would be rewarded by superb views over the Upper Clutha and Lakes Wanaka and Hawea. This 1999 photo shows tussocks below the snowline fence which were more numerous then.

Fig. 11. The natural values of the plateau block include birds as well as the botanical biodiversity. Bird life includes Oyster Catchers and this New Zealand Falcon which seems to be resident at the Little Criffel Trig as it has been seen on the same perch on several occasions.

Fig. 12. Shrublands on the lower slopes are not extensive but do contain some important examples of 'old man' kanuka as well as species of Olearia and Coprosma with manuka and lllatagouri. The best areas of shrubland are important as examples of biodiversity and should be retained as Conservation Reserve or

protected under Conservation Covenant. A few wilding pines could pose problems and the tenure review agreement should include a commitment to eradicate them.

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INTRODUCTION

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

The Report focuses on those features ofthe property which are known to be important for public recreational interests. It should be noted that while much ofthis interest focuses on access, the natural and historical values and landscapes ofthe areas concerned have a fundamental impact on the recreational value ofthe property and greatly influence the quality ofrecreational experience enjoyed. It is for this reason that reference is also made to the natural, historical and landscape values in this Report.

Mason (1988) has described the general area as follows:- *"The Pisa Range* is *the most western of Central Otago's block mountains. It is a distinct geographic unit separatedfrom other high countly by major river valleys and basins. The Clutha Valley* is *to north and east, and the Cardrona Valley and Kawarau Gorge provide western and southern boundaries respectively. Unlike most other Otago block mountains the Pisa presents distinct fault escarpments on either side, with a nine kilometer Wide, sloping summit plateau between. The western scarp. With its Criifel Range northern extension, rises 900 to 1000m above the Cardrona Valley. Two catchments drain the plateau; Luggate Creek into the Clutha and the Roaring Meg into the Kawarau; both becoming deeply incised in their lower reaches but retaining shallow intricate sub-catchments in their headwaters. Overall the plateau landscape* is *characterised by gentle roundedforms. It lies between 1,700 and 1,964m."*

METHODS OF SURVEY AND ASSESSMENT

A site visit and field inspection was carried out in December 2001. This report is based on the field inspection and in part, on infonnation gathered from other sources. The other sources include studies of topographical and Land Use Capability (LUC) maps, consultation with recreational user groups and a knowledge ofthe landscapes seen from the Cardrona Valley Road. A study of "Outdoor Recreation in Otago" was undertaken by Mason (1988) and published by FMC. Reference is made to this Recreation Plan for Otago in the recreation section below. The Conservation Management Strategy for Otago has also been used as a source of reference.

GENERAL DESCRIPTION OF THE LARCHES

The Larches is a relatively small pastoral lease (1,800 ha) consisting oftwo contrasting landforms: the western scarp slope ofthe Pisa Range (Fig. 1), and part ofthe rolling plateau between about 1,300 and 1,400m (Fig. 2). The homestead is situated at about 350m on a low alluvial river terrace within the narrow river valley floor, at the point where the valley opens out into the Upper Clutha basin (Fig. 3).

Now that the road has been sealed, the Cardrona Valley is a major tomist route between Wanaka and Queenstown. This carries both summer visitors and, in winter, skiers shuttling between skifields in the Upper Clutha and Wakatipu basins. The homestead is however, concealed within the plantation of exotic conifers, including a few larches after which it is named (Fig. 4).

111e Cardrona faces of The Larches are drained by several small creeks and streams, while the rolling plateau area forms part ofthe headwaters of Luggate Creek.

The lower slopes have been classified LUC Class IV and VI, the mid to upper slopes as Class VI and the highest slopes along the skyline are Class VIle. The rolling plateau is all Class VII, due either to proneness to erosion, or climatic limitation.

It is likely that the lower and mid to upper slopes (LUC Class IV and VI land) are capable of supporting sustainable pastoral use with appropriate maintenance (Fig. 4). The highest slopes and the rolling plateau has by definition low suitability for pastoral use, and is heavily infested with tussock hawkweed (Fig. 5). As such it is not capable of supporting sustainable pastoral production.

The upper slopes, skyline scarp and rolling plateau do have however, significant inherent valnes which enhance their value for recreation and conservation. The upper slopes between about 1,000 and 1,100m carry good tussock grassland among a steep landscape dotted with schist tors and bluffs (Fig. 6). The rolling plateau rises gently towards the summit of the Pisa Range and is bisected by the upper reaches of Luggate Creek. Near the eastern boundary this is deeply incised and bounded by steep and rocky valley sides (Fig. 7), while above the Criffel Diggings the usually more gentle streams are paralleled by multiple water races. The complex of races and diggings add an important historical value to the plateau part of The Larches (Fig. 8).

RECREATIONAL ACTIVITIES AND POTENTIAL

The recreational significance of the property lies in its position at the northern end of the Pisa, on what is usually known as the Criffe1 Range. The rolling plateau area lies near the source of Luggate Creek, and at the top of the Criffel Diggings Pack Track. There is much of historical goldmining interest to explore in this area including two separate areas of gold workings and an intricate network of water races (Figs. 8 and 9).

Mason (1988) has reported that:- *"The main recreational potential for the Pisa Range is for cross country skiing."* He does add that there is potential for horse riding at several locations, including the Criffel Diggings Pack Track, and that: *"The Criffel gold workings are of interest for the energetic walker who wishes to piece together the network of water races and other jield remains."*

The Criffel Pack Track is also used by a commercial recreation concession - Criffel Peak Safaris - which offers guided trips on 4WD farm bikes.

The southern boundary of the plateau section of The Larches adjoins a new area of Conservation Land, the Pisa Conservation Area, derived from the Avalon tenure review. Walking access to this area is available up the slopes of Avalon, although this is steep and particularly the upper slopes are very steep. Access via The Larches or the Criffel Diggings Pack Track would be much better. If alternative access could be made available through this tenure review, round trips would become possible to Criffel Peak and Little Criffel, and the new Pisa Conservation Area, with the return down through Avalon,. The views of the Cardrona, Lakes Wanaka and Hawea and the Upper Clutha are superb and are a fitting reward for some 3 or 4 hours of climbing (Figs. 1,3 and 10). The Little Criffel Trig seems to have its resident New Zealand Falcon, as this has been seen on the same perch on several occasions (Fig. 11). These views, landscapes and both natural and historical features add greatly to the recreational value of such trips.

The landscapes and historic features of the plateau block of the Larches are complementary to the features of the adjacent Pisa Conservation Area derived from Avalon. Although the former is dominated by tussock hawkweed (Fig. 5), the Pisa Conservation Area has much greater biodiversity on its rolling uplands with better tussock grassland, sub-alpine cushion plants and wetland commWlities.

The plateau area of The Larches is not as high as much of the remainder of the Pisa Range, so snow does not persist as long in winter. The plateau area does however, include some topographic shelter in the gullies near the head of Luggate Creek. These could be used to establish a base camp for more extensive ski touring on the northern part of the Pisa Range.

The mix of landscape, historic and natural values, and the opportunities for ski touring in winter, makes trips to the Criffel Range appealing, and would add significantly to the recreational opportunities currently available on the nOlthern end of the Pisa Range, and within easy reach of Wanaka.

As part of the tenure review agreement for The Larches, public access easements for foot, mountain bike and possibly horse riding should be negotiated as indicated on the attached map. The highest priority is to provide access to the Criffel diggings and to the track system leading to other gold minming areas such as the Fat Boy Diggings and to the new Conservation Area derived from the Waiorau tenure review.

