

Crown Pastoral Land Tenure Review

Lease name : **BROOKSDALE**

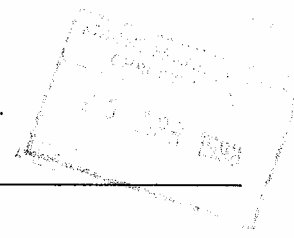
Lease number : **PC 126**

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.

April 04



Conservation resources of Brooksdale Pastoral Lease, Canterbury

Department of Conservation, Canterbury Conservancy, Pastoral Lease tenure review report to Knight Frank Limited

10 October, 1997

PART 1 - INTRODUCTION

1.1 Brooksdale

Brooksdale pastoral lease consists of 3,303 hectares of land bordering the West Coast Road (State Highway 73) mid-way between Christchurch and Arthur's Pass. The property's boundaries result from the removal of 4,900 ha of land above 3000 ft (900m) on the Torlesse Range and 3,500 ft (1000m) on the Red Hills block above Lake Lyndon, and by grid-ironing of freehold in the south-eastern corner. This leaves a narrow strip of land north of SH 73 and east and west of Porters Pass.

Land adjoining to the north and west is administered by the Department of Conservation, formerly Brooksdale POL, to the north-west is Castle Hill Pastoral lease, to the south and south-west Benmore pastoral lease and an area of freehold, formerly Benmore pastoral lease.

The property lies within the Torlesse Ecological District, which has not been surveyed by the PNA Programme, except Lake Lyndon which was surveyed and identified as an RAP in the Coleridge, Craigieburn and Cass Ecological Districts survey report (see Shanks *et al*, 1990) even though it was in an adjacent district. Although the lake is outside of the property's boundaries, Brooksdale sheep graze the lake shores and the periodically dry northern extension of the lake.

There are no other pastoral leases in the vicinity that are undergoing tenure review.

PART 2 - CONSERVATION RESOURCE DESCRIPTION

2.1 Landscape

2.1.1 Context

Brooksdale is situated in the middle of the eastern high country ranges that separate the mid-Canterbury Plains from the Castle Hill/Upper Waimakariri Basin.

The property is part of two distinct broad landscapes - the Front Range (Torlesse Range)-Canterbury Plains landscape and the Castle Hill Basin. The only comprehensive landscape study of the Canterbury region, the Canterbury Regional

Landscape Study by Boffa Miskell and Lucas Associates in 1993 (BMP and LA 1993), identifies both landscapes as being outstanding.

The Torlesse Range is one of the largest and most striking of the front ranges forming the backdrop to the Canterbury Plains. It is an icon of Canterbury. Its craggy skyline, botanical values, historical and cultural significance to both Maori and European, the exceptional views both to and from the Range, its proximity to Christchurch and easy accessibility from SH73 collectively make it an outstanding landscape (BMP and LA 1993). Brooksdale pastoral lease extends only up to 900m on this Range. The land above, including the skyline, is administered by the Department of Conservation

Castle Hill Basin is a high country limestone landscape of outstanding natural value due collectively to its scale, its geological and biological values, its significance to Maori and its accessibility from SH73 (BMP and LA 1993). Red Hill, Cloudy Hill and Mt Lyndon form the south-west wall of the basin and are large prominent skyline hills. The part of Brooksdale that lies within the Castle Hill basin landscape is principally the area west of the State Highway and north of Lake Lyndon.

Porters Pass forms the transition between these two landscapes, between the low plains/foothills country and the High Country proper.

Brooksdale is also an important part of a smaller scale landscape - the Lyndon valley. This valley links the Coleridge-Upper Rakaia landscape with the Torlesse Range and Castle Hill Basin landscapes. It is a “remote mountain type” landscape, yet is easily accessible from the Lyndon Road. The Coleridge area including the Lyndon valley is identified as a regionally significant natural landscape in the Canterbury Regional Landscape Study. DOC however has advocated this area as being an outstanding natural landscape in its submission on the proposed Selwyn District plan.

2.1.2 Landscape character

Brooksdale pastoral lease is comprised of three broad areas of landscape character (i) the front mountain ranges, (ii) an inter-montane range and basin area and (iii) a foothills landscape (after BMP and LA 1993). The first two areas can be further subdivided into two units. The accompanying map shows the location and boundaries of these units.

(i) Front mountain ranges

This landscape character area consists of the Torlesse and Rubicon Ranges. They are part of the North-Eastern Front range land type H9 described by Lynn in BMP and LA 1993. This type is characterised by high, very steep and rugged greywacke ranges with extensive scree and rock outcrop. Peri-glacial and slope processes have been dominant in shaping the landscape. The climate varies from dry on the west side to moister in the south and east - from southerly and easterly rain and fog, although overall the Torlesse Range is slightly drier than inland ranges such as Craigieburn.

The ranges are a major skyline feature from the Canterbury Plains and dominate the view travelling west along State Highway. Human modification is not obvious and the landscape is dominated by natural elements, patterns and processes.

This landscape can be further divided into two landscape units along the summit ridge of the Torlesse Range:

(a) *West Torlesse Range*

This unit covers the area west of Foggy Peak and Porters Pass, which is visually part of the Castle Hill Basin, and drains west into both the Rakaia and Waimakariri catchments. The vegetation is mainly shrubland and snow tussock, with matagouri covered fans and two small wetlands on the side of the State highway.

(b) *Kowai Valley/Rubicon Range*

This landscape unit consists of the upper Kowai River valley, the eastern slopes of the Torlesse Range and the lower Rubicon Range to the east. Both mountain ranges are characteristically steep and broken with extensive rock and scree. The vegetation is mainly scrub, tussock shrublands and beech forest remnants. The Kowai valley is the site of sediment yield and erosion studies of the 1970s. A partially washed out 4 WD track, and two former research huts near the Torlesse Stream are the only visible cultural elements.

(ii). **Inter-montane ranges and basins landscape**

This covers the part of Brooksdale west of Porters Pass and SH 73, described by Lynn as central subhumid to humid mountain range land type (BMP and LA 1993). These are high, steep, inland greywacke ranges covered in tussock and shrubland and beech forest remnants. Glaciation is more pronounced than in the front ranges landscape and rain comes mainly from the north-west. It is highly natural in appearance with very limited obvious cultural elements.

