

Crown Pastoral Land Tenure Review

Lease name : Dome Hills II

Lease number : PO 261

Lease name : Dome Hills Station

Lease number : PO 170

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.

The report attached is released under the Official Information Act 1982.

Copied November 2002

DOME HILLS CONSERVATION RESOURCE REPORT

Released under the Official
Information Act

GENERAL

Dome Hills is one of the larger pastoral leases (7415 ha) on the Kakanui Range. This property comprises two pastoral leases (P 170 and P 265) that include all of the upper reaches of the Kakanui River catchment from 360 m asl to Kakanui Peak and Mt Pisgah (1643 m). Dome Hills is located within the Danseys Ecological District which was surveyed over the summer of 1989/90 as part of the Protected Natural Areas Programme. The Danseys PNAP report published in 1992 recommended that some 800 ha around Mt Pisgah and 40 ha at the top of Kakanui Peak be protected on Dome Hills. Today approximately 3000 ha survives as unmodified native grassland while the balance of the property is either modified tussock grassland that has been oversown and topdressed, or is in exotic pasture.

BOTANICAL VALUES

1 Danseys PNAP Survey Recommendations

This survey highlighted one major and one minor area on Dome Hills for protection. These are:

a Pisgah : RAP 7

A RAP of 1980 ha of which approximately 800 ha is situated on Dome Hills. This RAP encompasses one of the greatest ranges of vegetation diversity in the Danseys Ecological District, ranging from small alluvial terraces around the stream margins, to slim-leaved snow tussock (*Chionochoa macra*) on the hill slopes. Some of the steeper shady stream margins have dense shrublands of mountain flax (*Phormium cookianum*), *Dracophyllum longifolium*, snow totara (*Podocarpus nivalis*) and *Coprosma* spp. The lower slopes are predominantly narrow-leaved snow tussock (*C. rigida*) with this giving way to *C. macra* on the higher slopes or shady faces. Some of the higher slopes under Mt Pisgah have cushion vegetation of *Luzula pumila*, *Dracophyllum muscoides* and *Chionohebe thomsonii*.

b Kakanui Peak : RAP 6

A RAP of 700 ha centred on the Kakanui Peak of which only 40 ha is on Dome Hills. The principle values surviving here are *C. macra* where it survives with one of the highest cover rating (> 80%) and the gravel and rockland with cushions of *Dracophyllum muscoides*, *Leucopogon fraseri*, *Celmisia ramulosa* and *Luzula pumila*.

2 Balance of the Property

On Dome Hills, outside the RAP, there is approximately 2200 ha of narrow-leaved tussock grassland that is relatively unmodified. The intertussock species are predominantly native and have not been subject to OSTD, although some areas have been burnt in the past for management purposes. In these areas the tussock cover is shorter in stature and less vigorous. The remaining 4415 ha of the pastoral lease is highly variable in cover. Shady faces are still covered in patches of snow tussock while the sunny faces and open slopes have a sparser native cover with few native intertussock species. The latter has been largely replaced by introduced pasture grasses. *Hieracium* is present throughout much of the property but not as extensive mats, as it is either being held at bay by good tussock cover or dense pasture grass cover.

Outside the RAP, the area of prime botanical interest is the area immediately south of the RAP to Kakanui Peak and Mt Evelyn. While this area is similar to the RAP in many respects, it is primarily an unmodified tussock grassland with good intertussock species. This extended area has a greater species diversity than the RAP itself. A small creek beside the Crumb Hut has flax *Phormium cookianum*, toe toe *Cortaderia richardii*, *Coprosma rugosa*, *Olearia bullata* amongst *C. rigida*.

The Crumb Spur is a mix of *C. rigida* and *C. macra* at the higher altitude and although this tussock lacks the height and vigour of the RAP tussock it is primarily a tussock grassland ecosystem. The lower slopes are a mixture of fescue tussock and tall tussock. Mt Evelyn itself is largely a boulderfield and cushionfield with a diverse range of plant species ranging from *Dracophyllum muscoides*, *Pimelea traversii* and South Island edelweiss *Leucogenes grandiceps* on the rocky outcrops. Elsewhere around the top is scattered *C. rigida* and *C. macra* along with blue tussock *Poa colensoi* around the margins of the boulderfields. The lower slope of Mt Evelyn above a farm track has dense snow tussock cover similar to the Pisgah RAP.

