

KAKANUI MOUNTAINS

1. Landforms

The Kakanui Mountains form the north-eastern boundary of Otago's block mountains. They are somewhat unusual, in that they are part of a major South Island divide stretching from the east coast to the main divide.

The range is a moderately dissected peneplain dipping into the Waitaki, Kakanui, and Waianakarua catchments to the north, with a relatively steep escarpment rising 600-900 m from the Shag Valley and Maniototo Plain to the south. Elevation increases steadily inland from 600-800 m on the outlying Horse Range, to the main Kakanui crest at over 1600 m. Danseys Pass (900 m), lies at the north-western end of the range.

The geology of the greater area consists of faulted greywackes, argillites and semi schists. At Mt. Dasher and Siberia Hill isolated caps of basaltic lava protrude above the 'Hectors plateau'. These are steep, columnar formations which cut through semi-schist by as much as 60 m on Kattothyrst. There are also great tongues of black volcanic rock, in marked contrast to the prevailing landforms of the region.⁽¹⁾

Many upper back-slopes are razor-edged, with deeply incised stream patterns and rugged gullies. As altitude decreases the ridge tops broaden and the land becomes rolling before blending into the North Otago downlands. The latter topography is very distinctive and is associated with mudstone-sandstone-breccia deposits. Spectacular sandstone canyons and weathered outcrops at Trotters Gorge are the best known local features.

2. Vegetation and Wildlife

The range experiences a transition between inland and coastal climatic influences. The downlands are well known for their low rainfall and high sunshine hours, yet the tops are often enveloped with damp north-east fogs. Winter snowfall is highly variable from year to year, but cover can persist for 3-4 months on the high crests and plateaus despite their northerly aspect.

Climatic variation is directly reflected by the vegetation.

Extensive areas of broadleaf-podocarp and kanuka forest occupy the Waianakarua catchment at the inland moisture limit for woody vegetation, with only riparian cover in the upper Kakanui Valley and at Trotters Gorge. The extent and composition of this forest has been greatly altered by burning and grazing; totara logs in grassland areas indicate more extensive forest in historical times.

Botanical oddities exist, particularly the large mountain daisy, *Celmisia hookerii*, which is restricted to the Horse Range-Trotters Gorge area. It is now confined to rocky faces inaccessible to stock. Isolated stands of narrow-leaved snow tussock are still to be found almost at sea level near Shag Point.

Tussock grassland is widespread on the range, although it is now greatly modified by pastoralism. Tall tussock has largely been succeeded by 'hard' tussock (fescue and silver), and pasture grasses on sunny aspects below 850 m. Considerable aerial oversowing and topdressing is occurring on these lands. Only on shady faces and upper headwaters does snow tussock persist. This is generally very depleted in both density and vigour. On basaltic areas there are *Sphagnum* moss bogs in association with short tussock.

Shrub associations of *Coprosma*, *Olearias*, manuka, matagouri, and native broom occur in gully floors.

A range of common bush birds is generally distributed throughout the native forest areas.⁽²⁾ The small bush remnants are important fauna habitats, but most are depleted by domestic stock or by large numbers of wild sheep. These pressures, as well as fire, have no doubt been the major factor in habitat and bird species decline. The New Zealand falcon is distributed throughout the eastern Kakanuis. There have been reports of long tailed and shining cuckoo, and morepork in some bush areas.⁽²⁾

Red deer and pig are present throughout the eastern Kakanuis.

3. History and Land Use

3.1 Maori Occupation:

Maoris were living in the area from as early as 1200 A.D., when moa hunters regularly occupied camp sites along the east coast. With the decline and eventual extinction of moas about 200 years ago, fishing became the mainstay of the local economy, with settlements at the mouth of the Shag River and at Katiki.⁽³⁾

At the time of the first European exploration, no Maoris were found residing on this coast, but they re-established themselves after a whaling station started at Moeraki in 1836.

3.2 Pastoral Tenure

Pastoral occupation began in 1852, with the issue of the first depasturing licences covering the Horse Range and Waianakarua catchment. These were followed in 1853-54 with licences over the eastern Kakanuis. The inland Kakanuis were occupied by several runs in 1858.⁽⁴⁾

Pastoralism continues today, with many run subdivisions and amalgamations during the intervening 130 years.