This landscape can be further divided into two landscape units:

(a) *Red Hill basin and south side of Mt Lyndon*

This unit consists of a relatively small self-contained basin made up of three smaller basins in the headwaters of the Acheron Stream and including the steep south-facing slopes of Mt Lyndon. The vegetation is mainly tussock grassland with *Dracophyllum* shrublands and several small beech forest remnants. A large old debris flow sits in the centre of the basin covered in subalpine shrubland. The area has a highly natural appearance.

(b) *Lyndon-Porter Valley*

This unit comprises the north side of Mt Lyndon, Cloudy Hill and adjacent valley floor up to SH 73 and the Porter River terraces. Short tussock grassland dominates this unit with some scattered areas of shrubland. Large conical hills and smooth fans and terraces dominate the landscape, their form accentuated by the predominant grassland cover, which also conveys a sense of great open space. Human modifications are noticeable including fences, power lines, the skifield road and its entrance and the highway as well as an active limestone quarry. Overall, however the area retains a dominance of natural elements, patterns and processes.

(iii). **Foothills and downlands landscape**

The low greywacke hills in front of the Rubicon Range are part of this land type described by Lynn as Northern hard rock hills (BMP and LA 1993). This country is less rugged than the other landscapes, although still steep, with very little scree and bare ground. Improved short tussock grassland with remnant and regenerating beech forest, mixed shrublands, matagouri and manuka are the main vegetation types. Gorse and broom are also common.

2.1.3 Visual values

Much of Brooksdale pastoral lease is highly visible from SH 73, typically at close range. It is particularly significant in views from the highway between Springfield and the Castle Hill straight, and dominates the view on one or both sides of the road between No. 1 Kowai Bridge and the Porter River, a distance of about 20 km. Other significant viewpoints are from Porters Pass, Lake Lyndon area, the Lyndon Road and tramping routes, and from near the Riddells Hotel site at the bottom of Porters Pass. In more detail these views are:

- *Views from SH 73*

Travelling west, the whole Torlesse Range is a major skyline mountain backdrop. It is visually striking due to its contrast with the flat Plains landscape. The Rubicon Range assumes a similar role once past Springfield, although not quite so dramatic.

At about No. 2 Kowai Bridge, there is a sudden and spectacular view of the full height of Foggy Peak (the lower half of which is on Brooksdale).

One of the highlights of the journey along SH 73 is crossing Porters Pass, a subalpine mountain pass surrounded by natural landforms and indigenous plants, a very definite transition into a mountain environment. Once over the Pass and at the end of Starvation Gully, there is a sudden and widening view of Lake Lyndon. Turning the corner after Lake Lyndon is the first glimpse of the distant Craigieburn Range and Castle Hill basin framed by Cloudy Hill and a large alluvial fan. It is the first real high country basin scene to greet motorists travelling west from Christchurch.

Approaching the Porter River, the expanse of smooth grassy terraces up the Porter valley convey impressions typical of the High Country - gold colour and fine texture,

clear landform and subtle shadowing, visual simplicity and uniformity, and a sense of grand scale and open space.

Travelling, in the opposite direction, back towards Christchurch, Cloudy Hill is a major skyline hill enclosing the south side of the Castle Hill Basin, and Porters Pass is a final high country experience before dropping steeply to the foothills and plains. The view from Porters Pass down into the Kowai Valley and out to the Plains as far as Banks Peninsula is exceptional.

- *Lake Lyndon and Lyndon Road*

Red Hill Basin is briefly visible from the Lyndon road, the remnant beech being a central focal point. Travelling north the road experience culminates in a strong image of Lake Lyndon set against mountains streaked with scree. The subalpine vegetation is an important visual feature of the area. This setting is important to the quality of the recreation experience at Lake Lyndon.

- *Riddells Hotel Site*

This highway pull-off is a visually unattractive area surrounded by mature trees which obscure views out. Beyond the trees however, there is an excellent view up the Kowai Valley to Mt Torlesse.

2.2 Geology and landforms

The basement rocks are sandstones, silt-stones, mud-stones and cherts - greywackes and argillites of the Torlesse Supergroup. In the far north-west of the property these basement rocks are overlain by a mantle of limestone - evident on the property by the limestone quarry on the Porter Heights ski-field road. On the lower valley floors and terraces are more recent gravel deposits.

The geomorphic features of the basin are a product of its geology, and its tectonic and glacial histories. The property is part of a major fault zone and the base rocks have been intensely faulted. Adjacent blocks of rock frequently bear no relation to each other. Despite a history of active faulting the stream channels do not appear to be closely related to fault movements. One important consequence of faulting, however, is that small fractures or jointing are common features of the bed rock. When this is exposed the surfaces disintegrate into small particles which form the scree deposits and rock debris slides which are characteristic of the Torlesse Range and Kowai Valley.

2.3 Climate

The climate on the property is strongly influenced by strong dry north-west winds on the western side and wetter south and east winds on the east side. Rainfall at Mt Torlesse, a neighbouring property, averages around 1025 mm a year, in the Kowai River catchment above the road bridge 1400-1800 mm, and annual precipitation on the Torlesse Range is between 1000 and 2500 mm, depending on aspect and altitude. The

driest part of the property is in the west around Dry and Porters Rivers which is too far east of the main divide to receive much rain from north-west winds, but is sheltered from the rain bearing winds from the south and east. Exact rainfall figures are not known, but rainfall at Castle Hill homestead is 900mm, so would be around 800-850mm on this part of Brooksdale. In winter snowfalls are frequent on Porters Pass and can remain on shady slopes for several weeks.

2.4 Vegetation

2.4.1 Vegetation types

The main vegetation types on Brooksdale are small scattered remnants of mountain beech, extensive manuka shrublands on the eastern side of Porters Pass, subalpine shrublands dominated by turpentine scrub with a component of snow tussock above about 800m, alluvial fans and streamsides of matagouri and open areas of exotic grassland or fescue tussockland. In more detail these areas are:

Forest remnants

Mountain beech is the principal forest tree on Brooksdale. Isolated patches of beech remain in several catchments. The largest are in the headwaters of the Acheron River (referred to here as Red Hills basin), the Kowai River, tributaries of the Rubicon, on the western side of Lake Lyndon and as smaller remnants on the front hills close to the homestead.

