

Crown Pastoral Land Tenure Review

Lease name : LOWER CASCADE

Lease number : PH 002

Conservation Resources Report - Part 3

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.

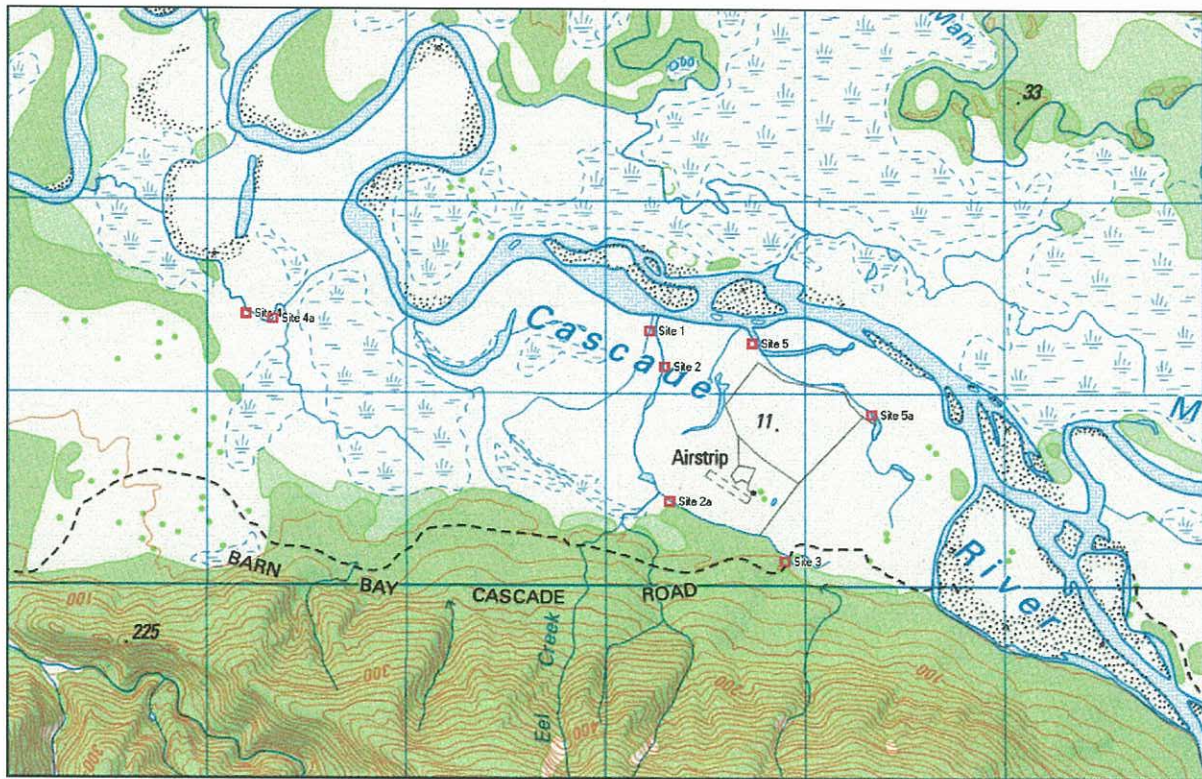
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APPENDIX THREE

Sites fished

Location	Fishing Method	NZMS 260 Grid Ref.	Date	Fish species
Site 1	1 Gm, 1 Fyk	E37/38 2146225 5671332	22/04/03	Gob. hut.
Site 2 to Site 2a	4 Gm, 2 Fyk	E37/38 2146299 5671147 to E37/38 2146322 5670444	22/04/03	Gob. hut., Sal. tru., Ang. die.
Site 3	Spotlight	E37/38 2146900 5670133	23/04/03	Sal. tru., Ang. die., Gal. arg., Gob. hut.
Site 4 to Site 4a	4 Gm, 1 Fyk	E37/38 2144196 5671414 to E37/38 2144332 5671387	23/04/03	None caught Sal. tru. and Ang. die. seen
Site 5 to Site 5a	2 Gm, 2 Fyk	E37/38 2146739 5671263 to E37/38 2147336 5670890	24/04/03	Sal. tru.

Gm = Gee-minnow trap; **Fyk** = Fyke trap; **Spotlight** = spotlighting.
Gob. hut. = Redfin bully, *Gobiomorphus huttoni*; **Sal. tru.** = Brown trout, *Salmo trutta*; **Ang. die.** = Longfin eel, *Anguilla dieffenbachii*; **Gal. arg.** = Giant kokopu, *Galaxias argenteus*.



Fish survey locations, Cascade River Pastoral Lease, April 22-24.

APPENDIX FOUR

Herpetofauna Survey Methods and Summary of Search Effort

Methods

Several search techniques were involved in the assessment of the property for its herpetological values. These are described below:

Visual search

Visual searching is the fundamental task of moving quietly through likely habitat during time and weather conducive to spotting reptiles. Visual searches are not only looking for reptiles themselves but also signs of their existence such as faeces (distinguished from birds by the cylindrical form usually comprising of invertebrate cuticle and seeds, capped with uric acid). Sloughed skins may also be found in the case of geckos.

Refugia searches

This involves looking in likely places of refuge such as under rocks or wood, beneath loose bark and within dense vegetation. As above, signs as well as lizards themselves are searched for. It is important to note the number of refuges searched so that any data collected can be related to relative density of occupancy, but this necessitates consistent search methodologies. Ideally this technique is expanded to the use of artificial refugia such as sheet iron etc placed in the environment and searched at regular intervals. When searching rock and wood refugia, care must be taken not to crush hiding reptiles if objects cannot be cleanly lifted. Dense *Coprosma* spp. bushes, known habitat for *Naultinus* spp should also be searched carefully to avoid unnecessary damage to the plant.

Pitfall Trapping

This is probably the most efficient method of assessing the presence of skinks in the environment. Smooth sided pots are sunken until flush with the ground, a drainage hole in the bottom and baited with soft fruit. Pots should be at least 14cms deep to effectively capture *Oligosoma* skinks. A cover of some form is placed over the trap that still allows the entry of skinks but prevents desiccation from the sun, exposure to rain or predators. Possums will often be attracted to the fruit and so a sturdy cover is desirable.

