

## **Crown Pastoral Land Tenure Review**

**Lease name : CLOUDY RANGE**

**Lease number : PM 015**

### **Conservation Resources Report**

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

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

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

**February 06**

**CLOUDY RANGE  
PASTORAL LEASE**

**CONSERVATION RESOURCES REPORT**  
OCTOBER 2003

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## PART 1

### INTRODUCTION

This report describes the significant inherent values present on Cloudy Range Pastoral Lease. Field survey reports upon which this report is based are listed below.

Cloudy Range Pastoral Lease covers an area of 9315 ha and lies between the Clarence River and the Inland Kaikoura Road (SH 70) midway between Waiau and Kaikoura (approximately 45 km from Kaikoura). Land adjoining to the north-east is Clarence Reserve (now formally protected as conservation land), to the north-west is Molesworth Station (Crown Land leased to Landcorp Farming), to the south is freehold (Whalesback, Terako, Mt Lyford and The Doone), to the west is Hossack Conservation Area, and to the east Conway Downs (freehold).

This report also refers to an area of crown land which was part of the Clarence Reserve and adjoins Cloudy Range to the north on the Clarence River banks.

Cloudy Range extends over the northern end of the Amuri Range and a southern extension of the Seaward Kaikoura Range. This mountain backbone provides a physical barrier effectively cutting the property in two, creating distinctive differences in climate and vegetation. This change is also recognized by the boundary of two ecological districts along the crest of the range - on the north eastern side of the Amuri Range, the faces of the Clarence River are in the Waiautoa Ecological District (formerly part of the Dillon Ecological District) and the southern slopes of the Range are in the Manakau Ecological District. Neither district has been surveyed as part of the PNA Programme. The Department of Conservation database lists three sites as SSWI, (site of special wildlife interest), Cloudy Range Bush, Towy River Bush and Robsons Bush. The Conway River is listed as a Weri, (wetland resource inventory).

#### **Field survey reports upon which this report is based:**

- Landscape Values of Cloudy Range (Internal report), Claire Findlay, May 1995.
- Cloudy Range – Resource report (ecological), Joy Comrie, December 1994.
- Assessment of Fauna Values of Cloudy Range Pastoral Lease, Jane Sedgeley, DOC, March 2003.
- Cloudy Range Pastoral Lease Report on Aquatic Fauna Surveys, Scott Bowie, DOC, March 2003.

**PART 2**

**INHERENT VALUES: DESCRIPTION OF CONSERVATION RESOURCES AND ASSESSMENT OF SIGNIFICANCE**

**2.1 LANDSCAPE**

**2.1.1 Landscape Context**

The boundary of the Amuri Range and Seaward Kaikoura Ranges divides the property into two very distinct zones and forms a boundary within a number of different classifications, rainfall, gradients, water catchments, soils, ecological districts, land use, landscape and visual catchments.

This can be illustrated by the drier inland middle reaches of the Clarence Valley and the moister, more coastally influenced and more complex topographic valley systems to the south-east of the Amuri Range. These smaller areas do not, however, form discrete landscapes in themselves. They therefore need to be considered within the wider landscape of which they are a part.

The property is considered to be regionally significant in terms of the Canterbury Regional Landscape Study's finding, (Boffa, Miskell & Lucas 1993). It adjoins the Seaward Kaikouras which are considered to be regionally outstanding.

**2.1.2 Landscape Descriptions**

**Clarence Valley (north west Cloudy Range)**

Cloudy Range Station is an integral part of the larger Clarence River Valley's middle reaches. Here the river down cuts through a confined valley system with only a small area of narrow terraces. The slopes rise steeply to the summit ridges (1500m).

The northern parts of the Clarence River faces contain 9-10 steeply graded tributary streams that feed directly into the Clarence River. Further south-west there is one major tributary, Tinline Creek which has a distinctly separate side valley system feeding the Clarence River. With numerous upper catchment streams, Tinline Creek has a large catchment and is deeply incised. The upper alpine areas consist of weathered rock ridges and bluffs, shattered rock pavements and rock screes.

The pastoral related activities are confined largely to the lower slopes above the Clarence River (e.g. manuka clearance, pasture improvement, fencelines, huts, willow plantings, dam formation). The most obvious and visible modification since pastoral occupation is the farm track which connects the two sides of the Amuri Cloudy Range. This is the only significant modification within this part of the Clarence Valley.

The crown land that adjoins this property to the north has slightly wider terraces before rising up to the steeper side slopes of the ranges. The lower land has a farm track from Cloudy Range and is grazed with areas of willow plantings.

Otherwise these middle valley reaches remain a seemingly remote inland area, relatively isolated from human activity and the impact of cultural modification.

## **South Eastern Cloudy Range**

On the south, or coastal side, the property is part of a more complex landscape than that of the Clarence River side. As an extension to the Seaward Kaikoura Range, the strongly dissected slopes of the Amuri Range form a highly cohesive backdrop to the Conway River valley.

The south eastern slopes of the Amuri Cloudy Range are part of the coastally influenced complex of inland mountain ranges which separate the eastern ranges from the higher, mountain range complexes further inland. The slopes are strongly dissected, have developed valley systems and receive moderately high rainfall from both the south and coastal easterly weather patterns.

