

**DOC REPORT TO THE
COMMISSIONER OF CROWN LANDS ON
TENURE REVIEW OF CLOVER FLATS PASTORAL LEASE**

PART 1

INTRODUCTION

Clover Flats is a 2185 ha Pastoral Lease on the western flanks of the Kakanui mountain range 53 km inland from Palmerston on Highway 85 the "Pigroot".

The majority of the property is in the Dansey ecological district which was surveyed under the Protected Natural Areas Programme in 1989/90. Approximately 100 ha of the highest country (1100-1600 m) at the back of the lease was included in Dansey RA27 a 1980 ha recommended area for protection.

There are no reserves or formally protected areas on the lease.

Other land is farmed in conjunction with this block which has stockyards but no buildings.

The lower easier $\frac{1}{3}$ of the lease has been developed to predominantly exotic pasture however the balance is still dominated by native grassland.

PART 2

CONSERVATION RESOURCE DESCRIPTION AND ASSESSMENT OF SIGNIFICANCE

2.1 Landscape

Clover Flats is located on the western flanks of the Kakanui Range and is one of the several pastoral leases that are "wrapped around" this North Otago mountain range. Much of this pastoral lease is highly visible from the Maniototo - particularly from SH 87, while the front country merges in with the neighbouring properties. Much of the lower country is used for dryland farming with limited development, eg. subdivisional fencing, being carried out. The mountain lands in the background rise to well over 1600 m with Mount Pisgah being the highest point. These mountain lands are still clad predominantly in tussock cover.

Significance

The foreground and mountain lands complement each other to help form an important part of the Kakanui Mountain Range which with similar neighbouring pastoral leases collectively form a significant high country landscape.

2.2 Landforms & Geology

The property runs from the crest to the valley floor on the western face of the Kakanui schist block mountain range. The soils are all high country yellow brown earths derived from schist or semi schist colluvium and vary in depth with slope from pavement areas and screes in highest altitude areas to over 1m of soil and subsoil on the lower easier slopes.

Significance

The upper part of the property contains areas of scree which, while not as extensive as on neighbouring properties, are significant in that other than on the Kakanui Mountains screes are rare on the Otago schist mountains.

2.3 Climate

The property lies in the transition zone between Central Otago v Coastal Otago climates.

Rainfall varies between 500 mm to 900 mm. The winters are cold and snowfalls are common however the snow only lies for any length of time on the higher slopes above 1000 m. Summers are less hot than Central Otago and affected by cool easterly winds from the coast however plant growth is restricted by moisture deficiency for significant periods from January - March particularly at lower altitude.

2.4 Vegetation

The Clover Flats Pastoral Lease encompasses an extensive area of the southern faces of the highest part of the Kakanui Mountains, below Mt Pisgah (1643 m), and a large area of terraces at 500-600m drained by the Swin Burn and its tributaries.

Two large and two medium sized catchments drain these steep faces with ripple-patterned uniformly vegetated snowgrass (*Chionochloa rigida*) clothing the mid and lower slopes

The vegetation on the property can be divided into four sub-sets.

(i) The Gorges

The more open larger gorges have a depleted shrubland of widespread species whilst the steep gorge at the southern boundary has acted as a refugia for an impressive array of native shrubs dominated by the daisy shrub *Olearia nummularifolia* growing to 3 metres tall. In places this species is expanding out of the gorge onto grassland ledges to form an association with *C. rigida*.

It is joined by *Cassinia fulvida*, *Leonobebe odora*, *Hebe rakaiensis*, *Corallospartium crassicaule*, *Carmichaelia petriei* and *Coprosma rugosa* with occasional *Olearia bullata*, *Coprosma ciliata* and *C. propinqua*.

In places this shrubland has expanded out of the narrow gorge to be present in the lower grassland.

(ii) Summit Herbfield

Mt Pisgah, including the segment on Clover Flats Pastoral Lease is of high conservation value for its flora and fauna. Being the highest point of the large Kakanui Mountain Range it has the highest diversity of high-alpine habitats, flora and fauna.