Spot lighting

For nocturnal species such as the members of the *Hoplodactylus* genus spot lighting can be effective as 'eye shine' (light that reflects off the retina) can make specimens obvious in structurally complex environments. The process involves walking transects of quantified habitat and scanning the surroundings with a powerful spotlight in search of likely reflections. A powerful spotlight and an accurate knowledge of the terrain is essential for this search method.

Results

In this section, details of area searched, techniques used and results are outlined.
April 22nd 2003 PM: Weather mild overcast, very light breeze.

Following the Barn Bay Cascade Road we placed two pitfall traps in a small clearing about 1km along the forest track. We then proceeded to the clearing at the end of the drivable Barn Bay Cascade road where another 6 pitfall traps were installed along the southern margin of the clearing. Pitfall trap locations are illustrated as red diamonds on figure 1, and the clearing area searched labelled A. The clearing was then visually searched. 209 rocks and 41 pieces of wood were investigated in the clearing, all deemed likely refugia for either skink or gecko species. No animals, sloughed skinks or faecal signs were observed. Site B (Fig. 1) was next to be searched where recently cleared forest was still in a decompositional phase with the rapid encroachment of exotic grasses and bramble. 26 logs were lifted, no animals, sloughed skinks or faecal signs were observed. NB. A *Peripatus spp.* (Onychophora) was observed on the rotting bark of a fallen tree.

Whilst returning along Barn Bay Cascade road all recently fallen trees were closely examined for signs of reptiles, specifically *H. granulatus*. No animals, sloughed skinks or faecal signs were observed.

On returning to the base hut the forest-clearing interface was visually searched (site C, fig. 1). Despite the boggy substrate, *Coprosma* and flax species appeared to be flourishing and identified as potential *Naultinus spp.* habitat. 86 *Coprosma spp.* bushes, 4 logs and 1 rock were closely investigated for signs of reptiles. No animals, sloughed skinks or faecal signs were observed.

The evening of the 22nd beginning with clear skies but becoming overcast and finally light rain. 2.5 hours were spent spotlighting for *H. granulatus* along the Barn Bay Cascade road (site I) No animals, sloughed skinks or faecal signs were observed. NB. Three brush tailed possum were observed during the spotlighting.

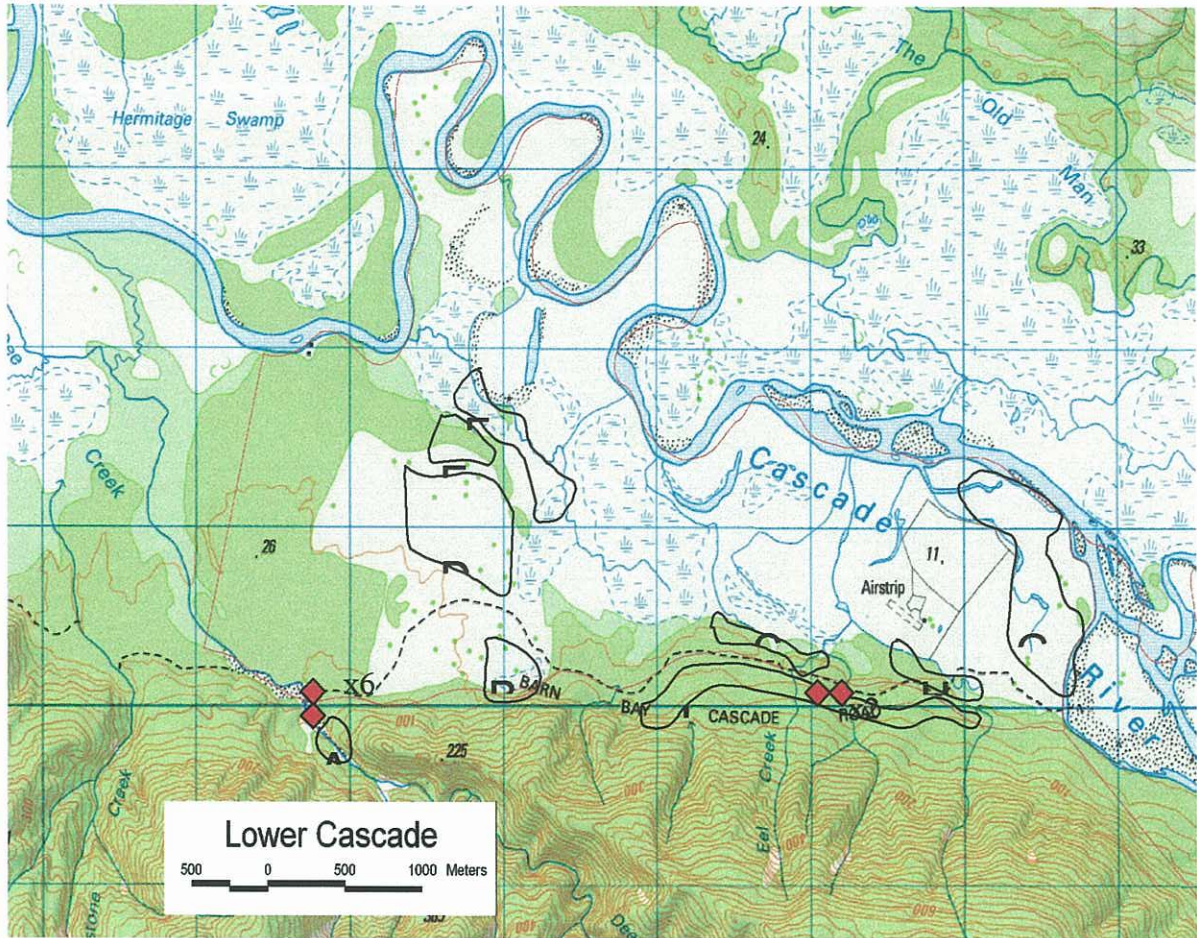
April 23rd 2003 AM: Heavily overcast morning clearing by 11AM. Site D (Fig. 1) was examined from 8.40 until 11AM as the cleared lines of rotting logs within the pasture area had significant numbers of *Coprosma spp.* growing within them deemed likely *Naultinus* habitat and log debris was identified as potential skink refugia. 68 logs, 44 *Coprosma spp.* bushes and 18 stones were investigated. No animals, sloughed skinks or faecal signs were observed.

