

Crown Pastoral Land Tenure Review

Lease name : COMPENSATION RUN

Lease number : PM 017

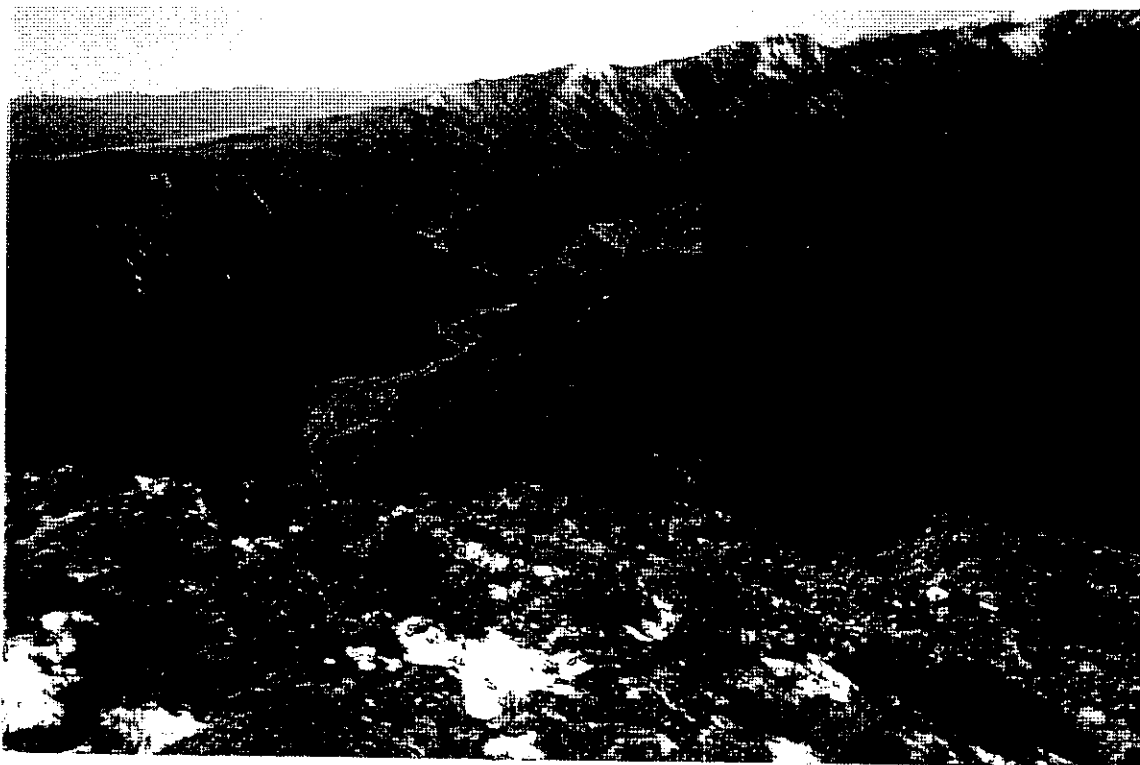
Conservation Resources Report

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.

They are released under the Official information Act 1982.

March 05

COMPENSATION PASTORAL LEASE



CONSERVATION RESOURCES REPORT

February 2003

**DOC CONSERVATION RESOURCES REPORT ON TENURE REVIEW OF
COMPENSATION PASTORAL LEASE**

PART 1

INTRODUCTION

This report describes the conservation resources of Compensation Pastoral Lease, a 2,602 hectare property located in south-western Marlborough.

The Lease lies between the Leatham and Branch Rivers. The property adjoins the Branch / Leatham Conservation Area to the west and south. To the east is Leatham Crown Land and to the north is freehold land which is mainly in pine forest.

Most of the property is steep scrub / forest covered mountainous country rising from 420 metres above sea level at the junction of the Branch and Leatham rivers, up to the highest point at the unnamed summit in the middle of the southern boundary, at 1,418 metres asl. The whole of the property lies below the natural treeline, which in Marlborough is at about 1500m.

Only small areas of grassland (<1% of the area) exist on small alluvial flats along the Branch and Leatham Rivers. The property tends to be only lightly grazed with some cattle presently grazing the Branch River flats. There is evidence of high pig numbers, and goats are also present.

Most of the Compensation Pastoral Lease occurs within the Bounds Ecological District in the Inland Marlborough Ecological Region. About 20% of the property (near the junction of the Branch and Leatham Rivers) is in the Hillersden Ecological District in the Wairau Ecological Region. The property has not been surveyed under the Protected Natural Areas Programme (PNAP).

PART 2

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

2.1 Landscape

The run itself and the surrounding lands are all steep and mountainous. The run occupies two spurs and a minor valley between them which, together, form the 6 kilometre long northern end of an unnamed range which runs some 30 kilometres southwards to the headwaters of the Branch and Leatham Valleys.

While a large part of the run has been modified by past bush clearance, significant areas of original beech forest remain, and there is widespread regeneration of red and mountain beech trees on much of the previously cleared land. There is little exotic pasture on the property, the predominant ground cover outside the beech forest being mixed kanuka and manuka. Distinctive patterns caused through burning (possibly about 50 years ago) followed by regeneration are clearly visible on some of the hillsides.

All of the property lies below the natural bushline, but past clearance has resulted in an induced subalpine character on some ridges and higher slopes, and this is often

accompanied by bare ground. Given the historic instability of the hills of the Branch and Leatham catchments, much of the bare ground may be natural and there are also significant erosion scars within the undisturbed beech forest.

The property includes a few alluvial river flats along both riverbeds. The flowers of kowhai trees along the banks of the Leatham and in one side valley make a spring feature.

There is a scattering of self-sown pine regeneration throughout, which is a feature of most of this part of Marlborough. There is virtually no other sign of exotic weeds, other than a few Spanish heath and some scattered hawkweeds. Pasture grasses are found in relatively few places, on river flats and some drier spurs.

Other than bush clearance, there is little sign of human activity on the land. The homestead is a small cottage with a few outbuildings tucked in amongst trees in the northern corner of the property. There is a substantial four-wheel-drive track following generally along the edge of the flats up the Branch, and there are the remains of an old farm track along the edge of the flats up the lower Leatham. There is no tracking on higher hillslopes.

The property lies under the flight path for low flying commercial passenger aircraft travelling from Nelson to Christchurch, and it is also seen as part of a wide panorama of mountain lands by passengers in commercial jets en route from Auckland to Christchurch. The main public viewing would be by trampers, hunters, mountain climbers, cyclists, etc. going to and using the conservation lands, and from passing aircraft.

Landscape units

For the purposes of this report the landscape of the run has been subdivided into 9 units. (Appendix 1) A description of the character of each unit follows:

Unit 1

This unit comprises generally west facing slopes which have largely been cleared of the original beech forest for grazing but are now in an advanced state of regeneration, with patches of beech, scattered young beeches and large areas of kanuka/manuka, the age of which appears to be determined by when fire was last used to clear it. There are only small areas of exotic pasture. There is a sprinkling of young self-sown pines.

The landform is quite convoluted, but generally it comprises a series of side spurs with incised gullies and at least one waterfall. Above 900 metres asl the landform is simpler, plants are relatively stunted and there is a significant amount of bare ground.

Unit 2

This side valley with its associated slopes has a convoluted stream course and around two thirds of the unit is clothed in beech forest and strongly regenerating beech. Less than a third of the unit is dominated by regenerating kanuka/manuka. Rising to over 1,300 metres asl, the upper slopes are steep to craggy, with much bare ground and areas of subalpine plants.