Fellfield with impressive patterned ground and snowbanks (a limited feature on the Kakanui Mts) are features of the peak while the diversity of mountain daisies including *Celmisia brevifolia* and *C. ramulosa* highlight the value of the flora.

Many cushion species are present too including *Kelleria chiidii*, *Chionohebe thomsonii* and *Dracophyllum muscoides*.

(iii) Mid-Altitude Grassland

Lower down a more uniform tall tussock grassland of *C. rigida* dominates to the base of the range in places and is in good consistent quality. Mid slopes have a scattered shrubland of *Cassinia fulvida*, *Leonobebe lycopodioides*, *Gaultberia crassa*, *Myrsine nummularia* and *Coprosma ciliata* with some snow totara in places, together with *Pimelea traversii* in stony areas. Wet gullies have *L. odora* and giant speargrass *Aciphylla scott-thomsonii*.

(iv) Lower Altitude Pasture

Below the snowline fence at about 700 m the grassland is dominated by exotic clover and grass species. Some areas of short tussock remain and there are also shrubland remnants in the creek beds though these are matagouri dominated with limited other species.

Problem Plants

The only problem plant of significance is wilding pines which are widespread in the locality generally as well as on this property and will require regular ongoing maintenance expenditure.

General

The upper slopes down to about 900 m contain excellent *Chionochoia* grassland with a good range of indigenous intertussock species. Below this short tussock increases the intertussock cover decreases and *bieractium* becomes evident; however the grassland is still in good condition down to about 750 m. Below 750 m to the snowline fence the tussocks are more open and the space between is dominated by *bieractium*, clovers and introduced grasses however there are still some excellent remnant shrubland/tussock communities in some of the gorges.

Significance

Although there are extensive areas of this type of vegetation in the district the back block on Clover Flats is one of the better condition and more intact examples remaining and as such is of at least ecological district significance.

2.5 Fauna

Invertebrates

The more intact vegetation zones contain an associated rich and varied insect population.

Amongst the native insects the giant weta *Deinacrida connectens*, the black cicada *Maoricicada phaeoptera*, grasshopper *Brachaspis nivalis* and moth *Notoreas ischnocyma* are of significance being typical of the northern Otago mountains in contrast to Central Otago alpine areas.

Native insects are of significance in both the gully shrublands, wetlands, grasslands and scree. *Pimelea traversii* is particularly rich in insects feeding on it, all confined to this genus including a large pink and dark green moth *Meterana meyricki*.

Stream fauna reflecting the natural character of these systems contains many stoneflies in the genus *Zelandobius*, *Zelandoperla* and *Spunioerca*.

In all, seven stonefly species were located in one transect. Caddis similarly are relatively rich reflecting both the location and intact nature of these catchments.

Lizards

The skinks are well represented with the common open country skinks: *Oligosoma polychroma*, *O. nigriplantare* and *O. maccanni*. In addition, *Oligosoma chloronoton* was found in the sparse snowgrass - rock mantle area at 1100 m under Mt Pisgah. This species is not commonly encountered but isolated populations are known in similar elevations throughout the Hawkdun Range and Kakanui mountains. The common grey gecko (*Hoplodactylus maculatus*) is considered a species complex requiring further work to determine the species (M Tocher pers. comm.). These are found from the road margins to the rock banks of Mt Pisgah with an individual of unusual size (>190 mm total length) at 1100 m.

Aquatic Vertebrates

The NIWA freshwater fish database has no fish records for the Clover Flats property; one record for the Swin Burn downstream of the property recorded four fish species: brown trout, longfinned eel, upland bully and an unidentified galaxiid.

Fish surveys were carried out on Clover Flats at ten sites in Swin Burn and three fish species were collected: brown trout, brook char and *Galaxias anomalus*. Although longfinned eels were not detected during the survey they are likely to be present in the lower reaches of the main stream channels on Clover Flats.

