

Crown Pastoral Land Tenure Review

Lease name : ARGYLE STATION

Lease number : PS 055

Conservation Resources Report - Part 1

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.

November

05

ARGYLE PASTORAL LEASE CONSERVATION RESOURCES REPORT

PART 1

INTRODUCTION

The lessee of Argyle Pastoral Lease has applied to the Commissioner of Crown Lands for a review of tenure. The property has been inspected and reported on by relevant DOC staff and their assessments have been incorporated into this conservation resources report.

Some of these individual assessments were undertaken in 1988 during the implementation phase of the Protected Natural Areas Programme following survey of the Umbrella Ecological District which was completed in 1985/86. Subsequent staff assessments have included the three RAPs identified on the PNAP survey and the balance of the pastoral lease, as well as the 15 separate parcels of land comprising the DOC administered Argyle Forest. These parcels are scattered throughout the lower altitude part of the property and the future of these lands has been assessed as part of the pastoral lease tenure review.

Argyle Pastoral Lease is a large property covering 13,799 ha with supporting freehold river flats and terraces. It is located on the eastern flanks of the Waikaia Valley and encompasses the south flowing Argyle Burn catchment which drains the western slopes of the Black Umbrella Range and the north flowing Whitecoomb Creek which drains the western slopes of the Whitecoomb Range and the White Umbrella Range. These three ranges are collectively known as the Umbrella Mountains.

The property adjoins the DOC controlled Waikaia Forest and all boundaries between the pastoral lease and this large DOC landholding are unfenced.

Argyle Station is 56 km north of Gore and 14 km north of Waikaia township, on the Whitecoomb-Piano Flat Road.

PART II

1 LANDSCAPE ASSESSMENT

A DOC landscape architect has previously assessed the property as part of the earlier PNAP Implementation work.

a HIGH COUNTRY BLOCK

i Landscape Context

A landscape management zone (LMZ) has been identified which encompasses the Whitecoomb Range and the White Umbrella Range and includes the Whitecoomb Creek catchment. These features form an integral part of an outstanding northern Southland/West Otago tussock landscape. These long uniform ridges of the White Umbrella Range are bordered in the east by the Whitecoomb Range, while in the west it descends quickly down into the Waikaia Valley. In the south and part of the north two RAPs have been identified. The landscape management zone completes the jigsaw, as it helps to both visually and physically link these two outstanding natural areas, RAPS UMB 01 and 02 respectively.

ii Landscape Character

The most prominent landscape feature contained within the LMZ is the well-defined ridgeline that runs parallel with the Waikaia Valley. Just off the crest, the topography gently slopes inwards, towards the headwaters of the Whitecoomb Creek, where fragile moss-cushionfields extend up into the side gullies.

The whole of the LMZ is covered in very dense and healthy snow tussock. This even-textured tussock cover creates a unifying element to the landscape, which is a characteristic that is becoming less frequent as more tussocklands become more modified and fragmented.

The lack of man-made impacts provide the LMZ with a strong sense of isolation and wilderness qualities. These expansive tussocklands would make an ideal setting for backcountry recreation.

b ARGYLE BURN HEADWATERS

Area with significant conservation values. This well-defined catchment links up with the open tussock plateau to the north (already identified as an outstanding high country landscape). The remnant forest, contained within this enclosed landscape helps to protect the uninterrupted sequence of vegetation types found in Umbrella Mountains. Its lack of man-made elements and modifications provide this area with wilderness qualities and a strong sense of isolation.

c BLACK UMBRELLA RANGE

Highly visible ridgeline that forms the backdrop to the lower country in the Waikaia district. Contains a number of rocky outcrops which are striking natural features. The fragility of this long, narrow ridgeline is obvious by the large areas of sheet erosion which makes it unsuitable for earth disturbances.

d BURNT BUSH

Highly visible bush remnant that is very conspicuous from along the Waikaia/Whitecoomb road. Provides an interesting backdrop to the more developed farmland located in the valley floor. Furthermore, it forms a natural extension to the Waikaia Forest, therefore helping to reinforce the district's landscape character.

e UPPER ARGYLE BURN

Landscape values for this remnant are only of medium significance - more of a biological value as it helped to physically link the higher area with the downlands.

f FOREST REMNANT WEST OF SPOT HEIGHT 1096 m

A well-defined catchment encircled by prominent ridgelines. The beech forest remnant's size and shape will help to ensure its sustainability in the long term. This is a well integrated forest remnant which naturally fits well into the surrounding topography. Its lack of man-made elements and its feeling of enclosure helps to give it a sense of remoteness.

g FOREST REMNANT CLOSE TO AIRSTRIP

Similar characteristics to area F, being a well integrated forest remnant, which naturally merges well in the surrounding topography. Of a size and shape to be sustainable in the long term.

SIGNIFICANCE OF THE LANDSCAPE

The area identified in the High Country Block LMZ, in its entirety, helps to maintain and represent the natural character and integrity of this northern Southland high country landscape. Areas c-g are smaller but still valuable contributors to the landscape character of the district.

2 LANDFORMS AND GEOLOGY

The property varies in altitude from 200 metres to 1450 metres at its highest point, being Whitecoomb Summit.

a GEOLOGY

Basement rock is predominantly Palaeozoic Haast Schist Group metamorphosed to textural zone IV (schistosity with strong foliation or segregation banding).

Deformation of a mid Tertiary erosion surface is evidenced by large-scale block-faulting trending NE-SW and smaller scale faulting and warping trending NW-SE.

Tertiary sediments are found locally in depressions in upland areas.

Quaternary deposits occur along the Waikaia River and various glacially derived deposits in the Waikaia Valley and in the isolated cirques of the Umbrella Mountains. Colluvium mantles both hill and mountain slopes. Localised areas of peat occur up to several metres deep on the plateaux.

b LANDFORM

The property encompasses a block-faulted landscape with the N-S trending Whitecoomb Range. The White Umbrella Ridge has faulted off the main Whitecoomb Ridge forming a plateau area of moderate altitude.

This plateau is part of a more extensive plateau sequence extending north towards the Old Man Range and is an eroded remnant of a mid Tertiary erosion surface which has undergone differential uplift and subsidence plus local tilting and warping.

The present drainage pattern is largely superimposed. In places, channels have exploited structural weaknesses such as the fault in Whitecoomb Creek. In cases where streams were present prior to uplift and the terrain has been greatly elevated, deeply incised and often gorge-like drainage channels, eg, the Waikaia River, have resulted.

Past glaciation is evidenced by isolated cirques in pre-glacial gully heads above 1300 metres on the Umbrella Mountains, with associated till and morainic deposits. Summit tors testify to past peri-glacial processes.

c SOILS

Upland and high country yellow-brown earths cover much of the property, derived from schist solifluction detritus. Silt loams and stony silt loams (Leithen Hill soils) occur west of Leithen Burn and border with podzolised yellow-brown earths (Maungatua soils) of the Black Umbrella Range.

Soils derived from alluvium (Mataura soils) feature in the Waikaia Valley south of Piano Flat.

d LANDFORMS OF RAPS**i RAP UMB 01****Whitecoomb-Gem Lake-Argyle Burn**

The Whitecoomb Range forms one of the two major fault blocks present within the Ecological District. The range has undergone uplift possibly combined with some warping and tilting. The altitude attained was great enough to allow minor glaciation to occur. Headwalls of cirques at Gem Lake and east Whitecoomb summit occur along the ridge comprising the lease boundary.

To the west of the main Whitecoomb Range the slopes are mainly colluvial, both ripply and planar types being present. Reverse scarplets are present but uncommon. Whitecoomb Creek follows a major fault line. The Argyle Burn also exploits a fault, at its head forming a deeply incised gorge.

Soils are predominantly upland yellow brown earths of the Carrick, Carrick Hill and Dunstan stepland series. Parent material is schist solifluction detritus, schist and slope deposits and some loess from schist. Texture varies from silt loams to stony loams. Organic soils derived from sedge and rush vegetation and texturally consisting of peats and peaty loams (Kaherehoau soils), occur in the headwaters of Whitecoomb Creek.

ii **RAP UMB 02**
Waikaia Bush

The White Umbrella Ridge is the result of faulting from the main Whitecoomb Range, the SW-NE fault line being currently occupied by the Whitecoomb creek. Above the present bushline, rock bluffs outcrop both on spurs and on the main ridge. A large area of slumping is present in the Post Office Creek headwaters.