While the ridge crest lines are characterised by the same weathered rocky ridges and bluffs, shattered rock pavements and screes as on the Clarence River side, the topography, vegetation sequences, soil formation and stream patterns are different. This area is deeply downcut by four rivers, the Mason, Towy, Conway Rivers and Robson Stream. Each of these has moderately extensive catchment areas and actively aggrading feeder tributaries with stream beds filling with deep layers of fresh rock detritus. The majority of these streams and rivers cut into parent material exposing moderately broken bluffs with steep slopes above. Much of this steep country remains in mixed hardwood and beech forest, being too steep to develop for pasture.

The spurs and ridgelines dividing these water catchments also have side slopes that grade steeply to summit ridges. At higher altitudes and in the upper catchment areas the silver tussock and forest associations give way to broadleaf snow tussock and sub alpine shrublands, merging higher still into alpine herbfields and open rock and scree.

Two main farm tracks exist, one extends up to a TV aerial and beyond to Conway Spur and the other up the central ridge, into the Robson catchment and over to the Clarence Valley. The lower and more accessible parts have been subdivided where possible and these areas are more intensively managed for grazing. The mid slopes of spurs and ridgelines, under extensive (and unfenced) pastoral management, are predominantly covered in silver tussock and exotic grass (and some weed) species. Subdivisional fencing extends to nearly 900m at the highest point but it is generally below this and only on the accessible south eastern parts of the property where grazing management is intensive.

## **Conway River Terraces**

The southeast portion of the property is the only relatively flat/gently sloping part of the property. Formed from glacial deposition during the Pleistocene these terraces are elevated above the bordering Conway and Towy Rivers and are intensely developed with subdivisional fencing and almost exclusively exotic grasses. Close to SH70 are located the Homestead, yards, farm buildings and airstrip.

### **2.1.3 Visual Values**

The property is within the visual catchment of SH70 for 10-15 km and is closest to the state highway where it crosses the Conway River. Parts of the property are highly visible to users of the Mt Lyford Ski field and to recreationists in the Clarence Valley.

The Hope Fault is identified in the Canterbury Regional Landscape Study as regionally significant and also of visual interest because it marks differences in terrain either side of the fault.

## 2.2 LANDFORMS AND GEOLOGY

The base geology is lower Jurassic massive greywackes and argillites which have been highly contorted and folded. The property's boundary to the south falls about the line of the transcurrent Hope Fault which runs for 125 miles east-north-east from the Taramakau Valley to the east coast north of Kaikoura. In this area it forms a boundary which differentiates the greywackes of the Amuri/Seaward Kaikoura Ranges on the north side of the fault from the broken downlands formed of younger limestone and sedimentary baserock to the south. The Elliott faultline that runs east/west to the North of the property boundary has several offshoots that run across the property meeting in the south with the Hope Fault. The differences in terrain caused by the faultlines are a significant feature of this area.

Landforms on Cloudy Range are predominantly a result of tectonic uplift, fault activity, erosion and deposition. Most of the property is extremely steep and broken with extensive scree, numerous rock outcrops, and steep gorgy headwater streams. On the south-eastern side of the Amuri Range landforms consist of steep to very steep mountain slopes with four deeply incised streams, the Towy, Robson, Mason and Conway. Terminal moraine deposits line the Towy and Conway river beds. Each catchment alternates between narrow gorges and gravel filled riverbeds. The only area of flat land is around the homestead on an elevated terrace between the Conway and Towy Rivers formed from Pleistocene glacial deposition.

On the Clarence River side, slopes are consistently steep with extensive gravel or scree slopes and rocky outcrops dissected by numerous short and narrow, steeply graded streams flowing into the Clarence River. This pattern is only broken in the western corner of the property, with a change to more gentle topography on the northern slopes of Mt Terako. Here there is one major tributary stream, Tinline Creek, with numerous feeder tributaries and a comparatively large catchment, still deeply incised in its upper catchment but with a comparatively wide flood plain in its lower stretches before it reaches the Clarence River.

The Clarence River itself, which borders Cloudy Range, has a relative absence of former outwash glacial and alluvial terrace which are characteristic of its upper reaches. Instead the river down cuts through a relatively confined valley system comprised of little flat land except in a small area around the Cloudy Hut and the far north-western end of the property. The UCL land adjacent to the north also has a small area of flat land.

The high country yellow brown earths Kaikoura and Tekoa are the predominant soil cover with Hurunui and Charwell on the lower lands. At higher altitudes soils are leached, some podzolised and are prone to slips and scree erosion with lots of bare rock.

There are important fossil localities dating back 70 million years on the northern side of the Cloudy Range.

## 2.3 CLIMATE

The nearest climatological stations are at Molesworth, Kaikoura or Hamner. All have markedly different climatic influences and cannot be easily transposed to Cloudy Range. The homestead area would probably reflect Hamner weather conditions with southwesterly or north-easterly winds, and moist coastal influences as illustrated by the characteristic cloud and mist cover on the slopes.

The Clarence River side reflects Molesworth weather conditions as the Amuri Range acts as a barrier to southerly rainfall. The Clarence Valley, with average rainfalls of less than 500mm, is well known as a dry inland valley system. Sufficiently eastward of the main divide

to be in its rain shadow and, protected by the coastal ranges from the predominant coastal climatic influences, the Clarence Valley is exposed to the prevailing, dry northwest winds and receives most of its precipitation from northerly rains and on the tops through southerly snow falls. It is prone to wide ranges of temperature variation and frost action which is a major contributor to scree formation and erosion processes.