In the Red Hills basin there are two feeder catchments containing beech remnants. Both are above 900m with the canopy solely mountain beech. These forests are typical of the dry inland Canterbury beech forests with a sparse understorey, and little regeneration except on the outside margins of the forest. There are occasional other species in the understorey such as celery pine, snow totara, *Coprosma crassifolia* and *C. depressa.*, but these are scattered and tended to be towards the outside edges.

In the upper Kowai, and Rubicon River valleys and in the small forest remnants on the front of the property, mountain beech is the dominant canopy species. In the understorey, and sometimes the canopy, however, there is commonly a mix of broadleaved species such as broadleaf and marbleleaf with a shrub layer of *Hebes* and *Coprosmas*. Along streamsides there is an increase in shrub cover and diversity of species with marbleleaf and broadleaf and often also fuchsia, lancewood, mountain three-finger, shrubs of mingimingi (*Cyathodes juniperina*), yellow-wood (*Coprosma linarifolia*), *C. microcarpa*, *Hebe venustula*, occasional prickly shield fern and climbers of bush lawyer (*Rubus cissoides*). The forest patches at the front of the property amongst the grid-iron of pastoral lease and freehold are the lowest on the property. Most of the canopy is sapling growth of around 8-10m tall with occasional older trees scattered throughout. The understorey is open and accessible to stock, with broadleaved trees along streamsides, but towards the edges an exotic grass ground cover and signs of stock tracking and browsing. The remnants are surrounded by patchy manuka shrublands, gorse and areas of broom.

Shrublands

Shrublands on Brooksdale are commonly dominated by either manuka, matagouri or turpentine scrub (*Dracophyllum*) depending on altitude and substrate.

- In the Rubicon, and to a lesser extent in the Kowai there are extensive areas of manuka shrublands. In the Rubicon the shrublands are dominated by manuka but there is also a succession of other shrub species including broadleaf, mountain three-finger, lancewood and shrubs of *Coprosma parviflora*, *C. rugosa*, *Hebe venustula*, *Gaultheria antipoda* and mingimingi. Overall these shrublands are dense and continuous and have been regenerating undisturbed for some time with virtually no sign of stock entry in the denser areas. On rocky talus areas there is often bracken, mountain ribbonwood and cabbage trees.
- In the Kowai the vegetation is a mosaic of shrublands and grassland. Manuka is only on lower slopes and often mixed in with turpentine scrub (*Dracophyllum acerosum*). Being at a higher altitude (over 700m) these manuka shrublands lack the diversity of broadleaved shrubs that are present in the Rubicon. The shrublands are patchy and scattered with areas of short tussock grassland between. As altitude increases the *Dracophyllum* becomes increasingly dominant. There is often also scattered matagouri, *Gaultheria crassa*, tauhinu (*Cassinia vauvilliersi*), with a ground cover of cotton daisy, sweet vernal, tutu, mosses and lichens, *Anisotome flexuosa*, *Gaultheria depressa*, browntop and blue tussock. In hollows, fluves and stream-sides matagouri is the dominant vegetation.
- Subalpine shrublands dominated by *Dracophyllum acerosum* are extensive above about 800m, particularly on shady faces around Porters Pass, in Acheron Stream, south and west facing slopes above Lake Lyndon and Kowai Rivers. There is commonly a component of snow tussock, either broad-leaved snow tussock (*Chionochloa flavescens*) or *C. macra* and sometimes a mix of other shrubs. There is no particular pattern evident, just a variety in the dominance of shrubs over tussock, sometimes dense turpentine scrub, other areas more open - possibly as a result of time since burning or heavier grazing. Other shrubs commonly present (although sparse) include *Dracophyllum uniflorum*, *Gaultheria crassa*, tauhinu and below 900m, matagouri. Ground cover is commonly a mixture of mosses, cotton daisy (*Celmisia spectabilis*), *Leucopogon colensoi*, *Anisotome flexuosa*, *Bracyglottis bellidioides*, *Raoulia subsericea* and *Blechnum penna-marina*. In more open sunny sites there is sometimes also *Hieracium praelatum*, and *Hieracium lepidulum*. Overall, these shrubland areas are relatively intact with the shrub cover thickening and spreading into tussock areas. This area, particularly from Porters Pass and above the Lyndon Road towards Lake Coleridge is one of the most extensive and best developed areas of *Dracophyllum acerosum* in Canterbury.
- Shrublands dominated by matagouri are common on terrace faces, stable stream beds and alluvial fans throughout the property, but more obviously on the western side of Porters Pass and in the Kowai River. In most cases these shrublands have a minor component of other shrub species, usually mountain wineberry (*Aristotelia fruticosa*), *Coprosma propinqua*, *Melicytus alpina*, *Corokia cotoneaster*, *Hebe*

venustula and *tutu*. In the Kowai valley there is sometimes also *Coprosma rugosa* and mountain ribbonwood. At the edge of a matagouri shrubland and the dry stream bed to the north of Lake Lyndon there are two adult plants of the threatened plant *Hebe cupressoides*. Ground cover on the better vegetated sites is usually wall lettuce (*Mycelis muralis*), *Hieracium lepidulum*, sweet vernal and browntop. Often in open areas between patches - or where matagouri growth is sparser - there is often fescue tussock, the hawkweeds *Hieracium pilosella*, *H. praealtum*, sweet vernal, browntop and the heath *Leucopogon colensoi*.

- In the headwaters of the Acheron Stream there is a large rock debris deposit covered in a diverse shrubland extending down into the stream. The shrubland is dominated by matagouri, with snow totara, *Melicactus alpina*, *Corokia cotoneaster*, *Carmichaelia aff. robusta*, *Hebe venustula* and mountain wineberry. Where the shrubland extends into the stream there are several plants of the threatened *Hebe cupressoides*.

Tussocklands

Brooksdale has a variety of open areas dominated by short and snow tussockland, and other areas dominated by introduced grasses.

- The introduced grasslands, with scattered silver or fescue tussock, are predominantly on the front of the property between the West Coast Road and the Rubicon headwaters. Ground cover is mainly browntop, pasture grasses, clover and sweet vernal with scattered bushes or patches of matagouri and manuka.
- Fescue tussocklands are more obvious around Kowai Stream and the Lake Lyndon side of the property, particularly on the terraces and fans draining into the Porter River. Just north of Lake Lyndon is a large alluvial fan with scattered fescue tussock over a number of indigenous plants including blue tussock (*Poa colensoi*), *Leucopogon colensoi*, *Racomitrium* moss, *Gaultheria depressa*, and *Coprosma petriei*. There are some introduced plants such as *Hieracium praealtum*, sweet vernal, and browntop but there is less overall cover than the river terraces above the Porter River described below.