SURVEY SITES		
Boundary Creek	(NZMS 260 141 029 647)	brown trout and brook
Boundary Creek	(NZMS 260 141 034 649)	brook char
Swin Burn tributaries	(NZMS 260 141 023 632)	<i>Galaxias anomalus</i>
Swin Burn tributaries	(NZMS 260 141 027 628)	brown trout
Swin Burn tributaries	(NZMS 260 141 042 637)	brown trout
Swin Burn tributaries	(NZMS 260 141 044 637)	no fish site is above a waterfall
Swin Burn tributaries	(NZMS 260 141 032 623)	brown trout
Swin Burn tributaries	(NZMS 260 141 031 610)	<i>Galaxias anomalus</i>
Swin Burn tributaries	(NZMS 260 141 031 612)	brown trout
Swin Burn tributaries	(NZMS 260 141 030 618)	<i>Galaxias anomalus</i>

Significance

As would be expected from the vegetation condition the insect communities are varied and healthy and of ecological district significance.

Of special significance are the lizard species *O. chloronotum* which is widespread in Southland but fragmented and rare in Otago and *Galaxias anomalus* which is a Category 1 threatened species (Molloy and Davis 1994) with a distribution limited to Otago and Southland.

NZ falcon (Category B species, Molloy and Davis) have also been seen on the property

Problem Animals

While goats occur in the locality and regular rabbit control is necessary on the lower country there are no problem animals of major significance on the property.

2.6 Historic

There are no historic sites of significance on the lease and no pre-European features are known to DOC however Trevor Howse has visited the property and will report direct to CCL on any Ngai Tahu interests.

2.7 Public Recreation

The property bounds a main highway with good access to the base of the largely natural hill area. There are two good ridge routes to the crest of the Kakanui range though these are not commonly used with other more popular routes nearby. The flats and pools associated with Swin Burn are good picnic locations. Despite the opportunities available, because of the alternatives elsewhere in the locality the recreation features here are not of major significance.

There are no existing marginal strips or legal roads on the property.

PART 3

CONSULTATION AND DISTRICT PLANS

3.1 Consultation

On 6 March 1997 an early warning meeting was held in the DOC office, Dunedin for various representatives from NGOs who were represented by the following people:

David Levick	OTMC
Sue Maturin	Forest and Bird
Bruce Mason	PANZ
Chris Pearson	OTMC
Alan Mark	Forest and Bird
Apologies from Mike Floate	FMC

Property maps had already been circulated to the NGOs and a report of the individual discussions for each property is as follows :

Points of interest identified by the NGOs were:

- Native conservation values that existed above 900 metres (F & B)
- Hummocky Slump area just above snowline fence in the centre of the property had particular conservation values (F & B)
- The southern area just above snowline fence was the piece of least conservation importance (F & B)
- PANZ considered access important from the state highway up the Longlands boundary
- A wilding pine problem exists above the snowline fence
- FMC also spoke to their written submission, a copy of which is attached below :

Clover Flat - PO 308 (Kveburn)

- 1 All land above about 1000 to 1100 m should be transferred to DOC for protection of the natural and landscape values of the tussock grasslands (Fig 25).
- 2 The boundary between freehold and conservation land should be drawn to ensure landscape continuity with the adjoining Longlands property.
- 3 Access for recreational purposes to the tops is best using the track across Clover Flats to the Longlands boundary at about 900 m, and thence up the Clover Flats/Longlands boundary to about 1350 m (Fig 26). From this point access is possible along ridge tracks to Mt Pisgah (Fig 27) and to Kakanui Peak. Access easements over proposed freehold land should be negotiated to enable the recreational use of these tracks on foot and by mountain bike.
- 4 If such opportunities are available then round trips could be made using existing and new opportunities on neighbouring properties (eg Islay Downs - Fig 27).
- 5 The natural value of tussock grasslands is very high above about 1000 m, and is good in the zone 800 to 1000 m.
- 6 There is a wide range of possible recreational opportunities on Clover Flats from family picnics by the creek, to more demanding trips over the tops (Fig 28).

