

Crown Pastoral Land Tenure Review

Lease name : CAITHNESS

Lease number : PO 355

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.

January 06

4.4 Appendices

APPENDIX ONE – Land Environments of New Zealand Environment descriptions

From Leathwick, J.R., G.Wilson, D.Rutledge, P.Wardle, F.Morgan, K.Johnston, M. McLeod, R. Kirkpatrick, 2003. Land Environments of New Zealand: A technical guide. Ministry for the Environment.

LENZ Environment	Description
Q1.1d	Q1.1 environments typically include the Hawkdun Range, Grampian Mountains and Hunter Hills, South Canterbury, lower elevation slopes of the Eyre and Harris Mountains and ranges of inland Otago. This environment is characterised by cold temperatures, moderate solar radiation, low vapour pressure deficits, low monthly water balance ratios and slight annual water deficits. Landforms include steep mountains and soils are well drained and of moderate fertility derived from greywacke and schist. Q1.1d environments have warmer temperatures than the general Q1.1 group.
Q2.1a	Q2.1 environments are typically found in the Eyre and Harris mountains and the ranges of inland Otago. This environment is characterised by cool temperatures, moderate solar radiation, moderate vapour pressure deficits, very low monthly water balance ratios and low annual water deficits. Landforms include steep mountains and soils are well drained and of moderate fertility derived from greywacke. Q2.1a environments have lower annual water deficits than the generalised Q2.1 group.
Q2.1c	As above. Q2.1c environments have higher temperatures and higher annual water deficits than the generalised Q2.1 group.
Q3.3c	Q3.3 environments are typically found in the Garvie Mountains and the North Rough, Knobby, Lammerlaw and Rock and Pillar ranges. This environment is characterised by cold temperatures, moderate solar radiation, moderate vapour pressure deficits, low monthly water balance ratios and low annual water deficits. Landforms include undulating mountains and soils are imperfectly drained and of moderate fertility derived from schist. Q3.3c environments have much lower annual water deficits than the generalised Q3.3 group.
Q4.3b	Q4.3 environments are typically found in eastern Otago including the Otago Peninsula. This environment is characterised by cool temperatures, low solar radiation, moderate vapour pressure deficits, very low monthly water balance ratios and low annual water deficits. Landforms include rolling hills and soils are imperfectly drained and of moderate fertility derived from schist and quartz gravels. Q4.3b environments have much higher annual water deficits and than the generalised Q3.3 group and landforms are strongly rolling hills.

- N2.2a N2.2 environments are found south of Timaru and in northern Southland. This environment is characterised by mild temperatures, low solar radiation, moderate vapour pressure deficits and moderate annual water deficits. Landforms include flat plains and soils are imperfectly drained and of high fertility derived from greywacke gravels with some loess. N2.2a environments have much higher annual water deficits and than the generalised N2.2 group.
- N3.1c N3.1 environments are found in Timaru, Oamaru and Otago. This environment is characterised by cool temperatures, moderate solar radiation, moderate vapour pressure deficits and moderate annual water deficits. Landforms include undulating plains and soils are imperfectly drained and of moderate fertility derived from greywacke alluvium with some loess. N3.1c environments have much warmer temperatures and higher annual water deficits and than the generalised N3.1 group
- N3.1d As above. N3.1d environments have much cooler temperatures than the generalised N3.1 group.
- N3.1e As above. N3.1e environments have much cooler temperatures and lower annual water deficits than the generalised N3.1 group.
- N3.3a N3.3a environments are found in Lower Waitaki, Oamaru and coastal Otago south of Moeraki. This environment is characterised by cool temperatures, low solar radiation, moderate vapour pressure deficits and moderate annual water deficits. Landforms are typically undulating plains and soils are well drained and of moderate fertility derived from loess derived from schist and greywacke.

APPENDIX TWO: Plant species list - Caithness lease tenure review survey.