From 11AM to 12.30PM (weather still but overcast) site E (fig. 1) was visually searched but the dense nature of the trees yielded few potential reptile habitats. No animals, sloughed skinks or faecal signs were observed. From 12.30 to 3PM the wetland habitat (site F, fig. 1) was investigated. It appeared that the area was exposed to occasional flooding from the amount of debris caught in low shrubs making the area unlikely to be inhabited by terrestrial skinks or geckos. No animals, sloughed skinks or faecal signs were observed.

From 3PM to 5PM area G (fig.1) was searched. Specific attention was paid to disused agricultural implements in the pasture environment and discarded iron sheeting. 8 logs, 29 rocks, 3 sheets of metal, 24 pieces of planking and old machinery were investigated for signs of skinks. The habitat appeared ideal for all *Oligosoma* skink species likely to occur in the region. No animals, sloughed skinks or faecal signs were observed. The braided edge habitat of the Cascade river was investigated and yielded no likely reptile habitat.

The evening of the 23rd (overcast but mild, turning to rain at 8.15pm) was spent spot light searching the track (site I, fig.1) but with short 20 meter transects at right angles to the road. 2.5 hours were spent spotlighting for *H. granulatus* along site I. No animals, sloughed skinks or faecal signs were observed. NB. one brush tailed possum was observed during the spotlighting.

24th April 2003 AM: Mostly clear skies, light broken cloud, warm and humid. 8.20AM pitfall traps retrieved, no lizards captured. 81 *Coprosma spp.* along forest boundary edge searched for *Nautinus spp.* in excellent sunny conditions (site H, fig.1). No animals, sloughed skins or faecal signs were observed.



Map depicts the areas surveyed for herpetofauna during the tenure review. Red diamonds represent sites where pitfall traps were installed and outlined areas identify specific areas of visual searches.

APPENDIX FIVE

Bat Survey Records

Date	NZMS 260 Map	Easting	Northing
22-Apr-2003	E38	2146899	5670129
22-Apr-2003	E38	2147630	5669977
23-Apr-2003	E38	2146833	5670207
23-Apr-2003	E38	2144340	5670183

APPENDIX SIX.

Invertebrate Records From Tenure Review Inspection.

Annotated list of invertebrates noted during a visit to Cascade Pastoral Lease on 22, 23 April 2003

*Invertebrates found prior to 2003 are presented in another list below these records

Order/family	Taxon	Locality	Elevation	Date	Collectors	comment
Blattoidea						
Blattidae	<i>Celatoblata</i> sp.	Dee Ck.	35	23-Apr-2003	J. Readon	
Coleoptera						
Lucanidae	<i>Geodorcus helmsi</i>	Dee Ck.	35	23-Apr-2003	J. Readon	Widespread west South Island forests and Southland
Tenebrionidae	<i>Artystona</i> sp.	Dee Ck.	35	23-Apr-2003	J. Readon	
Hemiptera						
Cicadidae	<i>Amphipsalta strepitans</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	inhabits tall shrubland
	<i>Kikihia</i> species	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, Shrubland
Hymenoptera						
Pompilidae	<i>Priocnemis monachus</i>	Dee Ck.	35	23-Apr-2003	J. Readon	Wasp that hunts trapdoor spiders
Lepidoptera						
Batrachedridae	<i>Batrachedra</i> sp.	Eel Ck.	8	22-Apr-2003	E. Edwards	
Crambidae	<i>Orocrambus flexuosellus</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
Geometridae	<i>Asaphodes aegrota</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x 2, larvae eat herbs
	<i>Asaphodes stephanitis</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x5, larvae eat <i>Rannunculus</i> in wet sedgeland
	<i>Austrocidaria gobiata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, Larvae eat <i>Coprosma propinqua</i>
	<i>Austrocidaria praerupta</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat <i>Coprosma</i> x2, caterpillars on <i>Pseudowintera</i> , <i>Sophora</i> and other trees
	<i>Cleora scriptaria</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x4, larvae polyphageous on shrubs and trees
	<i>Declana floccosa</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, Larvae eat Loranthaceae (mistletoes)
	<i>Declana griseata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x3, larvae polyphageous on shrubs
	<i>Declana junctilinea</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Epiphyrne verriculata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat <i>Cordyline</i>
	<i>Epyaxa rosearia</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x 10, larvae on herbs
	<i>Helastia corcularia</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, larvae on lichens and herbs
	<i>Hydriomena rixata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat <i>Gunnera</i>
	<i>Pasiphila mucosata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Pseudocoremia leucalaea</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat <i>D. dacrydioides</i> and other Podocarpaceae
	<i>Pseudocoremia suavis</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, Larvae polyphageous on trees
Noctuidae	<i>Graphania mutans</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x3, Larvae eat grasses
	<i>Graphania sericata</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Schrankia costaestrigalis</i>	Eel Ck.	8	22-Apr-	E.	x6, inhabits wetlands of