Unit 3

These north-east faces are clad in kanuka/manuka regeneration, taller on shady faces and shorter on drier faces. There is a fringe of beech and kowhai along the base of some of the slopes, at the edge of the valley floor.

Unit 4

This ridge and valley contains a variety of land and vegetation. Drier slopes are generally clad in kanuka/manuka, with beech predominant on shadier faces and around the streambeds. However there is also much beech forest and scattered beech regeneration advancing over the drier slopes. In the lower part of the valley there is a notable area of mixed beech, kowhai and kanuka/manuka.

Unit 5

These are some of the most uniform slopes of the property and also those closest to the character of reverting high country grazing land. While kanuka/manuka predominates, there are large areas of bracken fern and remnants of pasture.

Unit 6

Kanuka/manuka regeneration blankets most of these even, west-facing slopes. Patterns of past fires are clearly seen in the heights of the vegetation.

Unit 7

Dense kanuka/manuka regeneration blankets most of these even, east-facing slopes, which support a peppering of young wilding pines.

Unit 8

This unit comprises eastward trending spurs and valleys radiating from the highest summit and ridge on the property. A mosaic of land cover includes beech forest, kanuka/manuka regeneration, patches of remnant pasture, and areas of scree. The summit and tops of spurs are generally rounded, with a large proportion of bare ground.

Unit 9

This central valley and its sideslopes are almost completely clothed in a blanket of beech forest. There are several erosion scars running down gullies through the beech.

River flats

Several areas of river flats lie within the property, the largest being three alongside the Branch and two alongside the Leatham. The homestead occupies a smaller flat at the confluence. The larger flats are delineated by dashed lines on the Landscape Units map. Those in the Branch generally have the character of pasture enclosed by bands of kanuka/manuka, while the kanuka/manuka predominates on the Leatham flats. From a broadscale landscape point of view, management of each flat would best be linked to management of the adjacent hillslopes. Therefore the flats have been included within Units 1, 7 and 8 respectively.

Landscape assessment

Unit 5 is the most modified unit in the property, in that the pasture has not yet been fully replaced by woody vegetation, and still contains significant areas of grasses and bracken fern. **Units 3, 6 and 7** differ from Unit 5 primarily in that their regeneration has advanced further, resulting in an almost continuous cover of kanuka/manuka, with scattered young pines and beech trees. **Unit 1** has a greater variety of terrain and more beech regeneration. Four wheel drive tracks run alongside the river flats at the edge of units 1, 3 and 5. Otherwise, there is little other sign of human modification in any of these five units, and the predominant cover of woody vegetation and the lack of scarring by human activities give all of these units a natural character. They are clearly integral parts of the high country, and

their character has a high natural component, compromised only to the extent that the vegetation cover is dominated by regenerating kanuka/manuka rather than beech forest.

Unit 8 has a less homogenous character than any other part of the property. The mosaic of ground cover includes primordial beech forest, scree, regenerating beech, kanuka/manuka and pasture. The beech and scree combine to raise its natural qualities. The character of **Units 2 and 4** is not as distinctive, but the predominance of beech forest and beech regeneration in both of these units combines with the rugged nature of parts of their upper slopes to accentuate their natural values.

Unit 9 is almost all covered in primordial beech forest. This gives it the landscape character of mountain wilderness, and the significant inherent values of this largely untouched wilderness are such that it merits full protection from any form of land use modification.

2.2 Landforms & Geology

The geology of the lease area comprises sandstones and mudstones of late Jurassic to early Cretaceous age. On the eastern edge of the lease these include rocks of the Leatham sequence which contain lenses of grey fossiliferous limestone. At least four limestone lenses occur within the lease area.

The lease area is predominantly steep, dissected hill-country. Hard rock bluffs occur through the lease area but despite the steepness of the country they appear not to be especially extensive. Large talus slopes are not particularly evident, with more extensive ones occurring on the faces above the Leatham valley on the eastern side of the block.

2.3 Climate

The area has a continental type climate. Winters are very cold with intense frosts, which make the bedrock susceptible to fragmentation. Rainfall is approximately 1000mm. Summer droughts commonly occur with hot dry winds and there are occasional high intensity rain episodes. Predisposition to severe erosion, related to climatic conditions, is acute.

2.4 Vegetation

2.4.1 Indigenous plant communities

Below 1500m the entire Wairau catchment would have been covered in beech / hardwood / podocarp forest in earlier times (Simpson, 1980). Occasional natural or Polynesian fires and frequent European fires have restricted beech forest to remnants generally surrounded by kanuka forest and shrubland. The present vegetation pattern reflects the recent burning history with the different successional phases of regeneration forming a mosaic of bracken, different aged kanuka (*Kunzea ericoides*), fellfield and pockets of beech.

As with most of the Wairau mountain lands most of the property is steep with the land rising steeply from the valley floors. River flats and terraces are only a very small proportion of the land area. The property is well vegetated and apart from a scattering of pines, some Spanish heath and hawkweeds the vegetation cover is entirely indigenous.

Unless described as adventive (or exotic), all species mentioned in the text are indigenous. The vegetation communities may be summarised as follows:

- Beech forest
- Beech / podocarp forest
- Kanuka forest / shrubland
- Rohutu forest
- Kanuka forest on limestone
- Kanuka forest on alluvial terraces

- Fellfield
- Grasslands
- Wetlands

2.4.1.1 Beech forest

Approximately 30% of the property is covered in beech forest. The most extensive area of beech is in the upper Camp Stream catchment (unnamed tributary of the Leatham River locally known as Camp Stream). Other pockets of beech occur in the southern-most tributary of the Branch River and the upper valleys of the streams flowing into the Leatham River on the eastern side of the property. These pockets of beech have escaped fire and now form a nucleus for spread with beech trees and saplings scattered amongst the surrounding regenerating kanuka (Figs. 1, 2, 4, 12).

Mountain beech (*Nothofagus solandri* var. *cliffortioides*) is the dominant species with red beech (*Nothofagus fusca*) on the warmer slopes. Occasional black beech (*Nothofagus solandri*) is scattered throughout the riparian kanuka slopes to the south of GPS 106 (see Appendix 2).

Typical understorey species in beech forest include broadleaf (*Griselinia littoralis*), marbleleaf (*Carpodetus serratus*), weeping matipo (*Myrsine divaricata*), prickly mingimingi (*Cyathodes juniperina*), *Coprosma linariifolia* and lancewood (*Pseudopanax crassifolius*). Often on the edge of the forest or on banks the small shrubs *Gaultheria antipoda*, niniao (*Helichrysum lanceolatum*), *Olearia cymbifolia*, *Coprosma propinqua* and *Hebe decumbens* are present.

2.4.1.2 Beech / podocarp forest

A small area of matai / beech forest occurs above and below the Branch Valley track from GPS 49 to May Stream. Matai (*Prumnopitys taxifolia*) is very limited in occurrence in the Wairau catchment. This small area contains the only matai on the property and is part of a narrow discontinuous riparian strip of matai in the lower Branch River (Simpson, 1980). Large, old matai trees and both mountain and red beech form the canopy in this forest type. Important understorey trees and shrubs include lancewood, broadleaf, marbleleaf, kohuhu (*Pittosporum tenuifolium*), totara (*Podocarpus hallii*), tutu (*Coriaria arborea*), weeping matipo, *Coprosma rhamnoides*, mingimingi (*Cyathodes fasciculata*), prickly mingimingi and occasionally *Pittosporum divaricatum* and *Melicope simplex* (Fig.9). Other typical species include bush lawyer (*Rubus schmidelioides*), *Astelia fragrans* and the ferns, crown fern (*Blechnum chambersii*), hounds tongue (*Phymatosorus diversifolius*), common shield fern (*Polystichum richardii*) with occasional pig fern (*Hypolepis ambigua*) and bracken (*Pteridium esculentum*) on the track edges.