Soils are predominantly high country yellow-brown earths derived from greywacke and semi-schist. They consist of stony loams and silt loams (Waikaia steepland soils).

iii **RAP UMB 07**
Crown Rock/Stronach Hill

The main features are the prominent rock bluffs on the main crest of the Black Umbrella Range. These predominantly face westwards in the southern part of the RAP, on the ridge top around Crown Rock and face eastwards in the northern part of the RAP.

High country yellow-brown earths with related steepland soils (Waikaia) plus some podzolised yellow-brown earths (Maungatua soils) occur. The former are derived from greywacke and semi-schist with textures of stony loam and silt loam, the latter have parent material of schist with some schist loess and vary texturally from peaty loams to sandy loams.

SIGNIFICANCE OF THE LANDFORMS

There are no landform features listed in the Geopreservation Inventory occurring on Argyle Pastoral Lease.

The identified RAPs contain outstanding and representative examples of the landforms and soils typical of the northern and central part of the Umbrella Ecological District. Of particular note is the evidence of glaciation, the only examples in the Ecological District, which are partly shared with adjoining pastoral leases. Also significant are fault exploitation in the Whitecoomb Creek and Argyle Burn and the prominent ridge top bluff formation in RAP UMB 07 Crown Rock/Stronach Hill.

3 CLIMATE

Aspect of the property is generally westerly. Rainfall varies from 800 mm on the flats to 1500 mm per annum on higher ground. Summers are moderate, occasionally warm and winters can be cold. Much of the winter precipitation is snow, and frosts are frequent. Snow may cover upland areas for up to four months in winter, with drifts lasting much longer. Fogs are frequent and occur during all seasons and are often accompanied by rain. This climate characteristic is a distinctive feature of the district. The climate is generally described as being cool temperate, and humid-sub humid.

4 VEGETATION

a PNAP SURVEY RESULTS

The survey of the Umbrella Ecological District identified parts of three RAPs (Recommended Areas for Protection) located on Argyle Pastoral Lease. All three RAPs are located in upland parts of the property. A summary of the key features of the RAPs is detailed below and a copy of the full PNAP survey report description is appended.

(See extract pp 68-85 and 107-109, "Umbrella Ecological District - Survey Report for the New Zealand Protected Natural Areas Programme", by KJM Dickinson, 1988.)

i RAP UMB 01

Whitecoomb-Gem Lake-Argyle Burn

A large variety of vegetation communities are described for this RAP, of which the following are located within that part of the RAP located on Argyle Station.

Rich Beech Forest: Located within the headwaters of the Argyle Burn, this forest remnant's community is dominated in parts by red beech and in others by silver beech. Mountain beech occurs only occasionally. Red beech is abundant in the mid reaches of the remnant whereas silver beech dominates in the northern higher altitude portions.

The red beech forest contains broadleaf, marbleleaf and *Pseudopanax simplex*, the shrubs *Coprosma colensoi*, *C. cuneata*, *C. parviflora*, *C. pseudocuneata*, *C. rhamnoides* and a variety of ferns.

Silver Beech: This forest contains celery pine, snow totara, *Coprosma cuneata*, *C. ciliata*, *C. colensoi*, *C. propinqua* and *Brachyglottis buchananii*.

Mid-high Altitude Tussock Grassland: This community grades from tussock-shrubland, shrub-tussockland to tussockland. Dominant shrubs are mountain tauhinu (*Cassinia vauvilliersii*), *Hebe* aff. *rakaiensis* in combination with narrow-leaved snow tussock (*Chionochloa rigida*).

The tussockland community is the most widespread community within the RAP and occurs within the 900-1170 metres altitudinal range. In some areas tall tussock has been replaced with blue tussock (*Poa colensoi*). Species which dominate the ground tier include the sub-shrub snowberry and exotic herbs such as sweet vernal, brown top, catsear, *Gunnera monoica* and *Celmisia gracilentia*.

High altitude tussockland is also an extensive community.

Shrubland and tussock shrubland communities generally occur on southerly aspects and at altitudes varying from 1150 metres to 1340 metres. The dominant shrub species are turpentine scrub (*Dracophyllum uniflorum*) and/or *Hebe* aff. *rakaiensis* with narrow-leaved snow tussock and slim snow tussock (*C. macra*) subdominant. the regionally rare endemic shrub *Hebe poppelwellii* occurs and the community overall has a high level of naturalness.

The shrub-tussockland community is widespread in the Whitecoomb catchment and occupies a variety of aspects and topographic situations. Dominated by narrow-leaved snow tussock, slim

snow tussock or their hybrids, the shrubs *Hebe* aff. *rakaiensis* and turpentine scrub are the common subdominant species. In places the regionally endemic and generally rare shrub *Pimelea poppelwellii* is prominent.

High Altitude Tussock Grassland: This community is more restricted and confined to northerly aspects or dry flat areas within the altitudes 1070 metres to 1450 metres. It is dominated by narrow-leaved snow tussock or slim snow tussock. The daisy *Celmisia semicordata* var. *aurigans* is widespread.

Cushionfield/Cushionfield-tussockland: This community occurs on the main ridge above Gem Lake and near Whitecoomb Summit and is dominated by slim snow tussock and cushion species such as *Dracophyllum muscoides* and *Phyllachne colensoi*. The rare and regionally endemic shrub *Hebe poppelwellii*, *Celmisia brevifolia*, *C. laricifolia*, *Chionohebe densifolia*, *Cotula goyenii*, *Schizeilema exigum* and *Myosotis pulvinaris* are present.

Cushionfield and Cushion-mossfield: *Sphagnum cristatum* is prominent at sites in the Whitecoomb catchment. At these species poor sites, dominant vascular plants include *Dracophyllum prostratum* and *Oreobolus pectinatus* with *Phyllachne colensoi*, *Abrotanella* aff. *inconspicua* and *Celmisia alpina*.

Alpine Shrubland/Cushionfield: Located on both the White Umbrella Ridge and the Whitecoomb catchment, the most important shrub is bog pine (*Halocarpus bidwillii*). Dominant ground tier species include the cushion *Donatia novae-zelandiae*, *Dracophyllum prostratum*.

ii **RAP UMB 02**
Waikaia Bush

The RAP includes part of the DOC Waikaia Forest with upland areas only located within Argyle Station. Vegetation communities contained within the pastoral lease include the following:

Forest Margins: Extending above 860 metres, this community consists of shrubland and modified tussockland. At lower altitudes, close to the present bush edge, silver and red beech regeneration is occurring in association with shrub species such as *Coprosma parviflora* and *C. propinqua*. Higher up this grades into narrow-leaved snow tussock with some sweet vernal, browntop and catsear in modified sites. Evidence of burning of tussocks exists. The margins of the Waikaia Forest are largely artificial, having been modified by a history of burning. The natural bushline, estimated at c. 1000 metres, exists in only a few sheltered situations. Within the pastoral lease, there are fingers of beech forest extending well above the current dominant altitudinal limit of the forest. Above the forest, tussock cover is variable, reaching a maximum on southerly slopes. Despite repeated burning, there is potential for high tussock cover on a large proportion of the upper slopes. Cattle and sheep damage to forest margins is noticeable, especially cattle damage.

Rock Bluffs: Above the bush edge near Post Office Creek are a series of rock bluffs up to 30 metres high which support c. 68 species. The shrubs *Dracophyllum longifolium*, *D. uniflorum*, celery pine, *Brachyglottis buechananii*, *Olearia arborescens* and *O. nummulariifolia* are present on the bluffs (at c. 1050 metres) but not in the surrounding tussockland. The rock bluffs are important refugia for such species.