				2003	Edwards	short rush, Larvae eat litter
	<i>Tmetolophota micrastra</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Tmetolophota sulcana</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat <i>Microlaena</i>
Oecophoridae	<i>Eudonia leptalaea</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x3, inhabits open areas
	<i>Eutorna symmorpha</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	larvae eat <i>Sellieria radicans</i>
	<i>Gymnobathra tholodella</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Stathmopoda plumbiflua</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat dying flowers and fruit
Psychidae	<i>Liothula sp.</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Bag moth, widespread on shrubs and trees
Pyralidae	<i>Eudonia cataxesta</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae live in <i>Raoulia</i> in open areas
	<i>Eudonia chalara</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae eat grasses
	<i>Eudonia miniscalis</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x3, Larvae eat understory mosses
	<i>Udea flavidalis</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Larvae inhabit herbs in wet grassland
Tortricidae	<i>Merophyas leucaniana</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x2, Larvae on low herbs in fertile sites
	<i>Pyrgotis plinthoglypta</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
	<i>Protosynaema quaestuosa</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	
Yponomeutidae						x2, larvae eat <i>Carex</i>
Onycophora						
Peripatopsidae	<i>Peripatus sp.</i>	Eel Ck.	20	22-Apr-2003	J. Readon	velvet worms inhabiting rotten logs and forest litter
Orthoptera						
						Lowland grasshoppers inhabit open areas. Not known south of Cascade Valley on the West Coast
Acrididae	<i>Phaulacridium marginale</i>	Dee Ck.	35	23-Apr-2003	J. Readon	
	<i>Phaulacridium marginale</i>	Eel Ck.	8	23-Apr-2003	E. Edwards	
Phasmatodea						
Phasmatidae	<i>Argosarchus horridus</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Inhabiting tall mixed shrubland
	<i>Acanthoxyla prasinia gesovii</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	Inhabiting tall mixed shrubland and also podocarp trees
Trichoptera						
Leptoceridae	<i>Leptocerid spp.</i>	Eel Ck.	8	22-Apr-2003	E. Edwards	x3, stick case caddis inhabiting wetlands and small streams

Annotated list of invertebrates noted on the lease and in the lower Cascade River region before 2003

Collector codes

EE= E. Edwards

PMJ= P. Johns

J & L = P. Johnstone and W. Lee (1977)

Order/Family	Taxon	Locality	Elevation	Date	Collectors	comment
Spiders -Araneae						
	<i>Dolomedes sp. aff. aquaticus</i>	Cascade R.	11	23-Apr-2002	EE	wetland and streams spider
	<i>Tetragnatha sp.</i>	Cascade R.	11	23-Apr-2002	EE	wetland sedge and rush spiders
Cockroaches -Blattodea						
	<i>Celatoblatta notialis</i>	Cascade R.	?	1966	PMJ	Blattidae Logs
	<i>Celatoblatta notialis</i>	Jacksons Bay	?	1995	PMJ	Blattidae Logs
	<i>Celatoblatta subcorticaria</i>	Jacksons Bay	?	1968	PMJ	Blattidae Logs

Beetles -Coleoptera

Carabidae	<i>Neoferonia</i> nsp.	Jacksons Bay	?	1968	PMJ	Carabidae, logs
Carabidae	<i>Platynus macropterus</i>	Cascade R.	?	1955	R.R. Forster	Carabidae 1955, Logs
Lucanidae	<i>Dendroblax earlyi</i>	Cascade R.	11	23-Apr-2002	EE	stag beetle of large woody debris on margins
Lucanidae	<i>Geodorcus helmsi</i>	Cascade R.	~5?	1977	J & L	Stag beetle Johnstone & Lee 1977, Det M. Meads
Scarabaeidae	<i>Odontria</i> spp.	Cascade R.	11	23-Apr-2002	EE	chafers

Millipedes -Diplopoda

	<i>Procliosoma</i> species	Cascade R.	10	23-Apr-2002	EE	Pill millipede. EE, R. Wardle
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Flies -Diptera

Tipulidae	<i>Amphineurus breviclavus</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Amphineurus ochroplacus</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Amphineurus senex</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Amphineurus senex</i>	Jacksons Bay	?	1995	PMJ	
Tipulidae	<i>Amphineurus timidus</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Atarba eluta</i>	Jackson Bay smoothwater	?	1966	PMJ	Tipulidae fern and broadleaf sweeping
Tipulidae	<i>Atarba filicornis</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Austrolimnophila argus</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Austrolimnophila argus</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Austrolimnophila chrysorrhoea</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Austrolimnophila lambi</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Austrolimnophila nigrocincta</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Clorotipula viridis</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Discobola venustula</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Dolichozepea parvicauda</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Elephantomyia zealandica</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Limonia multispina</i>	Jacksons Bay	?	1966	PMJ	
Tipulidae	<i>Molophilus campbellianus</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Molophilus irregularis</i>	Cascade R.	?	1995	PMJ	
Tipulidae	<i>Rhamphophila sinistra</i>	Jacksons Bay	?	1966	PMJ	

Bugs etc. Hemiptera

Pentatomidae	<i>Rhopalimorpha linearis</i>	Cascade R.	11	23-Apr-2002	EE	shield bug common in wetlands
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Moths & Butterflies -Lepidoptera

Crambidae	<i>Barea exarcha</i>	Cascade R.	11	23-Apr-2002	EE	Widespread and common - exotic.
Crambidae	<i>Eudonia characta</i>	Cascade R.	11	23-Apr-2002	EE	autumn emerging, forest, Widespread and common.
Crambidae	<i>Eudonia dochmia</i>	Cascade R.	11	23-Apr-2002	EE	Local
Crambidae	<i>Eudonia feredayi</i>	Cascade R.	11	23-Apr-	EE	Widespread and common.