Species	Abundance at site	Notes	Threat ranking	Common name
Gymnosperms				
<i>Pinus nigra</i> subsp. <i>laricio</i>	Local	Appears to be spreading. Predominantly on main ridge and above lower junction of Jimmys Creek.	Exotic	Corsican pine
<i>Podocarpus hallii</i>	Rare	One sapling in Jimmys Creek	Locally Notable	Hall's totara
Dicotyledonous trees, shrubs and vines				
<i>Aristotelia fruticosa</i>	Local	Shrublands	Not threatened	small-leaved wineberry
<i>Aristotelia serrata</i>	Local	Green Valley Creek tributary	Locally Notable	wineberry
<i>Calystegia tuguriorum</i>	Rare	Jimmys Creek	Not threatened	bindweed
<i>Carmichaelia australis</i> ?	Rare	High knoll. ID provisional as not flowering; rounded, much branched shrub with flattened cladodes	Not threatened	
<i>Carmichaelia crassicaule</i>	Local	High knolls	Gradual Decline	coral broom
<i>Carmichaelia petriei</i>	Local	Shrublands	Not threatened	
<i>Clematis marata</i>	Local	Shrublands	Not threatened	
<i>Coprosma "taylorae"</i> (C. <i>parviflora</i> var. <i>dumosa</i> , C. sp. (t), C. sp. 27)	Rare	Jimmys Creek shingle slide	Not threatened	
<i>Coprosma cheesemanii</i>	Rare	Rock bluffs	Not threatened	
<i>Coprosma crassifolia</i>	Rare	Jimmys Creek shingle slide	Not threatened	
<i>Coprosma propinqua</i> subsp. "propinqua"	Local	Shrublands	Not threatened	
<i>Coprosma rugosa</i>	Local	Shrublands	Not threatened	
<i>Coriaria plumosa</i>	Rare	Rocky sites	Not threatened	feathery tutu
<i>Coriaria sarmentosa</i>	Local	Higher altitudes	Not threatened	tutu
<i>Corokia cotoneaster</i> agg.	Rare	Jimmys Creek shingle slide	Not threatened	corokia
<i>Crataegus monogyna</i>	Rare	Green Valley Creek	Exotic	hawthorn
<i>Cytisus scoparius</i>	Local	Isolated patches	Exotic	broom
<i>Discaria toumatou</i>	Common	Particularly at lower altitudes	Not threatened	matagouri
<i>Dracophyllum uniflorum</i> var. <i>frondosum</i>	Rare	Jimmys Creek	Range Restricted	
<i>Dracophyllum uniflorum</i> var. <i>uniflorum</i>	Local	Tussocklands	Not threatened	turpentine scrub
<i>Fuchsia perscandens</i>	Rare	Green Valley Creek tributary	Locally Notable	creeping fuchsia
<i>Gaultheria crassa</i>	Rare	Jimmys Creek	Not threatened	snowberry
<i>Gaultheria depressa</i> var. <i>depressa</i>	Local	Rock bluffs	Not threatened	snowberry
<i>Gaultheria depressa</i> var. <i>novae-zelandiae</i>	Local	Rocky sites	Not threatened	snowberry
<i>Gaultheria macrostigma</i>	Local	Tussocklands	Not threatened	prostrate