Shady slopes above the Kakanui River have vestiges of shrublands surviving but in a very discontinuous and narrow pattern. These shrublands are all highly modified, with exotic grasses forming a major component. The general pattern is a mix of bracken *Pteridium esculentum*, *Coprosma propinqua*, *C. linariifolia*, broadleaf, *Griselinia littoralis*, along with a mix of *C. rigida*. The occasional tree fuchsia *Fuchsia excorticata* have been recorded also. In some instances the shrubland occurs on the steeper (40 degrees) hill slopes above the river, but are never larger than a few metres square. Indicators of old totara forest survive as old logs lying amongst the blockfields at 640 m, just above the Kakanui River. Burning and grazing have altered these natural vegetation patterns over the balance of the property, and it is largely impossible to link together anything of conservation value. A riparian strip alongside the Kakanui protects the majority of the elements surviving today.

FAUNA

1 Insects

Above 900 metres in the North Kakanui Catchment, native insect communities are of high conservation value, reflecting the naturalness of the snow tussock and stream-side shrub communities. Species of note include the local tussock butterfly *Argyrophenga janitae*, diurnal moth *Aponotoreas insignis* and giant dragonfly *Uropetala chiltoni*.

The insects of the high-alpine zone are numerous and spectacular. Dwarf shrublands, fellfield, scree and cushionfield areas are frequented by a giant weta (*Deinacrida connectens*), and black cicada *Maoricicada phaeoptera*, two species of giant weevil *Lyperobius* n. spp., and an array of diurnal moths (*Notoreas*, *Dasyuris* spp. especially).

The alpine insect fauna has close affinities to that of Central Otago but in addition it has its own local endemics shared only with neighbouring ranges such as St Marys and Ida. Also a number of species typical of Canterbury alpine areas reach their southern limit on the Kakanui Mountains, particularly close to the highest parts such as Mt Pisgah.

The high-alpine fauna is also represented on Mt Evelyn (1390 m) with substantial fellfield, scree and cushionfield there. Insects of note include the moths *Dichromodes* n. sp., *Paranotoreas ferox* and *Notoreas* n. sp., and giant weta. For *P. ferox* this is the only Kakanui Mountains locality for this uncommon diurnal orange-underwing species.

The main river has a typical big river insect fauna including the dobsonfly, green stonefly and widely distributed caddis species; whereas the smaller creeks and seepages that feed it have a much richer and more informative fauna, especially above 1100 metres. Species such as the caddis *Oeconesus similis*, *Psilochorema cheirodes*, stonefly *Zelandoperla pennulata* and scorpionfly *Microshorista philpotti* are typical of Central Otago but more interesting is the presence of the caddis *Philorheithrus agilis* (700-1350 m), a species previously only recorded from mid Canterbury northwards. The distinctive stream and seepage insect fauna is best represented on the slopes of Mt Evelyn and north Kakanui River headwaters. A new stonefly species *Zelandoperla* n. sp. was discovered here also.

2 Lizards

The spotted and the common skink are the only lizards that have been recorded on Dome Hills to date. Further research may provide further information.

3 Birds

Dome Hills contains many of the bird species recorded in the ecological district. In the tussock grasslands the NZ pipit and skylark are common while the NZ falcon ranges over the whole area. The harrier hawk is a fairly common species at the lower latitudes. The shrublands and lower altitude areas have finch, sparrow, chaffinch, blackbird and yellow hammers, while the black shag is common along the Kakanui River.

4 Native Fish

A freshwater fisheries survey, using a battery-powered back pack electric fishing machine, was carried out on 2 February 1995. Two locations were fished on the north branch of the Kakanui River:

- a Deep Creek (map reference I41 133E 702N), a tributary stream, and
- b the headwaters of the main stem and a small tributary in the vicinity of Crumb Hut (map references I41 088E 647N and 087E 651W respectively).

Galaxiids were the most abundant fish at both locations and were identified by Richard Allibone, University of Otago Zoology Department, as common river galaxias (*Galaxias vulgaris*), a non-migratory species. This fish, which was previously regarded as common and widespread throughout the South Island and Stewart Island is now thought to be absent in rivers south of the Waitaki and Kakanui Rivers (R Allibone, C R Townsend, 1995, Galaxiids of the Taieri River: Identification, Ecology and Conservation Status - Taieri and Southern Rivers Research Programme).

Brown trout (introduced) were present in Deep Creek but were rare, while bullies (unidentified) were common. No brown trout were found at the headwaters site. Brown trout often apparently replace galaxiids by predation and competition (Allibone and Townsend, 1995). It is likely that some physical restrictions (such as a waterfall) exists between the point where Deep Creek enters the main stem north branch Kakanui and the headwaters adjacent to Crumb Hut.