Regeneration of this community is vigorous with juvenile matai, totara and beech of mixed ages present (Figs. 8,9).

2.4.1.3 Kanuka forest / shrubland

Kanuka dominant forest / shrubland covers approximately 70% of the property. The hill slopes are a complex mosaic of bracken / kanuka shrublands, kanuka / manuka scrub, kanuka forest, and rocklands which in places merge into beech forest (Figs. 1, 2, 3, 4, 5, 6, 10,11). Bracken represents the first stage of succession followed by kanuka shrubland which progresses to kanuka forest and eventually beech forest. Time elapsed since fire, depth of soils and altitude, all influence the present height of kanuka. Kanuka tends to be tallest in riparian areas (Fig.7).

At GPS 36 above the Branch Valley track on steep slopes at ~700m kanuka is dominant (~3m high) but relatively open with occasional red beech saplings. Ground cover species

include flax (*Phormium cookianum*), bracken, *Gaultheria antipoda*, *Lycopodium volubile*, *Raoulia glabra*, *Helichrysum bellidioides*, *Luzula rufa*, *Leucopogon fraseri*, *Hydrocotyle moschata*, *Lagenifera cuneata*, *Celmisia monroi*, *Clematis forsteri* and the native grass *Deyeuxia avenoides*. In small clearings adventive grasses sweet vernal (*Anthoxanthum odoratum*) and browntop (*Agrostis capillaris*) are present and occasionally the exotic herbs, catsear (*Hypochoeris radicata*), mouse-ear hawkweed (*Hieracium pilosella*), wall lettuce (*Mycelis muralis*) and the exotic weedy shrub Spanish heath (*Erica lusitanica*). Scattered across the sunny kanuka slopes above the Branch River are some self-sown pines that have established from seed blown across the river from the pine plantations below Blowhard. Occasional cabbage trees are to be seen on the Branch faces emerging from bracken and low kanuka (Fig.5).

At GPS 40 higher on the slopes at ~1000m manuka (*Leptospermum scoparium*) (2-3m high) is dominant with mountain and red beech saplings and occasional tall mature trees of both. Shrubs present include mingimingi, prickly mingimingi and *Gaultheria antipoda*. Clubmosses (*Lycopodium volubile*) and woolly moss (*Racomitrium sp.*) often cover the ground under manuka. On rock outcrops *Celmisia monroi* and blue tussock (*Poa colensoi*) are present. Above this altitude on exposed spurs the kanuka / manuka shrubland merges into induced fellfield vegetation.

At GPS 95 in the lower part of Camp Stream tall kanuka (Fig.7) occupies the riparian zone with occasional red and mountain beech. On the rock and gravel substrate of the streambed important ground cover species are *Raoulia tenuicaulis*, *Raoulia glabra*, *Helichrysum bellidioides*, *Scleranthus uniflorum*, *Blechnum penna-marina*. Occasional red and mountain beech seedlings are present in the riverbed. On riparian terraces and under banks under kanuka forest species present include *Corokia cotoneaster*, *Aristolelia fruticosa*, *Olearia avicenniaefolia*, *Clematis forsteri*, *Arthropodium candidum*, *Oxalis lactea* and *Brachyglottis lagopus*. Rocky bluffs above Camp Stream support *Helichrysum intermedium*, *Helichrysum parvifolium*, *Brachyglottis lagopus*, *Gingidia montana*, flax, *Grammitis billardierei* and *Blechnum fluviatile*.

2.4.1.4 Rohutu forest

The alluvial terraces and riparian slopes within the small part of the property in the Hillersden Ecological District are mostly clad in kanuka forest. However, a 300m long section of alluvial terrace on the Leatham River (GPS 106) just upstream from the cableway is unusual in that it is dominated by rohutu (*Lophomyrtus obcordata*) forest. Rohutu is a small tree which grows up to 8m tall. This is the largest tract of rohutu dominated forest in the whole Wairau Ecological Region (5 Ecological Districts) and has not previously been recorded in the Branch catchment (Druce, 1984). Of note in this forest, is the presence of parsley fern (*Botrichum bifforme*) which is uncommon in the Hillersden Ecological District.

A tract of damp kanuka forest lies upstream of the rohutu dominated forest and is unique in both the Ecological District and Region for the dense herb swards. Of interest in the herb swards is abundant *Mazus radicans* which is uncommon in the Ecological District.

2.4.1.5 Kanuka on limestone

Limestone outcrops occur at GPS 100-105 in the Leatham Valley opposite Cave Stream. These are the only visible limestone outcrops on the property. They are roughly in line with other limestone outcrops at Caves Bluff and limestone quarries on Leatham Crown Land on the other side of the Leatham River. The vegetation on limestone on the Leatham Crown Land has been well documented (Williams, 1983; Druce, 1990). The community present on limestone on Compensation Pastoral Lease is dominated by kanuka. Of note are the herbs *Senecio glaucophyllus* aff. ssp. *toa* and *Vittadinia australis*. *Senecio glaucophyllus* aff. ssp. *toa* is endemic to South Marlborough and may be a new *Senecio* species (Shannel Courtney pers comm). Hitchmough (2002) describes *Vittadinia australis* as 'data deficient'. The 'data

deficient' category covers those species that are believed to be threatened but there is not sufficient information to describe the degree of threat. Other trees and shrubs present include broadleaf, marble leaf, *Coprosma propinqua*, *Coprosma microcarpa*, *Hebe venustula*, *Helichrysum lanceolatum*, prickly mingimingi, tauhinu, matagouri (*Discaria toumatou*) and *Olearia odorata*. Near the stream there is lancewood, red beech saplings, *Fuschia excorticata*, weeping matipo, *Parsonsia capsularis* and ferns *Polystichum richardii* and *Blechnum penna-marina*. Other herbs and grasses occurring in fairly open situations include silver tussock, *Poa imbecilla*, *Elymus solandri*, *Dichelachne crinita*, *Raoulia glabra*, *Gingidia montana*, *Acaena juvenca*, *Cardamine debilis* agg, and *Oreomyrrhis colensoi*.

2.4.1.6 Kanuka forest on alluvial terraces

Alluvial terraces are uncommon in this area because of very active movement of rock and debris down the Branch and Leatham Rivers (the Central Branch area produces the greatest detritus output in the whole of the Wairau catchment). (Simpson 1980). Consequently kanuka forest on alluvium is uncommon in the area. At GPS 48 opposite the outlet of Nesbits Creek, the river flats support groves of kanuka with occasional broadleaf, kowhai (*Sophora microphylla*), toitoi (*Cortaderia richardii*), prickly mingi mingi, red and mountain beech saplings and tutu. In the open *Raoulia tenuicaulis*, creeping pohuehue (*Muehlenbeckia axillaris*) and silver tussock (*Poa cita*) grow over river stones and silt.