District Plan

Clover Flats Pastoral Lease is covered under the provisions of the Maniototo Section of the Central Otago Transitional District Plan.

The property is divided between two zones under the plan. The back 400 ha of the property are situated within the Rural B (Ru B) zone, the boundary of which lies roughly parallel to the eastern boundary of the property and approximates the 1100 m contour. The remainder of the property is contained in the Rural A (Ru A) zone. The attached map denotes the approximate division of the property between the two zones.

Rural A

The Rural A (Ru A) zone is designed to recognise those parts of the former Maniototo District which contain the natural resource to support economic and social well-being of the people living within it. This generally equates to what could accurately be described as the primary productive land of the former district. Consequently, the objectives, policies and rules of the plan associated with the Ru A zone tend to revolve around providing for this key focus.

Permitted activities include:

- farming;
- forestry;
- stalls for the sale of produce;
- recreation, scenic and historic reserves; and,
- buildings and dwellings associated with these activities.

Controlled activities include:

- rural industries;
- quarrying and mining;
- reserves (other than recreation, scenic and historic reserves); and,
- a number of other sundry activities associated with providing the infrastructure of a rural community (e.g. veterinary clinics, country stores, licensed premises etc.).

The provisions relating to subdivision focus primarily on allowing properties to be subdivided into independent and/or "stepping" farming units. There are also controls for subdivision of existing dwellings and for individuals who have retired from a rural activity and wish to remain living within the rural environment. Subdivision for the purpose of establishing a reserve is not specifically addressed in the plan. However, it may be possible to allow the subdivision of properties for the purposes of establishing a reserve or conservation area in much the same way as permission might be obtained to subdivide for the purpose of establishing a number of other permitted activities not specifically mentioned under the subdivision provisions (presuming that this is an issue which needs to be overcome). Conservation areas have similar objectives to reserves under the Reserves Act 1977. They do not specifically appear in the plan primarily because the plan was approved prior to the enactment of the Conservation Act.

Rural B

The Rural B (Ru B) in zone in the plan is designed to apply to high country land within the former Maniototo District that is vulnerable because of its susceptibility to erosion. The areas situated within this zone generally believed unsuitable to be utilised for agricultural or forestry purposes.

Permitted activities are limited to those activities which are "sympathetic to the vulnerable state of the land concerned" and are "consistent with Council's [water and soil] conservation objectives for the area". Activities which are permitted include:

- retirement of land for water and soil conservation purposes;
- protection forestry for water and soil conservation purposes;
- periodic grazing; and,
- huts for overnight shelter (as opposed to a dwelling on a temporary or permanent basis).