Rock bluffs on the main White Umbrella ridge support c. 52 species. Uncommon species recorded here were the shrub snow totara and the fern *Hypolepis ambigua*.

iii **RAP UMB 07**
Crown Rock/Stronach Hill

Stronach Hill appears to the southern limit of the rare and regionally endemic *Hebe poppelwellii*, and the sub-shrub *Celmisia walkeri* as well as providing the only record in the District for *Cotula pectinata* var. *villosa*. The summit of Stronach Hill is covered by cushionfield dominated by *Phyllachne colensoi*. In places, blue tussock forms extensive mats. The rock bluffs harbour species of restricted distribution within the District such as the shrubs *Coprosma serrulata* and *Helichrysum selago* plus the herbs *Aciphylla lecomtei* and *Schizeilema haastii*

b **ADDITIONAL AREAS OF NATURE CONSERVATION INTEREST**

i **High Country Block**

This block contains the above three RAPs, the lower half of the Argyle Burn beech forest remnant and associated hill slopes and the remainder of the Whitecoomb Creek catchment.

The area between the Waikaia Forest and the Whitecoomb Range is remarkably homogeneous.

The vegetation is almost exclusively narrow-leaved snow tussock. The steep rolling hill country is highly representative of the Ecological District and has a distinctive landscape character.

Narrow-leaved snow tussock dominates, and whilst cover is remarkably consistent, its stature is variable. For instance, the White Umbrella Ridge above Waikaia Forest is used for stock movement and has been periodically burnt. The burning activity has been more frequent than the remainder of the block, resulting in a prominent component of adventive species, eg, browntop. Generally though these extensive tussocklands are intact and in excellent condition, especially considering the relatively low altitude. Some gullies contain scattered *Leonohebe odora*, *Dracophyllum uniflorum* and *Brachyglottis revolutus*, however shrublands proper are rare.

Mixed shrublands dominated by *Coprosma ciliata* and *C. aff. parviflora* with *Dracophyllum longifolium*, *Cassinia vauvilliersii* and other woody species are found above the forest areas and outcrop fire refuge sites. Within the tussocklands are areas of young *Leonohebe odora* with some *Cassinia vauvilliersii* amongst dead stems of old shrublands. A special feature is the small areas of bog pine associated with flush cushionbogs.

There are two major types of wetlands. Firstly are the ridge crest cushionbogs dominated by *Oreobolus pectinatus*, *Phyllachne colensoi*, *Dracophyllum prostratum* with *Celmisia* sp. "rhizomatous", *Carex sinclairii* and Sphagnum. *Donatia novae-zelandiae* which is uncommon in the ecological district is present locally.

The other major wetland type is the flushes on the lower slopes and along the Whitecoomb Creek and Argyle Burn. They tend to be dominated by *Schoenus pauciflorus*, *Carex sinclairii*, *Hydrocotyle novae-zelandiae*, *Anisotome imbricata* var. *prostrata*, *Celmisia glandulosa* sp. "rhizomatous" and *Hebe pauciramosa*.

ii **Summit of Black Umbrella Range (Stronach Hill to Sandy Hill)**

The area to the south of RAP UMB 07 Crown Rock/Stronach Hill does not contain any additional communities, however some of the communities (especially the fellfields) did differ in their composition. The area to the south of Crown Rock is within a separate grazing block which has been topdressed and oversown and so has had a greater stock usage and tends to be more modified (especially at lower altitudes) than the area within RAP UMB 01. The limit of oversowing is 800-900 m. This generally corresponds with a zone of rock outcropping. The native vegetation above 800 m is generally relatively intact with limited modification, being buffered by the zone of rock outcropping.

The summit area to the south of Crown Rock is at a lower altitude than the summit areas within RAP UMB 01. Much of the summit ridge contains fellfields, but these are poorly vegetated, being dominated by stone and soil, therefore are relatively fragile and erodible. Below the summit area the vegetation is dominated by snow tussock and other native species. The area above 800 m also contains abundant rock outcrops. These contain a number of interesting plants and provide a fire refuge for a range of shrub and other species. The area south of Crown Rock contain several species not observed further north. These include *Celmisia semicordata* var. *auricans*, *C. semicordata* var. *stricta*, *Hebe propinqua*, *Hebe pauciramosa*, *Dracophyllum longifolium*.

The summit area of Argyle Station to the south of Crown Rock combines with the area on the east side of the ridge to form a linkage between the RAP in the northern Umbrella Mountains including the head of the Argyle Burn, Whitecomb Creek and Gem Lake (RAP UMB 01) with Leithen Bush and possible extensions in the head of the Leithen Burn (RAP UMB 04).

iii **Beech Forest Remnants**

There are 11 substantial scattered forest remnants varying in size from 25 ha to 140 ha through the lower part of the lease. There is also a large area of beech forest of approximately 470 ha on the pastoral lease known as Burnt Bush, which is adjacent and contiguous with the DOC Waikaia Forest. Elsewhere, there are many other scattered small pockets of beech within the lower part of the property.

The New Zealand Wildlife Service Fauna Survey Unit surveyed the larger forest remnants in 1980 and recorded their findings as part of a nationwide survey of forest remnants. The survey unit vegetation descriptions are summarised below.

iv **Upper Argyle Burn Bush and Burnt Bush**

Both forest areas are either contiguous with or part of RAP UMB 01 Whitecomb-Gem Lake-Argyle Burn and RAP UMB 02 Waikaia Bush respectively. Consequently the relevant sections of vegetation descriptions of these RAPs apply equally to these areas of forest.

v **Forest Remnants South and South-west of White Umbrella**

Forest comprises red, mountain and silver beech with associated sub-canopy tree and shrub species.

vi Forest Remnants South and South-east of Argyle Hill

Forest comprises red, mountain and silver beech with associated sub-canopy tree and shrub species.

vii Forest Remnants East of Block Road

Forest consists of red, mountain and silver beech with associate sub-canopy tree and shrub species.

viii Forest Remnants West of Spot Heights 1096 m and 991 m, Black Umbrella Range

Forest consists of red, mountain and silver beech with associated sub-canopy tree and shrub species.

ix Forest Remnants Lower Argyle Burn

Forest consists of red, mountain and silver beech with associated sub-canopy tree and shrub species.

These numerous forest remnants are legacies from a pattern of a more extensive forest which has been reduced by repeated fires over a long period of time. They tend to be largely confined to fire refuges, and adjoining land use practices such as burning and pasture improvement, combined with grazing, have created a series of discrete islands. Many remnants suffer edge effects of suppressed timberlines, lack of outward spread into what is essentially farmland and varying amounts of damage to the understorey. Regeneration is being suppressed by and trampling by stock where access is available. The larger remnants have a greater buffering capacity against stock damage, especially when access is limited. Some remnants would benefit from fencing to exclude stock.

x Argyle Forest Conservation Area

Scattered throughout the lower altitude part of the pastoral lease are 15 discrete areas of DOC land collectively known as Argyle Forest totalling 386 ha. The majority of these areas contain no beech forest of any consequence, being essentially hill country pasture. Only six areas cover parts of existing forest remnants, and most have no legal public access. Their existence and location seem to be ineffective for fulfilling any conservation objectives.

SIGNIFICANCE OF THE VEGETATION

Native plant communities and species composition of those parts of RAP UMB 01 and RAP UMB 02 located on Argyle Pastoral Lease are ranked as outstanding. They contribute substantially to the biodiversity and representativeness of the Umbrella Ecological District. RAP UMB 07 is a small RAP noteworthy as being the southern limit for some plant species.

The High Country Block is a very large tract of intact native vegetation which acts as a matrix linking the three RAPs together.

The summit ridge of the Black Umbrella Range contains a wide diversity of native plant communities, generally in good condition with differing species mix to the High Country Block.

Large forest remnants such as Burnt Bush, Argyle Burn Bush and the forested catchment immediately west of Leithen Bush Scenic Reserve have important conservation values because they are contiguous and to all intents and purposes are part of larger conservation holdings land or are adjacent to other significant areas of native vegetation on the property.

5 FAUNA

a PNA SURVEY RESULTS

i RAP UMB 1

Whitecoomb-Gem Lake-Argyle

The fauna associated with this RAP were the most intensively studied within the Ecological District. Birds recorded in open country were kea, skylark, New Zealand pipit, New Zealand falcon and Australasian harrier. South Island pied oystercatchers and black backed gulls are common on wetlands.

Birds associated with the beech remnant were bellbird, chaffinch, blackbird, yellow-breasted tit, yellow-crowned parakeet, rifleman, grey warbler, South Island robin and fantail.