Occasional kowhai trees grow along riparian terraces and riverbanks and extend up to an altitude of 700m on the slopes of the Kowhai Stream catchment (unnamed Stream entering the Leatham River near Camp Stream).

2.4.1.7 Fellfield

Fellfield may be described as scattered low plants growing on a rocky substrate. On Compensation this vegetation type has a subalpine character having been induced after earlier land clearance. The low shrubby vegetation fills the gap between kanuka and beech where kanuka has reached its altitudinal limit which is below that of beech. At GPS 41, on an open spur at 1100m above the Branch Valley, the manuka/kanuka forest merges into fellfield where scattered shrubs and grasses colonize exposed rock outcrops and thin soils overlie a rock substrate (Fig.12). The fellfield continues on up the spur to GPS 42 with scattered shrubs including *Hebe decumbens*, tauhinu (*Ozothamnus leptophylla*), *Gaultheria crassa*, snowberry (*Gaultheria depressa* var. *novae-zelandiae*), *Myrsine nummularia*, *Leucopogon colensoi*, *Dracophyllum uniflorum*, *Olearia cymbifolia*, *Helichrysum parvifolium* and *Celmisia spectabilis*. Occasional open grassy areas include bristle tussock (*Rytidosperma setifolium*), fescue tussock (*Festuca novae-zelandiae*) and the adventive browntop. The fell field vegetation merges into beech forest.

2.4.1.8 Grassland

Only very limited areas of grassland occur on this property. There are some very small clearings on the steep slopes and ridges that are in the early stages of regeneration with bracken and kanuka / manuka encroaching onto the remnant grassland. (Figs.3,6). The most extensive area of grassland occupies the river flats on the true right of the Branch (between GPS 34 and 51) (Fig.16). The adventive grasses, browntop and sweet vernal are dominant with occasional mouse-ear hawkweed and scattered matagouri. These grassy flats are generally surrounded by kanuka.

2.4.1.9 Wetland

There are two small wetlands on the grass flats of the Branch River. Wetlands are extremely rare in the Hillersden Ecological District and the entire Wairau Ecological Region. Because of the steep and unstable nature of the Branch / Leatham catchments flat alluvial terraces and any wetlands are uncommon. *Carex secta* dominates the smaller wetland at GPS 94 and raupo (*Typha orientalis*) is dominant over half the larger wetland at GPS 50. Of note are the presence of *Epilobium chionanthum* and *Ranunculus macropus* in both wetlands. Both

species are rare in the Hillersden Ecological District and the whole of the Wairau Ecological Region. Also present in and around the wetlands are *Carex coriacea*, *Azolla filiculoides*, *Blechnum penna-marina*, *Coprosma propinqua*, *Eleocharis acuta*, *Epilobium neteroides*, *Lemna minor*, *Montia fontana*, *Potamogeton cheesemanii*, *Ranunculus amphitrichus* and *Ranunculus foliosus*.

2.4.2 Notable plants

The following notable plant species were observed on the property:

| <u>Plant species</u> | <u>Known distribution in area</u> |
|--|---|
| Threatened (Hitchmough, 2002) | |
| <i>Epilobium chionanthum</i> | in wetland on Branch riparian terrace |
| <i>Vittadinia australis</i> | near limestone outcrop in Leatham |
| <i>Ranunculus macropus</i> | in wetland on Branch riparian terrace |
| Uncommon | |
| <i>Lophomyrtus obcordata</i> | on an alluvial terrace of the Leatham River |
| <i>Botrichum biforme</i> | amongst rohutu |
| <i>Mazus radicans</i> | upstream of rohutu in Leatham |
| <i>Senecio glaucophyllus</i> aff.ssp. <i>toa</i> | on limestone in Leatham |
| matai | scattered riparian distribution in the lower Branch |

2.4.3 Exotic plants

Although there are no pine plantations on the property there is a scattering of self-sown pines throughout (*Pinus radiata* and *Pinus contorta*). There is virtually no other sign of exotic weeds, other than a few Spanish heath and some scattered hawkweeds. Occasional scattered plants of Spanish heath are present amongst kanuka scrub on the lower western slopes. Small patches of mouse-ear hawkweed are present in grassland and some tussock hawkweed (*Hieracium lepidulum*) is occasionally present under kanuka. There are only very isolated plants of gorse (*Ulex europaeus*) on the riparian flats. Pasture grasses are found in relatively few places, mainly on the small river flats and on drier spurs.

The least natural part of the property is the immediate surroundings of the homestead and outbuildings. Several large exotic trees including 2 mature pines and several wattles and poplars are set amongst a small glade of adventive grasses. Ivy was present near the house.

2.5 Fauna

The following native bird species were observed during the survey – tomtit, bellbird, fantail, grey warbler, paradise duck, spur winged plover, black fronted tern, black backed gull, black shag, harrier hawk and falcon. Not observed but also likely to be present – robin, kereru, tui, and possibly parakeet and kaka. Many of these species would move through the area as food becomes available ie flowering and fruiting of the vegetation. A number of weka were re-introduced into the Branch River by the Wildlife Service but failed to survive.

There are historic records of bats in the Branch catchment but there have been no recent sightings.

Other forms of indigenous wildlife include skinks and geckos. Common skinks (*Oligosoma nigriplantare*) have been recorded in the general area and the common gecko (*Hoplodactylus maculatus*) is also likely to be present. A green gecko which appears to be the Rough Gecko (*Naultinus rudis*) was found during the survey near the limestone outcrops in the Leatham Valley. These geckos live in the kanuka forest that covers a large proportion of the lease.

All the major tributaries to the Branch and Leatham Rivers were surveyed for freshwater values as well as several locations on both the major rivers. As the Branch/Leatham River systems are severed from the main Wairau system by the Branch Hydro station on the lower Branch River, there is only limited fish passage over this obstacle. Trout occur in the rivers and the lower reaches of the larger tributaries. Three species of non-diadromous (do not travel to the sea for part of their life cycle) fish are found in the pastoral lease area, dwarf galaxias (*Galaxias divergens*), upland bully (*Gobiomorphus breviceps*) and Northern galaxias (*Galaxias* sp. – previously included within *Galaxias vulgaris* but recent work being undertaken indicates that it may be genetically distinct). These species occur in their greatest abundance in the tributaries where brown trout are either absent or in low numbers. Nationally non-migratory species such as the dwarf galaxias and northern galaxias are declining in numbers and the Northern galaxias is endemic to the top of the South Island. Rivers and their tributaries with native riparian vegetation are important to maintain populations of these species.

Low numbers of eels were found during the survey, reflecting the difficulties with downstream fish passage. Short-finned eels were found in one of the wetlands on the terraces adjacent to the Branch. These wetlands are important short-finned eel habitat, as well as containing other freshwater life such as koura and upland bullies.

Also significant to the instream values of the lease area and the primary food source for native fish and trout are the benthic invertebrates. The invertebrate faunas observed during electric fishing were typical of high quality water with unoccluded substrates, with the larvae of mayflies (primarily *Deleatidium* spp), caddisflies and stoneflies dominating the fauna. The fauna of the stream in the central gully of the Compensation Run (Camp Stream) was particularly notable for its diverse fauna including many larger genera such as the stoneflies *Stenoperla* and *Zealandoperla*, and the large mayflies *Coloburiscus*, *Nesameletus* and *Oniscigaster*. Other taxa observed, that are also typical of high quality water, include the snail shell caddis *Helicopsyche* and larvae of the net-wing midge *Neocurupira*. The abundance of gordian worms observed in this stream is also indicative of reasonable numbers of large terrestrial invertebrate hosts in the surrounding relatively unmodified upstream catchment.