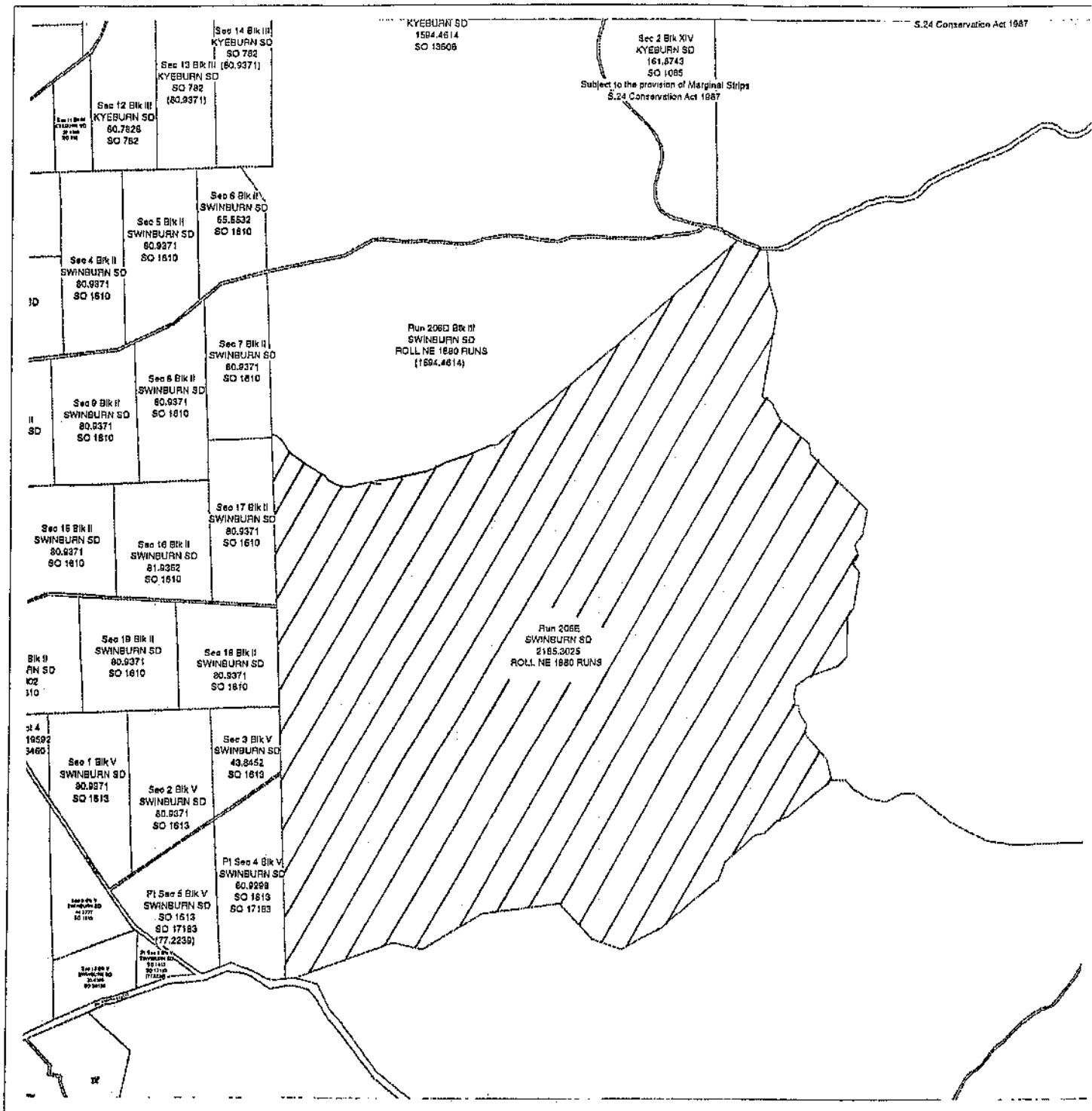
Tracks are listed as a discretionary activity.

Controlled activities for the zone include:

- forestry; and,
- reserves under the Reserves Act 1977.

The subdivision provisions for this zone are the same as for the Ru A zone. The obvious restrictions relate to the activities which might be allowed to take place on any property which has been subdivided. Subdividing off an independent farming unit would not be appropriate given that the property which has been subdivided could not operate as an independent farming unit.

See also attached extract from draft Conservation Management Strategy report (Special Place 14).