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				2002		
Crambidae	<i>Eudonia octophora</i>	Cascade R.	11	23-Apr-2002	EE	open areas Widespread and common. wetlands
Crambidae	<i>Eudonia philerga</i>	Martyr R.	30	23-Apr-2002	EE	Larvae on mosses on rocks
Crambidae	<i>Orocrambus flexuosellus</i>	Cascade R.	11	23-Apr-2002	EE	
Crambidae	<i>Orocrambus ramosellus</i>	Cascade R.	11	23-Apr-2002	EE	Widespread and common. grasses
Crambidae	<i>Orocrambus vitellus</i>	Cascade R.	~5?	1977	J & L	Johnstone & Lee 1977, Det M. Meads
Geometridae	<i>Asaphodes aegrota</i>	Cascade R.	11	23-Apr-2002	EE	Larvae on herbs
Geometridae	<i>Asaphodes beata</i>	Cascade R.	11	23-Apr-2002	EE	Larvae on herbs
Geometridae	<i>Asaphodes camelias</i>	Cascade R.	11	23-Apr-2002	EE	
Geometridae	<i>Asaphodes stephanitis</i>	Cascade R.	11	23-Apr-2002	EE	local on wetland herbs
Geometridae	<i>Austrocidaria gobiata</i>	Cascade R.	11	23-Apr-2002	EE	W, C. coprosma
Geometridae	<i>Chloroclystis testulatus</i>	Cascade R.	11	23-Apr-2002	EE	common widespread polyphageous
Geometridae	<i>Declana flocossa</i>	Cascade R.	11	23-Apr-2002	EE	W, C, polyphageous on trees
Geometridae	<i>Declana griseata</i>	Not found but on mistletoes				Peraxilla, Illeostylus and Tupeia
Geometridae	<i>Declana junctilinea</i>	Cascade R.	11	23-Apr-2002	EE	W, C, shrubs
Geometridae	<i>Epiphyryne verriculata</i>	Cascade R.	11	23-Apr-2002	EE	Cabbage tree
Geometridae	<i>Epyaxa rosearia</i>	Cascade R.	11	23-Apr-2002	EE	Polyphageous on herbs
Geometridae	<i>Gellonia dejectaria</i>	Martyr R.	30	23-Apr-2002	EE	Polyphageous on shrubs
Geometridae	<i>Helastia cinerearia</i>	Cascade R.	11	23-Apr-2002	EE	W, C. Mosses on rock
Geometridae	<i>Helastia corcularia</i>	Cascade R.	11	23-Apr-2002	EE	W, C, P mosses/herbs
Geometridae	<i>Hydriomena arida</i>	Cascade R.	11	23-Apr-2002	EE	
Geometridae	<i>Hydriomena rixata</i>	Cascade R.	11	23-Apr-2002	EE	Larvae on herbs
Geometridae	<i>Ischalis fortinata</i>	Cascade R.	11	23-Apr-2002	EE	W, C, ferns
Geometridae	<i>Ischalis fortinata</i>	Martyr R.	30	23-Apr-2002	EE	W, C, ferns
Geometridae	<i>Ischalis gallaria</i>	Cascade R.	11	23-Apr-2002	EE	Local on ferns
Geometridae	<i>Ischalis variabilis</i>	Cascade R.	11	23-Apr-2002	EE	
Geometridae	<i>Ischalis variabilis</i>	Martyr R.	30	23-Apr-2002	EE	
Geometridae	<i>Pasiphila cotinea</i>	Cascade R.	11	23-Apr-2002	EE	local on small leaved <i>Olearia</i>
Geometridae	<i>Pasiphila melochlora</i>	Cascade R.	11	23-Apr-2002	EE	On <i>Charmichaelia</i> local
Geometridae	<i>Pasiphila muscosata</i>	Cascade R.	11	23-Apr-2002	EE	common, widespread on <i>Muehlenbeckia</i>
Geometridae	<i>Poecilasthena pulchraria</i>	Cascade R.	11	23-Apr-2002	EE	L on heaths <i>Cyathodes</i> , <i>Leucopogon</i> etc.
Geometridae	<i>Pseudocoremia productata</i>	Cascade R.	11	23-Apr-2002	EE	Larvae polyphageous on trees
Geometridae	<i>Rhaphsa scotoscialis</i>	Cascade R.	11	23-Apr-2002	EE	W, C, litter
Geometridae	<i>Sarisa muniferata</i>	Cascade R.	11	23-Apr-2002	EE	
Lycaenidae	<i>Antipodolycaena</i> nsp.	Cascade R.	11	23-Apr-2002	EE	<i>Muehlenbeckia axillaris</i>
Lycaenidae	<i>Boldenaria</i> nsp.	Cascade R.	11	23-Apr-2002	EE	<i>Muehlenbeckia axillaris</i>
Noctuidae	<i>Agrotis ipsilon</i>	Cascade R.	11	23-Apr-2002	EE	W, C, P.