On the river terraces above the Porter River and adjacent mountainslopes, particularly above the Porter Heights road, exotic species are common, especially browntop, *Hieracium pilosella*, sweet vernal, and *Hieracium praealtum*. The main indigenous species are scattered fescue tussock, *Racomitrium* moss, scattered small matagouri (<1m in height), the heaths *Leucopogon fraseri*, *Leucopogon colensoi*, and *Gaultheria depressa*.

In the Kowai, where the rainfall is higher there is more diversity and a greater cover of indigenous species associated with the fescue tussock, particularly cotton daisy, *Racomitrium* moss, *Leucopogon fraseri*, *Raoulia subsericea* and scattered tauhinu, matagouri and manuka. The main exotics are sweet vernal, browntop, *Hieracium praealtum*, and *H. pilosella* but they are not significant compared with the Porter River terraces.

- The tall tussocks on Brooksdale are *Chionochloa macra* and *C. flavescens*. These do not occur as pure tussocklands, however, but are always mixed with a shrub component - mainly *Dracophyllum* species (and are described as a community under shrublands). These areas occur on the property predominantly above 800m, around and west of Porters Pass - along beside the State Highway, around and above Lake Lyndon and in the Acheron Stream headwaters.

Wetlands

There are a number of localised wetlands and flushes on Brooksdale, including two main areas right beside State Highway 73, an uncommon sight along the main highway between Christchurch and Arthurs Pass.

- On the south side of the road between Porters Pass and Lake Lyndon is a small red tussock wetland, with *Carex coriacea*, *Schoenus pauciflorus*, small amounts of *Juncus novae-zelandiae*, *J. articulatus** and *Viola cunninghamii*. Between tussocks and sedges/rushes are mosses including sphagnum, *Polytrichum commune*, and the little ground fern, *Blechnum penna-marina*. The wetland is in relatively natural condition with little recent disturbance, except the roadside edge which has a number of exotic grasses and herbs migrating out from the road batters.
- On the east of the main road between Lake Lyndon and Dry Creek is a small fenced off area of *Carex secta* wetland. Other species in the wetland include *Carex ovalis*, *C. echinta*, *Juncus articulatus**, *Ranunculus glabrifolius*, *Potamogeton suboblongus*, mosses, bamboo spike-sedge (*Eleocharis acuta*) and the moss *Polytrichum commune*. Although fenced it has been grazed in the past by neighbouring stock with most of the *Carex secta* not much more than stumps and is only slowly starting to recover.
- The edges of Lake Lyndon, although Crown land, are periodically grazed by Brooksdale stock and are therefore mentioned here. The lake bed and margins are one of the most floristically valuable wetlands in the region for its representation of turf land species. On the periodically dry margin of the main part of the lake there is a *Myriophyllum propinquum* herbfield on fine mineral soil. Other small herbaceous species, such as *Rumex flexuosus*, *Leptinella maniototo*, *Limosella lineata*, *Galium perpusillum*, *Montia australasica*, *Agrostis muscosa*, *Epilobium komarovianum*, *Pratia perpusilla* together with the two aquatic ferns *Pillularia novae-zealandiae* (of indeterminate risk status) and *Isoetes alpinus* make this a highly diverse turf community. At the northern end of the lake is a seasonally wet, highly natural turf land area dominated by *Leptinella maniototo*. This is thought to be the largest turf land area in the Cass/Coleridge area and is relatively weed-free, but is showing clear sign of trampling and hoof impact from grazing stock as well as trail-bike/vehicle damage.

2.4.2 Flora

Because of the altitudinal and climatic range, and the history of fire, the area around Porters Pass-Lake Lyndon and the Torlesse Range including Brooksdale pastoral lease has a wide diversity of flora. Brian Molloy noted in a 1982 conference article the area

contains around 300 different species of ferns and flowering plants. The Torlesse area is also the type locality for 23 species, subspecies and varieties of plants i.e. these plants were first described from this area. Some of the more familiar species and their type locality (in brackets) are - *Ranunculus haastii* (Kowai River), *Corallispartium crassicaule* (Mt Torlesse), *Dracophyllum acerosum* (Mt Torlesse), *Celmisia viscosa* (Mt Torlesse), *Raoulia mammilaris* (Mt Torlesse), *Leucogones grandiceps* (edelweiss), (Mt Torlesse Range), *Swainsona novae-zelandiae* (scree pea) (sources of Kowai River), *Parahebe canescens* (Lake Lyndon), *Chionochloa macra* (slim snow tussock) (Starvation Gully, Porters Pass), *Chionohebe pulvinaris* (Mt Torlesse), and a legume (*Carmichaelia prona*) (Lake Lyndon).

2.4.3 Weeds

Broom is extensive on the adjoining property and in the Kowai River bed - immediately next to the Brooksdale boundary - posing a considerable threat to the largely indigenous flora on Brooksdale. This requires regular spraying/ maintenance to prevent the spread onto Brooksdale and into areas of indigenous vegetation. Gorse is scattered on other areas of the property and is dominant over patches of the front foothills, particularly around the front forest remnant visible from the road. Wilding pines spreading from the Lake Lyndon plantings could remain a management issue in the future, even though most of the seed source has been removed.

2.5 Fauna

2.5.1 Birds

The forest and shrubland areas, especially the mixed shrublands on the valley floors of the upper Acheron Stream and the Kowai valley commonly support bellbird, South Island tomtit, and occasionally silvereye and fantail. In the beech forest remnants on the front of the property, bellbird and grey warbler are also common. In the open country kea, paradise shelduck, pipit and harrier were observed, and falcon were seen in the middle branch of the Acheron headwaters.

Lake Rubicon has been identified in the past as a possible site of marsh crake, but does not have any recent sightings or recordings.

Lake Lyndon, although Crown land, is bordered by Brooksdale on the east and north. The lake is used by waterfowl, black shag, little shag, paradise shelduck, grey duck, New Zealand scaup, South Island pied oyster-catcher, pied stilt, banded dotterel and the Australasian crested grebe (a threatened species).

2.5.2 Lizards

No specific survey was carried out for fauna, but common gecko and giant weta (probably the scree weta *Deinacrida connectens*) were located in rock debris in the Acheron River headwaters by Mike Harding in a separate survey.