Most of the lower country is now freehold or Crown land under



Kattoihyrst (centre) and Mt. Dasher (right) from basaltic boulder field on Siberia Hill, the Hectors plateau'. Photo: Ken Mason

freeholding action. Pastoral leases cover all the higher Kakanuis, with the exception of a pastoral occupation licence in the area of Kakanui Peak. Pastoral leases in the south branch of the Waianakarua (with extensive forest cover), at the Pigroot, and in the upper Kauru River have been reclassified as Farm Land in recent years, with most lessees opting to freehold. In the Waianakarua case two thirds of one reclassified pastoral lease was repurchased by the former Lands and Survey Department for reserve purposes.

3.3 Industry

A lengthy history of mining commenced in 1863 with the discovery of coal at Shag Point. The river mouth provided a conveniently placed but hazardous port. The underground workings were extended below the sea bed and so provided continual problems of flooding and ventilation. The intermittent operations ceased in the 1950's.

Beach sands along the coast were worked for gold in a small scale during the mid 1860's. Quartz mining in the Shag Valley near Dunback during the 1870's was short lived and small scale. Four small gold dredges worked in this area between 1898 and 1904 with minimal success. This location proved to be one of Otago's lesser gold mining areas although goldfields at the adjacent Maerewhenua and Mt. Ida workings had regional significance.

The Government opened lime kilns at Makaraeo near Dunback in 1899 to satisfy a major need both for building and agricultural lime. In 1909 the works were leased out and have been operated privately to the present day. A hill-top-quarry

was opened in 1950, utilising a kilometre-long aerial cableway to a railhead where limestone is transported to Dunedin for cement manufacture.

3.4 Communications

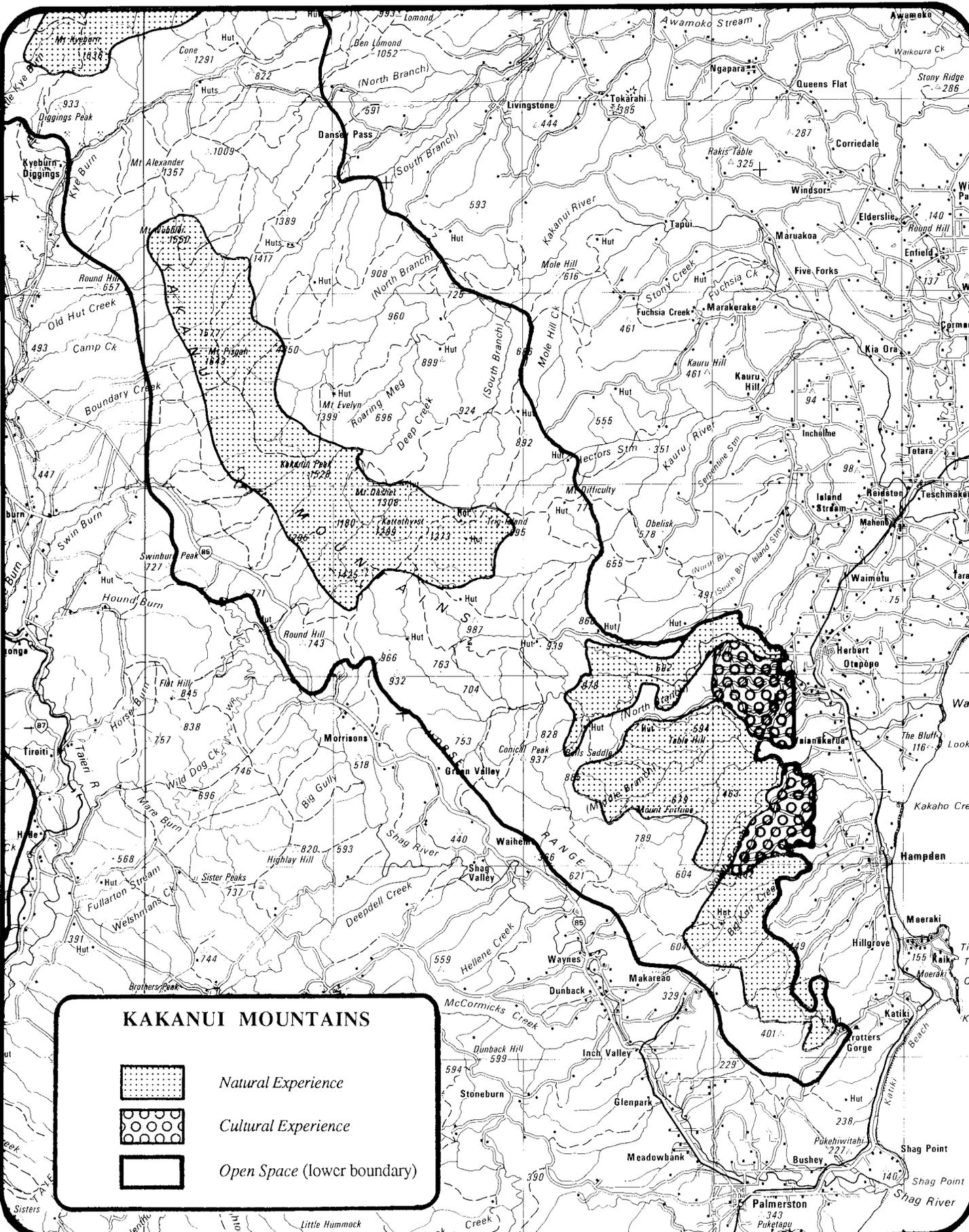
The Kakanuis and Horse Range have always been something of an impediment to communications. In the early 1860's a coach road was formed over the Horse Range, and remained the major east coast link until the main truck rail connection was completed in 1878. This was followed by the main north highway being constructed in the vicinity of the rail route. Telecommunication and radio installations are modern uses.