Griselinia littoralis	Rare	Upper Jimmys Creek	Not threatened	snowberry broadleaf
Hebe rakaiensis	Rare	Shrublands	Not threatened	
Hebe salicifolia	Rare	Streamsides	Not threatened	koromiko
Helichrysum intermedium	Local	Rock bluffs	Not threatened	
Hypericum androsaemum	Rare	Green Valley Creek tributary	Exotic	tutsan
Leucopogon colensoi (ex. L. suaveolens)	Rare	Tussocklands	Not threatened	
Melicytus aff. alpinus (erect)	Local	Shrublands and rocky sites	Not threatened	porcupine shrub
Muehlenbeckia australis	Local	Green Valley Creek	Not threatened	large-leaved pohuehue
Muehlenbeckia axillaris	Local	Open sites	Not threatened	
Muehlenbeckia complexa agg.	Local	Shrublands	Not threatened	small-leaved pohuehue
Olearia bullata	Local	Shrublands	Not threatened	
Olearia lineata	Rare	Jimmys Creek	Sparse	
Olearia sp. (O. odorata/O. fimbriata)	Rare	Jimmys Creek shingle slide. One seedling	Unknown	
Pimelea pseudolyallii	Occasional	Tussocklands	Sparse	
Pimelea traversii	Local	High knolls	Locally Notable	
Populus deltoides	Local	Planted. Green Valley Creek	Exotic	necklace poplar
Ribes uva-crispa	Local	Green Valley Creek	Exotic	gooseberry
Rosa rubiginosa	Local	Shrublands and flats	Exotic	sweet briar
Rubus fruticosus agg.	Rare	Jimmys Creek, near crossing	Exotic	blackberry
Rubus schmidelioides var. schmidelioides	Local	Shrublands	Not threatened	bush lawyer
Rubus schmidelioides var. subpauperatus	Rare	Jimmys Creek shingle slide	Not threatened	bush lawyer
Salix fragilis	Local	Streamsides	Exotic	crack willow
Sambucus nigra	Local	Lower Jimmys Creek	Exotic	elder
Scandia geniculata	Rare	Jimmys Creek shingle slide	Not threatened	
Sophora microphylla	Rare	Tributaries of Jimmys Creek	Locally Notable	kowhai
Ulex europaeus	Local	Lower Jimmys Creek. Sprayed	Exotic	gorse

Dicotyledonous herbs (including composites)

Acaena agnapila var. aequispina	Rare	Grasslands	Exotic	
Acaena anserinifolia	Local	Jimmys Creek	Not threatened	bidibid
Acaena caesiiglauca var.	Occasional	Tussocklands	Not threatened	bidibid
Acaena inermis	Local	Open sites	Not threatened	bidibid
Achillea millefolium	Local	Jimmys Creek	Exotic	yarrow
Aciphylla aurea	Common	Tussocklands	Not threatened	spaniard
Aciphylla scott-thomsonii	Rare	Jimmys Creek	Not threatened	spaniard
Anaphalioides bellidioides (ex. Helichrysum bellidioides in part)	Occasional	Tussocklands	Not threatened	
Anisotome aromatica var. incisa	Occasional	Tussocklands	Not threatened	
Aphanes arvensis	Rare	Drier sites	Exotic	parsley piert
Arctium minus	Rare	Jimmys Creek	Exotic	burdock

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Brachyglottis bellidioides var.	Occasional	Tussocklands	Not threatened	
Brachyscome sinclairii var. sinclairii	Rare	Tussocklands	Not threatened	
Callitriche stagnalis	Local	Wet sites	Exotic	starwort
Carduus nutans	Local	Green Valley Creek	Exotic	nodding thistle
Celmisia hookeri	Local	Rock bluffs	Sparse	
Celmisia lyallii	Occasional	Tussocklands	Not threatened	false spaniard
Celmisia prorepens	Rare	Tussocklands	Not threatened	
Centaureum erythraea	Rare	Jimmys Creek	Exotic	centaury
Cerastium fontanum subsp. vulgare	Occasional	Throughout	Exotic	mouse-ear chickweed
Cirsium arvense	Local	Grasslands	Exotic	Californian thistle
Cirsium vulgare	Occasional	Throughout	Exotic	Scotch thistle
Colobanthus acicularis	Local	Rocky sites	Not threatened	
Colobanthus strictus	Occasional	Open sites	Not threatened	
Crassula colligata comp. (ex C. tetramera)	Local	Rocky sites	Not threatened	
Crepis capillaris	Local	Grasslands	Exotic	hawksbeard
Digitalis purpurea	Local	Grasslands	Exotic	foxglove
Echium vulgare	Local	Drier sites	Exotic	viper's bugloss
Epilobium glabellum (E. rubromarginatum)	Rare	Higher altitude rocky sites	Not threatened	
Epilobium microphyllum	Local	Green Valley Creek	Not threatened	
Epilobium pubens	Rare	Jimmys Creek	Not threatened	
Euchiton ruahinacus (ex. Gnaphalium ruahinacum)	Local	Open sites	Not threatened	
Euphrasia zelandica agg.	Rare	Tussocklands	Not threatened	
Galium aparine	Rare	Shrublands	Exotic	cleavers
Galium propinquum	Rare	Jimmys Creek shingle slide	Not threatened	mawe
Gentianella amabilis	Occasional	Tussocklands	Not threatened	
Gentianella bellidifolia	Occasional	Rocky sites	Not threatened	
Geranium microphyllum	Occasional	Tussocklands	Not threatened	
Geranium sessiliflorum subsp. novaezealandiae var. novaezealandiae		Drier sites	Not threatened	
Geranium solanderi "Large Petals"	Rare	Jimmys Creek shingle slide	Not threatened	
Gingidia grisea	Local	Rock bluffs, particularly along Jimmys Creek	Range Restricted	
Gonocarpus incanus	Rare	Tussocklands	Not threatened	
Helichrysum filicaule	Occasional	Rocky sites	Not threatened	
Hieracium lepidulum	Occasional	Tussocklands	Exotic	tussock hawkweed
Hieracium pilosella subsp.	Common	Grasslands	Exotic	mouse-eared hawkweed
Hydrocotyle novaezeelandiae	Rare	Jimmys Creek	Not threatened	
Hypochoeris radicata	Occasional	Throughout	Exotic	catsear
Leptinella pectinata subsp. villosa	Occasional	Higher altitude tussockland	Not threatened	
Leptinella pusilla (Cotula perpusilla)	Rare	Tussocklands	Not threatened	
Leucopogon fraseri complex (mountain ecotype)	Occasional	Open sites	Not threatened	
Linum catharticum	Local	Jimmys Creek	Exotic	purging flax