The recreational significance of this propelty should be assessed not only on its present usage but also on its potential. This is because current usage is much less than its potential for a number of reasons. Because of the current land tenure nnder pastoral lease, and because access to some parts of the range has not been easy in the past, the recreational use of The Larches and the Criffel Range is less than it might have been if these impediments did not exist. There is significant potential for greater use and it is the full range of possibilities which should be considered during this tenure review.

In summary, this assessment indicates that there is considerable scope on the Criffel Range for day walks, and tramping or mountain bike trips to more distant parts of the Pisa Range, exploring the historic gold workings, possible horse riding, and in winter cross conntry ski touring. It is recommended that public access for all these activities should be secured as an outcome of tenure review.

SIGNIFICANT INHERENT VALUES AND THEIR IMPORTANCE FOR RECREATION

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

As noted in the general description of The Larches, the lower to mid- and upper slopes of the Cardrona faces has been classified LUC Class IV or VI, which should be capable of supporting sustainable pastoral use with appropriate maintenance (Fig. 4). Much of the vegetation on the Cardrona faces has been modified from its natural state by grazing and burning, but there are important areas of shrubland which add significantly to the biodiversity of tllese slopes. The access track up the front face passes through some "old man" kanuka which is some 6 to 8m tall in places. The shrubland also appears to contain a variety of species including Olearia and Coprosma as well as kanuka, manuka and matagouri (Fig. 12). Consideration should be given to setting aside the best of the shrubland either as Conservation Reserve, or nnder a protective covenant.

There is a conservation problem on these lower slopes, and that is the potential spread of wilding pines. These could spread from the isolated trees on the slopes or from the plantation of Radiata pine and Douglas fir near the homestead. The Tenure Review agreement should include a commitment by the prospective freehold owner to eradicate the wilding conifers.

TIlere are considerable areas of significant inherent value on the upper scarp slopes and skyline, and on the rolling plateau above about 1,200m. TIle slopes between the fences at about 1,000 and 1,200m are mainly short tussock grassland, but with increasing invasion by tussock hawkweed towards the crest of the scarp (Figs 6 and 10). The combination of dramatic landscapes with tors and bluffs and the tussock grassland is sufficient that these significant inherent values should ensure that this upper landform becomes conservation land, rather that freehold. Although the rolling plateau is heavily infested with tussock hawkweed there is also significant biodiversity especially in the headwater gullies of Luggate Creek, and in the associated areas of wetlands. The historic value of the extensive network of water races is high and complements the goldmining sluicings at the Criffel Diggings. The entire plateau block should become conservation land through tenure review, and be added to the adjacent Pisa Conservation Area.

The Cardrona faces of the Criffel Range are a prominent feature of the landscape seen from tile increasingly popular Crown Range Road (Fig. 4). As noted in the introduction this road (now that it has been sealed) is being used as a major tourist route in summer and as an important access route to skifields in winter. Because of this increasing tourist usage, the landscape values of these faces are increasingly important. It is

doubtful whether landscape provisions in the Queenstown Lakes District Plan are sufficiently robnst or durable enough to achieve adequate protection from the adverse effects of inappropriate development, and landscape values should be more securely protected. A binding Landscape Conservation Covenant shonld therefore be negotiated as part of the tenure review and finally registered on the freehold title.

AREAS TO BE PROTECTED

On the basis of the descriptions above it is considered that three areas are worthy of being restored to full Crown ownership and control,and to be transferred to the Department of Conservation to be managed for conservation and recreation purposes. ll1ese areas are as follows:-

(i) The plateau area with the headwaters of Luggate Creek, the Criffel Diggings and the associated extensive network of water races.

(ii) The steep upper slopes above the fence at approximately 1,000m with short tussock grassland and dramatic tor and bluff landscape

(iii) A representative are of lowland shmbland including mature kanuka, Olearia, Coprosma, manuka and Matagouri.

ACCESS REOUIREMENTS

The following access provisions will be required:-

Walking, mountain bike and possibly horse riding access to the extended area of Pisa Conservation Area (including plateau and upper slopes) described and recommended in the section above. Public access up the farm track in the middle of the property would be complementary to the steep walking access on Avalon, and would enable more interesting round trips to be made.

In order to minimise the inconvenience to the runholder (or owner of the new freehold) a route should be chosen from the Cardrona Valley Road to meet the zig-zag track above the plantation. This should be located well away from the homestead.

CONSERVATION MANAGEMENT STRATEGY FOR OTAGO

There are important statements in the Conservation Management Strategy for Otago, in which the Pisa is recognised as a Special Place. The objective for this area, which includes The Larches is:-

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

Implementation includes:-

"Seek opportunities arising out of pastoral lease tenure review negotiations to protect extensive high altitude areas of high landscape, nature conseJ1lation, recreational and water and soil conservation significance.

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

- *Aim to protect at least one complete mining system. "*

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

CONCLUSIONS

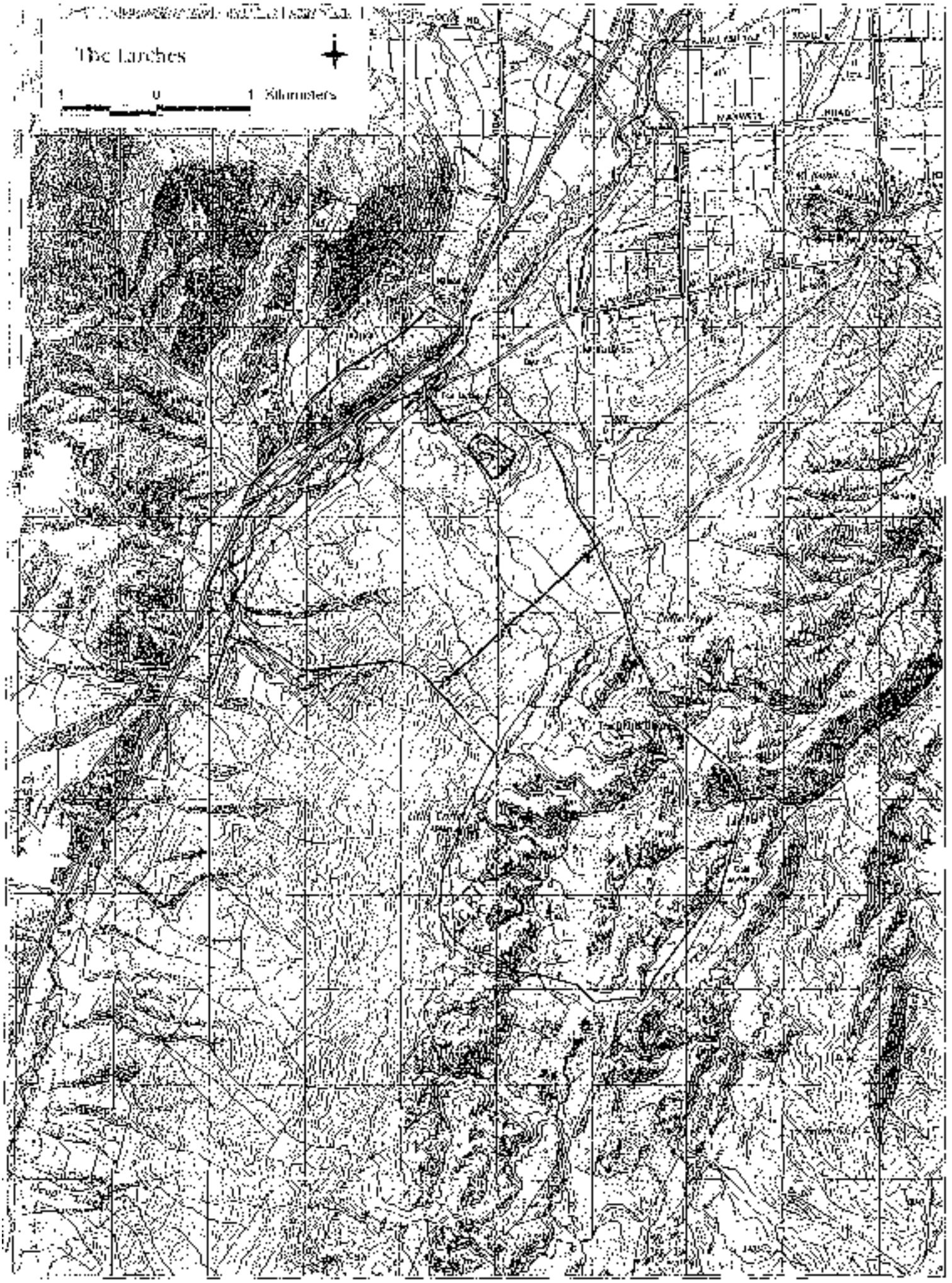
TIle tenure review of The Larches is important as it provides an opportunity to enhance the recreational opportunities and use of the northern end of the Pisa Range in general and of the Criffel Range in particular. This also provides an opportunity to increase the range of opportunities available in the Wanaka area generally. Furthermore, it is also an opportunity to improve the quality of recreational experience on those lands by recognising and protecting the significant landscape and historic values described above.