2.5.3 Freshwater fish

Native fish were not sampled in the preparation of this report. Information has been extracted and extrapolated from the freshwater fisheries database. The larger waters i.e. the Porter and Kowai Rivers support the native fish - Canterbury galaxias (*Galaxias vulgaris*) and upland bully (*Gobiomorphus breviceps*) in addition to brown trout and rainbow trout. These are also likely to be quite widespread in the smaller tributaries of these waters - confirmed by sampling in one Kowai river tributary which detected both these species as well as brown trout. Alpine galaxias (*G. paucispondylus*) and longjawed galaxias (*G. prognathus*) are other galaxiid species which might be expected to occur in waters within this range of habitat types.

The native fauna of Lake Rubicon is unknown; upland bully and/or koaro (*G. brevipinnis*) may be present. Lake Lyndon supports upland and common bullies (*Gobiomorphus cotidianus*). Koaro may also be present but remain undetected in any sampling to date.

Although, information on native fish within the lease area is incomplete, the fauna appears typical of other habitats within this altitude range in Canterbury; and no rare or endangered species are likely to be present.

2.6 Historic values

Brooksdale, or Brookdale as it was known has its origin from the large Easdale Nook run taken up in 1851 by Jackson and Draper. By 1860 Easdale Nook comprised Grassdale, Brookdale and most of Mount Torlesse.

Brooksdale was established as a separate station in 1872 when Runs 190, 211 and 287 were taken over by R.N. Hopkins and T. Anson. Hopkins built a new house in the Kowai River catchment and Anson lived at Mount Torlesse. Hopkins sold the run a year later to D. Matherson who retained it until 1882 when the NZ Loan and Mercantile Agency Co. took it over.

The Loan Co. held the run until 1901 when John Milliken acquired it. Prior to him taking up the run he ran a cartage business and was responsible for laying out the milestones for the coach route between Springfield and Arthur's Pass. From 1908 to c1921 Milliken's also had Castle Hill, part of which is still in Brooksdale. Brooksdale has been in the Milliken family ever since.

There is one historic place of interest on the pastoral lease, The Springs Staging Post. The Springs Staging Post and the site of D'Arcy's Accommodation House are situated near the Porter Heights Skifield Road and SH 73. The Staging Post operated from the early days of coaching in the 1860's until about the time Castle Hill Hotel was completed in 1871. Topo Map 7P of Sept 1882, however, indicates that there were still stables at "The Springs" at that time.

Across the Porter Heights Skifield Road from the limestone quarry is the ruin of a stone hut. As the ruin is on freehold land (owned by Trelissick Fold Limited) it is possible that this was the original Castle Hill homestead built when the Porter Brothers

took up Castle Hill Run in 1859 and “established a homestead between the Porter River and Spring Creek near the old Coleridge Pass pack track”. This track itself was used by miners travelling from the Otago goldfields to the West Coast goldfields via Rakaia Gorge.

Between Springfield and Arthur’s Pass there were six coaching stops and staging posts. The Springs Staging Post was one, and another is immediately adjacent to the State highway and Brooksdale freehold about 1 km east of where the road starts climbing to Porters Pass (i.e. it is not on pastoral lease). Known variously as Porters Pass Hotel, Riddle’s or Riddell’s Inn, the site is now a picnic area surrounded by exotic trees and is the access point for the upper Kowai River valley.

There are no recorded Maori archaeological sites on the pastoral lease.

2.6.2 Significance of Historic Places

As little is known of The Springs Staging Post, it has escaped the destruction of the other coaching stops and is reasonably intact. It is of regional importance, and since the survey of the site has been protected under the Historic Places Act 1993 as an archaeological site.

2.7 Public Recreation

2.7.1 Physical characteristics

Brooksdale is partly a backcountry and partly a rural environment according to the NZ recreation opportunity spectrum classification. The majority of the property is readily accessible from the main highway or at the most, within 1/2 days walk, and is easy going terrain. Although accessible, once in the Kowai River valley, or in the Red Hills basin the environment seems comparatively remote and there is little, if any, signs of civilisation.

2.7.2 Public access

The West Coast Road (State Highway 73) provides legal access through the middle of the property. There is a legal road in the upper Kowai River, which is mainly in the river-bed, i.e. it does not follow the foot/4 w.d. track. The river-bed itself is Crown riverbed. There is also a legal road from the West Coast Road to Coleridge Pass along the terraces of the Porter River, but it does not follow the formed Porter Heights ski-field road. The gate to the ski-field is normally locked during the summer, although it may be open during the operation of the limestone quarry.

The Rubicon Riverbed is Crown land, although getting onto the riverbed is not straightforward (either legally or practically). The bed of Lake Lyndon is Crown land and it has legal road/ 20m wide Crown land strip around the lake shore.

2.7.3 Activities

Brooksdale is a popular property for recreationists from road-side stop-overs to tramping and ski-touring parties. There are invariably cars stopped at Porters Pass either with people admiring the view, or to park their cars to gain easy access onto the Torlesse Range for tramping and ski-ing. Many of the peaks of the range are regularly climbed during summer and winter day walks, as parties go to Foggy Peak or the Gap or sometimes traverse the entire range is traversed. After winter snowfalls the roadside slopes between Porters Pass and Lake Lyndon are very popular for snow sliding and tobogganing.

The Kowai River valley includes an easily accessible and reasonably comfortable hut (formerly a research base), and for part of its length, a rough 4 WD track which gives easy walking and mountain-biking access. The valley is very popular with both trampers or day-trippers exploring the valley or going beyond to Mt Torlesse or Castle Hill Peak, and sometimes staying overnight at the old research hut. Occasionally the

Kowai is used by trampers on a round trip from Lake Rubicon in the east. Mountain bikers and road-based campers also use the lower valley, and the area is occasionally used by hunters.

Lake Rubicon is often visited by Christchurch tramping club parties and the front country (freehold and pastoral lease) is regularly used for orienteering by the Peninsula and Plains Orienteering Club.

The section of Brooksdale in the Acheron River headwaters is sometimes used by walkers or by skiers exploring from Porter Heights. It provides opportunities for easy and interesting walking, with impressive mountain scenery. Access to the basin is possible via the low saddle from Lake Lyndon, near the Pathfinder Lodge at the southern end of the Lake. The Pathfinder Lodge itself is on conservation land.