The Pigroot (State Highway 85) became one of Otago's major routes to the interior with the discovery of gold at 'The Dunstan' (Clyde) in 1862. Its horrific bogs continued to be traversed by wagons and coaches until 1892 when the Central Otago railhead reached Middlemarch. The Pigroot is now a high standard sealed highway.

The tortuous Danseys Pass road dates from goldmining days, and is today a lightly used local road link.

3.5 Land Use Capability

The majority of the high country is Class 7, with severe limitations for pastoral use. This roughly coincides with the remaining tall tussock zone which has moderate to very severe wind and sheet erosion, and high potential for erosion under pasture grass cover.⁽⁵⁾ There is also an area of Class 8 land on Mt. Pisgah.



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-  *Natural Experience*
-  *Cultural Experience*
-  *Open Space (lower boundary)*

Land use capability within the hill country can be roughly divided in half between Classes 7 and 6, with moderate limitations for pastoral use on the latter. There has been extensive oversowing and topdressing on the Class 6 country. As can be expected, capability generally improves with decreasing altitude. Much of the Horse Range is zoned Classes 6 and 4.

3.6 District Scheme Zoning

The Kakanui is divided between three territorial local authorities: Waitaki, Maniototo, and Waihemo County Councils.

Within the **Waitaki County**⁽⁶⁾, most of the Kakanui high country, mainly in the North Branch Waianakarua and Kurinui catchments, is zoned Rural E (water supply), which permits extensive farming to continue as a predominant use, but makes commercial forestry a conditional use. These provisions are carried over into Rural C (extensive farming and scenic) zones which are devised to protect scenic values. There are Rural C zones in the Livingstone-North Branch Kakanui, the Middle and South Branches of the Waianakarua, and in the Trotters-Pigeon creek catchments. Unfortunately the County Council's intention of permitting only those uses which are compatible with scenic quality within Rural C zones, was thwarted at Trotters Gorge by the former Forest Service exercising Crown exemption from the provisions of the Town and Country Planning Act. Most of a recent land acquisition for forestry is Rural C. Effective public input into the whole question of production forestry in this sensitive area was further subverted by road construction and bush clearance several weeks prior to the closing date for public submissions on an environmental impact assessment. The Horse Range to the coast is Rural B (Mixed Farming), the only zone within this county which allows commercial forestry as a predominant use.

The highest crests of the Kakanui Range within Maniototo **County**⁽⁷⁾ are zoned Rural B (High Country Protection), which provides for retirement from grazing, revegetation, soil and water conservation works, periodic grazing, and huts as predominant uses. Vehicle tracking is a discretionary use. All lower slopes are within a general Rural A zone.

The Waihemo **County**⁽⁸⁾ side of the Horse Range is all within the County's one rural zone, with 100 ha of bush remnants in Kurinui Creek protected as Designated Places.

3.7 Reserves and State Forests

Historically, only very limited areas have been reserved for public use and appreciation.