Protection of the headwaters of the north branch from landuse changes and the laying-off of marginal strips on either side of the main stem river should be sufficient to ensure that the present healthy population of *Galaxias vulgaris* continues to exist. It is also important to ensure that brown trout are not liberated into the Kakanui north branch headwaters in future and that trout do not otherwise find their way into the headwaters (eg, by collapse of whatever physical structure is presently preventing their occurrence there) - this may require human intervention at some stage.

LANDSCAPE

No separate landscape assessment has been made of Dome Hills. It was surveyed as part of the larger Danseys Ecological District in conjunction with the PNAP survey. Dome Hills can be divided into two distinct landscape types, each with their own unique characteristics. The attributes that make up the criteria for evaluating the landscape quality are the area's naturalness, sensitivity, intactness, distinctiveness and visibility. The main landscape types on Dome Hills are the "mountain" steepland system, encompassing all the high altitude land above 1300 m around Kakanui Peak and Mt Pisgah; and the "high hills" (dissected) system covering the lower portion of Dome Hills Pastoral Lease.

The "mountains" landscape type is dominated by the homogeneity of the landform and the vegetation. This is made up by the steep gully systems, mountain tops and the broad ridges along with the distinctive snow tussock grassland. The naturalness ranking of the area is high to moderately high as the natural vegetation is largely intact.

The "high hills" landscape type is characterised by deep gorges, prominent rocky outcrops, and shorter spurs and ridges that extend off the main mountain ridges. The vegetation pattern is far less uniform being a mix of tall tussock, short tussock, shrublands and oversown and topdressed areas.

Both these landscape types are sensitive to visual change, especially from tracking and new buildings, while the mountain landscape is also sensitive to farm management practices.

RECREATION

1 Legal Access

Legal access to Dome Hills is available on roads from Livingstone via the McKenzies Road and from Tokarahi via the Balmoral Road. McKenzie Road is metalled for about 4 km beyond Dome Hills homestead and from there a 4WD track continues up the ridge to Mt Pisgah. The road is surveyed as far as Trig D. From there the paper road is unsurveyed, however the cadastral plan coincides almost exactly with the formed track apart from a stretch between 4 km and 3 km below Mt Pisgah. That section deviates by up to 500 m though an older track continues on the legal line.

Beyond the Dome Hills homestead the road is predominantly on the Pisgah Downs (McKenzie's) side of the boundary fence and negotiations with them would be necessary. An amicable agreement would be desirable, however, failing that there is little doubt legal vehicle access exists and upgrading of the old track where the deviation occurs would be a possibility (if warranted) if difficulties arise.

If use was to become significant, maintenance will become an issue/problem.

Surveying of the paper road portion should be part of the tenure change process for Dome Hills. It appears the paper road may be the legal boundary and will have to be surveyed anyway.

From Mt Pisgah the paper road dives directly over the Kakanui on to the Kyeburn Flats below, before joining up with the Mt Pisgah Road.

The Balmoral Road follows a farm track down to the Kakanui River. Here this legal road joins the marginal strip on the true right of the Kakanui River and continues to the forks below the Crumb Hut. There should be marginal strips on both sides of both Kakanui River and Deep Creek though it appears there may be some confusion regarding this on DOSLI records. In any event, as part of the

proposed tenure change, marginal strips will be established/confirmed on both sides of both water courses within the freeholded part of Dome Hills property.

2 Existing Use

Recreational use of Dome Hills is low, being largely confined to tramping and shooting. Tramping is confined to the main Kakanui, with Mt Pisgah and Kakanui Peaks being the usual attractions. These are either climbed from the Pigroot, or by a combination of vehicle access and walking from Pisgah Spur or the Danseys Pass. Winter adds another dimension with possible snow-climbs on to the peaks, or ski touring. The latter can be somewhat unreliable although in good snow years extended ski touring is possible.

Hunting is largely confined to pig shooting and depends on farming activities.

Vehicle access is limited to 4WD and some use is made of existing farm tracks for recreational purposes, normally up the Pisgah Spur.

HISTORY

The European history of Dome Hills is documented in various history books of the region. The most comprehensive is Robert Pinney's book, *Early Northern Otago Runs* in which the history of Dome Hills is described in the chapters on Stotfold and Longlands. The history is somewhat confusing but, briefly, Dome Hills was part of the Stotfold property (Run 134) which was taken up in 1859. This lease expired in 1882 and was divided into two runs, which later became small grazing runs. In 1897 part of Dome Hills was managed by Longlands Station near the Pigroot Road. This area was separated by the Kakanui Mountains and was in effect the best and safest winter tussock country Longlands grazed. Portions of the old track over the Kakanui are still visible today and relatively easy to follow in places. The present Crumb Hut is located on this track near the old zig-zags that wind up the spur on Mt Evelyn. This Longlands block was sold in 1964 and later became part of the present Dome Hills property.