Map 1 : Clover Flats Pastoral Lease - Cadasatral



Clover Flats Pastoral Lease

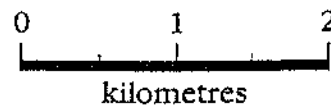
CLOVER FLATS

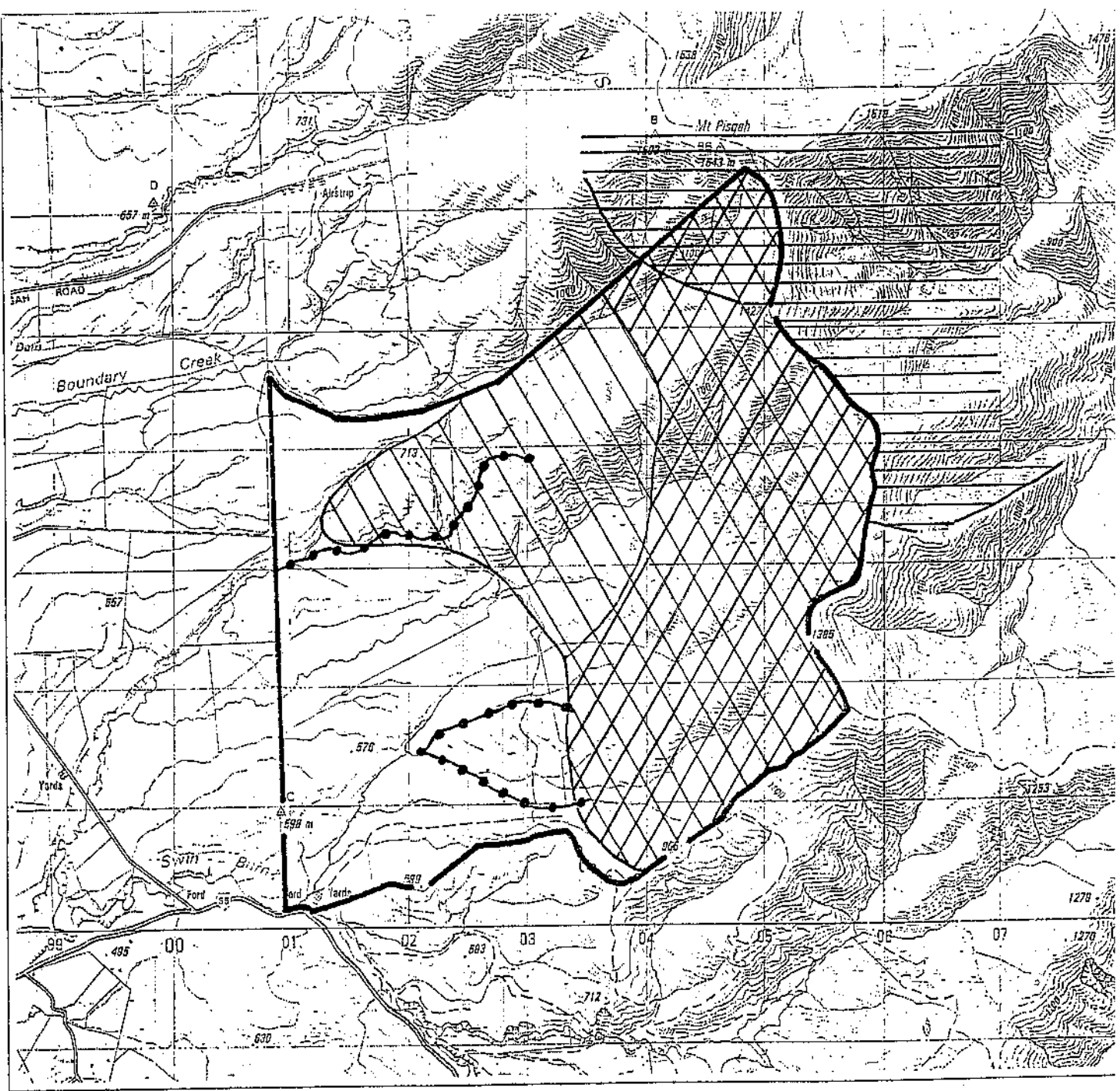
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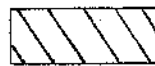