Shells of the endemic land snail *Powelliphanta spedenii* subsp. *spedenii* were found within the Argyle Burn beech remnant at altitudes between 780 metres to 960 metres. This mollusc is ranked as a second priority threatened species for conservation action (see *Setting Priorities for the Conservation of New Zealand's Threatened Plants and Animals*, 2nd Edition, October 1994, Molloy and Davis, DOC). The species is confined to upland parts of northern Southland and southern Central Otago.

The White Umbrella/Whitecoomb Ranges wetland habitats are relatively undisturbed and unmodified examples of subalpine southern South Island freshwater faunal associates. Crustacea collected included the endemic species *Echinsca schauinslandi*, *Microcyclops monacanthus* and *Boeckella dilatata*. The latter species populations are apparently unique, displaying unusual features of giantism, large clutch size, resting eggs and red pigmentation.

The beetle fauna of the Whitecoomb Range is very diverse and many species were found to be extremely abundant. Eighty-three species of Coleoptera were recorded from this range. Affinities are shared with the beetle fauna of the Old Man Range, the Garvie Mountains and the Blue Mountains.

The Lepidopteran fauna shares many affinities with that of the Garvie Mountains and the Lammermoor Range. Many species recorded are not found in Central Otago. The Umbrella Mountains moth fauna is both richer and different from that of the Old Man Range. Ninety-two alpine species were recorded from the Umbrella Mountains. Species recorded include those reaching their eastern-most limits, western-most limits and those found from eastern Otago across northern Southland to western alpine areas where they are more common.

The RAP contains habitats which are described as key sites for invertebrate conservation, ie, ridges, tors and bogs around Gem Lake and tors on Mt Whitecoomb.

**i RAP UMB 02
Waikaia Bush**

Birds recorded during the PNAP survey include yellowhead, South Island robin, fantail, rifleman, yellow-crowned parakeet, chaffinch, bellbird, New Zealand pigeon, morepork, blackbird, yellow-breasted tit, grey warbler, silvereye, New Zealand falcon and New Zealand pipit.

There is an earlier New Zealand Wildlife Service record dated 1980 of a single red-crowned parakeet.

NB: This list includes both the DOC forest and pastoral lease parts of the RAP.

The endemic land snail *Powelliphanta spedenii* subsp. *spedenii* was recorded on the rock bluffs at 1050 metres in the headwaters of Post Office Creek.

Long-tailed bats have been reported in the Waikaia Forest area. This bat species is a category B Threatened species.

The forested area harbours a full range of forest associated species, in an abundance not recorded elsewhere in the District, including notable threatened species such as yellowheads. A healthy forest is an essential contributor to the continued survival of such species. The finding of *Powelliphanta spedenii* subsp. *spedenii* both as shells and live specimens is significant. Habitat modification is a major threat to this species.

The RAP is considered to be a key site for fauna conservation. Key habitats include beech forested areas and rock bluffs.

**ii RAP UMB 07
Crown Rock/Stronach Hill**

New Zealand falcons were recorded on several occasions. Notable Lepidoptera recorded near Crown Rock were *Dasyuris leucobathra* (Meyrick) and *Notoreas* nr. *perornata* (Walker). *Gelophaula* sp., *Lycaena salustrius* (Fabricius), *Stenoptilia orites* (Meyrick), *Eudonia chalara* (Meyrick) and *Aponotoreas orphnaea* (Meyrick) were recorded from the Black Umbrella Range.

**b NEW ZEALAND WILDLIFE SERVICE
FAUNA SURVEY UNIT RESULTS**

The Fauna Survey Unit surveyed the larger forest remnants in 1980 and recorded their findings as part of a nationwide survey of forest remnants, described as follows:

i Upper Argyle Burn bush and Burnt Bush

Faunal values are ranked as outstanding due to the presence of threatened species. The description of these values are as stated in the PNAP survey report fauna sections for RAP UMB 01 and RAP UMB 02.

- ii Forest Remnants South and South-west of White Umbrella**
- Habitat ranking: Local
- Habitat value: Moderate. Due to steepness of valley sides, stock have had little impact. Possible falcon habitat. All common bush bird species present, ie, bellbird, yellow-breasted tit, blackbird, chaffinch, brown creeper, silvereye, grey warbler, rifleman, redpoll, goldfinch, greenfinch.
- iii Forest Remnants South and South-east of Argyle Hill**
- Habitat ranking: Local
- Habitat value: Moderate. Stock should be excluded from these remnants. All common bush bird species present plus South Island robin and pigeon.
- iv Forest Remnants East of Block Road**
- Habitat ranking: Local
- Habitat value: High due to proximity of remnants to each other and the presence of yellow-crowned parakeets and South Island robins. At the time of survey, stock had access to parts of these remnants. Pasture improvement on adjoining land could increase stock pressure on the remnants and affect their conservation value. All common bush bird species were recorded in addition to New Zealand pigeon and long-tailed cuckoo.
- v Forest Remnants West of Spot Heights 1096 m and 991 m Black Umbrella Range**
- Habitat ranking: Local
- Habitat value: Moderate. Subject to grazing and edge effects of burning. All common bush bird species present plus South Island robin and New Zealand pigeon. Protection from stock required.
- vi Forest Remnants, Lower Argyle Burn**
- Habitat ranking: Local
- Habitat value: Moderate. Modified by grazing, all remnants relatively small. All common bush bird species present and probably utilised by South Island robins, yellow-crowned parakeets and New Zealand pigeon.

Whilst botanically these forest remnants do not possess much of note, their relative size and health combined with their close proximity to the much larger Waikaia Forest has meant that they are able to contribute to the ongoing viability of some bird species such as yellow-crowned parakeets and South Island robin. Without the presence of the large Waikaia Forest habitat, it is unlikely these forest remnants on their own would continue to support these species.

Burnt Bush is particularly important given that to all intents and purposes it is part of the Waikaia Forest. The exclusion of stock, especially cattle, from this area would not only enhance the ecological health of this forest area but it would also benefit Waikaia Forest too, as currently cattle have free access to this conservation land.

**c SUMMIT OF BLACK UMBRELLA RANGE
(STRONACH HILL TO SANDY HILL)**

VALUES

i Large Mountain Weta

A large weta *Hemideina maori* (55 mm long) is distributed along the ridge from at least as far north as Stronach Hill to Sandy Hill on both sides of the fence on the ridge. Harems of up to five animals were seen. The weta are up to 5 cm long and "chunky" in shape. This is the southern-most occurrence of the species in New Zealand (previous limit being the Lammermoor Range).

ii Large Beetles

Two large native beetles, a shiny green and black carabid *Megadromus bullatus* (40 mm long) and a weevil *Anagotus lewisi* were found quite commonly along the ridge. Both are widespread but local in occurrence in southern New Zealand.

iii Fellfield, Tor and Rocky Sites

These are extensive and support a range of invertebrates that complement the invertebrate values in the summit grasslands. Native flies, bugs, moths and beetle species are conspicuous in this fellfield zone.

iv Seepages, Wetlands and Headwaters of Creeks

These are numerous and contain an assemblage of aquatic insects, including short-winged stoners, scorpion flies and caddis species. One species of stoner may be new to science, while other species found are a mixture of high altitude Central Otago species and northern Southland alpine species. The quality of the habitat and the mix of native species which is different to other known areas make these areas of high scientific and conservation interest.

Species of note:

- stoners: *Zelandobius* n.sp.
Z. macburneyi
Z. foxi
- scorpionfly: *Nannochorista philpotti*
- caddis: *Psilochorema cheirodes*.

v Snow Tussock

Good quality snow tussock, often mixed with shrubland of *Cassinia* or *Leonohebe odora* covers large areas of the summit ridge.

The typical native moth species of this habitat were seen including the large black diurnal *Aponotoreas orphnaea*, several grass moths including *Orocrambus machaeristes* and one species of very limited

distribution, the colourful *Asaphodes cinnabari*. The last-named is local across alpine northern Southland. Also rarely seen is the small black and white moth *Scoparia tuicana*. Its occurrence here is only its fourth known location, underlining the importance of the Umbrella Mountains biogeographically and quality of the habitat. The Umbrella Mountains stand at the crossroads of the drier Central Otago mountains and the wetter northern Southland mountains, each supporting a district fauna mixed with a more widespread fauna.

d AQUATIC VALUES

The Argyle Burn and Waikaia River waters are included within the Maitara National Water Conservation Order and listed in Schedule 6.2 of the Proposed Southland District Plan. The fisheries value of the Waikaia River is equal to the Maitara River.