Additions to the public conservation land on the Pisa Range, for example by extending the Pisa Conservation Area derived from the tenure review of Avalon, and the nearby new conservation lands derived from Mid Run and Lake McKay, and from Waioran, are assisting in the realisation of the Pisa Conservation Park, foreshadowed in the Conservation Management Strategy for Otago. New conservation land generated from the tenure review of The Larches would further enhance the development of this concept.

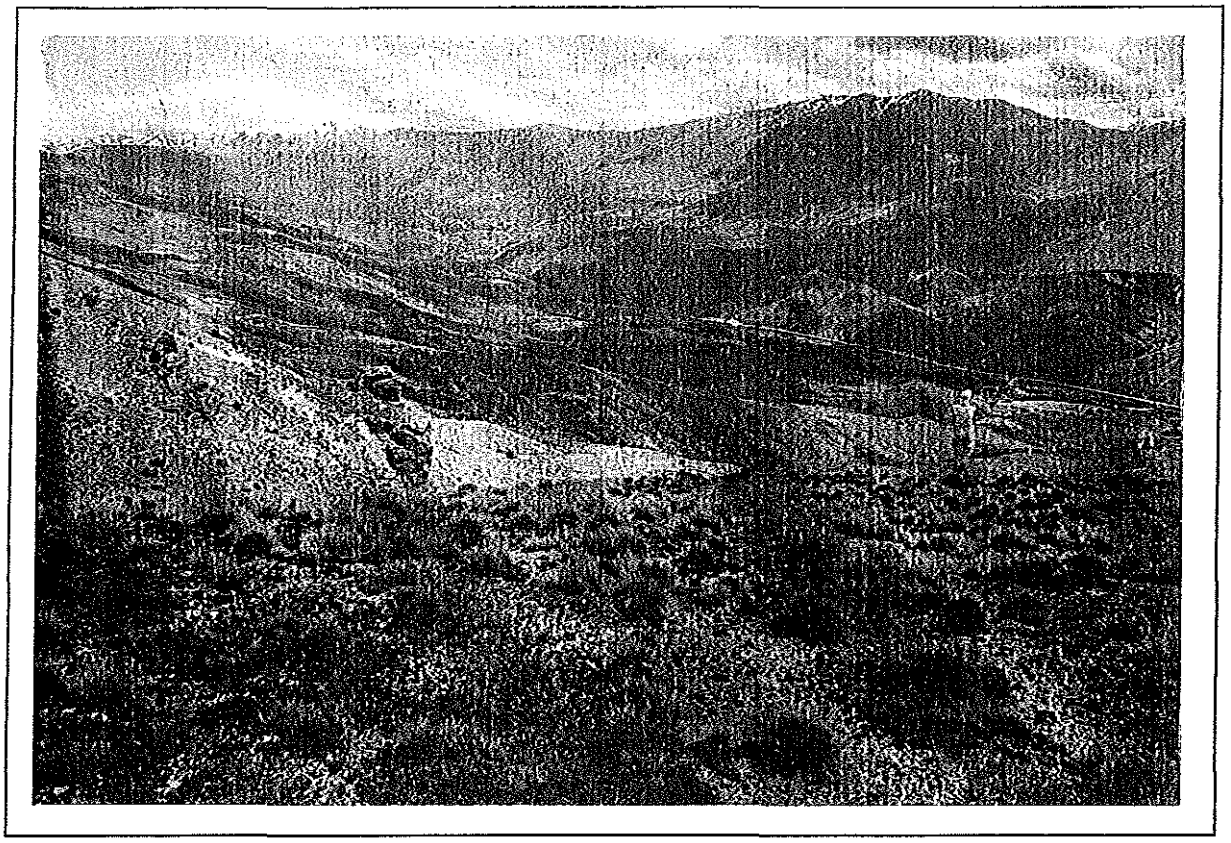
The outcome of the tenure review of The Larches, if it includes the important recreation and conservation recommendations included in this Report, could contribute significantly to the achievement of the objectives declared for the Pisa Special Place in the Conservation Management Strategy for Otago.

ACKNOWLEDGEMENTS

FMC is gratefhl for assistance from authorities in making the assessment possible. TIle site inspection was carried out in December 2001 and FMC is grateful to the nmholder for co-operation and granting pennission for access, and to Opus staff for making the appropriate arrangements.



Map showing the preferred allocation of public conservation land and freehold land (green and red outlines respectively) and important recreational access routes (Yellow)