Sites surveyed for invertebrates included the Branch River flats and some associated side-streams; two major unnamed streams flowing north to the Leatham River from the central area of the lease; and the limestone outcrops in the southernmost part of the lease, above the Leatham River. Invertebrate values were assessed primarily from available habitats.

Specimens collected during the tenure review survey of Leatham lease, immediately east of Compensation, seemed to indicate a mixture of both north-western and eastern elements in the fauna. It is likely that Compensation will have similar influences, but possibly with an increased western-northern element. Of the areas investigated, the important habitats for invertebrate conservation are:

- The catchments of the two unnamed tributaries running north to the lower Leatham;
- The catchment of the first major creek north from May Stream, Branch catchment;
- The east-facing slopes falling to the Leatham on the eastern side of the lease;
- The raupo-dominated wetland and grassy wetland on the Branch River flats and the catchments of the two feeder streams.

2.6 Historic

There are no known sites of historic interest on the property.

2.7 Public Recreation

2.7.1 Physical Characteristics

The property is very steep scrub and forest country bounded by the wide accessible riverbeds of the Branch and Leatham Rivers. There is a four-wheel-drive track following the gentle contours at the base of the steep slopes of the Branch, and there are the remains of an old farm track along the edge of the lower Leatham. There is no tracking on higher hillslopes.

2.7.2 Legal Access

Public road access runs from State Highway 63 in the Wairau Valley and up the Branch River. At the confluence of the Branch and the Leatham the public road runs along the north bank of the Leatham to near the Leatham homestead, roughly opposite the north-east corner of the Compensation Run.

The Leatham River must be forded near the junction of the Leatham and the Branch Rivers to gain access to Compensation Pastoral Lease and there are no legal roads on the property itself. Public access to the extensive conservation lands up the Branch and Leatham valleys runs along four-wheel-drive tracks which follow the eastern banks, the track up the Branch running through the Compensation lease while the Leatham track passes through the adjoining Leatham station. There is no public right of access along the track through Compensation, and visitors must first seek the runholder's permission to use the track. There is legal foot access up the riverbeds on three sides of the property.

2.7.3 Activities

Most public use involves hunting (pigs, goats, deer) and tramping. Apart from the privately owned homestead and outbuildings there are no huts on the property. The track up the Branch valley provides opportunities for mountain biking, tramping, camping, fishing and hunting.

PART 3

OTHER RELEVANT MATTERS & PLANS

3.1 Consultation

Meetings were held for NGOs in October 2002 to discuss the Compensation Run tenure review process. Comments from the meetings included:

- Public conservation land in the Branch and Leatham Valleys is land-locked.
- Good access to Blowhard is needed.
- Essential to secure access up the Branch and Leatham Valleys.
- The Camp Stream area is a good walk.
- Mostly walk from the cableway – do not use vehicles much.
- Kayaking on Leatham quite good.

One submission was received from the Marlborough Tramping Club. They regard the Leatham and Branch catchments as important backcountry recreational areas and would like to access these areas through the Compensation Run. A report from the Federated Mountain Clubs recommended protection of virtually the entire lease with freeholding being confined to a small area around the old homestead and the securing of public access by designating the track in the Branch Valley as legal road.

3.2 District Plans

Under the proposed Wairau/Awatere Resource Management Plan, the station falls within the Rural 4 Zone. Under this zoning farming, keeping domestic livestock and homestays (limited to no more than 5 visitors) are permitted activities. Erection of further accommodation buildings is restricted to one dwellinghouse/title.

3.3 Conservation Management Strategies & Plans

The Nelson Marlborough Conservation Management Strategy includes the Leatham in the South Marlborough management unit. Relevant objectives in this unit include:

- Obtain legal protection for threatened species habitat and important plant communities
- Land status review of Inland Marlborough conservation areas and reserves.
- Maintain access and facilities for recreational hunting, particularly in the Branch and Leatham Catchments.

PART 4

MAPS ETC.

4.1 Acknowledgements

Thanks to the following for assistance with this survey: David Sissons (landscape), Carol Jensen, Mike North (botanical), Ian Millar (invertebrate ecology), Peter Gaze (vertebrate ecology), Jan Clayton-Greene, Martin Rutledge and Keith Dunlop (freshwater ecology).

4.2 Illustrative Maps

4.2.1 Landscape Units (Appendix 1)

4.2.2 Topo/Cadastral GPS Points (Appendix 2)

4.2.3 Topo/Cadastral (Appendix 3)

4.2.4 Values (Appendix 4)

4.3 References Cited:

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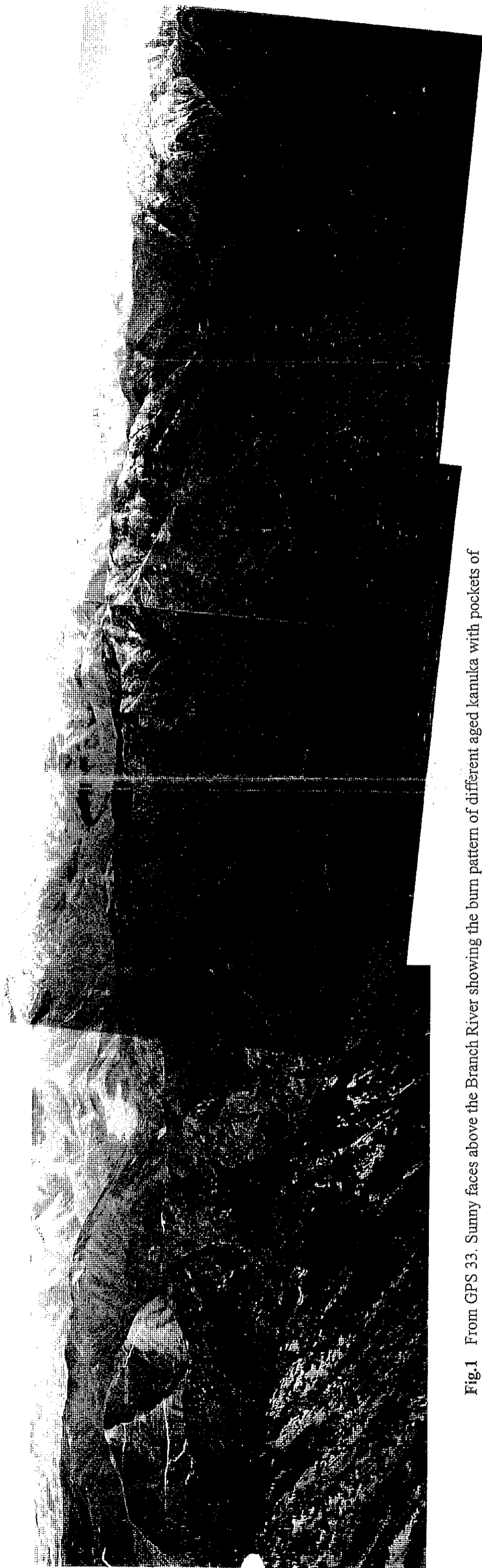


Fig.1 From GPS 33. Sunny faces above the Branch River showing the burn pattern of different aged kanuka with pockets of beech providing a nucleus for spread.