The small hill to north-west of Porter Heights ski-field entrance (point 917m) is used as a take-off point for groups parapenting and the gravel access road into the ski-field is an appealing and easy "off road" experience for mountain bikers and motorists (the latter only when the ski-field road is open).

Lake Lyndon, although not in the lease, attracts a high level of public use, which has an affect on Brooksdale. The picnic area on the main road is a very popular stop-over for travellers, with picnic tables, open ground and toilets. In winter-time the lake is sometimes used for ice-skating - more so in the northern extension to the lake which is more readily frozen if covered in water. The Lake is a regionally important recreation fishery which attracts a high number of anglers - second only to Lake Coleridge as the region's most popular lake for angling. The lake has populations of both rainbow and brown trout. The Porter River is used for fishing but is much less popular. Nothing is known about the angling use of Lake Rubicon, but it has been stocked with rainbow trout over the years by the former North Canterbury Acclimitisation Society (now Fish and Game Council).

Information on gamebird hunting is not readily available, but suitable habitat for waterfowl exists on the property and gamebird shooting is known to occur at Lakes Lyndon and Rubicon. Habitat suited to upland gamebirds such as California quail and Chukor is also present.

PART 3 - CONSULTATION AND DISTRICT PLANS

3.1 NGO Consultation

A meeting was held on 24 September 1997 with representatives from the Canterbury Botanical Society, Four Wheel Drive Club, Trout Unlimited, North Canterbury and Aoraki Conservation Boards, Forest and Bird, FMC, Agenda 21, and the Epicentre to discuss tenure review on Brooksdale and other properties.

Issues raised in the meeting were access requirements to the Kowai River, Lake Rubicon, and in the summer, to the Porter Heights ski-field. The 4 w.d. club representative pointed out that the public have a right to use legal roads, and

recommended that where a legal road sometimes follows a formed track the public should have the use of the formed road (for motorised and non-motorised access). The FMC representative suggested swapping the areas of road (unformed for formed) at the time of tenure review - i.e. to close the legal access that was impractical to use and to survey out practical access for public use.

Points of interest on the property were the extension of the Porters Pass fault at the southern end of Lake Coleridge and the head of Acheron Stream, the presence of a number of threatened plants including *Swainsona* growing on screes in Dry Creek, fish-guts plant (*Chenopodium detestans*), at the northern end of Lake Lyndon and two populations of *Hebe cupressoides*. Lake Rubicon has some unusual biology, plus raupo, is a rainbow trout fishery and a lovely day walk for the family.

Concerns were the spread of broom, particularly below Porters Pass and in the Kowai Riverbed, gorse around the shrublands and beech forest on the front of the property.

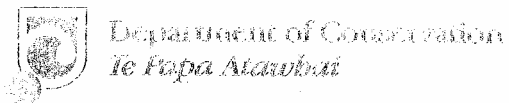
Forest and Bird tabled Mike Harding's report (appended to this report) and wanted to know DoCs views on the recommendations.

3.2 District Plans

Brooksdale is in the Selwyn District. Their proposed District Plan was notified in 1996 but is to be withdrawn on August 22 1997. Until a new plan is notified (or a specific variation to the old plan are introduced), all rules and protection provisions will instead revert to the Malvern section of the Transitional District Plan.

Under this section most of Brooksdale is zoned Rural C (High Country), with a small area of Rural B over the front hills close to the homestead. The Transitional Plan lists in the appendix four special features on the property. Three are examples of recent traces of the Porters Pass fault. The fourth is Lake Rubicon, an area of with moderate to high wildlife value and a possible location for marsh crake. There are no protection provisions for indigenous vegetation in the Plan, other than indigenous forest or shrubland greater than 2m in height which is not "regrowth or invasion on farmland". The general rules in the plan control tracking, quarrying, forestry and the erection of some buildings.

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PAS 126, PAS 122
23 July 1999.

Manager
KNIGHT FRANK Ltd
Land Resources Division
PO Box 142
CHRISTCHURCH

Attention: Roger Lough

Dear Roger

**BAROSSA AND BROOKSDALE -TENURE REVIEW - REVISED
CONSERVATION RESOURCE REPORT RECOMMENDATIONS.**

Please find attached the revised Conservation Department recommendations for the above properties. These recommendations replace the earlier recommendations made under the 1948 Land act process. These revised recommendations are made in accordance with the Departments standard procedures and reflect the department's view as per the 1998 CPLA.

At this point full documentation for easements is not available, but is being actioned. These will be finalised as soon as the consultation phase is under way. Also the status check may reveal new information that will further consultation and recommendations. *require*

The revised recommendations are in accordance with 3.2 of your approved project plan. Once the consultation phase is under way the marginal strip and consent process will be initiated.

Your contact for these properties is still Joy Comrie, so please fell free to contact her to initiate the next step. The Department has made tenure review a priority and we are anxious that we can make some progress over the next few months. Please note that in some instances the Department's recommendations may have changed as the objectives and definitions are now different under the CPLA. This point should be clearly made to the lessee's.

Please if you have any concerns please feel free to contact me.

Yours faithfully

Handwritten signature of Mike Clare

Mike Clare
Manager High Country Tenure Review
For CONSERVATOR

PART 4 (FOR OFFICIAL USE ONLY)
RECOMMENDATIONS AND JUSTIFICATION (Brooksdale)

4.1 RECOMMENDATIONS

4.1.1 That the proposals described below be submitted to the CCL’s Agent, during the consultation process on the preliminary proposal for this tenure review, as representing the views developed under delegated authority from the Director-General of Conservation.

[Note that additional proposals, developed after the initial report is written, may also be put forward at the consultation stage.]

4.1.2 Note that statutory consents will be required before the CCL can include (in the preliminary proposal for this tenure review) the designations set out in paragraphs: 4.2.2.1, 4.2.2.2, 4.2.2.3, 4.2.2.4, 4.2.5.1, and 4.2.6.1 below.

4.1.3 Note that any disposition of land by the Crown will be subject to the relevant provisions of Part IVA Conservation Act.

4.2 PROPOSALS AND JUSTIFICATION

4.2.1 Land to be Restored to or Retained in Full Crown Ownership and Control

4.2.1.1 Porters Pass, Lyndon hillslopes and Acheron headwaters

Existing status: Pastoral lease

Authority: s. 35 (2)(a)(i) CPLA

Proposal: That an area of approximately 1444 ha be designated as a Conservation Area to be managed by the Department of Conservation.