The pastoral lease has a river frontage on the true left side of the Waikaia River of approximately 8 km. This section of the river contains a number of cut-off meanders which form lagoons and backwaters. These contain trout and wildlife and probably several species of native fish and should be included within the river system and marginal strip. These lagoons would comply with the definition of a river since they do contain flowing water at times of high flow and contain still water at all other times.

The NIWA Freshwater Fish Database indicates the following species present in the Waikaia River:

- *Galaxias argentus* (giant kokopu): a Category B Threatened Species, ie, second priority status for conservation. Its habitat is under threat from drainage.

There are no database records for Whitecomb Creek or the Argyle Burn.

SIGNIFICANCE OF THE FAUNA

The PNAP survey results clearly indicate that the RAPs are highly significant for invertebrate fauna conservation, eg, the threatened species *Powelliphanta spedenii* subsp. *spedenii* as well as revealing some unique endemic crustaceans which display unusual features such as giantism, large clutch size, resting eggs and red pigmentation.

Major insect groups such as beetles and moths are well represented by the richness and number of species present and collections have expanded many ranges of distribution. The Black Umbrella Range survey reveals this area is of high scientific and conservation interest also for invertebrates.

The Fauna Survey unit and PNAP surveys confirm that the larger forest areas are ranked as outstanding habitat due to the presence of nationally threatened species, eg, New Zealand pigeon, yellowhead, and possibly red-crowned parakeet, and ranked high for regionally threatened species such as South Island robin and yellow-crowned parakeet. Open country records include kea and New Zealand falcon, both nationally threatened species.

Long-tailed bats are also nationally threatened. All of the threatened species are listed as Category B, ie, second priority species for conservation (Molloy and Davis 1994) except for yellow-crowned parakeet which is Category C.

6 ARCHAEOLOGICAL AND HISTORIC VALUES

Archaeological and historic features of this property have been assessed and described in the DOC unpublished report titled "*Gold Mining in the Gow Burn, Whitecoomb and Eastern Upper Waikaia*", Second Report, J Hamel, 1990.

In this report, Hamel describes the importance of early musterers huts and a system of water races supplying water to the major gold workings in the Switzers area, near Waikaia township. There are no recorded Maori sites on the pastoral lease. A search by Athol Anderson and other archaeologists in 1980 for moa hunter sites reported by Augustus Hamilton in the 1890s confirmed that it was unlikely any of Hamilton's sites were located on Argyle Station.

a THE ARGYLE BURN HUTS

The upper Argyle Valley has been relatively remote until a major farm road was pushed up it in recent years. The road runs up tributaries and over saddles into the upper forested section of the valley. In the course of checking for water races, two small huts of considerable character were located, both built of corrugated iron and only 3 m x 4 m in area.

The history of all these small huts is obscure. Though there is little proof, the basic structure of some could be over 100 years old, but some that look 100 may be only 20. They are rarely painted and wood weathers rapidly in the harsh high country climate. Their interest lies in the economical use of space, the similarities of design - one door, small windows, gabled roof rather than a single pitch shed roof, limited use of sawn timber, bunk beds, an open fire or solid fuel stove and ingenious use of local materials.

The southern hut was in a sheltered tributary where beech forest comes down a gully off the Black Umbrella Range (GR 869943). A massive stone chimney covering one end of the hut has mostly collapsed, barely leaving room to get through the low door. All the framing is of round beech poles, the bunks of halved slabs, and only the door, window framing, a small table and a cupboard are made of sawn timber. There is a small four paned window in the rear wall and mud has been used to chink the gap between the wall and the roof. The chimney was mud mortared and the floor is stamped dirt. The earliest date on the walls was 1937.

The northern hut is less sheltered but in slightly better condition because the corrugated iron chimney is still intact. It is on a small terrace being rapidly undermined by a creek. Again all the framing is of beech poles and the bunk is a single construction of half slabs layered with tussock. There is a dirt floor, a normal sized door and a small four paned window in the back wall. Only the door and window framing is made of sawn timber. The earliest date seen was 1926 and J Ferris used it as a packer off and on from 1926 to 1953, including a spell of fencing in 1940. Musterers and deer stalkers have left their signature, and labelled it "*The Welcome Inn*".

b THE RACES OF THE ARGYLE BURN (Refer to Map B)

i Argyle Race

Though completely surrounded by gold-bearing rivers - the Waikaia-Whitecoomb, the Pomahaka and Winding Creek - the Argyle Burn has eroded rocks apparently totally destitute of gold. The uncommonly rich deposits of King Solomons Mine in Winding Creek, only 600 metres above its junction with the Argyle Burn (Hamel, 1989b), would suggest that the Argyle Burn might have been

gold-bearing but the early miners did not even put down prospecting pits. Its gravels were barren. It was, however, a valuable water source and the Argyle Race was a major supply for Switzers goldfield. This magnificent race starts relatively low in the valley at about GR 837894, and is about two metres wide in the base and 3.5 metres across the top. It is now only 0.8 metres deep but its sides are much collapsed. Its upper section runs through attractive beech forest but it is fairly well overgrown and further down has been bulldozed to form a farm track. Near its intake it runs on about 200-300 metres of stone revetting. Material lying about, such as a shovel, nails and tin sink, could have belonged to a race keepers' hut now gone.

The race is clearly visible from the road near Awatere Homestead, running round a spur at about 120 metres above the road. Beyond the boundary of Argyle Station closer to the goldfield, the race has been ploughed up, and there is now no sign of the flume or siphon by which it crossed the road to the workings at Carnies hill. It was built by two local store keepers, George Skene and Otto Hast, with help from an engineer, Alexander Carnie (Hall-Jones, 1982).

ii The Argyle High Race

This is probably a very old race and is now in poor condition. It seems to have been designed to bring water from high levels in the Argyle Burn at about 970 metres asl and running along the contour to below Black Hut. It then drops steadily down the eastern side of the ridge of the White Umbrellas to Argyle Saddle where it crossed at 610 metres asl on to the western side of the ridge and into the Waikaia catchment. It has been obliterated by ploughing at the saddle and was not traced further down the Waikaia side of the range. It was meant to run to the Switzers goldfield but is said to have been sabotaged by the surveyor who set the levels because he was not paid enough (Bob McKay, Argyle Station, pers. comm.). In the upper part of the valley and near Argyle Saddle it is a relatively small race, only 50 cm across the top and 30 cm deep.

At the southern end of the range running from Argyle Saddle to above Switzers there is a small race coming in from the eastern side of the range at about 448 metres asl, which was not traced further north than the first forested gully north of Trig J (GR 798858). It is quite feasible that this is the Argyle high race which crossed back to the eastern side of the range, swung round the end of the spur where it could have supplied pipelines with 600 feet of head down to the Switzers diggings. There were indications that it supplied a small reservoir (know locally as the Independent Company reservoir) in a gully leading down to the dredge tailings north of Switzers. The race is in good condition in the rough pasture on the steep eastern side of the range, but has been ploughed out in places on the western side. Garth Mahon knows of a camp site within one of the forested gullies on the steep eastern side which he considers was a race-builders' camp (Bob McKay, Argyle Station, pers. comm.), but this was not relocated.

The intake and upper two or three kilometres of this high race is within RAP UMP 1 and, if deductions are correct, the whole length of the race and the Independent Reservoir are within Argyle Station.

SIGNIFICANCE OF HISTORIC VALUES

Whilst the musterers huts are good examples of early pastoralism, there is no great claim to seeking any formal protection for these buildings.

The two Argyle Burn water races are associated with the very rich Switzers goldfield nearby and are generally in good condition. The races are already protected by the Historic Places Act and no additional protection is seen as necessary or appropriate. Care however needs to be taken by landholders to ensure that no further damage to the races is caused by earth disturbance activities.