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Lotus pedunculatus	Rare	Green Valley Creek	Exotic	lotus
Malva neglecta	Rare	Green Valley Creek	Exotic	dwarf mallow
Mimulus moschatus	Local	Streamsides	Exotic	musk
Montia fontana subsp. fontana	Local	Green Valley Creek	Exotic	blinks
Mycelis muralis	Local	Green Valley Creek tributary	Exotic	wall lettuce
Myosotis laxa	Local	Green Valley Creek	Exotic	water forget-me-not
Navarretia squarrosa	Rare	Green Valley Creek	Exotic	Californian stinkweed
Oreomyrrhis ramosa s.l.	Local	Shrublands	Not threatened	
Oxalis exilis	Local	Throughout	Not threatened	native yellow-flowered oxalis
Oxalis rubens	Rare	Tussocklands	Not Threatened	native oxalis
Prunella vulgaris	Local	Damp sites	Exotic	selfheal
Pseudognaphalium "inland" (ex. P. luteoalbum in part)	Rare	Rocky sites	Not threatened	
Ranunculus glabrifolius	Local	Farm pond	Not threatened	
Ranunculus multiscapus (ex. R. lappaceus)	Occasional	Tussocklands	Not threatened	
Ranunculus reflexus	Rare	Jimmys Creek shingle slide	Not threatened	hairy buttercup
Ranunculus trichophyllus	Local	Farm pond and Green Valley Creek	Exotic	water buttercup
Raoulia australis s.s.	Rare	Green Valley Creek	Not threatened	scabweed
Raoulia subsericea	Occasional	Open sites	Not threatened	
Raoulia tenericaulis	Rare	Jimmys Creek shingle flat	Not threatened	scabweed
Rorippa nasturtium-aquaticum	Local	Streamsides	Exotic	watercress
Rumex acetosella	Common	Throughout	Exotic	sheep's sorrel
Rumex obtusifolius	Rare	Jimmys Creek	Exotic	broad-leaved dock
Sagina procumbens	Rare	Jimmys Creek	Exotic	procumbent pearlwort
Scleranthus brockiei	Rare	Higher altitude tussockland	Not threatened	
Scleranthus uniflorus	Occasional	Grasslands	Not threatened	
Senecio "discoideus" (S. glaucophyllus subsp. discoideus)	Local	Rock bluffs	Locally Notable	
Senecio glomeratus	Rare	Jimmys Creek shingle slide	Not threatened	fireweed
Senecio wairauensis	Rare	Jimmys Creek shingle slide	Not threatened	groundsel
Sonchus asper	Rare	Jimmys Creek	Exotic	prickly sow thistle
Spergularia media	Rare	Open sites	Not threatened	
Stellaria parviflora	Rare	Rock overhangs	Not threatened	New Zealand chickweed
Trifolium arvense	Occasional	Grasslands	Exotic	haresfoot trefoil
Trifolium dubium	Occasional	Throughout	Exotic	suckling clover
Trifolium repens	Occasional	Throughout	Exotic	white clover
Urtica incisa	Rare	Jimmys Creek shingle slide	Not threatened	
Verbascum thapsus	Occasional	Drier sites	Exotic	woolly mullein
Vicia sativa	Rare	Shrublands	Exotic	vetch