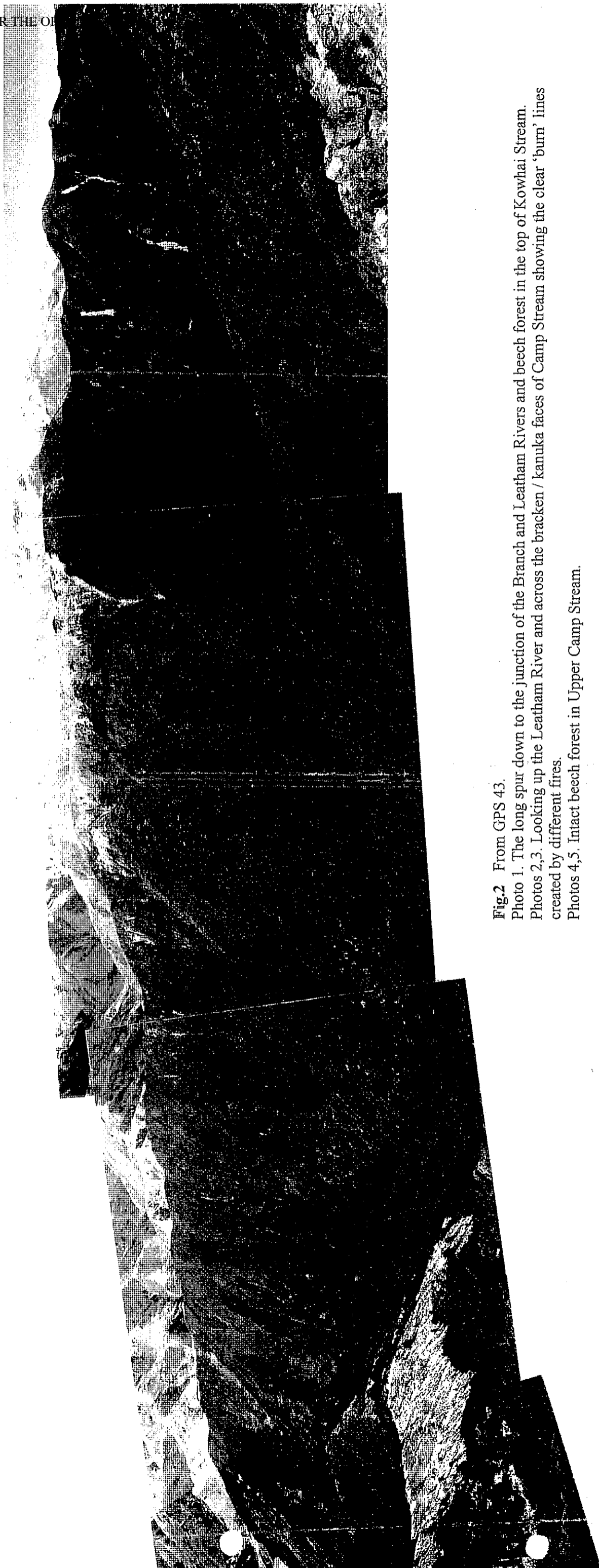


Fig.2 From GPS 43.

Photo 1. The long spur down to the junction of the Branch and Leatham Rivers and beech forest in the top of Kowhai Stream.
Photos 2,3. Looking up the Leatham River and across the bracken / kanuka faces of Camp Stream showing the clear 'burn' lines created by different fires.

Photos 4,5. Intact beech forest in Upper Camp Stream.

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Fig. 3 Looking across the Leatham River to :

Photo 1. North facing slopes that are the slowest to recover after fire.

Photo 2. Looking up Camp Stream with kanuka in the lower valley and beech in the upper catchment.



Fig. 4 From GPS 48 looking up to the Branch faces – a mosaic of bracken, kanuka, beech, and occasional pine tree.



Fig. 5 Some of the few cabbage trees seen - amongst bracken, kanuka and rock outcrops on the Branch faces.



Fig. 6 From track crossing Boulder Stream (on Leatham Crown Land) looking across the Leatham River to Compensation faces. Different aged kanuka dominates with small areas of grassland visible. Note kowhai flowering on river bank.

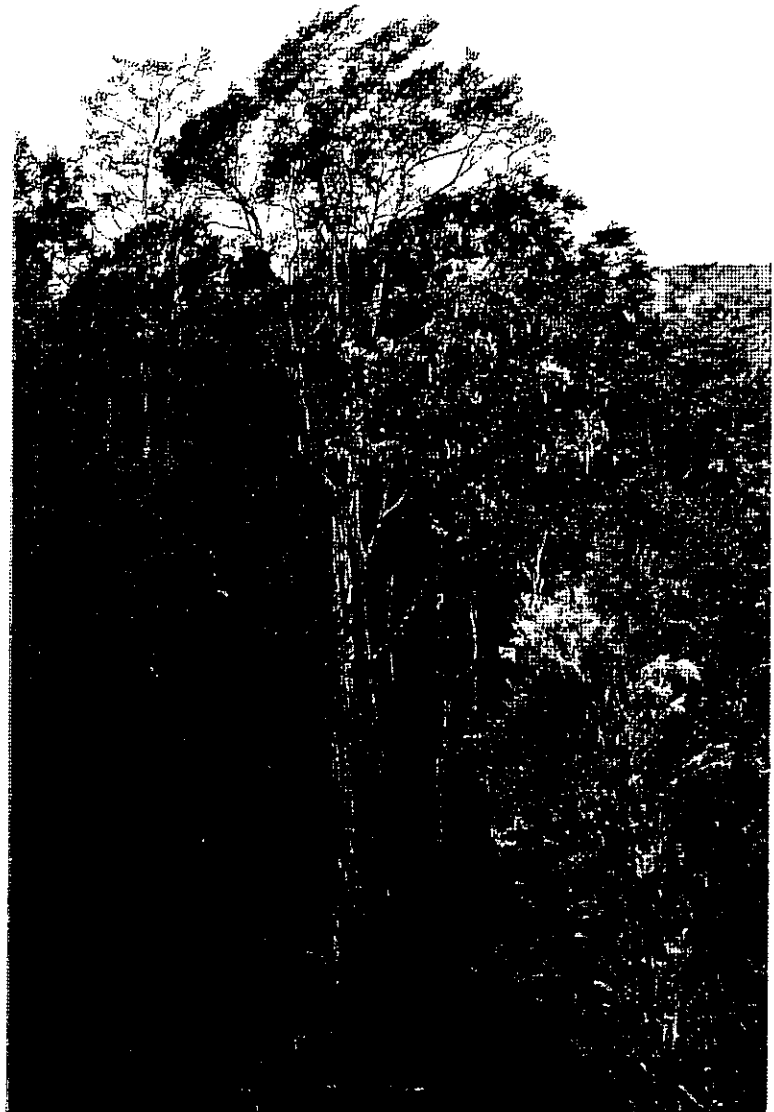


Fig. 7 GPS 95. Tall kanuka in riparian zone of Camp Creek.



Fig. 9 GPS 49. Vigorous regeneration of *Pittosporum divaricatum* (right), *Melicope simplex* (left) and lancewood (middle) under tall beech / podocarp canopy.