7 EXISTING LAND STATUS

a LEGAL ROADS

The farm access track from the Waikaia-Waikaka road along the ridge to just north of Black Hut approximately corresponds to the line of an unformed paper road. If there was to be road legalisation as part of survey work for tenure review, then indications from the chief surveyor are that the line of the farm access track would be adopted as legal road.

The unformed legal road extends past Black Hut along the White Umbrella Range and also branches across to Whitecoomb Trig from the White Umbrella Trig (Trig K). Other unformed legal roads extend along the Whitecoomb Range towards Gem Lake in the north and in the south down to Trig D on the Black Umbrella Range.

Formed legal road access to the Waikaia River is available from the Waikaia-Whitecoomb Road, via Argyle Road. Legal access is available also via the unformed legal road approximately 1.5 km southwest of Huttons Coal Pit Road. These roads join up with an unformed legal road which runs along the true right bank of the river. These roads should be retained for public access to the river.

b MARGINAL STRIPS

Until recently, the only marginal strip located on the lease was a former section 58 Land Act 1948 strip along the Waikaia River frontage (true left bank and a short section of true right bank). These strips created under earlier legislation do not move with the changes to the river channel that occur over time. The opportunity to exchange these unmoveable marginal strips for moveable marginal strips should be taken during survey associated with tenure review.

The lease has recently been renewed and DOSLI has identified marginal strip requirements on Whitecoomb Creek and the Argyle Burn. These strips are deemed to exist on lease renewal under Part IVA Conservation Act.

c DISTRICT PLAN

Southland District Council has recently produced a proposed district plan which has been available for public comment. Currently the Planning Tribunal decision on appeals is awaited. In DOC's opinion, as it stands at present, the proposed district plan contains no recognition of any matters contained in section 6 (b and c) of the Resource Management Act 1991.

The Southland Transitional District Plan similarly contains no provision for matters relating to significant landscapes, significant vegetation or significant habitat of indigenous fauna.

d RATIONALISATION OF CONSERVATION LANDHOLDINGS

The DOC controlled Argyle Forest is located within the pastoral lease boundaries. The forest consists of 15 land-locked, small and discrete areas totalling 386.47 hectares, which bear no resemblance to the location of existing beech forest remnants located in the Argyle Burn Catchment and other low altitude parts of the lease. Over two-thirds of the forest is a mixture of shrubland/developed pasture.

A rationalisation of this landholding by way of disposal or exchange in association with the tenure review of the pastoral lease seems appropriate.

A small area of conservation land lying between freehold Sections 7 and 14, approximately 10 ha in size, is located adjacent to the Waikaia River. In the past, Argyle Station has grazed this land under a temporary grazing licence. Most of the land appears now to be part of the Waikaia River bed but two small parts appear to be dry land. These two parts have no conservation value and could be disposed of in association with the tenure review process after adjustments are made for marginal strip requirements.

8 RECREATION/ACCESS

a ACCESS

As far as is known, none of the unformed legal roads located within the pastoral lease has ever served any practical public access purpose.

The formed Waikaia-Whitecoomb Road provides public access to the Waikaia Forest Conservation Area, and public access to the high altitude part of the pastoral lease traditionally has been gained via this conservation area.

Access to the lower altitude beech forest remnants, principally for deer stalking, has been available via the station 4WD tracks by arrangement with the lessees.

Access to the Waikaia River for angling is via unformed legal roads off the Waikaia-Whitecoomb Road and along the riverbank unformed legal road and the marginal strip.

b USES

Little detail of current recreational use is available and the Umbrella Mountains are not included in any published Federated Mountain Clubs outdoor recreation plan. Recreational groups contacted in Dunedin and Invercargill confirm that the White Umbrella-Whitecoomb Ranges is a very attractive setting for tramping trips including the Waikaia Forest Conservation Area. Whilst no formed tracks exist through the forest, some tramping club members have made day and weekend trips from Piano Flat in the Waikaia Valley, through the bush to Gem Lake, across on the Pomahaka side of the two ranges. The open pastoral lease country provides potential for ski touring trips across to the Old Man Range.

Apart from the attractions of the landscape, this area is relatively low altitude with nearby shelter from extreme weather conditions. It is considered therefore to be safe country for tops travelling.

It is likely that deer stalking (red deer) activities in the popular Waikaia Forest Conservation Area would involve hunters hunting the bushline and scrub belt on Argyle.

Some hunting is likely to occur in Argyle Forest Conservation Area and forest remnants on the lower part of the pastoral lease but all activity would be governed by the need to obtain lessees' access permission.

The Waikaia River is a very popular brown trout fishery and is well suited to fly fishing. It is the most fished and most highly valued Mataura tributary. The Argyle Station section meanders between low willow-lined banks. This stretch of water is part of the heavily fished middle section of the river and has easy access. Anglers achieve good catch rates of reasonably large trout. Many anglers combine

camping and hunting with their visits. The river is popular as a regionally important fishery, attracting equal numbers of Otago and Southland anglers, and a small number from the rest of the South Island.

SIGNIFICANCE OF RECREATION

The Umbrella Mountains have the potential to become regionally important for recreation, namely tramping and cross-country skiing, with links to the Old Man Range possible. Deer stalking is an established recreation pastime of local importance. The Waikaia River is a regionally important trout fishery.

9 MANAGEMENT CONSIDERATIONS

a WILD ANIMALS

Low numbers of red deer and possums occur in beech forest remnants scattered throughout the property. These animals have in the past been controlled by recreational and commercial hunting pressure. No specific control measures are warranted.

Pigs may occasionally wander over parts of the lease but are few in number.

b ANIMAL PESTS

Rabbits occur in pockets on river flats. They are well controlled and do not represent a management problem for conservation. Hares occur in low numbers throughout the native tussocklands but are also not considered to be a threat for conservation.

c PLANT PESTS

Areas of conservation interest are free of plant pests. Localised broom and gorse are present elsewhere on the property.

d FIRE

The fire risk over the property is comparatively low due to the humid/sub-humid cool temperate climate. Burning has been undertaken on the property to control both tall tussock growth and scrub regeneration. The practice had had the effect of suppressing forest margins in many situations. Within a 1 km fire safety margin of the DOC controlled Argyle and Waikaia Forests, DOC is the rural fire authority. Elsewhere on the property, the rural fire authority is the Southland District Council. Burning of vegetation for pastoral purposes is usually undertaken within winter and early spring.

e FENCING

None of the boundaries between the Waikaia Forest and Argyle Forest Conservation Areas and the pastoral are currently fenced to exclude stock. The upper forest margin of Waikaia Forest has evidence of stock grazing where accessible.

There have been reported numerous instances of cattle from Argyle Station travelling through Waikaia Forest and emerging at Piano Flat. Argyle Forest, being comprised of a large number of small parcels,

most of which are shrubland and developed pasture, are extensively grazed by both cattle and sheep. Beech forest parts of Argyle Forest would be utilised where accessible by stock for shelter and grazing.

The short boundary between the pastoral lease and Leithen Bush Scenic Reserve is fenced.

PART III

CONSULTATION

There have been two separate consultations with non-governmental organisations (NGOs) which represent public conservation/recreation interests.

26 April 1995

Discussion occurred with Maurice Rodway of Southland Fish and Game Council. Points raised include the following:

- The existing marginal strip along the Waikaia River originated from Crown land reserved from sale under section 58 Land Act 1948 and does not move with changes in the channel of the river. The suggestion was made that this marginal strip be replaced with one that moves when the river moves.
- There are a series of lagoons and old oxbows adjacent to the Waikaia river which should be treated as if they were part of the river system and retained in Crown ownership. They are used by waterfowl and fish species.
- Marginal strips required along the Argyle Burn: The waterway contains common river galaxiid and upland bully and good trout numbers in lower reaches where it joins Winding Creek.

A submission was received from the Southland Fish and Game Council dated 12 July 1995 which reiterated the above points and also included the following:

- Desirable to negotiate a moveable marginal strip on true right of Waikaia River on existing freehold if possible through the tenure review process, as well as the true left side which is pastoral lease.
- Access strips to be negotiated to the Waikaia River from Waikaia-Whitecoomb Road along three routes. All routes correspond with legal road alignments, one of which, Argyle Road is formed, and Huttons Coal Pit Road which is partially formed.

The submission is attached as an appendix to this report.