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<i>Viola cunninghamii</i>	Occasional	Tussocklands	Not threatened	
<i>Viola filicaulis</i>	Occasional	Streamsides	Not threatened	
<i>Wahlenbergia albomarginata</i> subsp. <i>albomarginata</i>	Occasional	Throughout	Not threatened	harebell
<i>Wahlenbergia rupestris</i>	Rare	Jimmys Creek shingle slide. One plant	Not threatened	

Grasses

<i>Agrostis capillaris</i>	Common	Grasslands	Exotic	browntop
<i>Aira caryophyllea</i> subsp. <i>caryophyllea</i>	Local	Drier sites	Exotic	silvery hair grass
<i>Anthoxanthum odoratum</i>	Common	Grasslands	Exotic	sweet vernal
<i>Bromus hordeaceus</i>	Occasional	Grasslands	Exotic	soft brome
<i>Chionochloa conspicua</i> subsp. <i>conspicua</i>	Local	Stream margins. Identity unconfirmed	Not threatened	
<i>Chionochloa rigida</i> subsp. <i>rigida</i>	Abundant	Throughout, except on flats	Not threatened	narrow-leaved snow-tussock
<i>Cortaderia richardii</i>	Local	Stream margins	Not threatened	South Island toetoe
<i>Critesion murinum</i> subsp.	Local	Drier sites	Exotic	barley grass
<i>Cynosurus cristatus</i>	Rare	Grasslands	Exotic	crested dogstail
<i>Dactylis glomerata</i>	Local	Damp grassland	Exotic	cocksfoot
<i>Deschampsia pusilla</i>	Rare	Trig C area, short grassland	Data Deficient	
<i>Deyuexia avenoides</i>	Local	Rock bluffs	Not threatened	
<i>Dichelachne crinita</i>	Occasional	Rock bluffs	Not threatened	long-hair plume grass
<i>Elymus falcis</i>	Rare	Tussockland	Range Restricted	
<i>Elymus solandri</i>	Occasional	Grasslands	Not threatened	
<i>Festuca novae-zelandiae</i>	Common	Grasslands	Not threatened	hard tussock
<i>Festuca rubra</i> subsp.	Occasional	Grasslands	Exotic	red fescue
<i>Glyceria fluitans</i>	Local	Farm pond	Exotic	floating sweet grass
<i>Holcus lanatus</i>	Local	Grasslands	Exotic	Yorkshire fog
<i>Lachnagrostis lyallii</i>	Rare	Tussockland	Not threatened	
<i>Poa annua</i>	Local	Tracks	Exotic	annual poa
<i>Poa cita</i> agg.	Occasional	Damp grassland	Not threatened	silver tussock
<i>Poa colensoi</i> s.l.	Common	Rock bluffs and grasslands	Not threatened	blue tussock
<i>Poa lindsayi</i>	Occasional	Tussockland	Not threatened	
<i>Poa matthewsii</i>	Local	Rock overhangs	Not threatened	
<i>Poa pratense</i>	Occasional	Grasslands	Not threatened	Kentucky bluegrass
<i>Poa trivialis</i>	Rare	Streamsides	Exotic	rough-stalked meadow grass
<i>Rytidosperma buchananii</i>	Local	Rocky sites	Not threatened	
<i>Rytidosperma clavatum</i>	Local	Rock bluffs	Not threatened	
<i>Rytidosperma unarede</i>	Rare	Grasslands	Not threatened	cliff fairy grass
<i>Vulpia myuros</i> var. <i>megalura</i>	Local	Grasslands	Exotic	vulpia hair grass