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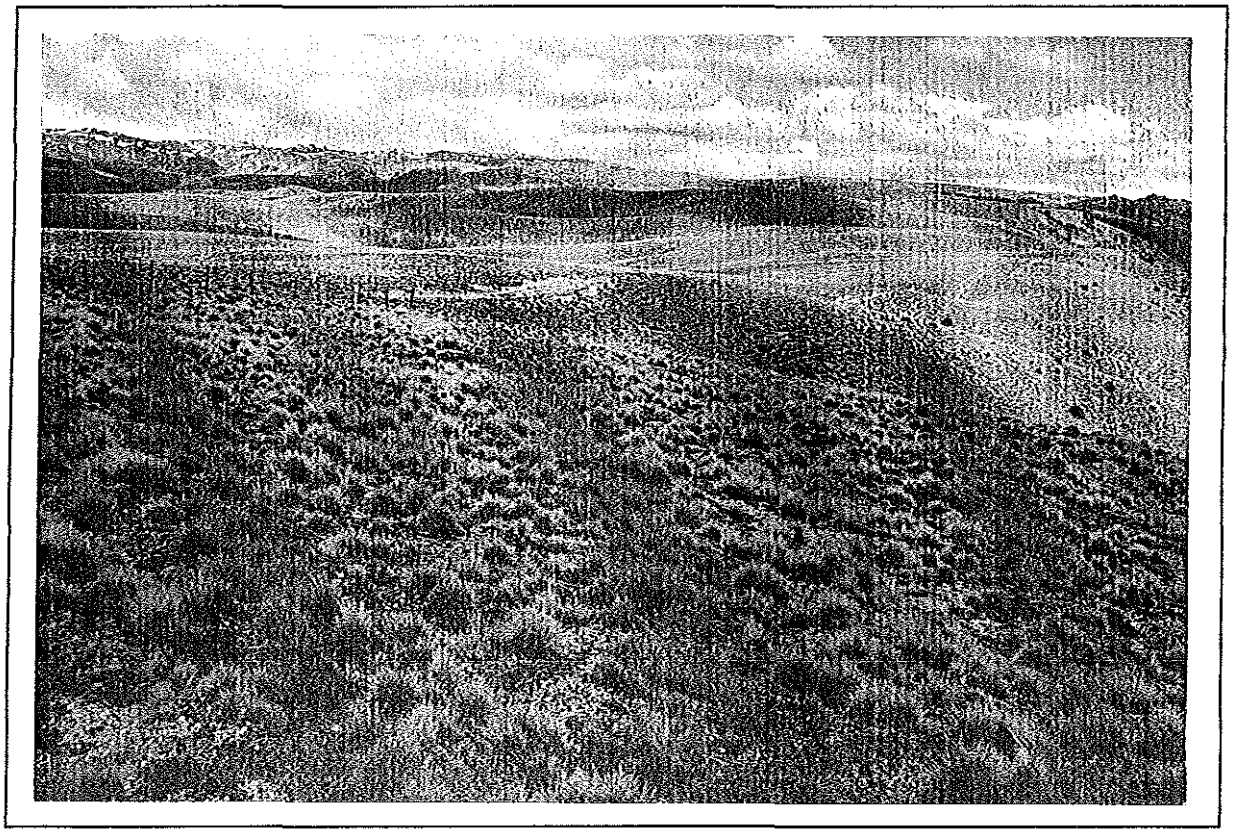

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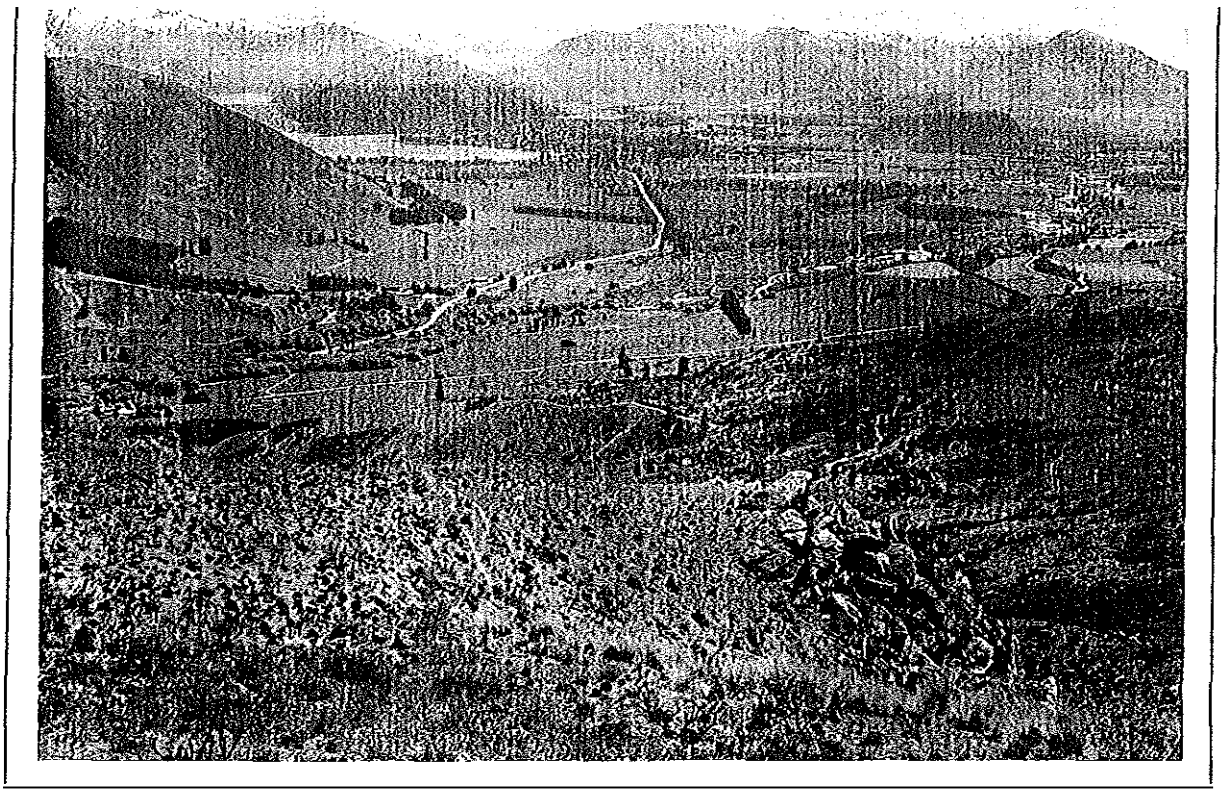

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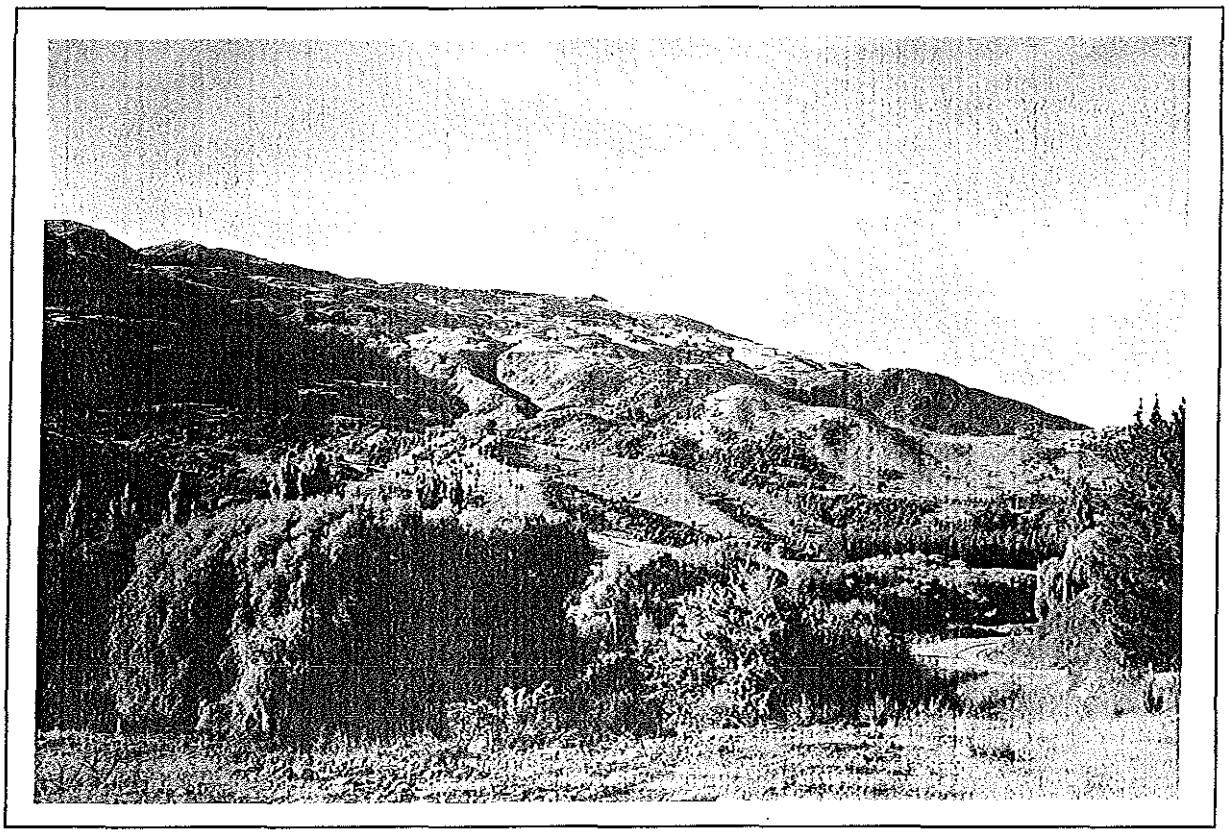