Description: This area comprises all of the area of Brooksdale Pastoral lease west of Porters Pass including a small basin and tributary streams in the upper Acheron River catchment, the lower hillslopes of Mt Lyndon, Cloudy Hill and the Torlesse Range west of Porters Pass.

Justification: The land is characterised by the following significant inherent values:

1. Areas which meet PNAP criteria (naturalness, representativeness, diversity)
 - It encompasses a diversity of vegetation types and plant species including tussockland, forest remnants and a range of shrublands.
 - Except for the Porter River terraces and hillslopes above the Porter Heights ski-field road, the vegetation cover is largely intact, with healthy regeneration and a limited number of introduced species.
 - This area of Brooksdale represents one of the most extensive and best-developed areas of *Dracophyllum acerosum* in Canterbury; (Mount Torlesse is the type locality for this plant).
 - The area includes two small wetlands, uncommon along roadsides and in the Waimakariri Basin. Both are in relatively good condition with a variety of wetland sedges, rushes and tussocks.
2. Breeding and feeding sites of fully protected wildlife including forest and shrubland birds, lizards and weta.
3. Habitat of the threatened plants *Hebe cupressoides*, and *Swainsona* (now *Montigenia novae-zelandia*).

4. Areas which collectively sustain the special natural quality and integrity of the High Country landscape, especially the indigenous component:
 - This recommended area consists of regionally significant and outstanding natural landscapes.
 - The Red Hills basin (Acheron headwaters) is a relatively small self-contained and visually very attractive basin with a high natural landscape character. It is visually, physically and botanically continuous with DOC land above.
 - Land north of Lake Lyndon and the Porters Valley is dominated by natural elements, patterns and processes with an open grassland character, variety of landform, lake setting, subtle colours and textures and a high public profile from the State Highway.
5. An area which makes a special contribution to the overall quality, natural functioning and ecological integrity of significant values through linkages between the two parts of Torlesse Conservation Area (formerly Brooksdale POL).
6. Settings of high natural value for outdoor recreational opportunities in the high country. This is a popular and easily accessible recreation area providing access to Foggy Peak and the Torlesse Range and for snow sliding/tobogganing in winter, paragliding around Cloudy Hill, and access to Porter Heights ski-field. There is also opportunities for short day walks into the Acheron Stream headwaters from Lake Lyndon and from Coleridge-Lyndon Road.
7. This proposal also contains an important aspect of human activity in the High Country - the Springs Staging post. The site near the Porter Heights ski-field road contains the Staging post, one of six coaching stops and staging posts between Springfield and Arthurs Pass, and the site of D'Arcy's Accommodation House.

Management and boundary issues: If all of this area is protected, as a Conservation Area there is no requirement for fencing. Control of broom is required on plants spreading out of the Kowai Riverbed and over Porters Pass. These are still scattered, and are controllable, but need to be dealt with as soon as possible before they start seeding and spreading up into the tussocklands of the Torlesse Range and Porters Pass area.

4.2.1.2 Kowai River

Existing status: Pastoral lease

Authority: s. 35 (2)(a) (i) CPLA

Proposal: That an area of approximately 593 ha be designated as a Conservation Area and managed by the Department of Conservation.

Description: This area consists of all of the upper catchment of the Kowai River above the confluence of the stream that flows east from Porters Pass as well as a section of pastoral lease just east of Porters Pass.

Justification: The land is characterised by the following significant inherent values:

1. Areas which collectively sustain the special natural quality and integrity of the High Country landscape, especially the indigenous component:
 - This is a regionally outstanding landscape on the basis of its natural values, particularly the strongly regenerating native shrubland and beech forest with



a diversity of plant communities forming rich visual textures and patterns. It is also visually continuous with and integral to the rest of the Torlesse Range above.

2. Areas that meet PNA criteria of naturalness, diversity, representativeness, and viability -
 - Diverse range of plant habitats, and vegetation communities representative of the Ecological District.
 - Relatively few exotic species, and healthy regeneration of shrubland and forest communities,
3. Sites, which are important for birds providing a variety of habitats and food, sources.
4. An important linkage across the Kowai Stream which will provide protection of the whole upper catchment and of vegetation communities which are continuous with those on DOC land.
5. Settings of high natural value for outdoor recreation opportunities in the high country. This is an important and accessible valley for recreation – providing access to climbing, tramping and day-walking areas, already popular with Christchurch public. A walking track (an old 4 w.d. track) provides access to the upper valley, Mt Torlesse, public conservation land and the old Mountainlands Institute research hut.

Boundary and management issues:

- This area of pastoral lease is contiguous with land already surrendered from Brooksdale and now managed by DOC. It is also fenced off from other parts of the property, so no new fencing seems to be required (although the condition of the fenceline has not been checked).
- Broom in the Porters Pass branch of the Kowai Riverbed requires control as soon as possible to stop it spreading onto the Torlesse Range and providing a seed source for further spread over Porters Pass.
- Some investigation needs to be made of the maintenance responsibilities and costs of taking on management of the Tussock-Grasslands Institute Research Hut, as recreationists now use this almost exclusively.
- This proposal covers two disjoint pieces of pastoral lease separated by a square piece of freehold owned by Brooksdale. The possibility of including a part of this freehold block into the tenure review needs to be discussed with the owner, as it will provide added protection to the lower mountain slopes of the Torlesse Range and simplify the management responsibilities for this area.

4.2.1.3 Rubicon Valley and hillslopes

Existing status: Pastoral lease

Authority: s. 35 (2)(a) (i) CPLA

Proposal: That an area of approximately 280 ha be designated as a Conservation Area and managed by the Department of Conservation.

Description: The steep headwater tributaries of the Rubicon River, covered in extensive shrublands, mainly manuka with beech-hardwood forest remnants and some small areas of fescue tussock grasslands.

Justification: The land is characterised by the following significant inherent values:

1. Areas which sustain the special natural quality and integrity of the High Country landscape, especially the indigenous component, and
2. Areas which make a special contribution to the overall quality, natural

functioning and ecological integrity of significant values especially linkages and buffering:

- Indigenous plant cover dominates this area. It includes extensive manuka shrublands, with very healthy regeneration and abundant forest trees species, and remnants of the former forest cover of mixed forest of beech and hardwoods in sheltered gullies. It is visually continuous with and provides a buffer to public conservation land above.