Rushes and Sedges

<i>Carex breviculmis</i>	Local	Rocky sites	Not threatened	
<i>Carex coriacea</i>	Local	Green Valley Creek	Not threatened	
<i>Carex flagellifera</i>	Rare	Jimmys Creek	Not threatened	
<i>Carex secta</i>	Local	Wet sites	Not threatened	niggerhead

<i>Eleocharis acuta</i>	Local	Farm pond	Not threatened	sharp spike-sedge
<i>Juncus articulatus</i>	Local	Wet sites	Exotic	jointed rush
<i>Juncus effusus</i>	Local	Damp sites	Exotic	soft rush
<i>Luzula rufa</i> var. <i>rufa</i>	Occasional	Tussocklands	Not threatened	woodrush
<i>Schoenus pauciflorus</i> "tall"	Rare	Jimmys Creek	Not threatened	bog-rush

Monocotyledons (other)

<i>Bulbinella angustifolia</i>	Local	Damp sites	Not threatened	maori onion
<i>Cordyline australis</i>	Rare	Upper Jimmys Creek	Not threatened	cabbage tree, ti
<i>Corybas macranthus</i> agg.	Rare	Jimmys Creek shrubland	Not threatened	
<i>Microtis unifolia</i> agg.	Local	Grasslands	Not threatened	onion orchid
<i>Phormium cookianum</i>	Local	Damp bluffs and steep sites	Not threatened	mountain flax
<i>Thelymitra</i> sp.	Rare	Tussocklands	Not threatened	sun orchid

Ferns and Allies

<i>Asplenium flabellifolium</i> agg.	Local	Rock crevices	Not threatened	necklace fern
<i>Asplenium richardii</i>	Rare	Jimmys Creek shingle slide	Not threatened	
<i>Asplenium trichomanes</i>	Rare	Jimmys Creek	Not threatened	maidenhair spleenwort
<i>Blechnum chambersii</i>	Local	Streamsides	Not threatened	nini
<i>Blechnum montanum</i>	Local	Streamsides	Not threatened	mountain kiokio
<i>Blechnum penna-marina</i>	Local	Rocky sites	Not threatened	
<i>Blechnum procerum</i>	Rare	Green Valley Creek	Not threatened	small kiokio
<i>Cystopteris tasmanica</i>	Local	Rock crevices	Not threatened	bladder fern
<i>Hypolepis millefolium</i>	Local	Rocky sites	Not threatened	thousand-leaved fern
<i>Lycopodium fastigiatum</i>	Occasional	Tussocklands	Not threatened	mountain clubmoss
<i>Microsorium pustulatum</i>	Rare	Damp bluff	Not threatened	hound's tongue fern
<i>Polystichum vestitum</i>	Local	Shady sites	Not threatened	prickly shield fern
<i>Pteridium esculentum</i>	Local	Open sites	Not threatened	bracken