The 150 ha Trotters Gorge Scenic Reserve dates from 1864 and provides a popular regional amenity. It has recently been enlarged to provide better protection for its regenerating forest. Further enlargements are planned to the north, to incorporate unplanted state forest land. A corridor along part of the Horse Range Road approach to the reserve is also to be transferred to the Department of Conservation (DOC).

The original 128 ha Waianakarua Scenic Reserve, within the Kurinui Creek catchment, dates from 1905. This was due to be transferred to the Forest Service as part of a former land rationalisation exercise, however reserve status and DOC administration is now to be retained.

The 150 ha forested Glencoe Recreation Reserve, in the lower

north branch of the Waianakarua, was revoked in 1982 and incorporated into the Herbert State Forest on the understanding that it become 'protection forest'. The area has now been allocated to DOC.

The 3500 ha Herbert State Forest consists of two main blocks inland from the townships of Hampden and Herbert. It is predominantly exotic plantation but with significant areas of broadleaf-podocarp forest within. These enclaves are to be transferred to DOC. There have been substantial additional acquisitions in the Trotters Gorge-Horse Range area for expanded plantations.

Two recreation reserves and their environs, centred on Shag Point and the Shag River estuary, are subject to scenic reserve and protected private land proposals. A 5 ha area of snow tussock in the vicinity has been gazetted scientific reserve.

Scientific investigation of remaining indigenous forest remnants in coastal Otago has resulted in substantial recent increases in protected lands. In 1985 negotiations were completed on 3800 ha of pastoral lease for a new Waianakarua Scenic Reserve in the middle and south branches of the Waianakarua. A further 1200 ha in the north branch has a protected private land agreement over it.

Approximately half of a proposed reserve in the headwaters of Pigeon Creek, upstream from the Trotters Gorge Scenic Reserve, has been purchased recently for reserve purposes. Land rationalisations between Forestrycorp and DOC in this locality are resulting in 'no planting areas' in mid Pigeon Creek going to DOC. This provides an opportunity for a connecting corridor of public use between the Trotters Gorge and Pigeon Bush reserves.

A reserve proposal on the distinctive 'Hector plateau' is under investigation.

The small roadside Dead Horse Pinch Historic Reserve has been established at The Brothers hills on the Pigroot as an interpretive site of the Otago Goldfields Park.

4. Recreational Opportunities

4.1 Tramping

Activity tends to be centred on the forested Waianakarua catchment, with its deeply dissected ridge and valley system.



Trotters Gorge.

As the only extensive tract of native forest in coastal North Otago it is invaluable for Oamaru and Palmerston trampers and as such, receives regular use by clubs and for bushcraft training.

The Kurinui Creek catchment abuts the South Waianakarua; in conjunction with the Horse and Razorback ranges, and Trotters Gorge further east, the greater area provides extensive opportunities for bush and tussock ridge travel of up to two days duration. In many respects the area is very similar to the Silver Peaks yet it remains unknown to most of Dunedin's trampers. It has potential for considerably greater use.

Over the greater area of tussock grasslands of the Kakanui Mountains there is less frequent tramping activity. Features such as the volcanic caps of Siberia Hill and Kattothyrst, and the high points of Kakanui Peak and Mt. Pisgah are the more usual attractions. Winter snow cover provides another dimension, particularly for ridge climbs from the Pigroot.

The partly tussock covered Razorback Range is used for day trips. Despite its low elevation (580 m) it provides energetic walking along a craggy, undulating ridge in steep hill country. It provides a good vantage point of the settled Shag Valley to the south. The Makareao lime works and a nearby cave provide points of interest on route. There is considerable potential for Walkway routes along the spine of the Razorback Range, with connections through the Pigeon and Trotters creek catchments to Trotters Gorge. This would utilise a mix of farm tracks and untracked terrain.

4.2 Hunting

Forested areas and their margins have a history of red deer and pig hunting. Local deerstalkers have access arrangements with private land occupiers and there are several private huts used by hunting parties.