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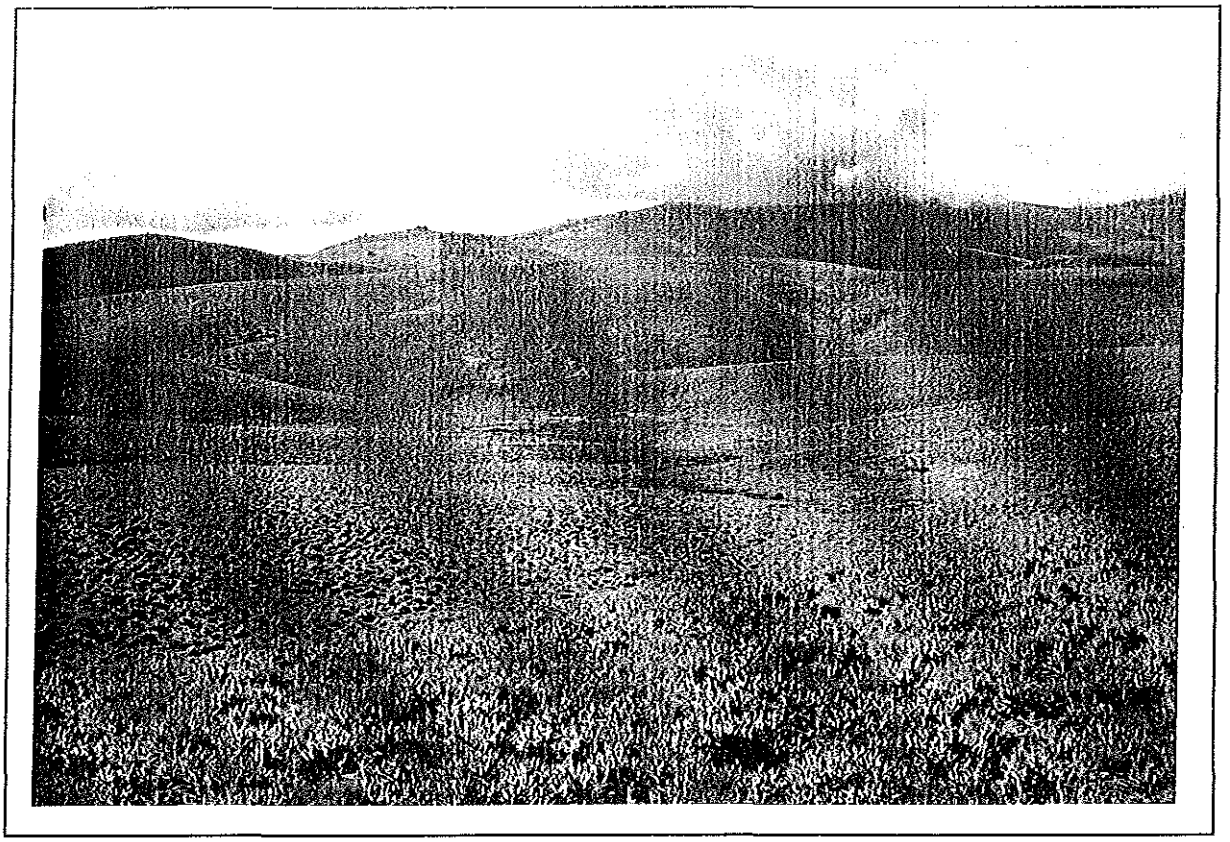

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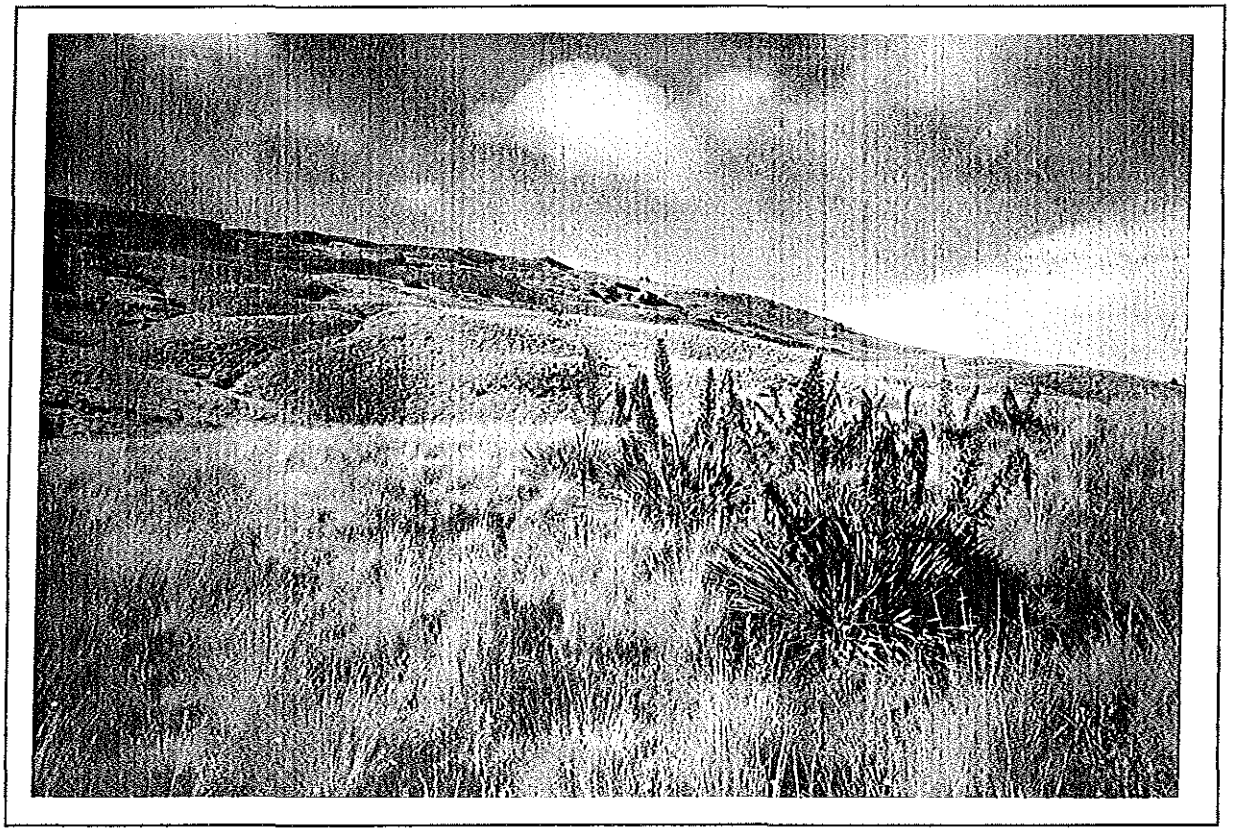