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Noctuidae	<i>Aletia moderata</i>	Cascade R.	11	23-Apr-2002	EE	W, C, Daisies
Noctuidae	<i>Feredayia graminosa</i>	Cascade R.	11	23-Apr-2002	EE	W, C. Mahoe
Noctuidae	<i>Graphania mutans</i>	Cascade R.	11	23-Apr-2002	EE	
Noctuidae	<i>Meterana tartarea</i>	Cascade R.	11	23-Apr-2002	EE	W, L, Coprosma
Noctuidae	<i>Persectania aversa</i>	Cascade R.	11	23-Apr-2002	EE	W, C. grasses
Noctuidae	<i>Schrankia costaestrigalis</i>	Cascade R.	11	23-Apr-2002	EE	Wetlands
Noctuidae	<i>Tmetolophota alope</i>	Cascade R.	11	23-Apr-2002	EE	Local on Monocots
Noctuidae	<i>Tmetolophota atristriga</i>	Cascade R.	~5?	1977	J & L	C, W, grasses. Johnstone & Lee 1977, Det M. Meads
Noctuidae	<i>Tmetolophota semivitata</i>	Cascade R.	11	23-Apr-2002	EE	W, C. sedges
Oecophoridae	<i>Proteodes profunda</i>	Martyr R.	30	23-Apr-2002	EE	Larvae on <i>Nothofagus</i>
	<i>Liothula omnivora</i>	Cascade R.	~5?		J & L	Case larvae on <i>Olearia</i> , <i>Aristotelia</i> and <i>Muehlenbeckia</i> etc. Johnstone & Lee 1977, Det M. Meads
Psychidae				1977		
Pterophoridae	<i>Pterophorus monospitalis</i>	Cascade R.	11	23-Apr-2002	EE	Plume moth on Pate and <i>Pseudopanax</i>
Pterophoridae	<i>Stenoptila zophodactyla</i>	Cascade R.	11	23-Apr-2002	EE	Plume moth, exotic on exotic gentian - <i>Centuaria</i>
Pyalidae	<i>Antiscopa Epicornia</i>	Cascade R.	11	23-Apr-2002	EE	
Pyalidae	<i>Deana hybreasalis</i>	Cascade R.	11	23-Apr-2002	EE	C, W larvae common on <i>Clematis</i> and some other hosts
Pyalidae	<i>Scoparia miniscalis</i>	Cascade R.	11	23-Apr-2002	EE	W, C. Mosses
Pyalidae	<i>Scoparia petrina</i>	Cascade R.	11	23-Apr-2002	EE	C, W Autumn emerging
Pyalidae	<i>Scoparia rotuella</i>	Cascade R.	11	23-Apr-2002	EE	W, C. on Epilobium
Pyalidae	<i>Scoparia ustimacula</i>	Cascade R.	11	23-Apr-2002	EE	Larvae on Hydrocotyle
Pyalidae	<i>Udea flavidalis</i>	Cascade R.	11	23-Apr-2002	EE	
Tortricidae	<i>Ctenopseustis obliquana</i>	Cascade R.	~5?		J & L	Polyphageous on shrubs, <i>Aristotelia</i> etc. Johnstone & Lee 1977, Det M. Meads
Tortricidae	<i>Merophyas leucaniana</i>	Cascade R.	11	23-Apr-2002	EE	W, C, grasses and Pimelea
Tortricidae	<i>Planotortrix excessana</i> grp.	Cascade R.	11	23-Apr-2002	EE	
Tortricidae	<i>Planotortrix flavescens</i>	Cascade R.	11	23-Apr-2002	EE	
Yponomeutidae	<i>Protosynaema steropucha</i>	Cascade R.	11	23-Apr-2002	EE	W, C. grasses
Lacewings -Neuroptera				23-Apr-2002		
	<i>Micromus tasmaniae</i>	Cascade R.	11	23-Apr-2002	EE	Common lacewing
Damselflies & Dragonflies -Odonata				23-Apr-2002		
	<i>Austrolestes colenstonis</i>	Cascade R.	11	23-Apr-2002	EE	Damselfly
	<i>Procordula</i> species	Cascade R.	11	23-Apr-2002	EE	dragonfly
Weta & grasshoppers -Orthoptera				23-Apr-2002		
Acrididae	<i>Phaulacridium marginale</i>	Cascade R.	11	23-Apr-2002	EE	lowland grasshopper
Anostostomatidae	<i>Hemiandrus maculifrons</i>	Jacksons Bay	?	1977	Trevor Crosby	Anostostomatidae malaise trap
Anostostomatidae	<i>Hemiandrus maculifrons</i>	Jacksons Bay	?	1968	PMJ	Anostostomatidae forest

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Anostostomatidae	<i>Hemiandrus maculifrons</i>	Cascade R.	?	1995	A. S. Gerber	Anostostomatidae pitfalls
Anostostomatidae	<i>Hemiandrus</i> nsp. 'madisylvestris' (PM. Johns)	Jacksons Bay, Jacksons Head	?	1968	PMJ	Anostostomatidae
Anostostomatidae	<i>Hemiandrus</i> nsp. 'madisylvestris' (PM. Johns)	Jacksons Bay -Tuning Fork Ck.	?	-	Lyll, J.	Anostostomatidae
Anostostomatidae	<i>Hemideina thoracica</i>	Cascade R.	~5?	1977	J & L	Tree weta Johnstone & Lee 1977, Det M. Meads
Raphidophoridae	<i>Talitropis sedilloti</i>	Jacksons Bay	?	1968	PMJ	Raphidophoridae ,logs at night
Raphidophoridae	<i>Talitropis sedilloti</i>	Cascade R.	?	1966	PMJ	Raphidophoridae
Stick insects -Phasmatodea						
	<i>Acanthoxyla prasina</i> ?geisovii	Cascade R.	11	23-Apr-2002	EE	stick insect favours totara, rimu, rata
Flatworms -Planaria						
Geoplanidae	<i>Newzealandia</i> sp.	Cascade R.	?	1995	PMJ	Flatworm, logs near river
Caddis -Trichoptera						
Conoesucidae	<i>Pycnocentroides aeris</i>	Cascade R.	11	23-Apr-2002	EE	caddis
Conoesucidae	<i>Pycnocentroides aureolus</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Hydrobiosidae	<i>Costachroema callistum</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Hydrobiosidae	<i>Hydrobiosis clavigera</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Hydrobiosidae	<i>Hydrobiosis copis</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Hydrobiosidae	<i>Psilochorema leptoharpax</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Leptoceridae	<i>Hudsonema amabile</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682
Polyplectropidae	<i>Polyplectropus puerilis</i>	Martyr R.	30	23-Apr-2002	EE	caddis E 38 21526 56682

APPENDIX SEVEN

A RAMBLE THROUGH THE JACKSON BAY RIDING
(By a Tourist).

West Coast Times

1894

21 November: Starting at the Cascade River, the first sign of civilisation is the sheep and cattle station of Mr Colin McFarlane, in the valley of the Cascade & Martyr rivers, which consist of a number of good alluvial flats covered with ribbon wood and scrub, with open grass flats in several places along the river bed, also a great extent of bush land suitable for cattle rearing. The home station is situated on the Martyr River, at the foot of the Olivine range, and consists of a comfortable and substantially built house suitable for a family residence. A smaller house is at present occupied by Mr C Macfarlane and his brother, with well kept wool sheds. Sheep and cattle yards are all well and substantially built, with a good orchard of various kinds of fruit trees looking grand with blossom. Several large wire-fenced paddocks in oats, turnips and grass as well as the inevitable potato patch, all looking splendid.

On my arrival at the station, Mr Macfarlane was away mustering cattle for the Hokitika market, but he returned in the evening with a mob of about 20 head of splendid beef cattle, all as quiet as if they had never left the home paddocks. The owner has not been fortunate with his sheep this lambing season, although all I saw on the river flats were looking well.