Rainfall ranges from 500mm along the Clarence River to an average of 1125 mm to the south-east of the Amuri Range at the Homestead (and up to as high as 1500mm).

## 2.4 VEGETATION

As a result of the differences in climate and physical features on this property, the vegetation also shows some marked differences from one side of the Amuri Range to the other. For the purposes of description the vegetation has been divided into two sections: the "coastal side" and the "Clarence River" side.

### 2.4.1 The coastal side

On the "coastal side" the vegetation is principally short tussock grassland slopes, interspersed with forested catchments of mountain beech, broadleaved trees and scattered totara. On slopes above 900m the vegetation becomes a mixed shrub- flax-tussockland. The area of flat land around the homestead consists of cultivated and intensively grazed paddocks. In more detail these areas are as follows:

Short tussock grasslands on the hillslopes below 900m in the south-eastern part of the property. These grasslands are a mix of fescue and silver tussock, with a sward of introduced grasses and herbs. Fescue tussock (*Festuca novae-zelandiae*) is more common on steeper lower slopes and on more gravelly ground. The silver tussock (*Poa cita*) appears more on the rounded ridge tops and less steep country. On lower steeper slopes there is often scattered flax and matagouri, and where these slopes have been burnt there is abundant Maori onion (*Bulbinella angustifolia*).

Remnant forests of mountain beech, broadleaved trees and totara in the catchments of the Mason, Towy and Robson. These forests are confined principally to the very steep and often inaccessible slopes of these rivers, mainly below 700m but reaching 900m at the heads of catchments. Beech is virtually absent from the Robson, but becomes increasingly dominant towards the Mason.

In the Towy the main broadleaves mixed in with the beech are broadleaf (*Griselinia littoralis*), golden akeake (*Olearia paniculata*), mountain ribbonwood (*Hoheria lyalli*), three finger (*Pseudopanax ternatus*), marbleleaf (*Carpodetus serratus*) and lancewood (*Pseudopanax colensoi*). The understorey is made up principally of shrubs of *Coprosma*, *Hebe traversii*, prickly shield fern (*Polystichum vestitum*), *Blechnum* ferns, *Astelia fragrans*, *Helichrysum lanceolatum*, *Corokia cotoneaster* and prickly mingimingi (*Leucopogon fasciculata*). Along the main streamsides *Coprosma robusta*, tutu, ferns and marbleleaf are common.

Occasional red beech is scattered amongst the mountain beech, on river terraces and gentle sloping gullies. Isolated trees of matai grow on recent alluvium on terraces in the Towy and Robson and are likely to be found in similar habitats in the other catchments.

In the Robson the forest remnants and surrounding shrublands are much more broken with a noted absence of beech, except in the last (downstream) straight stretch of the catchment before it reaches the Towy. The predominant tree cover is instead golden akeake, broadleaf and three-finger with occasional lancewood, kowhai and shrublands of mountain wineberry, *Hebe* sp., flax, native broom and manuka.



On bluffy sites in the gorges of both catchments, Marlborough rock daisy (*Pachystegia insignis*), coral daisies, (*Helicyrsum intermedium*, *H. coralloides*) and *Celmisia monroi*, are common along with occasional mountain aniseed (*Gingidia montana*) on shadier, less accessible sites.

Scattered patches of Hall's totara, often on gravelly slopes and around steep bluffy sections, remain in the Robson and Conway and to a lesser extent in the Towy, mainly at altitudes above 700m. Together with the totara there are usually also shrubs of matagouri, mountain ribbonwood, *Hebe rakaiensis* and *H. anomala*.

On slopes above approx 900m in the Conway, Robson and Towy broad-leaved snow tussock lands with flax, scattered shrubs and speargrass are extensive. The cover varies from predominantly snow tussock (*Chionochloa flavescens*) and mountain flax (*Phormium cookianum*) on gravelly high altitude slopes with scattered speargrass (*Aciphylla aurea* and *A. glaucescens*), snow totara and the shrub *Bracyglottis monroi* to snow tussock and flax with an increasing shrub component as altitude decreases (below approximately 1100m). The shrubs are mainly mountain inaka (*Dracophyllum uniflorum*), matagouri, mountain tauhini, *Olearia cymbifolia*, and *Hebe odora*. Other species present in this type of community include occasional fescue tussock (*Festuca mathewsii*), *Leucopogon colensoi* the native daphnes *Pimelea oreophila* and *P. concinna* and bidbibids (*Acaena caesiglauca* and *A. profundeincisa*).

#### 2.4.2 Clarence River slopes

On the "Clarence River side" the vegetation cover is sparser than the coastal side with extensive underlying gravel. It consists of snow tussock-flaxlands, shrublands and small remnants of totara treelands. The only modified areas are around Cloudy Hut, along the Clarence River flats and on north facing slopes downstream of the hut, where the cover is predominantly short tussock grassland, gravelly slopes and modified kanuka remnants. In detail these communities consist of the following.