To the north of Dome Hills are extensive gold workings in and around the Maerewhenua River. No gold was discovered on Dome Hills itself. One major water race that starts high in the South Branch of the Maerewhenua River on Pisgah Downs passes through the bottom corner of Dome Hills, while a couple of minor water races have their origins in Awamoko Stream below the homestead.

MANAGEMENT CONSIDERATIONS

Some 2400 ha of the back block has high conservation values that warrant the area being transferred to DOC. Part of this area adjoins the Kakanui Peak Conservation Area on Longlands above the Pigroot. This proposal will provide the nucleus for providing potential protection of a range of ecosystems that exist along the Kakanui Range. The principal management factors for this proposed area are:

1 Public Access

Providing practical public access into the proposed conservation land is difficult. The marginal strip up the Kakanui is extremely steep and tortuous and not practical. The 4WD farm track along the Kakanui Spur is long and rough and not suitable for public access. This track also goes directly through the heart of the farming operation and could cause potential conflicts. The most logical route is the Pisgah Spur track which is partly on the neighbouring property. As part of this tenure review

process, public access will be discussed with the neighbour. Potential exists for other access points to be created. These will be achieved if adjoining properties join the review process.

2 Recreation

Improved access would open up new opportunities for recreation on the Kakanui Range. Many of these opportunities can be successfully catered for with minimal management inputs. It is proposed that the Crumb Hut will be maintained and managed by DOC for recreational use, as well as being available for farm use if necessary.

3 Grazing

It is considered that to retain the existing conservation values and endeavour to achieve regeneration and recovery, grazing should be removed from the conservation area. This will require 5-6 km of new fencing along the lower boundary from Mt Evelyn, down to the Kakanui River and then downstream to the existing subdivision fence. On completion of this fence, the area will be destocked. The existing ridgeline fence will require periodic maintenance to prevent stock trespass from adjoining properties.