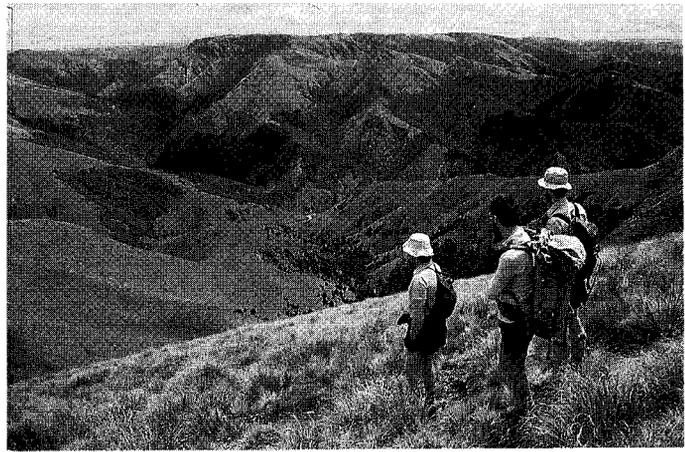
Wild sheep are present in large numbers throughout the Waianakarua catchment, however until very recently these have not generally been regarded as *sport*. North Otago deerstalkers are now assisting DOC with organised culls of feral sheep within the new scenic reserve. Opossum numbers appear to be moderate to high. Hunting within the Herbert State Forest was controlled by a block system under the former Forest Service, with preference to opossum hunters during winter.

4.3 Walking

There are several popular short bush walks in the Trotters Gorge Scenic Reserve. A combination of spectacular sandstone outcrops, and stream and bush settings provide one of the more significant scenic areas in North Otago. There is potential for further easy walking opportunities in the recent reserve extension.

In the northern block of the Herbert State Forest, an expanding network of tracks through remnant native forest and exotic plantations provide walks of up to several hours duration. These are very popular, particularly during holiday periods. There is scope for further tracking within natural forest settings, including up the lower North Waianakarua from Glencoe. Suitable arrangements need to be made between Forestrycorp and DOC for continuing public access to these attractions and for their on-going maintenance.

Existing 'walks' and 'tracks' in the district provide important recreational opportunities for both locals and visitors, in a



Headwaters of Middle Branch Waianakarua from Mt. Fortune.

region that is generally lacking in native forest settings. Most of the higher and inland areas are subject to climatic hazards and are relatively lacking in topographic appeal for general public use.

Coastal walks are locally important, particularly for youth hostellers at Shag Point.

4.4 Skiing

It appears that the range is in a snow shadow relative to most other Otago ranges, and therefore cannot be relied on to provide skiable conditions. When snow cover is sufficient however, extended tours on variable terrain are possible from Obi in the south, along the main crest to Danseys Pass. This is a distance of over 35 km. The crest is relatively narrow with greater variations in gradient than found on most Central Otago ranges. The crest is suitable for both cross country and alpine ski touring in the right conditions.

The 'Hectors plateau' is particularly suitable for cross country skiing. This area's potential was recognised as early as 1947 when an Otago Tramping Club party twice visited the area on ski.⁽⁹⁾

During the last few years a rope tow has been occasionally operated above the Pigroot by a local club. Infrequent snow cover is causing declining interest and probable abandonment. This is the likely result of any attempt at skifield development on the Kakanuis.

4.5 Outdoor Education

Opportunities for outdoor education in the eastern Kakanuis have long been recognised by university, school and youth groups. Camp facilities are established at Shag Valley, Trotters Gorge, and Waianakarua which seasonally receive regular use. Walking tracks, coastal and hill country features are used as part of outdoor living programmes.

4.6 Picnicking, Camping, Water Recreation

Open glades in the Trotters Gorge Scenic Reserve provide outstanding settings for passive recreation. At peak periods, demand for space exceeds supply.⁽¹⁰⁾ In response to vehicle misuse, noise, and damage, the reserve is now periodically closed to vehicles. There are other picnicking and camping areas within the Herbert State Forest and at Glencoe.

Most picnic areas are closely associated with streams and small rivers. Water quality for recreation is important, especially so

at Trotters Gorge where crystal-clear stream water has a major contribution to the high aesthetic appeal of the reserve. Forestry activities upstream are likely to increase water turbidity and decrease recreational value.

The Shag and Kakanui rivers provide good brown trout fishing for both local and visiting anglers. Due to low flows, only parts of the Shag, Waianakarua, and Kakanui Rivers are suitable for canoeing. However, they provide pleasant settings for 'messaging about in boats'.