Side slopes on the Clarence River side of the range are covered predominantly in a snow tussock-shrub flax mix of broadleaved snow tussock and mountain flax with shrubs of *Hebe rakaiensis*, *H. glaucophylla*, *H. anomala*, *Olearia cymbifolia*, *Brachyglottis monroi*, matagouri and speargrass.

Broadleaved snow tussockland continues to high altitude - to the crest of the range between patches of scree and rockland. Other species on these higher altitude gravelly slopes include bristle tussock (*Rytidosperma setifolia*), *Leucopogon colensoi*, *Aciphylla aurea*, *Celmisia spectabilis* and mountain inaka. On ridge crests where the ground is often rock and firm gravel-land there is a mix of species including the dwarf Spaniard *Aciphylla monroi*, *Hebe pinguifolia* and *Heliohebe raoullii* subsp. *raoullii*.

In hollows, gullies and streamsides at altitudes below 1000m there is increased scrub particularly matagouri, mountain ribbonwood (*Hoheria lyalli*), *Aciphylla glaucescens* and *Coprosma propinqua* and occasional Halls's totara. Localized stands of totara remain in many of the short steep sided streams flowing into the Clarence. Underneath the canopy of the bigger patches there are commonly ferns of *Asplenium* and *Polystichum richardii* as well as shrubs of celery pine (*Phyllocladus alpinus*), *Corokia cotoneaster* and *Helichrysum lanceolatum*.

Within these stream catchments, rock outcrops and bluffs are numerous. Surviving in cracks or ledges and on river-sides are Marlborough rock daisy, *Bracyglottis monroi*, and coral daisies *Helichrysum intermedium*, and *H. coralloides*.

One other conspicuous vegetation community on the Clarence River side including the crown land is karuka. Patches are frequent on mountain slopes below approximately 900m, mainly occupying dry, sunny and often bare slopes with very little else growing beneath except occasional exotic grasses and flatweeds.

Screes are common throughout this country - along the main range, side ridges and extending down to stream sides in places. The finer screes have a smattering of plants such as scree convolvulus (*Convolvulus fractosaxosa*), *Oxalis "scree"*, *Epilobium pycnostachyum*, *Lobellia roughii*, *Stellaria roughii*, *Leptinella atrata* and penwiper (*Nothothlaspi rosulatum*). Along the crest of the range there is also the little grass *Poa buchannii* and *Epilobium epacridea*.

At the south-western end of the property in the upper true right of the Tinline Creek catchment and adjoining Mt Lyford skifield the terrain and vegetation differ quite markedly from the rest of the property. The landforms are less steep, and much more rounded with occasional basins and hollows. Screes are still common and are in fact extensive on the summit and sides of Mt Terako, but the vegetation is a mix of sparse snow tussockland (*Chionochloa pallens*), fellfields and carpet grass-herbfields. Snow tussock communities tend to be on drier rocky slopes, often knolls but also well drained sideslopes. Growing with the snow tussock are herbs of *Celmisia spectabilis*, *Raoulia australis*, *Kellieria diffenbachii* and low growing sprawling shrubs of *Dracophyllum pronum*, *Aciphylla monroi*, *Hebe pinguifolia*, *H. lycopodoides* and *Leucopogon colensoi*.

On flatter sites with more soil development and moisture there are some moderately extensive areas of carpet grass (*Chionochloa australis*). Amongst the carpet grass are herbs of *Celmisia sessiliflora*, *C. viscosa*, *C. incana*, *Dracophyllum pronum* and *Hebe lycopodoides*.

### 2.4.3 Problem Plants

Weeds on Cloudy Range are limited principally to broom. Broom is widespread and thick in the Conway River, up to 300m above the river. It also occurs in the lower Towy and Robson and is patchy but has potential to become a problem on the Clarence River side, particularly downstream of the Cloudy Hut. It is also widespread in the crown land to the north of the Cloudy Hut. Gorse and Briar are also present in the crown land block.

## 2.5 FAUNA

### 2.5.1 Birds and Reptiles

Cloudy Range pastoral lease contains several important areas for wildlife, the most important being a range of high altitude habitats (tussock-flaxlands, shrublands, forest remnants, and extensive screes), and mountain beech forest dominated remnants in the Towy River and Robson Stream catchments.

Robson Bush, Cloudy Range Bush, and Towy River Bush forests are diverse, containing vegetation representative of both Kaikoura forests and Canterbury beech forests. They are classified as SSWI's, (sites of special wildlife interest), being important for indigenous forest and shrubland birds, and snails. The Conway River is listed as a WERI site, (wetland resource inventory), of high value to wildlife.

The area of high altitude habitats is extensive, and contains a continuous linked and diverse range of habitats with a range of vegetation types, aspects, altitudes and landforms that extend in altitudinal sequence from high altitude to the fringes of lowland areas.

Lizards are numerous on the property, and of particular note is the presence of the scree skink. Cloudy Range is extremely significant for geckos. It is the most southerly location for *Hoplodactylus maculatus*, the most northerly for *H. aff. maculatus* "Canterbury". Cloudy Hut is the only site where these species have been found together.

A total of thirty-four bird species: nineteen indigenous (thirteen endemic, six native), and fifteen introduced have been recorded on Cloudy Range station (Tables 1 & 2). Of the indigenous birds, five species are classed as threatened (Table 1). Five endemic species of lizard were recorded, one of which is classed as threatened (Table 3).