APPENDIX THREE: Invertebrate species list-Caithness lease tenure review survey

	Order	Species and description
Orthoptera	<u>Acrididae</u> -grasshoppers; ID by Brian Patrick	<i>Sigauss australis</i> - widespread and locally common short-horned grasshopper of open areas from montane to alpine zone.
Hemiptera (bugs, etc.)	<u>Cicadidae</u> -cicadas ID by John Dugdale	<i>Kikihia angusta</i> widespread tussock cicada <i>Maoricicada otagoensis</i> apparently endemic to Otago and Southland; originally described as occurring SW of the Clutha River, but apparently now known to be more widespread
Coleoptera	<u>Carabidae:</u> <u>Cicindelinae</u> -tiger beetles	<i>Neocicindela latecincta</i> (widespread, eastern South Island)
Lepidoptera moths, butterflies; IDs by Brian Patrick)	<u>Nymphalidae</u>	<i>Argyrophenaga janitae</i> Janita's tussock butterfly - widespread but local in eastern, central and north-eastern South Island - montane to alpine - larvae on <i>Chionochloa</i> spp. - usually indicative of good quality grasslands <i>Argyrophenaga antipodum</i> common tussock butterfly - lowlands to alpine zone - larvae on many grasses including exotic species - widespread and common over larger area than above species
	<u>Lycaenidae</u>	<i>Antipodalalycaena</i> new species - boulder copper butterfly - an undescribed species that is localised but can be common around larval foodplant <i>Muehlenbeckia axillaries</i>
	<u>Noctuidae</u>	<i>Graphania phricias</i> - common and widespread cutworm of shrublands containing the larval hostplant matagouri - lowland to montane but vagrant to alpine areas too <i>Graphania morosa</i> - common and widespread cutworm of grasslands - larvae on grasses including exotics - lowland to montane areas <i>Tmetolophota atristriga</i> very common and widespread cutworm of grasslands - larvae on grasses both native and exotic - lowland to montane <i>Tmetolophota semivittata</i> - common and widespread species of <i>Carex</i> dominated wetlands and damp pastures - larvae on <i>Carex</i> - lowland to montane <i>Tmetolophota propria</i> very common and widespread cutworm of grasslands - larvae on grasses - montane to alpine species

- Geometridae *Aponotoreas insignis* - widespread and locally common late summer diurnal geometrid species - two males and a female here - low alpine areas of eastern South Island - larvae on *Chionochloa* spp.
- Geometridae *Dichromodes sphaeriata* - nocturnal species of rock faces where the cryptic larvae feed on lichens - locally common but good record - widespread distribution
Xanthorhoe semifissata - widespread and very common species - larvae on crucifer herbs - forest to shrublands - lowland to low alpine
Austrocidaria similata - widespread geometrid, locally common - larvae on *Coprosma* spp. - lowland to montane shrublands and forest
Helastia cinerearia - common and widespread species - small grey geometrid with larvae on mosses on rock faces - lowland to montane areas
Chloroclystis filata - self introduced Tasmanian geometrid that is now nation-wide and common to low alpine zone - larvae on flowers.
- Crambidae *Eudonia aspidota* - widespread species of lowland to montane areas but commoner in latter - presumably larvae on mosses - attractive distinctive adult
Orocrambus vittellus - widespread and very common grass moth - larvae in many grasses - lowland to montane areas
Orocrambus flexuosellus - very common and widespread
Gadira acerella - widespread and often common moth of rock faces - larvae on mosses - lowland to montane areas
- Oecophoridae *Phaecosaces apocrypta* - widespread species with larvae on lichens on tree trunks and rocks - lowland to montane
- Tortricidae *Capua semiferana* - widespread and common species of open areas - lowland to montane - larvae on leaf litter

APPENDIX FOUR: Herpetofauna records-area surrounding Caithness lease.

Species	Location	Habitat	Altitude (m)	Threat status
Otago gecko <i>Hoplodactylus</i> aff. <i>maculatus</i>	Mt Dasher, Pisgah Downs Shingley Creek	Schist outcrops and boulder fields	throughout	Gradual decline, data poor Northern distributional limit
Otago/Southland large	Mt Stalker (scarce) The Dasher (scarce)			
Jewelled gecko <i>Naultinus gemmeus</i>	Glencoe	shrublands	400m	Gradual decline (human induced)
Green skink <i>Oligosoma</i> <i>chloronoton</i>	Shingley Creek	Boulder scree and rock outcrops	1100 - 1250	Gradual decline Taxonomy uncertain
McCanns skink	widespread	among and near rocky sites		Not threatened
Common skink <i>O. nigerplantare</i> <i>polychroma</i>	widespread	Among and near rocky sites, damp gullies, dense grassland		Not threatened

APPENDIX FIVE: Aquatic Survey of Caithness lease – Stream sampling site characteristics and insect abundance.

Table 1 Sampling site characteristics measured on 21 February 2005.