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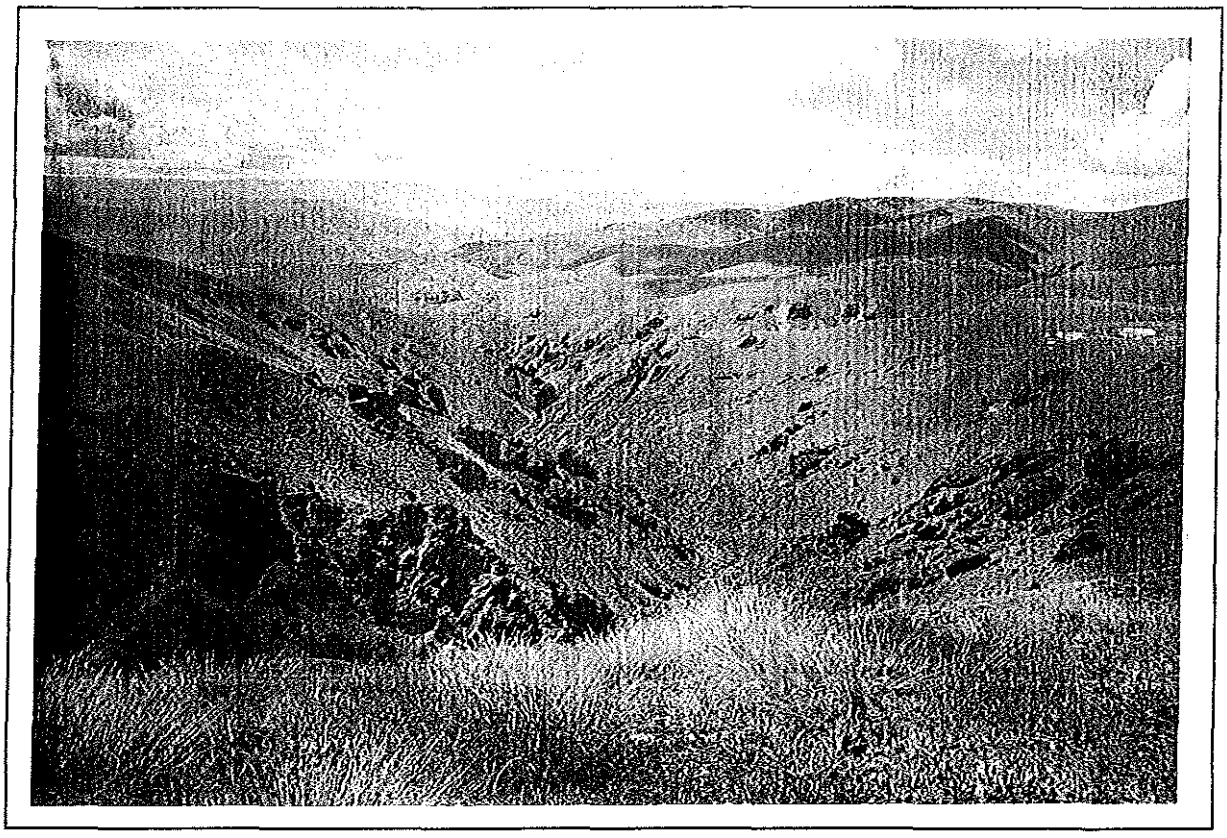

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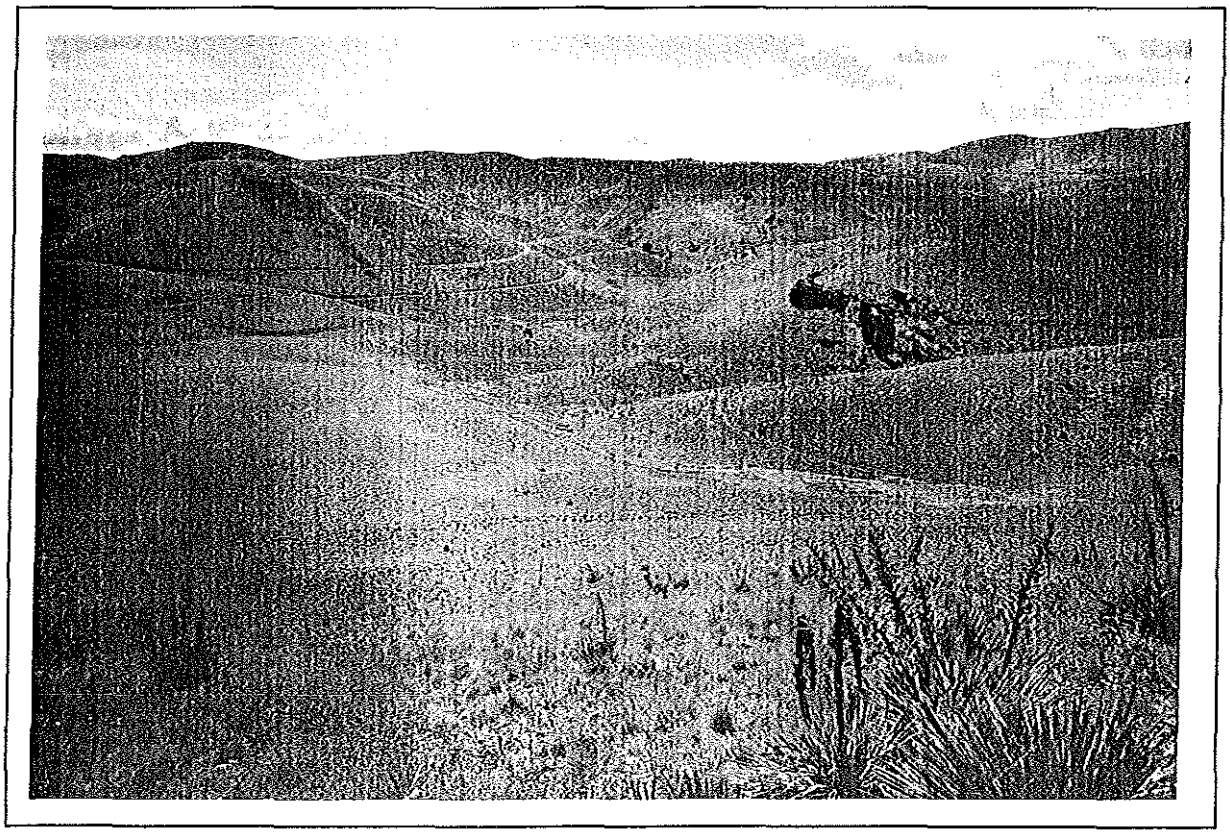

Fig. 8. Above the Griffel Diggings, Luggate Creek flows over more gentle gradients and its many tributary branches and localised wetlands are the gathering grounds for the network of races which lead to the diggings. This complex network of races is of considerable historical significance and offers a multitude of opportunities for exploralion by those who have an interest in goldmining relics.