A meeting with representatives of Southland NGOs occurred in Invercargill on 29 November 1995. Key points raised were as follows:

- High Country Block and summit ridge of Black Umbrella Range have high conservation value, warranting protection, due to presence of wetlands in head of Whitecoomb Creek and subalpine vegetation sequences.
- Deer stalking use flagged.
- Tramping and cross-country skiing potential on tops. Current use level is moderate-low.

PART IV

JUSTIFICATION AND RECOMMENDATIONS

Argyle Pastoral Lease contains substantial areas of land possessing high inherent values warranting formal identification and protection. Included in the suite of values present are areas which, because of their importance for nature conservation, heritage landscapes and potential for recreation, should be retained in Crown ownership and managed for conservation purposes by DOC.

There are large conservation landholdings adjoining these parts of the pastoral lease with impractical boundaries for effective conservation management. Adjoining land uses on the pastoral lease, eg, burning of tussocklands and extensive grazing in the absence of boundary fencing are compromising effective management of the existing conservation landholdings and, over time, will reduce the conservation values present that have been identified on the pastoral lease.

The tenure review of Argyle provides an opportunity for these interests and conflicts to be considered and addressed through negotiations.

The following areas of high inherent value warranting protection are:

1 HIGH COUNTRY BLOCK

a LANDSCAPE

This large, unmodified, high-altitude block contains parts of three RAPs identified during the PNAP survey of the Umbrella Ecological District. Linking these representative areas are extensive, intact, tall tussocklands with a series of long, uniform ridges. The natural landscape, in its entirety, helps to maintain and represent the natural character and integrity of this northern Southland high country landscape.

b LANDFORM

The two RAPs, namely RAP UMB 01 Whitecoomb-Gem Lake-Argyle Burn, and RAP UMB 02 Waikaia Bush, are ranked as outstanding and representative examples of the landforms and soils in the Umbrella Ecological District. Key features are evidence of glaciation, fault exploitation and the ridge top bluff formations.

c VEGETATION

RAP UMB 01 and RAP UMB 02 are ranked as outstanding and representative examples of native plant communities of the Ecological District. Their protection would contribute substantially to the biodiversity and representativeness of the Umbrella Ecological District. The RAPs contain a particularly diverse array of native plant communities and extend knowledge of species ranges of distribution.

d FAUNA

Both the PNAP survey and the Fauna Survey Unit survey results confirm that the RAPs and adjoining forest remnants and open, natural country are ranked as outstanding habitats for fauna conservation, due to the presence of seven nationally threatened species and two regionally threatened species, ie, yellowhead, New Zealand falcon red-crowned parakeet, the giant snail *Powelliphanta spedenii* subsp. *spedenii*, kea, New Zealand falcon, long-tailed bats and South Island robin and yellow-crowned parakeet respectively. Yellowhead may be confined to the adjoining DOC part of RAP UMB 02.

All of these are listed as Category B (second priority for conservation) species (Molloy and Davis 1994) except for yellow-crowned parakeet which is Category C.

The three RAPs are highly significant for invertebrate conservation. Apart from the giant land snail, *Powelliphanta Spedenii* subsp. *spedenii*, the RAPs contain unique endemic crustacean species and insect groups display high diversity and species richness.

e RECREATION

The High Country Block in association with the Waikaia Forest, is regionally important for recreation uses such as tramping and cross-country skiing, with ski-touring potential extending on to the Old Man Range. Deer stalking tends to occur along the bushline and scrub belt.

Access to the tops has usually been through the Waikaia Forest or by use of 4WD farm tracks with permission. No additional public access seems to be required.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area. A vehicle access easement for DOC management purposes will be required along the designated farm track, off Argyle Road.

MANAGEMENT/BOUNDARY NOTES

Problems of stock trespass and grazing impacts in the Waikaia Forest Conservation Area would be overcome if the High Country Block was managed for conservation purposes. Also, there would be no need for vegetation burning, which has had a negative impact on the health of forest margins, shrublands and tall tussocklands. Burning has severely suppressed bushlines to artificial levels.

Given that this block constitutes a substantial part of the summer grazing country for the property it may be necessary to consider a phase-out grazing arrangement for a period of up to five years.

There may be some new fencing required along forest margins on the true right side of the Argyle Burn to link up with existing fences. This requirement will need field checking.

2 BLACK UMBRELLA RANGE

a LANDSCAPE

A striking ridgeline with spectacular rocky bluffs. The ridge is spinelike compared with the broader, more rounded ridge crests of the other Umbrella Mountains ridge systems.

b LANDFORM

An impressive series of rock bluffs and ridge top tors with extensive mobile screes extends southwards from Crown Rock to beyond Sandy Hill. These landform features are only partly represented in RAP UMB 07.

c VEGETATION

Above the 900 metre oversowing limit, native vegetation communities in good condition exist within the rock outcroppings and screes, and extend over both the Argyle and Hukarere and Crown Rock leases along the summit ridge boundary between these properties. This corridor of native vegetation and landform acts as a linkage between the High Country Block of Argyle and the Leithen Bush Scenic Reserve. The Hukarere and Crown Rock leases components of this linkage will be considered for protection when those properties undergo tenure review.

The native plant communities present differ from those contained in the High Country Block in terms of their species mix. This is attributable to the relative steepness of the bluff system and the presence of screes.

d FAUNA

The quality of the habitat and mix of native invertebrate species makes this area of high scientific and conservation interest.

e RECREATION

There is potential for a long tramping route utilising the Black Umbrella Range as a link between Waikaia Forest and Leithen Bush Scenic Reserve. No additional public access is required.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area.

MANAGEMENT/BOUNDARY NOTES

Given the relative steepness of the slopes on the Argyle side of the ridge, fencing to exclude stock may not be practical. It is likely that under a more intensive farming regime, Argyle stock may not stray much beyond the oversown and topdressed country below the bluff system.

The existing boundary fence along the ridge is an intrusive element in the natural landscape but will have to remain as the only effective stock barrier between adjoining pastoral leases until all three leases have undergone tenure review. In the longer term, if the Argyle stock stay more or less to the oversown and topdressed country, it may be possible to remove this boundary fence.

3 BURNT BUSH

a LANDSCAPE

This area of beech forest and regenerating beech forest is part of the visual continuum of Waikaia Forest, especially when viewed from the Waikaia-Whitecoomb Road. It is an important element in this forested landscape and would provide a more natural boundary to the forested lands compared to the existing cadastral boundaries.

b VEGETATION

A large beech forest remnant, regenerating from partial burning several decades ago. The forest consists of a mixture of red, mountain and silver beech with associated shrub species. The remnant botanically is an integral part of the Waikaia Forest.

c FAUNA

Faunal values are ranked as outstanding due to the presence of nationally threatened species, eg, New Zealand pigeon, yellowhead, long-tailed bat and possibly red-crowned parakeet, and ranked high for regionally threatened species such as South Island robin and yellow-crowned parakeet. All of these species are Category B, ie, second priority species for conservation except for yellow-crowned parakeet which is Category C.

d RECREATION

Some deer stalking is likely to occur. Favoured locations would be clearings and forest margins. No additional public access would be required.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area and added to Waikaia Forest Conservation Area.

MANAGEMENT/BOUNDARY NOTES

The area should be managed as part of the Waikaia Forest Conservation Area. Boundary fencing, approximately 3.5 km, would be required to exclude stock. This fencing would benefit the Waikaia Forest Conservation Area and prevent stock trespass problems continuing.

4 UPPER ARGYLE BURN BUSH

a LANDSCAPE

A prominent beech forest remnant located in the deeply incised Argyle Burn extending downstream of the High Country Block.

d VEGETATION

A large beech forest remnant with fire induced boundaries. Forest is dominated by red, mountain and silver beech. A developing shrubland/tall tussockland exists.

c FAUNA

Faunal values are ranked as outstanding due to the presence of several threatened species, notably New Zealand pigeon, South Island robin and yellow-crowned parakeet.

d RECREATION

Some deer stalking is likely to occur. No additional public access is required.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area.