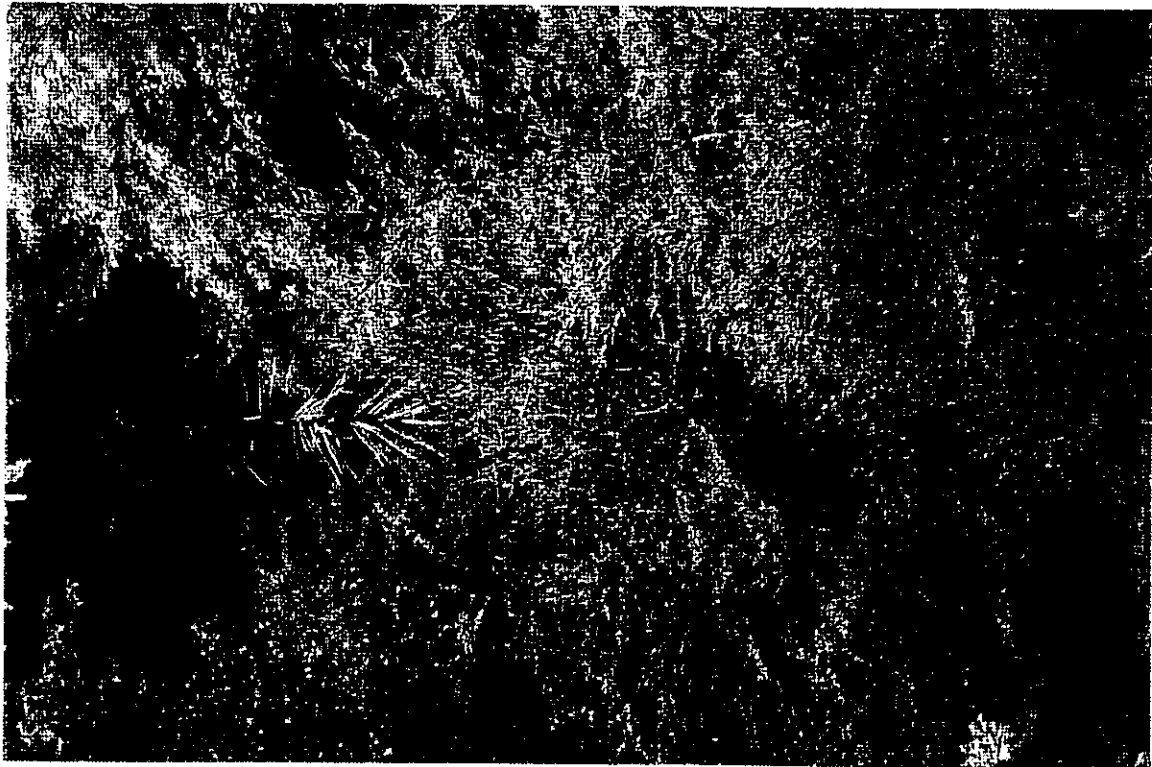


Fig. 8 GPS 49. Vigorous regeneration with matai sapling (brown in mid picture) in podocarp / beech forest.



Fig.10 Looking up Kowhai valley. Note kowhai flowering up to near ridgeline (at about 700m).

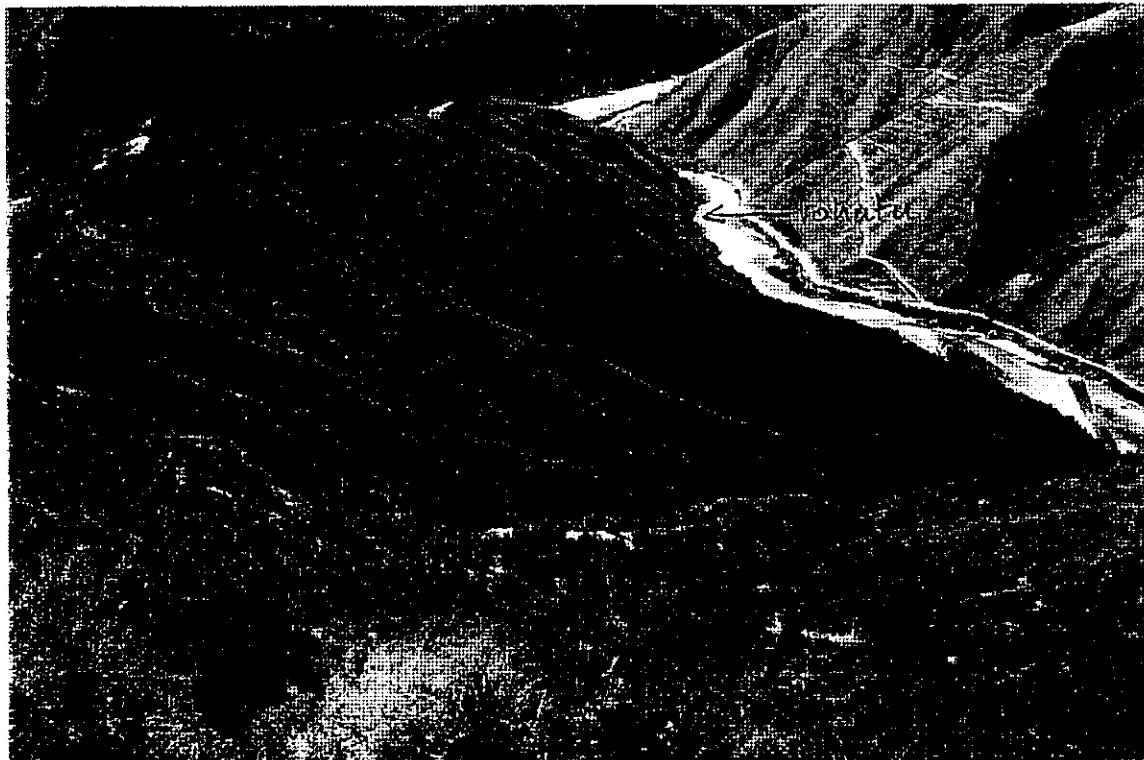


Fig.11 From GPS 44 looking down long spur to Leatham River with pine plantation on opposite bank. Rohutu forest in kanuka on river bank.

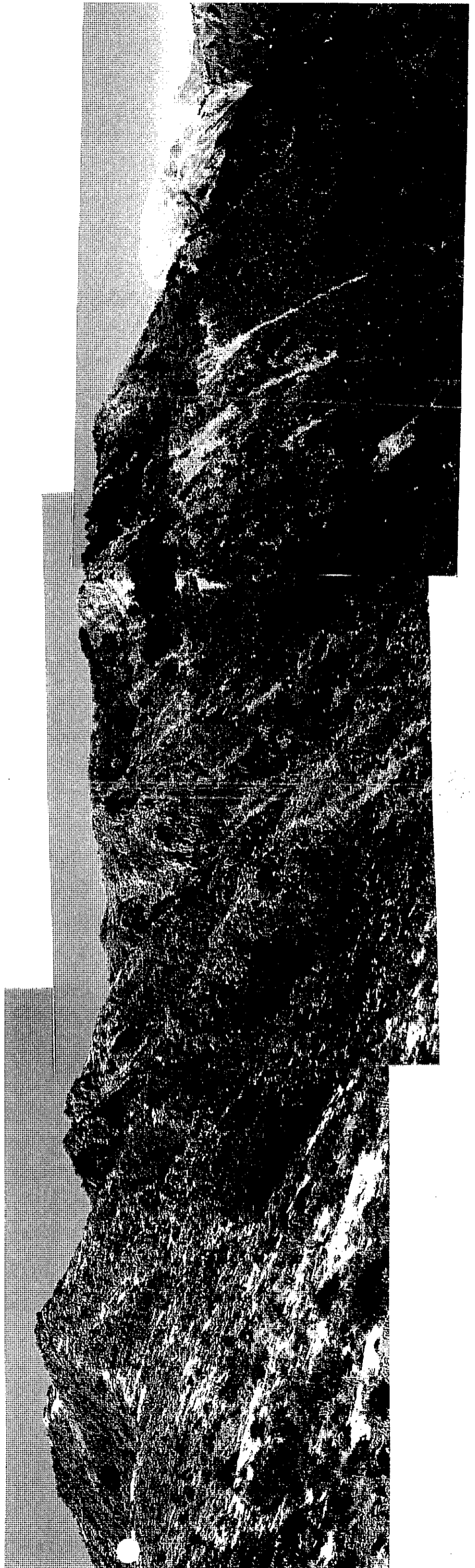


Fig.12 From GPS 42. View of upper Branch faces (looking up to GPS 43). Showing fire induced fellfield below natural treeline.