### **Towy River, Robson Stream and associated forested gullies and slopes**

#### *Birds*

Bellbird, grey warbler, fantail, rifleman, silvereye, tomtit, brown creeper have been recorded in the bush, and Australasian harrier, paradise shelduck, white-faced heron and welcome swallow have been recorded along bush edges and over the riverbed. An eastern falcon (threatened species = gradual decline, Hitchmough, 2002) has been recorded flying over the Conway River. Because falcons have large home ranges, the falcon observed on the Conway River is also likely to use the nearby river catchments.

#### *Lizards*

One *Hoplodactylus* gecko (*Hoplodactylus aff. maculatus* "Malborough mini") has been found beneath a rock at the bottom of a small rock slide at the river/bush edge. The forest and shrubland provided habitat suitable for arboreal *Nautilinus* geckos (Whittaker & Gaze, 1999).

#### *Other species*

A threatened species of carnivorous snail (*Wainuia edwardii*) (gradual decline) was found in Cloudy Range Bush in a 1983 Wildlife Service survey. An introduced whistling frog has been heard calling at Robson Stream near the farm track.

### **High altitude habitats on either side of the Amuri Range**

#### *Birds*

Bellbird, grey warbler, fantail, rifleman, silvereye have been recorded in the shrublands and high altitude forests. An eastern falcon (gradual decline) has been recorded at the saddle approx. 3-4 km from the hut.

#### *Lizards*

Five *Hoplodactylus* geckos (*Hoplodactylus aff. maculatus* "Malborough mini") (including one very small sub-adult) has been found under rocks among rocky outcrops and bluffs at the side of the track and under larger rocks at the edge of scree slopes at four different sites. The alpine areas in which these were found were dominated by bare rock and screes with spear grass (*Acyphlla aurea*, *A. glaucescens*), mountain flax (*Phormium cookianum*), mountain inaka (*Dracophyllum uniflorum*), pimelias, *Brachyglottis monroi*, coral daisies (*Helichyrsum intermedia*, *H. coralloides*) and snow tussocks. A large fragment of scree skink skin (gradual decline) has been found partly covered by rocks at the edge of screes .

### Cloudy Hut and Clarence River

#### Birds

Silvereyes, bellbird and eastern falcon (gradual decline) have been recorded at the hut site. Additionally a robin has been heard calling in the willows. Grey duck (serious decline), black shag (sparse), paradise shelduck, spur-winged plover and black fronted terns (gradual decline) have been recorded on the Clarence River.

#### Lizards

No lizards have been recorded at the hut site but three geckos identified as *H. maculatus* and *H. aff. maculatus* "Canterbury" were collected at the site in 1983 (ARDS; R. Hitchmough, pers. com.). A common skink *Oligosoma nigriplantare polychroma* has been found amongst rocks and matagouri on the stream banks of the first major side-stream to the south of the hut.

### Unoccupied Crown Land

#### Birds

Bellbird, fantail, silvereyes, and riflemen have been recorded in the kanuka shrublands.

#### Lizards

One *Hoplodactylus* gecko *Hoplodactylus aff. maculatus* "Malborough mini" has been found among rocks. Numerous lizard droppings have also been found among the rock outcrops.

**Table 1** Indigenous bird species recorded from Cloudy Range Pastoral Lease, March 2003.

Bird species Common name	Scientific name	Known Distribution on Property
white-faced heron	<i>Ardea novaehollandiae</i>	Towy River
black shag	<i>Phalacrocorax carbo novaehollandiae</i>	Clarence River
paradise shelduck	<i>Tadorna variegata</i>	Throughout
Grey duck	<i>Anas superciliosa superciliosa</i>	Clarence River
Australasian harrier	<i>Circus approximans</i>	Throughout
eastern falcon	<i>Falco novaeseelandiae "eastern"</i>	Cloudy Hut, 3-4 km from hut along track, Conway River
spur-winged plover	<i>Vanellus miles</i>	Throughout
black-fronted tern*	<i>Sterna albobriata</i>	Clarence River
Kea*	<i>Nestor notabilis</i>	Open tussocks Clarence River side
S. I. rifleman	<i>Acanthisitta chloris chloris</i>	beech forest remnants and shrublands throughout
welcome swallow	<i>Hirundo tahitica</i>	Throughout
S. I. fantail	<i>Rhipidura fuliginosa fuliginosa</i>	beech forest remnants and shrublands throughout
S. I. tomtit	<i>Petroica macrocephala macrocephala</i>	beech forest remnant Towy River
S. I. robin*	<i>P. australis australis</i>	Cloudy Hut
brown creeper	<i>Finschia novaeseelandiae</i>	beech forest remnant, Towy river

Grey warbler	<i>Gerygone igata</i>	beech forest remnants and shrublands throughout
New Zealand pipit	<i>Anthus novaeseelandiae novaeseelandia</i>	Throughout
bellbird	<i>Anthornis melanura melanura</i>	Throughout
silvereeye	<i>Zosterops lateralis</i>	beech forest remnants and shrublands throughout

\*Previously recorded (tenure review survey report 1995) but not recorded during 26-28 March 2003