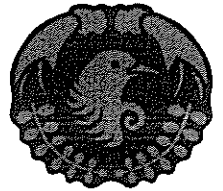
This is my first visit to the valley of the Cascade and I was agreeably surprised to find such a large extent of good useful land for cultivation as well as sheep and cattle raising. Mr C Macfarlane is badly handicapped and has been for sometime; what he requires here is a partner as energetic and industrious as himself, and there is a grand future before them in this splendid country. The one great drawback to it at present is its isolation. There have been several sporadic attempts to get a road into this part of Westland, making a patch of a few miles here and a few miles there, then leaving about double the length unfinished or untouched so that it is almost impossible to get on to the constructed portions from either end.

APPENDIX EIGHT

Royal Forest and Bird Protection Society – Lower Cascade Early Warning Tenure Review Submission.

APPENDIX NINE

Federated Mountain Clubs of New Zealand – Preliminary Report on Recreation and Related Significant Inherent Values – Lower Cascade.



Upper Clutha Branch
Royal Forest and Bird Protection Society of New Zealand Incorporated
PO Box 38
LAKE HAWEA

FOREST
& BIRD

27th August 2003

Mr T Perrett
Manager Tenure Review Programme
Department of Conservation
PO Box 5244
DUNEDIN

DEPT OF CONSERVATION
OTAGO CONSERVANCY
- 3 SEP 2003
RECEIVED

CONS	
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C.R.M.	
B.S.M.	
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H.R.A.	
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OTHER	

Rob.

Dear Tony

Lower Cascade – early warning tenure review submission

This property was first drawn to our attention during the NGO meeting held in Alexandra on 19th September 2002. It was again discussed at a similar meeting on 22nd May 2003.

We would be pleased if you would take into consideration the following points concerning this run before your department forwards the Conservation Resources Report to the Commissioner of Crown Lands.

We were able to see and get the feel of the top part of this run when we inspected the Upper Cascade run in September of 2002. We conducted an inspection of the Lower Cascade property by air in August 2003. This report is based on these inspections and on other information obtained from various official records.

The lessee has applied for a review of his tenure, therefore the property has to be considered in accordance with Part 2 of the Crown Pastoral Land Act 1998 whose objectives have recently been reviewed and added to by the current Government Cabinet Policy Committee on 6 August 2003 (POL Min(03) 19/7).

They are to:

Objectives derived from the CPLA

- 9.1 promote the management of the Crown's high country land in a way that is ecologically sustainable;
- 9.2 enable reviewable land that is capable of economic use to be freed of current management constraints;
- 9.3 protect significant inherent values of reviewable land by the creation of protective measures; or preferably by restoration of the land concerned to full Crown ownership and control;
- 9.4 secure public access to and enjoyment of high country land;
- 9.5 take into account the principles of the Treaty of Waitangi;
- 9.6 take into account any particular purpose for which the Crown uses, or intends to use, the land;

New complementary objectives

- 9.7 ensure that conservation outcomes for the high country are consistent with the New Zealand Biodiversity strategy;
- 9.8 progressively establish a network of high country parks and reserves;
- 9.9 foster sustainability of communities, infrastructure and economic growth and the contribution of the high country to the economy of New Zealand;
- 9.10 obtain a fair financial return to the Crown on its high country land assets;

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- B I R D . O R G . N Z

General:

- The property is surrounded by land under the control of the Department of Conservation.
- It is incongruously in the middle of the Te Wahi Pounamu South West New Zealand World Heritage Area.
- This is one of only two Pastoral Leases on the West Coast.
- This Pastoral Lease is unusual in that it is all below 40masl.
- This property occupies approximately 20% of the Cascade River flood plain.
- The Lower Cascade run adjoins the Hermitage Swamp; a very significant unmodified wetland.
- The surrounding land, apart from some of the Upper Cascade run is diverse with very significant inherent conservation and landscape values as well as considerable recreation potential.
- The high rainfall of the area leads to rapid regeneration of native vegetation, the extreme climate favouring those plants adapted to the conditions, ie endemics.

History:

- The first attempts to farm the Lower Cascade and surrounding country were made towards the end of the nineteenth century because it was relatively clear of forest in comparison with the surrounding country. There was no laborious tree felling involved to make a farm.
- The lateral moraine (the Cascade Plateau) to the east of the Cascade River, was burnt in an endeavour to run sheep: see photo (#1) This was not successful due to the ultramafic soils in the plateau being unsuitable for agriculture.
- In the process of attempting to develop these river flats, the Carex purai makura was grubbed or slashed by hand under a government subsidy scheme.
- When the road was constructed up the Jackson River and over the Martyr Saddle to "The Cascade" some years ago it gave the lessee the opportunity to fell most of the podocarp forest at the western end of the run and export the logs to the mill: see photo (#2)
- We understand the land has been fertilised using super-phosphate but given the high rainfall this enrichment would have to be considered temporary given the leaching and runoff rates.

Significant Inherent Values:

- A very small part of a largely untouched catchment of considerable native biodiversity, a wide range of different habitats from large areas of wetland – both fresh water and tidal, grassland-forest margins with rare shrubs including east coast type olearias, ultramafic areas with their reduced palette of hardy plants, podocarp and beech forest, tussock lands, alpine vegetation. see photos (#3)
- It is remote, an increasingly valued attribute in an increasingly crowded world.
- The Cascade River flows and meanders to the north of the property and forms its northern boundary. It is a significant whitebait habitat and spawning area. The white bait , particularly the dominant species inanga, live in the small creeks, meanders,

oxbows and swampy areas above the tidal waters to about 20masl and all species using the vegetation on the tidal water edges to spawn. Both these habitats are present in the Lower Cascade run. : see photo (#4)

- There are not many rivers or swamp areas left on the West Coast of the quality such as that contained in the lower sections of the Cascade River. Most similar areas further up the West Coast are considerably more modified; consequently their whitebait fisheries have suffered. The river is arguably more significant economically to South Westland in terms of its whitebait habitat and spawning areas than farming the surrounding land to grow cattle.
- Lowlands are very under-represented in the portfolio of protected conservation lands.
- The landscape values of the surrounding country are outstanding forming a unique landscape unit with the Red Hills as a back drop down to the coastal dunes and coastal bar where the river enters the sea.: see photos (#5 & #6). Very few rivers in New Zealand are protected from "their tip to their toe"!
- Recreational values in the vicinity of the property are high. As time goes by when it becomes more known canoeing or kayaking on the river will become even more popular. The road/route to Barn Bay passes through under the hills on the south side of the property. Barn Bay is the start of the coastal walking route to Martins Bay in the south.
- The remnant forest on the southern edge of the property where it has not been entirely cleared is home to much bird life. There is a relatively low number of possums in this valley which shows itself in prolific numbers of native birds that are reduced in numbers elsewhere, kakas, kakariki, kea, native pigeons, fernbirds, bittern, tuis and bellbirds.