Fig.13 From GPS 99. Limestone outcrops (GPS 100 - 105) above the Leatham River



Fig.14 GPS 100. *Senecio glaucophyllus* aff. ssp. *toa*

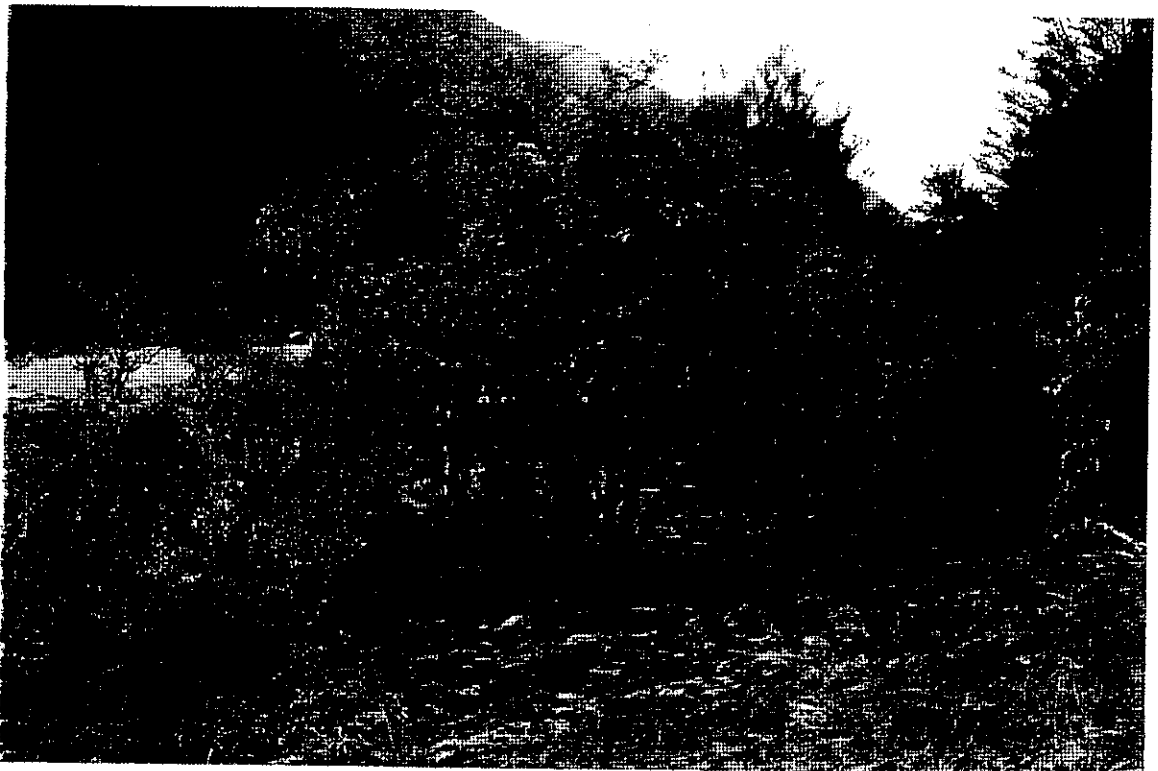


Fig.15 GPS 48. Old matagouri on Branch grass / kanuka alluvial flats. Note pig rooting under matagouri.

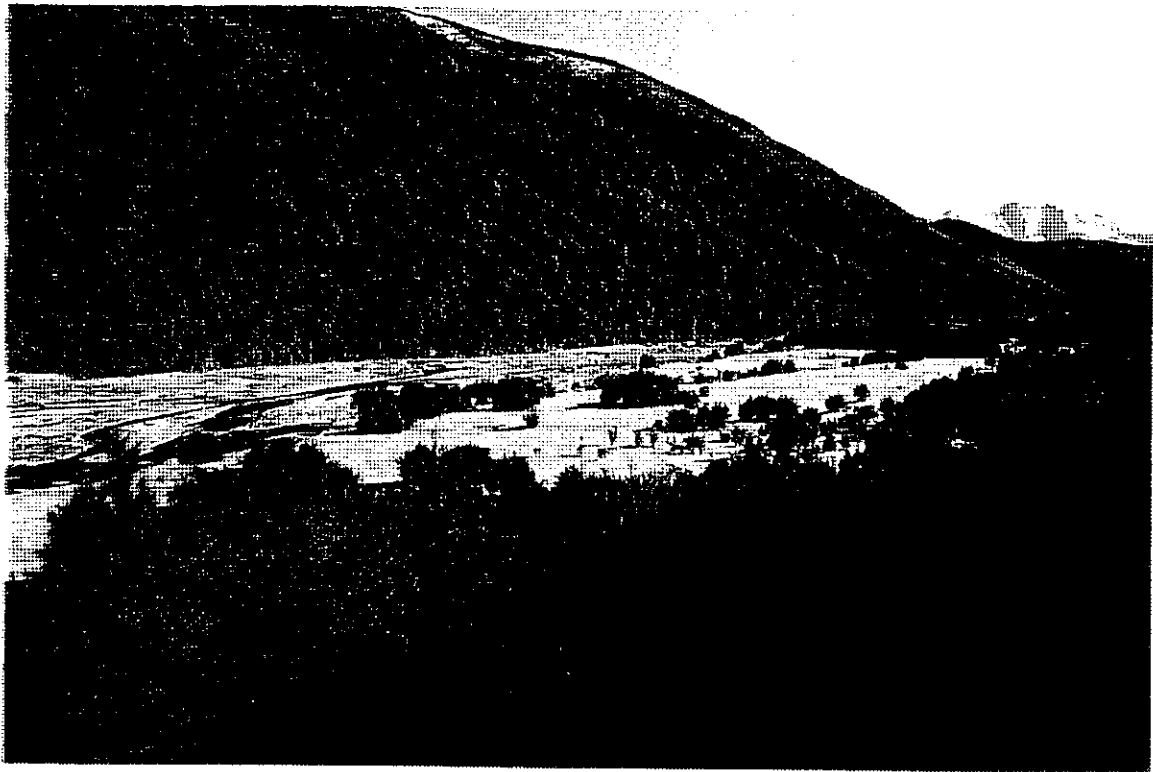


Fig.16 GPS 34. Grass / kanuka on alluvial flats in the Branch.



Fig.17 GPS 94. Small *Carex secta* wetland surrounded by kanuka.