**Table 2.** List of introduced bird species recorded on Cloudy Range Pastoral Lease March 2003.

Bird species	
chukor	<i>Alectoris chukar</i>
Californian quail	<i>Callipepla californica</i>
skylark	<i>Alauda arvensis</i>
dunnock	<i>Prunella modularis</i>
rock pigeon	<i>Columba livia</i>
song thrush	<i>Turdus philomelos</i>
blackbird	<i>T. merula</i>
starling	<i>Sturnus vulgaris</i>
house sparrow	<i>Passer domesticus</i>
chaffinch	<i>Fringilla coelebs</i>
redpoll	<i>Carduelis flammea</i>
goldfinch	<i>C. carduelis</i>
greenfinch	<i>C. chloris</i>
yellowhammer	<i>Emberiza cintrenella</i>
Australian magpie	<i>Gymnorhina tibicen</i>

**Table 3** Endemic lizard species recorded from Cloudy Range Pastoral Lease, March 2003.

Lizard species	Scientific name	Known Distribution on Property
Common name	Scientific name	
gecko*	<i>Hoplodactylus maculatus</i>	Cloudy Hut
gecko*	<i>Hoplodactylus maculatus</i> aff. "Canterbury"	Cloudy Hut
gecko	<i>Hoplodactylus maculatus</i> aff. "Malborough mini"	Throughout
common skink	<i>Oligosoma nigriplantare polychroma</i>	stream bed south of hut
scree skink <sup>1</sup>	<i>O. waimatense</i>	scree near track approx. 3 km from hut

\*Previously recorded (ARDS database & R. Hitchmough pers. com.) but not recorded during 26 – 28 March 2003.

<sup>1</sup> Skin only

## 2.5.2 Freshwater Fauna

Freshwater fauna communities were surveyed at eight sites on Cloudy Range Pastoral Lease, spread between catchments of the Conway and Clarence Rivers.

Eight different fish species, including seven native species, and a wide range of aquatic macro-invertebrates including insect larvae and worms have been found throughout the different habitat types on the Pastoral Lease.

Four different aquatic habitat types have been described. These were classified by water source, resistance to drying and surrounding landform structure. All of these were flowing water habitats.

### Habitat Types

Small Streams: Draining into both the Clarence and Conway Rivers are several small streams that either arise from a high elevation, or contained an area of seepage before reaching the main river. These streams are generally less than 1 metre wide, normally flowing through a gorge or steep gully. Stock access is generally possible, except for those streams that occurred at greater altitudes; these appeared to be fenced off from the stock.

Large Streams: These streams are generally slightly larger than the small streams, often with small streams present in the upper parts of their catchments. These streams flow directly to the main Clarence River without any blockages such as waterfalls or seepages. These streams appeared to have some stock access, although any gorgy areas are fenced off.

Rivers: The main river on the Pastoral Lease, and the only one to be defined in this habitat type, is the Clarence River. This river is generally greater than 20 metres wide (normally greater than 30 meters) and is composed of many deep pools intermixed with areas of both riffle and run. The river is also generally confined to one channel, although in occasions two or more channels are present. The river is accessible by stock.

Conway River Streams: The streams of the Conway River show some quite marked differences to those of the Clarence River. The valleys tended to have large areas of relatively pristine native bush, the river channel is fairly uniform in size and the stock access is minimal. All of the streams are less than 2 metres wide, although during higher flows, as much as five metres of channel is probably used, with the river braiding into two or three channels, rather than the one at base flow.

### Fish

Native fish have been found in all habitat types. Three species classified as nationally threatened have been caught in surveys of the fish communities, one of these, the "Northern" galaxias (*Galaxias* spp "Northern") is classified as data deficient, dwarf galaxias (*G. divergens*) is considered to be in gradual decline and the longfin eel (*Anguilla dieffenbachia*) is also in gradual decline (Hitchmough 2002) .

Neither of the major rivers is influenced by hydroelectric dams, so this has two major effects on the fish communities within the rivers. The first is that fish communities are often comprised of both diadromous (those species with a marine phase in their lifecycle) and non-diadromous species. The second feature is that fish are able to recolonise sections of river or stream that may have previously contained fish communities, but have lost them due to circumstances such as drought and water extraction.

In the Clarence River, the diadromous species recorded in the NZFFD (New Zealand Freshwater Fish Database) are longfin eel (*Anguilla dieffenbachii*) and shortfin eels (A.

*australis*), redfin bully (*Gobiomorphus huttoni*), bluegill bully (*G. hubbsi*) and common bully (*G. cotidianus*), koaro (*Galaxias brevipinnis*), inanga (*G. maculatus*), common smelt (*Retropinna retropinna*), torrentfish (*Cheimarrichthys fosteri*) and chinook salmon (*Oncorhynchus tshawytscha*). Of these, all but common smelt are known from around the area that this survey incorporates. Of the non-diadromous species, Canterbury galaxias (*Galaxias vulgaris*), alpine galaxias (*G. paucispondylus*) and dwarf galaxias (*G. divergens*), upland bully (*Gobiomorphus breviceps*) and tarndale bully (*G. alpinus*), and brown trout (*Salmo trutta*) are known from the river, with only tarndale bully not recorded at Cloudy Range.

The small streams around Cloudy Range Pastoral Lease have three species of native fish in their communities. The most common of these are from the Canterbury galaxias complex, but also present were upland bully (lower altitude sites only) and alpine/ dwarf galaxias (these species are very close and cannot be accurately identified without anaesthetising). The large streams had a similar community arrangement, although common bully and brown trout are also present in these communities. Due to the shallow nature of these streams, the brown trout are all less than 120 mm in length.