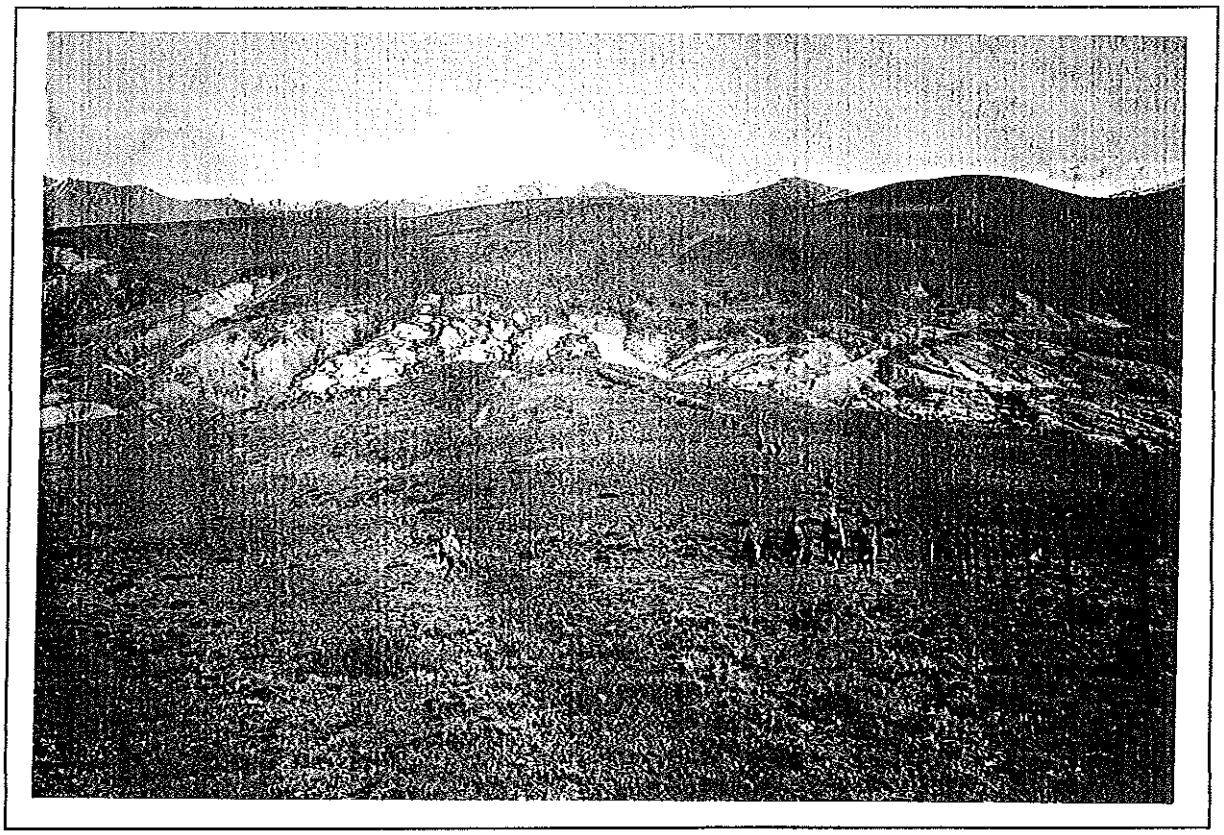

Fig. 9. A group of walkers on the Otago Goldfields Heritage Trust Cavalcade is approaching the historic Criffel Diggings. The Diggings are situated near the northern boundary of the plateau block. In the distance, across Ihe Cardrona Valley, can be seen the snow on the Cardrona Skifield.

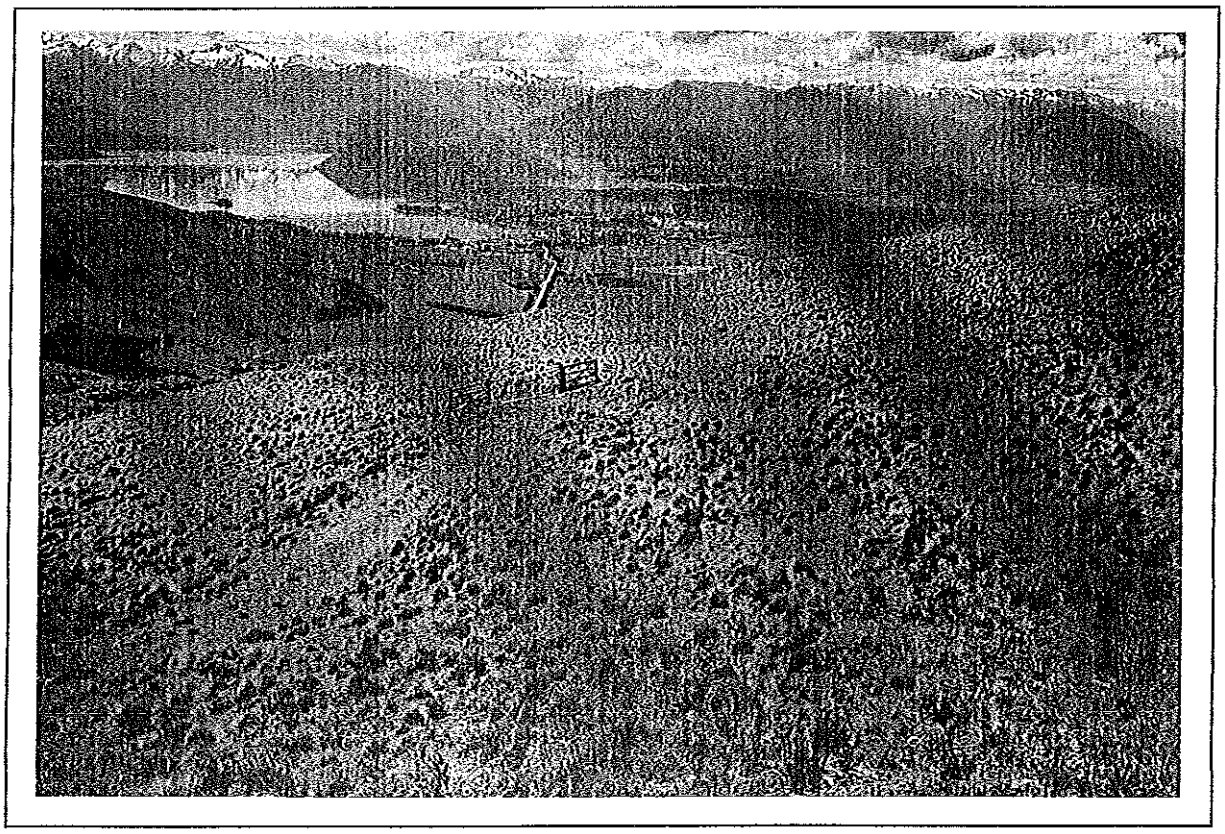

Fig. 10. The farm track on The Larches would be preferable 10 the steep access over Avalon to the skyline ridge of the Criffel Range. Such alternative access would also create opportunities for round lrips, which would be rewarded by superb views over the Upper Clulha and Lakes Wanaka and Hawea. This 1999 pholo shows tussocks below the snowline fence which were more numerous then.