Management and boundary issues: Some of the boundary of this proposal is fenced. Approximately 1.5 km of fencing will, however, be required around the base of the hillslopes behind Lake Rubicon and the area of former State Forest which was incorporated into pastoral lease.

4.2.2 Land to be restored to or retained in Crown Control (Qualified Designation)

4.2.2.1 Lake Rubicon public access easement

Existing status: Freehold

Authority: s. 35 (4) and s. 36 (3) (b) CPLA

Proposal: That the designation of land under s.35 (4) CPLA, held in fee simple title, be subject to the creation of an easement for the purposes of providing public access to Lake Rubicon. The total area of land is approximately 4 ha (4 km x 10m) and it will be managed by the Department of Conservation.

Description: From the first big bend on State Highway 73 after the first road crossing of the Kowhai River, north across the paddocks then onto a 4 w.d. track to Lake Rubicon. Note: This easement links up with proposals for public access across pastoral lease under 4.2.5.1.

Justification: To provide as of right all year round public access for foot, horses and non-motorised bikes to Lake Rubicon and the proposed Conservation Area.

Management and boundary issues: The easement may require sign posting, and marking. Any maintenance will be the responsibility of the owner of the land who will be using the track for 4 w.d. vehicles. As both the underlying owner of the land and the public will be using the track, the level and costs of future track maintenance may need to be agreed on.

Type of qualification: Public access easement in favour of adjacent land (Conservation Area).

Attachment: Terms and conditions.

4.2.2.2 Lake Rubicon management access easement

Existing status: Freehold

Authority: s.36 (3)(b) CPLA

Proposal: That the designation of land under s.35 (4) CPLA, held in fee simple title be subject to the creation of an easement to provide the Department of Conservation with access for management purposes.

Description: From State Highway 73 along the main driveway and past the house on to a 4 w.d. track which leads to Lake Rubicon.

Justification: To provide DOC with vehicle access for future maintenance of fences, tracks and signs.

Management and Boundary issues: As two main parties will be using the track – the underlying owner of the land and DOC, the level, and costs of track maintenance will need to be agreed on and managed.

Type of Qualification: The creation of an easement in favour of adjacent land (Department of Conservation).

4.2.2.3 Kowai River public access easement

Existing status: Freehold

Authority: s. 35 (4) and s.36 (3) (b) CPLA

Proposal: That the designation of land under s.35 (4) CPLA, held in fee simple title, be subject to the creation of an easement for the purposes of providing public access up the Kowai. The total area of land is approximately 1 ha (1 km x 10m) and the easement will be managed by the Department of Conservation

Description: This access follows the 4 w.d. track from State Highway 73 at the old Riddells Hotel site to the proposed Conservation Area in the Kowai River.

Justification: To provide for public access to the proposed Conservation Area for foot, bike and horses as of right all year round.

Management and boundary issues: As two main parties will be using the track – the underlying owner of the land and the public, the level and costs of ongoing maintenance of the track will need to be discussed and agreed on.

Type of qualification: Creation of an easement in favour of adjacent land (DOC).

Attachment: Terms and conditions

4.2.2.4 Kowai River management access easement

Existing status: Freehold

Authority: s.36 (3) (b) CPLA

Proposal: That the designation of land under s.35 (4) CPLA, held in fee simple title, be subject to the creation of an easement to provide the Department of Conservation with access for management purposes. The total area is approximately 1 ha (1km x 10m).

Description: An access easement over the 4 w.d. track from State Highway 73 at the old Riddells Hotel site to the proposed Conservation Area in the Kowai River.

Justification: To provide the Department of Conservation with vehicle access to for the future maintenance of signs, tracks and fencing as well as pest control work.

Management and boundary issues: As the underlying owner of the land and DOC will be using the track – the level, and costs of track maintenance will need to be agreed on between the parties and managed.

Type of qualification: The creation of an easement in favour of the adjacent land (DOC).

Attachment: Terms and conditions

4.2.3 Existing Reserve

Not applicable

4.2.4 Existing Conservation Area

Not applicable

4.2.5 Land Being Disposed of Subject to a Protective Mechanism

4.2.5.1 Lake Rubicon public access easement

Existing status: Pastoral lease

Authority: s.40 (1) (c) CPLA

Proposal: That an area of approximately 2 ha (2 km x 10m) be designated as land that may be disposed of subject to the creation of an easement for the purpose of providing public access.

Description: From the first big bend on State Highway 73 after the first road crossing of the Kowhai River, across the paddocks, then onto a 4 w.d. track to Lake Rubicon. This links in with an easement across freehold described in 4.2.2.1.

Justification: To provide public access for foot, horses and non-motorised bikes to Lake Rubicon and the proposed Conservation Area as of right all year round.

Management and boundary issues: The easement may require sign posting, and marking. As both the underlying owner of the land and the public will be using the track, the level and costs of future track maintenance will need to be agreed on.

Type of protective mechanism: An easement under s. 7 (2) Conservation Act for public access.

Attachment: Terms and conditions

4.2.6 Other qualified designations

4.2.6.1 Lake Rubicon management access easement

Existing status: Pastoral lease

Authority: s.36 (3)(b) CPLA

Proposal: That the designation of land under s.35 (4) CPLA, held in fee simple title be subject to the creation of an easement to provide the Department of Conservation with access for management purposes.

Description: From State Highway 73 along the main driveway and past the house on to a 4 w.d. track which leads to Lake Rubicon. This is part of the easement described under 4.2.6.1 above.

Justification: To provide DOC with vehicle access for future maintenance of fences, tracks and signs.

Management and Boundary issues: As two main parties will be using the track – the underlying owner of the land and DOC, the level, and costs of track maintenance will need to be agreed on and managed.

Type of Qualification: The creation of an easement in favour of the DOC.

Attachment: Terms and conditions

4.2.7 Exemption or variation of a marginal strip.

Not applicable

4.2.8 Other matters.

PART 5

ATTACHMENTS

5.1. Additional Information

- (i) Terms and conditions of qualified designations
- (ii) Terms and conditions of protective mechanism

5.2. Illustrative Maps

- 5.2.1 Topo/Cadastral
- 5.2.2 Values
- 5.2.3 Boundaries