The main Clarence River contained only four species, brown trout, alpine/ dwarf galaxias, common and upland bully. The brown trout tended to be bigger than in the large streams.

The Conway River contained five species of fish, "Northern" galaxias, alpine/dwarf galaxias, common and upland bully, and torrentfish; and one introduced amphibian, whistling frog. No trout have been found in any of the streams surveyed in this system, probably due to the shallow nature of the streams. The presence of torrentfish is important as these fish are truly diadromous, requiring unimpeded access to and from the sea. It is therefore possible that some other diadromous species such as banded kokopu and koaro, may be present in parts of the Conway River, particularly in some of the bush-clad streams.

### **Aquatic macro-invertebrates**

The small streams on Cloudy Range Pastoral Lease that have been surveyed are characterised by cased caddisflies (*Olinga feredayi* and *Confluens* spp), stoneflies (*Zelandoperla* spp), mayflies (*Deleatidium lillii*- and *myzobranchia*-group) and coleoptera larvae (*Elmidae* spp). However, the streams surveyed are from high altitude sites, so those nearer the river may show differences, probably with higher species diversity. The larger streams have not been surveyed, due to the difficulty of access; however, these are expected to be similar to the river communities and to those found in the small streams near the river.

The community sampled in the Clarence River has been found to contain mainly mayflies (*Nesameletus* spp, *Deleatidium lillii*- and *myzobranchia*-group) and caddisflies (*Aoteapsyche colonica* and *Hydrobiosis* spp) with the only other species observed being coleopteran larvae (*Elmidae* spp). The Conway River streams appear to be dominated by caddisflies (*Aoteapsyche colonica* and *Hydrobiosis* spp) rather than mayflies, although these are also present (*Deleatidium lillii*- and *myzobranchia*-group). Also found in these streams are stoneflies (*Stenoperla prasina*), crane flies (*Eriopterini* spp) and coleoptera larvae (*Elmidae* spp and *Ptilodactylidae* spp). None of the sites surveyed appear to contain any particularly threatened invertebrate species; however, because of the inaccessibility of much of the Pastoral Lease, this is not a certainty.

### **2.5.3 Problem Animals**

The main problem feral animals that were seen during field visits are goats in the lower Towy and chamois on the range. Both are thought to be in low numbers, but goats in particular require control to ensure their spread is limited. Deer are also reported to be present. Hares and rabbits are present on the higher areas.

## **2.6 HISTORIC**

Cloudy Range was originally part of Highfield Station until around 1884, when it became a separate unit.

The oldest buildings on the property are a corrugated iron "Cloudy Hut" with beech framing possibly built just prior to R Latter taking up the run in 1911. The earliest name that can be found is dated 6 May 1909. The hut is a typical mustering hut of the era and is of local historic interest.

On the homestead site a portion of the woolshed dates back to the 1890s. It was possibly built between 1884 and 1897 when a Mr Wharton ran Cloudy Range as a separate unit from Highfield. As the shed has been modified it is of little historical interest.

The crown land adjacent to the north was a part of the ex- Clarence Reserve that was purchased by the Crown in 1994.

## **2.7 PUBLIC RECREATION**

### **2.7.1 Physical Characteristics**

The lease can be divided into two areas with different physical characteristics; the north western steep, dry scree covered slopes, and the south eastern rolling hill country. The two sides are joined by a 4-wheel drive track. There is also a farm track to a TV aerial on the south east of the property and a farm track that follows the flats that border the Clarence River near the Clarence Hut on the north western side. The Clarence River forms the north west boundary, and the Conway River forms the south eastern boundary.

The area can be characterised as open space with some 4wd access and some areas accessible by foot only. The relatively high use of the Clarence River for access via water is an unusual characteristic of the lease.

### **2.7.2 Legal Access**

Legal access to Cloudy Range from SH 70 is via a formed road only as far as the Conway River. There is no access to the homestead or along any of the 4 W D tracks. However, Section 24 Marginal strips are laid off either side of the Conway River for approximately 3/4 of the distance from the junction with the Towy to Palmer Saddle, for approximately 4 km up the Towy River, along the Clarence River and for a very short distance up the Winterburn River.

### **2.7.3 Activities**

The main recreational use of Cloudy Range is by rafters and kayakers along the Clarence River. The Clarence is one of the premier classic multi-day river trips in New Zealand, taking 4 to 5 days to travel and passing through remote and impressive landscape, with water



which is not too challenging but interesting enough for people from all ability levels. Access to this river is essentially restricted to the upper and lower ends of the river i.e. the Accommodation House at the confluence of the Acheron and Clarence Rivers is the main entry point and the SH1 road bridge near the East coast the main exit point. Most river users camp their first night downstream of the Cloudy Range boundary.

The Clarence is also suitable for brown trout fishing and has a seasonal run of Quinnat salmon.