MANAGEMENT/BOUNDARY NOTES

The beech forest is the most intact native plant community present but the shrubland/tussockland community has potential to recover from burning and grazing. The inclusion of land above the bushline can be also justified on the grounds of consolidation of boundaries with Areas 1 and 3 with a consequential saving on fencing costs. If the bush edge boundary has to be accepted, extra fencing to protect Burnt Bush will be required. Area 4 bush edge has natural barriers to stock generally.

**5 FOREST REMNANT WEST OF SPOT HEIGHT 1096 METRES
BLACK UMBRELLA RANGE****a LANDSCAPE**

A large beech forest remnant enclosed in a side catchment off the main ridge. A series of prominent rock bluffs form the skyline along the summit ridge of the range. The catchment retains its full indigenous character.

b VEGETATION

A large beech forest remnant dominated by red, mountain and silver beech with associated sub-canopy tree and shrub species. Some intact tall tussock and rock outcrops with herb and shrub species at higher altitude.

c FAUNA

The beech forest supports significant species such as the New Zealand pigeon, and South Island robin.

d RECREATION

Some potential for deer stalking exists. The summit ridge could become part of the tramping route between Leithen Bush Scenic Reserve and Waikaia Forest Conservation Area.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area.

MANAGEMENT/BOUNDARY NOTES

The catchment/beechn forest margins require approximately 3 km of new fencing along the northern boundary to totally exclude stock. This action would enhance forest margin health by removing the need to undertake burning of shrublands also.

6 FOREST REMNANTS ADJACENT TO AIRSTRIP**a LANDSCAPE**

Moderate-sized beech forest remnants enclosed in side catchments off the main ridge. The catchments predominantly retain their indigenous character.

b VEGETATION

Beech forest remnant comprised of red, mountain and silver beech, with regenerating beech and shrubland. Some modified short tussock grassland with browntop occurs between the bush edge and ridgeline, which is being invaded by shrub species. These remnant forests occur at a relatively low altitude on the property and are important for their diverse forest communities, ie, riparian forest, hill slope forest and regenerating forest and shrublands. They comprise two of the three largest forest remnants in the lower Argyle Burn and over 2 km of riparian forest.

c FAUNA

All common bushbird species are present. The remnant is probably utilised by South Island robin, yellow-crowned parakeet and New Zealand pigeon which are significant species.

d RECREATION

Probably used for deer stalking. The area could be assessed from the Argyle Burn marginal strip which it adjoins.

LAND STATUS SOUGHT

Retention in Crown ownership and transfer to DOC as conservation area.

MANAGEMENT/BOUNDARY NOTES

These remnants being enclosed within complete catchments could be fenced to exclude stock which currently have access. Some existing fencing occurs along the ridgeline boundary and approximately 3 km of new fencing is required along the side boundaries down to the Argyle Burn.

These remnants should be managed to exclude burning influences but strategic grazing under a grazing licence (short-term) could assist regeneration of native vegetation.

NB: OTHER FOREST REMNANTS

There are numerous other beech forest remnants in the lower Argyle Burn catchment and on the western faces of the ridge running south from White Umbrella. The latter contribute to the natural landscape setting of the Waimea Plains. None of these remnants warrant formal protection because of their small size and irregular boundaries, which are impractical to fence and exclude stock. DOC should advocate through the Southland District Plan for the adoption of policies which recognise and seek to retain these landscape values.

7 MARGINAL STRIPS

A former section 58 Land Act 1948 originated marginal strip exists along the true left Waikaia River bank. This marginal strip is fixed and does not move with any changes in the channel of the watercourse.

The pastoral lease has recently been renewed. At the time of lease renewal, DOSLI identified marginal strip requirements along both sides of the Argyle Burn and Whitecoomb Creek, from their headwaters to the lease boundaries. These marginal strips are deemed to exist subject to Part IVA Conservation Act 1987. These marginal strips move with any change in the channel of the watercourse. They are of value for public access and habitat protection.

The Waikaia River contains giant kokopu, a Category B threatened species. There are lagoons and oxbows which support trout and probably several species of native fish and wildlife and they should be treated as if they were part of the river.

The river is a tributary of the Mataura River and is included within the Mataura National Water Conservation Order. Its fisheries value is equal to the Mataura River.

LAND STATUS SOUGHT

For habitat protection and public access reasons, a moveable Part IVA Conservation Act 1987 marginal strip should replace the existing unmoveable section 58 Land Act and be defined to ensure the lagoons and oxbows are included in the river channel definition.

Part IVA Conservation Act 1987 marginal strips along the Argyle Burn and Whitecoomb Creek are to be retained.

MANAGEMENT/BOUNDARY NOTES

The section of the Whitecoomb Creek through Whitecoomb Pastoral Lease (part of Glenaray Station) is another possible access route into the land in the upper part of the catchment which has been identified for retention by the Crown for conservation purposes. At this stage, no marginal strips exist on this section of the creek.

The marginal strips in the Argyle Burn similarly will provide legal access to the forest remnant adjacent to the airstrip, Upper Argyle Burn Bush and High Country Block proposed conservation areas.

8 RATIONALISATION OF DOC LANDHOLDINGS

There are two areas of DOC landholdings adjacent to the pastoral lease which require rationalisation.

a ARGYLE FOREST

This conservation landholding is comprised of 15 land-locked small and discrete parts totalling 386.47 ha. Originally set aside to protect various scattered pockets of beech forest, it appears that due to an error in draughting their boundaries, very little of the total area is bush covered. The majority is rough pasture and some shrubland.

The boundaries clearly need to be redefined and the tenure review process provides a good opportunity to achieve this. Those parts of the conservation land which are bush covered do not correspond with the existing areas of beech forest remnants which currently contain significant conservation features warranting protection.

b DOC LAND ADJACENT TO SECTIONS 7, 8 AND 14

This land is mostly located in the Waikaia riverbed but two small parts appear to be dry land. These two parts have no conservation value except for marginal strip requirements. It is proposed to dispose of parts of this land surplus to marginal strip requirements.

Both areas of conservation land should be disposed of at the time of agreement on tenure review is reached. Disposal could be undertaken, assuming agreement is reached between the parties, either by way of exchange for areas of conservation importance on the pastoral lease, on an outright sale, whichever is administratively easier. Disposal will require appropriate public consultation procedures to be followed.

9 NGO CONSULTATION

Generally speaking, DOC and the NGOs have similar expectations regarding conservation outcomes from the tenure review. Some differences exist, but these relate to fairly minor matters.

There is agreement on the replacement of the old section 58 Land Act unmoveable marginal strip with Part IVA Conservation Act 1948 moveable marginal strip along the Waikaia River. There are technical difficulties involved with achieving this though.

NGO expectations for marginal strips along the Argyle burn and whitecomb Creek have already been met by DOSLI on lease renewal.

The issue of establishing access and signposting access to the Waikaia River from the Waikaia-Whitecomb Road is one issue where DOC and the Southland Fish and Game Council may differ. In DOC's view, there are adequate legal accessways already in existence, ie, the three legal roads which SFGC identified. DOC believes that as the public use of these access routes will be by anglers principally, SFGC should assume the responsibility for defining and signposting these access routes.

SUMMARY OF RECOMMENDATIONS

(Refer to Map 3)

- 1 That pastoral lease tenure review negotiations on Argyle Station proceed on the basis that the Crown seeks to retain ownership and transfer to DOC for conservation purposes all that land hatched black. As this proposal will result in the property losing a substantial part of its summer grazing land, ie, the High Country Block, a five year phase-out will be agreed to, if requested.
 - 2
 - a That marginal strips deemed to exist on lease renewal along the Argyle Burn and Whitecoomb Creek be formalised.
 - b That the "unmoveable" section 58 Land Act 1948 marginal strip along the Waikaia River frontage be replaced with a "moveable" marginal strip subject to Part IVA Conservation Act 1987.
 - 3 That subject to an agreement on tenure review acceptable to the Crown, DOC will transfer parts of areas 1-16 being Argyle Forest and land adjacent to the Waikaia River that are not required for conservation purposes.
 - 4 A vehicle access easement be created for DOC management purposes, over the farm track shown as a dashed line.
 - 5 That fencing of proposed conservation land be undertaken as part of the negotiated agreement on tenure review as shown. The cost of this additional fencing to be charged to the Land Tenure Reform Account.
- NB An accurate assessment of fencing will need to be undertaken once boundaries are agreed to in principle.