Map 2 : Clover Flats Pastoral Lease - Conservation Resource

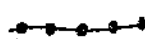


RAP

High indigenous ecological values



High landscape values



High indigenous aquatic values

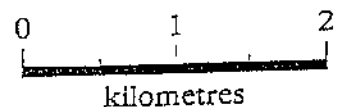
CLOVER FLATS

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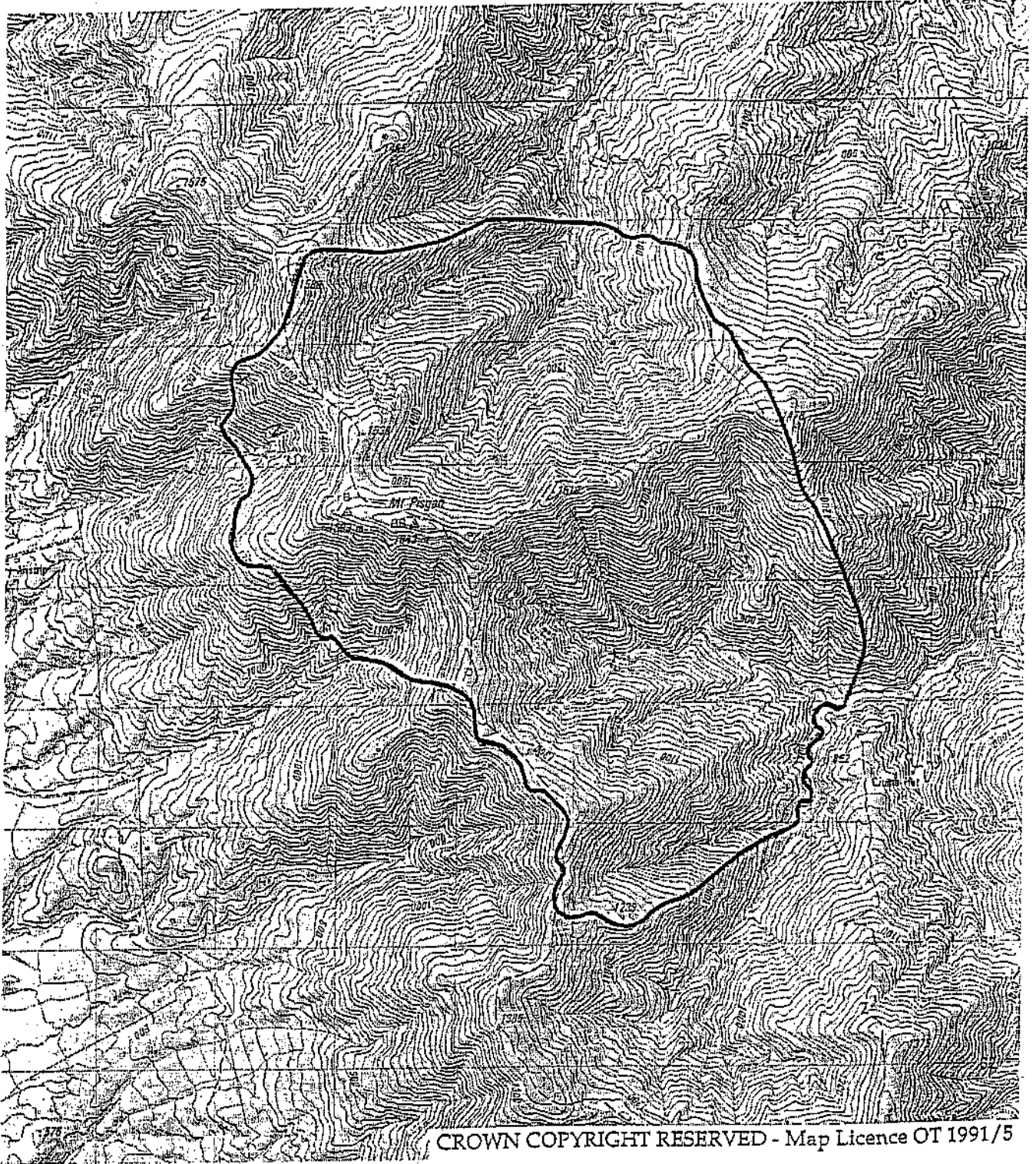
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Danseey RAP 7 - Pisgah



GR Centre: : NZMS 260 141 060660

Area : 1980 ha

Altitude Range : 700 - 1640m

Tenure : Pastoral Lease (Dome Hills, Pisgah Downs, Sunset Farm, Clover Flats)

Sample Sites : KAK 03 - 07, 16 - 20, & PIS 01 - 02