Issues:

- Most of this property has been modified for farming purposes in the way of fencing and clearing of vegetation: see photo (#7) More so than the Upper Cascade pastoral lease: see photo (#8).
- It is likely that free-holding would result in an increase in farm development, for example intensive drainage and the application of lime, nitrogenous and phosphate fertiliser. If there was a resulting increase in stock numbers riparian damage from trampling and enrichment from the cattle dung would increase if the water margins were not protected by having the cattle excluded with adequate fencing
- How secure would this fencing be, when logs and debris come down the river in times of flood?
- The ideal whitebait habitat is to encourage riparian vegetation to provide shelter and shade. This means there should be no drainage or clearance of water channels. Stock trampling and contamination damage this habitat particularly when the ground is soft and water-logged.
- In the case of this particular Tenure Review we feel the onus should be on the lessee to prove that the land can be farmed in an ecologically sustainable manner should they wish to continue with pastoral farming. Investigation must be done into fertiliser application rates needed for sustainable farming, the effect of this application is likely to have on the water quality of downstream water given the very high rainfall and the

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high rate of leaching and the possible effect of any development on the whitebait habitat both within the run and in the surrounding areas.

- In connection with the above issues we would like to refer you to the excellent publications that NIWA have produced and also to their website.

Access:

- As far as we can ascertain the Jackson River Road to the Cascade River is not a legal road. This needs to be rectified during the process. We would see this only being necessary as far as the Martyr Homestead in the Upper Cascade run.
- The Barn Bay-Cascade Road would need no further action taken should both the Upper and Lower Cascade runs be restored to full Crown ownership and control as conservation land as the public would be free to use the formation. If any of the land where the road crosses the Lower Cascade were to be freeholded a public right of access would be crucial. It would be important that this right of access was not in the form of legalising the road, as this would encourage and invigorate those intent on building a road to Martins Bay further down the West Coast. This is not a desirable outcome in our opinion as the remoteness of this area is one of its inherent significant values.

Conclusion:

The tenure review process offers the opportunity of rectifying some mistakes that were made in New Zealand 100 or more years ago when it was then assumed that all land in New Zealand was suitable for farming. Over this time, and in hindsight, this has proved not to be so. Much of the high country in New Zealand is unsuitable for grazing as it is unsustainable. A great deal of our lower country, has since been proven to have very valuable ecosystems which are unique to New Zealand and New Zealand only.

New Zealand has recently adopted a "Biodiversity Strategy" recognising that such areas should also be suitably protected. As a flow on from this the Government has recently updated its objectives for the outcomes of tenure review to include "that conservation outcomes for the high country are consistent with New Zealand Biodiversity Strategy;" (given that this is low country and not high country we read the intent is to cover this pastoral lease as the objectives are about the tenure review of pastoral leases, which are not solely in the high country). All indications are that this is an area of outstanding biodiversity and in our opinion the intrusion of a farming area in the middle is an anomaly that needs to be rectified given that continued farming will decrease biodiversity on the actual run and the surrounding and dependant areas for reasons outlined above.

The Draft West Coast Conservation Management Strategy has as its objectives:

- i To preserve the natural resources and visitor opportunities of the Cascade.
- ii to seek an appropriate status for all land in the Cascade that reflects the significant natural and recreational resources present.
- iii To ensure that the Cascade's value as one of the last large lowland wilderness areas in New Zealand is protected.
- iv To maintain the remote experience opportunity provided in the Cascade.

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One of the Governments recently re-stated objectives for tenure review is to "take into account any particular purpose for which the Crown uses, or intends to use, the Land". (9.6; Government Cabinet Policy Committee; 6 August 2003 (POL Min(03) 19/7). We think that the intent of the Crown (Department of Conservation) in the above Conservation Management Strategy objectives is to restore the Lower Cascade run to full Crown ownership and control as part of the Te Wahi Pounamu South West New Zealand Heritage Area which completely surrounds it. This would help address the lack of lowlands as formally protected conservation areas in New Zealand.

In 1977 a scientific survey of the Lower Cascade River was done by members of the Botany Division of the DSIR. A recommendation coming out of this survey was that the whole area from Charlie's Bump to the sea, including the Cascade Plateau be reserved because of its unique biodiversity, its landscape, its botany and its geology.

We would fully concur with this recommendation to reserve the whole lower Cascade area. We recommend a full property purchase for retention of Crown Land managed for conservation purposes.

We thank you for this opportunity to place before you the issues involved in this review as we see them.

Yours faithfully



John L Turnbull and Jean McFarlane
For Upper Clutha Branch Forest and Bird.

List of photographs on following pages

- 1 Ultramafic Cascade Plateau
- 2 Podocarps cleared at coastal end of Lower Cascade
- 3 Largely untouched Cascade Valley showing how small the area of both runs are compared with total area
- 4 Meander at bottom of Lower Cascade believed to be tidal – both habitat and spawning areas for whitebait
- 5 Backdrop to the Cascade – the Red Hills
- 6 Where the Cascade River meets the sea
- 7 Modification of natural values on Lower Cascade
- 8 Upper Cascade run showing lesser amount of development than for Lower Cascade#