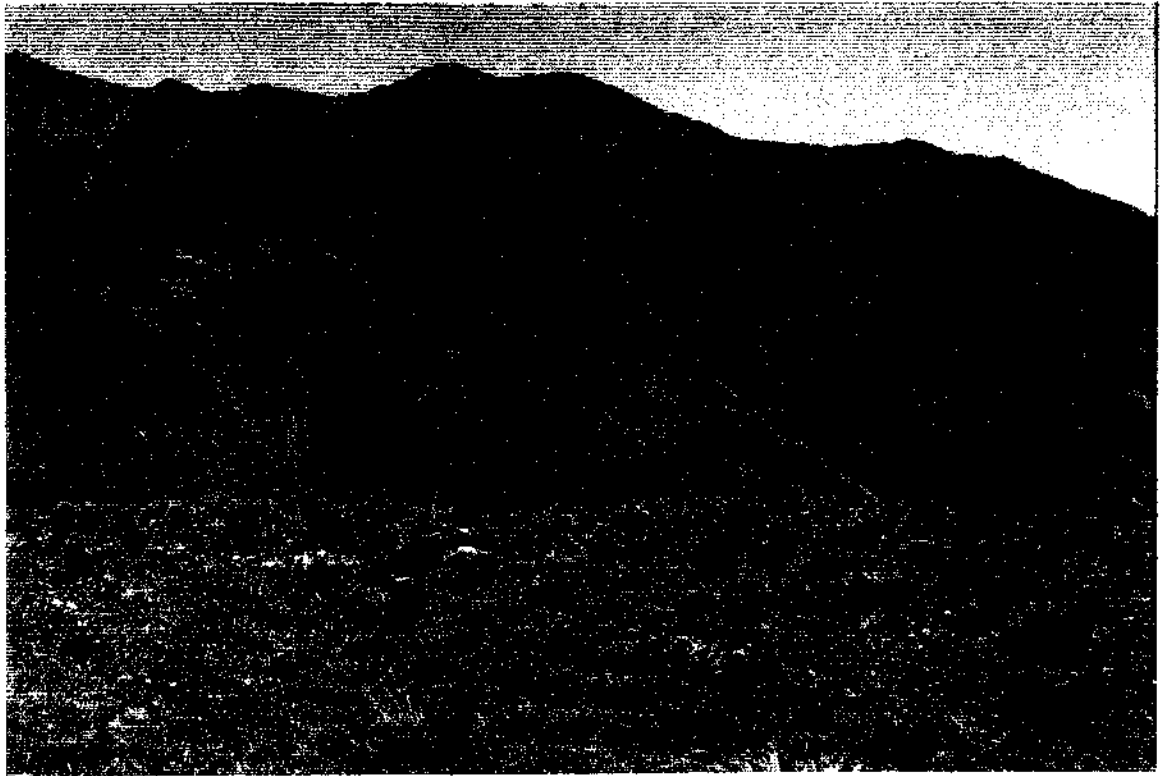
4 Weeds

Woody weeds are not a problem in the area at this point, although a watch will have to be kept for wilding pines in the future, as they do occur on the western flank of the Kakanui Range.

5 Animal Pests

The main wild animals in the area are pigs, which are prevalent throughout much of the Kakanuis, and possums which occur in the shrubland remnants and appear to be slowly increasing. Deer have been observed on the property but are few in number and migratory. Hares are found in the higher tussock grasslands, while the rabbit is common at the lower altitudes.

The pigs will be controlled by recreational shooting and the hares and rabbits are not considered to be a major problem in this area.



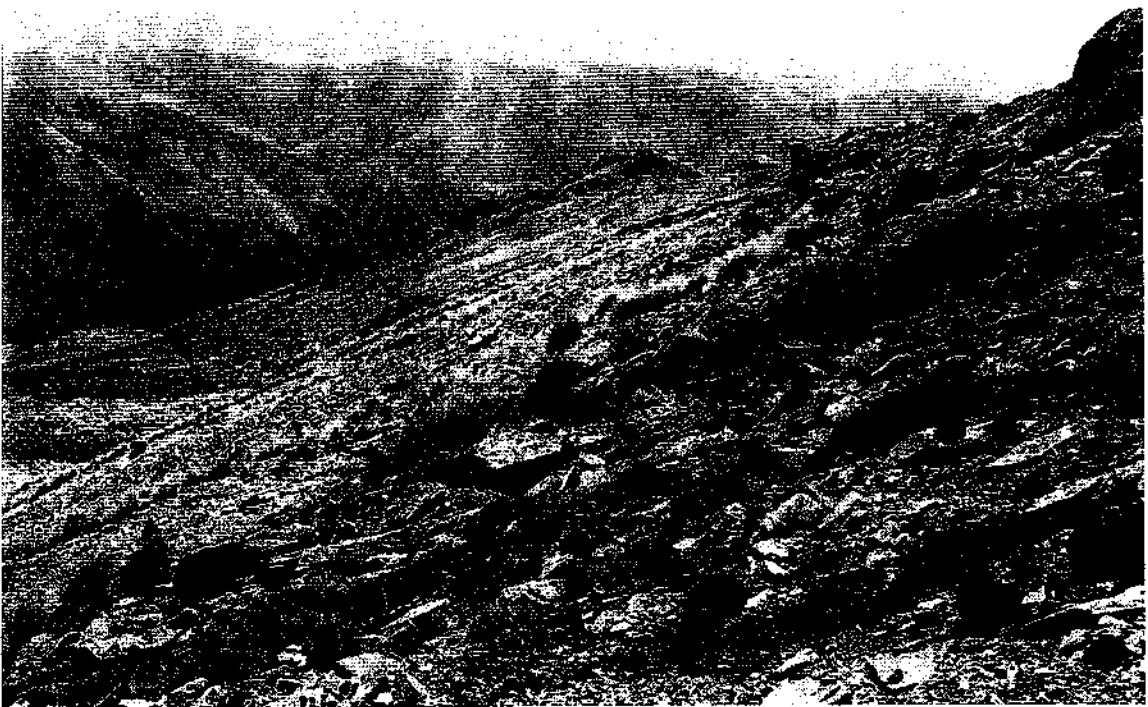
Heavily modified tussock in foreground. Less modified, but still burned, oversown and topdressed in background.



Upper Kakanui River. Remnant shrublands in riverbed. Tussock grassland becomes more modified towards foreground.



Remnant shrublands in headwaters. Is situated in proposed conservation area.



Volcanic spoil below Mt Evelyn. Part of proposed conservation area.



Volcanic spoil in headwaters Kakanui River. Part of proposed conservation area.



Back block below Mount Pisgah. Headwaters of right branch (true left) of Kakanui River.