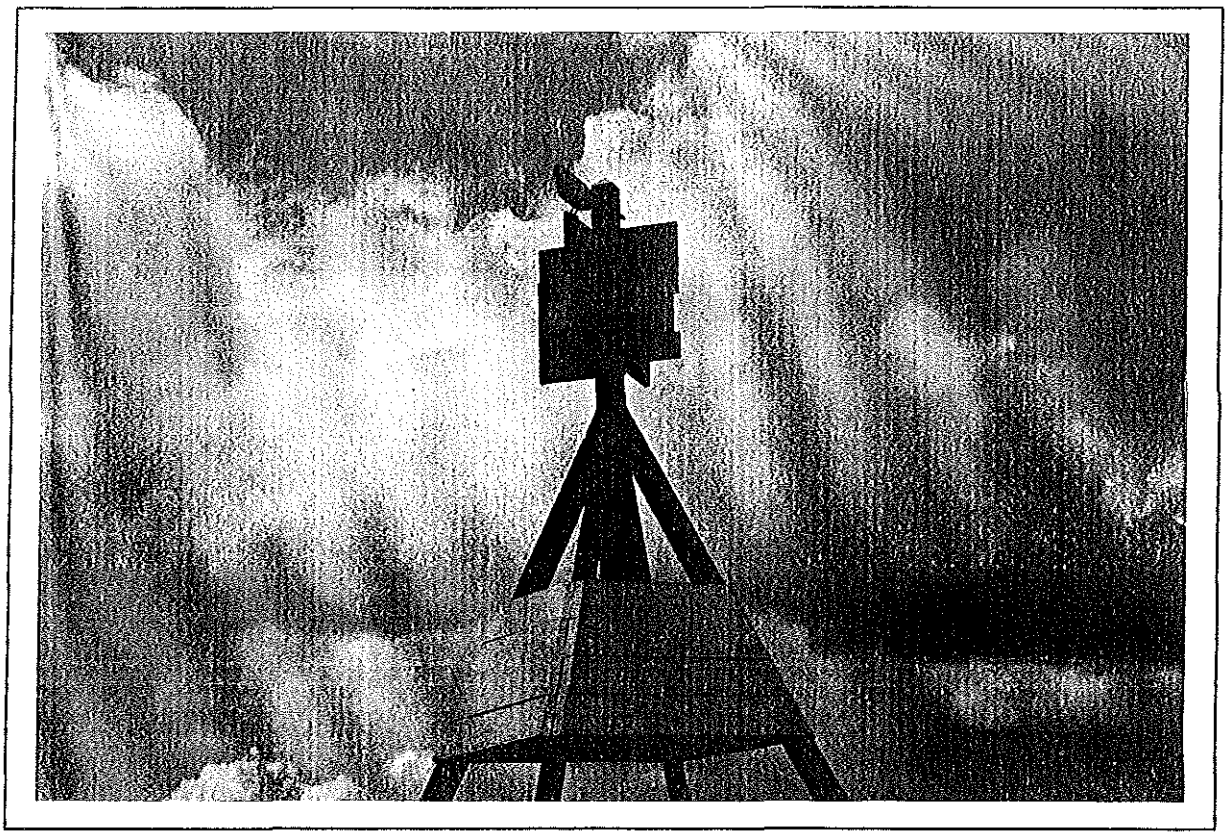

Fig. 11. The nalural values of the plateau block include birds as well as the botanical biodiversity. Bird life includes Oyster Catchers and Ihis New Zealand Falcon which seems to be resident althe Ullle Criffel Trig as it has been seen on Ihe same perch on several occasions.

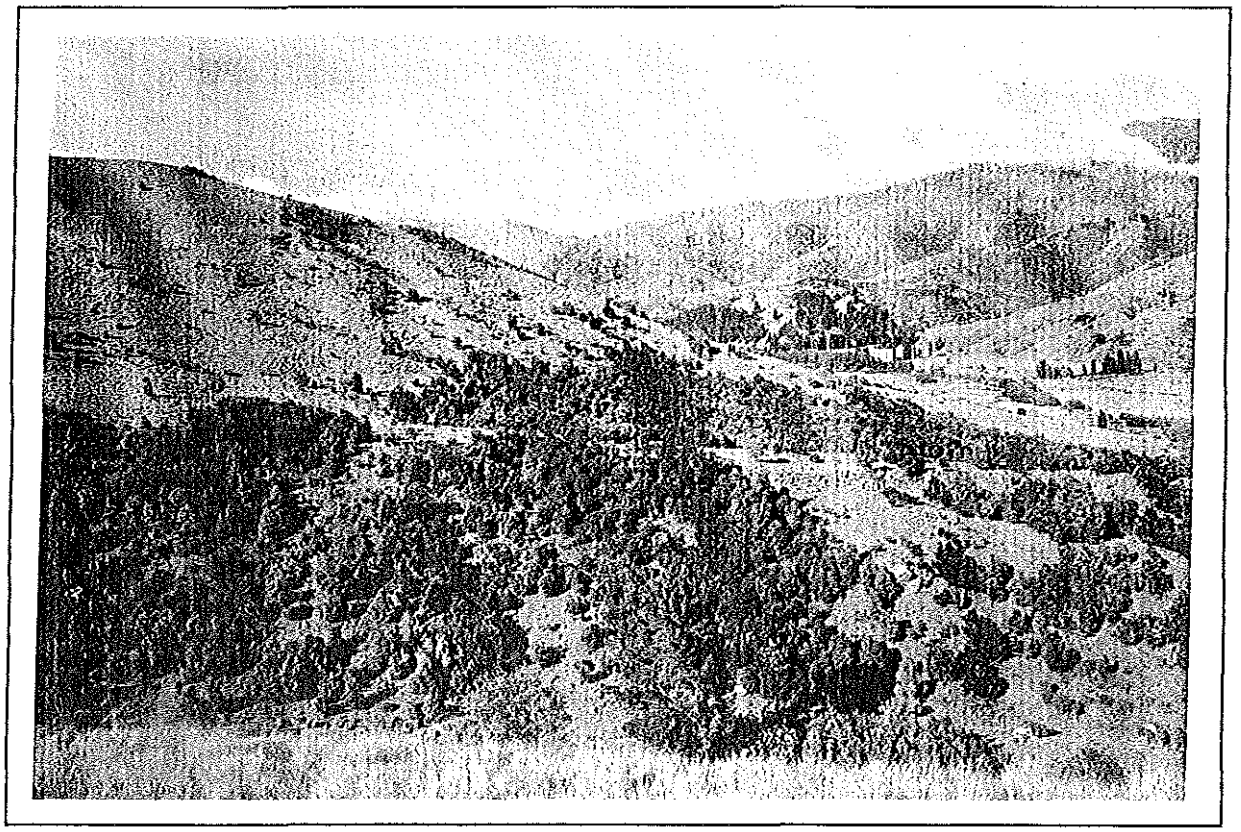

Fig. 12. Shrublands on the lower slopes are not eXlensive but do contain some importanl examples of 'old man' kanuka as well as species of Olearia and Coprosma with manuka and matagouri. The besl areas of shrubland are importanl as examples of biodiversity and should be retained as Conservation Reserve or protecled under Conservation Covenanl. A few wilding pines could pose problems and Ihe tenure review agreemenl should include a commiUmenl to eradicale them.