The property has low numbers of red deer, chamois and goats. Permission is required from the lessees to hunt on the property. There are also small populations of chukor, California quail and rabbits on the Clarence side of the Hamner Range. Because of the remote locality few small game hunters hunt the property. Paradise shelduck and Canada geese are also present on the Clarence River

Very few trampers visit the property but increasing numbers of people are getting access via the Mt Lyford skifield road. There is potential for a "round-trip" - tramping access from Mt Lyford, downstream along the Clarence River to as far as the Palmer Stream, up the Palmer Stream over the Palmer Saddle and down the Conway River. The ridges adjacent to Mt Lyford have potential for ski-touring in winter. There is also potential for horse trekking and already quite a bit of mountain biking over the vehicle track on Cloudy Range into the Clarence River. It is possible to continue down the Clarence exiting via Clarence Reserve or to go up the Clarence River via Molesworth and the Hossack Station to Hamner Springs.

### **PART 3**

#### **OTHER RELEVANT MATTERS & PLANS**

##### **3.1 CONSULTATION**

Meetings were held with representatives from NZ 4 Wheel Drive Association, Canterbury 4 Wheel Drive Association, University Tramping Club, Botanical Society, Peninsula Tramping Club, NZ Deer Stalkers Association, High Country Committee, Public Access NZ, South Canterbury Tramping Club, Temuka Tramping Club and Federated Mountain Clubs, on the 10<sup>th</sup> of September 2002 in Timaru and the 11<sup>th</sup> September 2002 in Christchurch. A number of leases including Cloudy Range were discussed.

Issues discussed that were relevant to this property were that there are important fossil localities dating back 70 million years at the back of Cloudy Range. Also there is a good 4-wheel drive track over the hill that may be useful for public access. (The inclusion of other lands was questioned such as Hossack or Clarence Reserve).

When this property was involved in the tenure review process in 1995 a meeting was held with representatives from Forest and Bird, the 4-wheel drive club, NZ Deerstalkers Association, Mid-Canterbury Fish and Game Council, FMC and members of the North Canterbury and Aoraki Conservation Boards. At that time no NGOs had visited the property and only general comments were made at the meeting such as there needed to be guaranteed foot access and some reasonable formalised arrangements for 4 wheel drive access. The importance of access to the Clarence River was stressed.

Also, subsequent to the 1995 meeting Doug Rankin from the New Zealand Canoeing Association approached the Department about making comments from a water users perspective. His letter of September 1995 express the desire "to be able to continue with

our current unrestricted access to campsites on the banks of this river [Clarence] for its length". He added this would not normally mean requiring access to the river through the property, and that this river is a very important waterway for paddlers in New Zealand, having been recommended for protection with a National Water Conservation Order in a number of forums.

### 3.2 DISTRICT PLANS

Cloudy Range falls under the jurisdiction of two District Councils - all that area on the "coastal side" of the Amuri range is within the Hurunui District, while the Clarence River side of the property is in the Wairau/Awatere area of the Marlborough District Council. The Proposed Wairau/ Awatere Resource Management Plan was notified in November 1997. This identifies the lease land as being *Rural 4 zone*.

The Hurunui District Council notified a proposed District Plan in September 1995. This plan identifies all of the area of Cloudy Range that is in the Hurunui District as being an *outstanding landscape area*. It also identifies three areas on the property as being "Conservation Areas" - 52 Towy River Bush (covering most of the forest remnants in the Towy), 53 Cloudy Range bush (the forest remnants in the lower Robson) and 54 Robson Bush ("patch of mountain podocarp/hardwood forest on very steep hillslopes").

### 3.3 CONSERVATION MANAGEMENT STRATEGY

Cloudy Range is within the Lowry Unit of the Canterbury Conservation Management Strategy (CMS). Key priorities for this unit are listed as:

- o to promote the enhancement of the landscape integrity of the river gorges and limestone areas in the Lowry area.
- o to co-operate with and assist Te Runanga o Ngai Tahu and Papatipu Runanga and the New Zealand Historic Places Trust in protecting rock art sites, in accordance with the outcomes of *the Deed of Settlement (1997)*.
- o to identify the significant indigenous vegetation and threatened species of the Lowry unit.
- o to use a range of effective methods to protect the indigenous biodiversity of the Lowry unit.
- o to protect and enhance the viability of priority threatened species' populations and their habitat(s) in the Lowry unit.

**PART 4**

**MAPS ETC.**

**4.1 Additional information**

**4.1.1 References Cited**

**Boffa Miskell and Lucas Associates. 1993.** *Canterbury Regional Landscape Study*, Volumes I & II.

**Courtney, S and Arand, J. 1994.** *Balaclava, Sedgemere and Dillon Ecological Districts. Survey Report for the Protected Natural Areas Programme. New Zealand Protected Natural Areas Programme No. 20.* Department of Conservation. Nelson.

**Hitchmough, R. (compiler) 2002.** New Zealand threat classification system lists. *Threatened Species Occasional Publication 23.* Department of Conservation, Wellington.

**McEwen, W.M. (editor) 1987.** Ecological regions and districts of New Zealand, third revised edition (Sheet 3). *New Zealand Biological Resources Centre Publication No.5.* Department of Conservation, Wellington, 1987.

**Moore, S. 1998.** *Manakau Ecological District. Reconnaissance Report for a Protected Natural Areas Survey.* Department of Conservation. Nelson.

**4.2 Illustrative Maps**

**4.2.1 Topo/Cadastral Map**

**4.2.2 Values Maps**  
**Botanical Values**  
**Fauna Values**