Sampling Site	NZ Map I42 Coordinates	Distance Sampled	Average Stream Width	Average Stream Depth	Temp. (°C)	Conductivity
Jimmys Creek	E2315924 N5549358	20m	3.5m	0.30m	12.3-16.4	40.8-48.3
Jimmys Creek	E2315017 N5549988	8m	5m	0.40m		
Jimmys Creek	E2314828 N5550275	10m	4m	0.26m		
Jimmys Creek	E2317441 N5548254	3m	6m	0.11m		
Jimmys Creek tributary	E2316955 N5547777	2m	0.09m	0.10m	12.9	62.4
Green Valley Creek	E2314588 N5545822	6m	0.0m (clogged with grasses)	0.02m	19.4-21.1	81.9-95.7
Green Valley Creek	E2314503 N5547099	6m	0.8m	0.01		
Green Valley Creek	E2313887 N5546769	12m	1.0m	0.02m		

Table 2 Stream insect abundance estimates, 21 February 2005.

Sampling Site	Major Insects Seen	Abundance Estimate	Major Insects Seen	Abundance Estimate
Jimmys Creek	<i>Deleatidium</i>	High	<i>Psilochorema</i>	Low
	<i>Nesameletus</i>	High	<i>Hydrobiosis</i>	Low
	<i>Aoteapsyche</i>	Moderate	<i>Zelandobious</i>	Low
	<i>Archichauliodes</i>	Low	<i>Costachorema</i>	Low
	<i>Olinga</i>	Low	<i>Stenoperla</i>	Low
	<i>Zelandoperla</i>	Low		
Tributary of Jimmys Creek	<i>Deleatidium</i>	Moderate	<i>Potamopyrgus</i>	Low
	<i>Olinga</i>	Low	<i>Helicopsyche</i>	Low
Green Valley Creek	<i>Deleatidium</i>	Moderate	<i>Helicopsyche</i>	Low
	<i>Olinga</i>	Low	<i>Pycnocentria</i>	Low
	<i>Potamopyrgus</i>	Low	<i>Oligochaete</i>	Low

APPENDIX SIX Central Otago Deerstalkers Club Submission

RE: Tenure review

Central Otago Deerstalkers Club wish to make a submission to the last round of reviews, being

The Homestead
Carrickmore
Patearoa
Riverslea
The beaches 1
Wiapiata Syndicate
Leaning Rock
Moa Hills
Mt. Grand
Glenfellen
Cambrian Hills
Caithness
Mt Aspiring Station
Coronet Peak

We wish the Department to note our request 1. for good public four wheel drive access to the above blocks.
2. that permission to carry guns be met by DOC permit only
3. and dogs be allowed on those blocks

Thank You
Alan Mackie

30 Earnsclough rd.
Alexandra
28-04-05

APPENDIX SEVEN

**New Zealand Deerstalkers Association-
Southern Lakes Branch Submission**

Re 2004/05 Tenure review program

On behalf of the Southern Lakes branch of new Zealand Deerstalkers association like to make some comments on the current Tenure review program. The properties in question

The Homestead(Rock and Pillar
Carrickmore (Rock and pillar
Patearoa Syndicate(rock and pillar
Riverslea(Rock and pillar
The Beeches(Rock and pillar
Waipata Syndicate(Rock and pillars
Leaning rock(Cromwell grge
Moa Hills (Old man range
Mt Grand Hawea flats
Glenfellen(upper Mataura
Cambrian Hills (Dunstans
Caithness(Kakanuis
Mt Aspiring station
Coronet Peak

11/12/2004

I like to make a general comment on the proces rather than individual properties
We are increasingly concerned about the lack of recognition given to hunting as an recreational activity
Access with fire arms and Dogs is still often put in the to hard basket
Hearing a Doc staf member mentioning the three principal ways of access as being walking Horse bac
Push bike is in our eyes Cutting out a big proportion of recreationalist
Most of the properties mentioned above do have Game animals on them Always or certain times of the
year.
Hunting is not only about shooting , a lot of time is spend exploring new places and looking around.

we like more recognition given to Hunting as an recreational activity and provision made where it is
appropriate for Acces with firearms and or Dogs

Sincerely
Hans Biemond
Secretary Southern lakes branch NZDA

Earnsclough road rd 1
Alexandra