4.7 Recreational Motoring

The Pigroot provides an increasingly unique motoring experience, travelling through a lightly settled, hill country area, with tracts of tussock grassland either side of the highway. There are also vistas of tussock-clad faces on the Kakanuis immediately above. The Brothers Hills to the upper Swin Burn is the highest and least modified section. This contains an impressive panorama of red tussock on a tableland adjacent to the highway. This area is still pastoral lease although recently reclassified to Farm Land and therefore available for freeholding. High priority should be given to the protection of tussock landscapes adjacent to the road, in particular west of the Pigroot summit.

The Horse Range Road between Palmerston and Trotters Gorge provides a visually stimulating experience, with considerable diversity in outlook and geomorphic features on route. Remnant clumps of bush and impressive sandstone cliffs provide much of the interest. It is both an interesting through-route as well as a dramatic approach to the Trotters Gorge Scenic Reserve. An owner's initiative to protect bush remnants by means of a Q.E.II open space covenant is a most welcome move. Unfortunately these efforts are being rapidly overshadowed by exotic forest planting either side of the road. This threatens to smother rather than complement the distinctive landforms.

Within the Herbert State Forest, the public was encouraged to use forest roads providing access to areas of interest within, and to the Waianakarua tributaries. Future availability will depend on Forestrycorp's commercial policies.

5. Zoning

Within the Kakanui Mountains there are a wide range of recreational opportunities within a diversity of settings. This is reflected in the zoning. Provided the present landscape diversity is maintained, the hill country recreational requirements of the coastal North Otago region can be adequately catered for in the future.

5.1 Natural Experience

The wild land settings of the higher slopes of the Kakanuis, and the remaining native forested catchments are zoned *natural experience*. They form three distinct areas:

5.1.1 An alpine zone generally above 900-1000 m including all the high crests between Obi and Mt. Nobbler, and containing the majority of the remaining tall tussock grasslands. The 'Hectors plateau', with its distinctive volcanic landforms and plant associations is also included in this zone.

5.1.2 The Waianakarua catchment is divided into two *natural experience zones*; the north branch includes remnant forest that is confined within the lower slopes; the larger and contiguous middle and south branches includes forest, shrublands, and short/tall tussock grasslands to skyline crests.

5.1.3 The native forests within the Kurinui and Pigeon Creek catchments are under the greatest pressure from forestry, grazing, farm development, and firewood clearance. Extensive farm tracking within the Pigeon Creek catchment has occurred in recent years, whereas the Kurinui catchment is largely undeveloped. Despite a large degree of modification, the area is capable of reversion to a more natural condition by appropriate protection and management. The higher crests of the Razorback Range are included in this zone in recognition of their high landscape/recreation values.

5.2 Open Space

An extensive *open space zone* includes short and tall tussock grasslands generally above 600 m but down to 300 m on the Horse Range. This is a zone of extensive pastoralism which can continue, within limits, without detriment to recreational values. Most of this zone is 'used in a visual sense by travellers along roads outside of the area. It is also actively used to provide foot access to and between natural areas.

Much of the zone remains pastoral lease but with significant areas alienated from direct public control. The main management requirement for all these lands is to maintain an undeveloped and open appearance. This can be most directly achieved by the Crown exercising earth disturbance, forestry, and cultivation controls on pastoral leases, and by covenanting and district scheme planning controls on private land. Further exotic afforestation in the Pigeon Creek catchment would degrade and over-power remaining natural landscapes within this catchment.

Three areas require particular attention to protect high landscape values:

- * Pigroot-Swinburn red tussock tableland;
- * from the saddle on Horse Range Road northwards down Trotters Creek valley;
- * unroaded sections of the Razorback Range crest.

5.3 Cultural Experience

This zone includes the Herbert State Forest and immediate environs which provide opportunities for facility orientated activities centred around walking tracks, native forest remnants, watercourses, picnic and camping areas. Expansion of services and facilities within this zone could satisfy many future recreational requirements in the coastal North Otago region.

6. Recommendations

6.1 The 'Hectors plateau' reserve investigation take into account landscape considerations, and incorporate Class 8 and severely eroded Class 7 lands from pastoral leases.

6.2 No approvals be given for further firebreaking or vehicle access tracking within the alpine *natural experience zone*.

6.3 DOC initiate protection of remaining native forests in the Kurinui and Pigeon Creek catchments.

6.4 The Trotters Gorge Scenic Reserve be maintained primarily for day use, with no further facilities or activities permitted which intrude into the tranquility of the reserve. With extension of the reserves complex in this district however, consideration should be given to designating a discrete walk-in camping area as a base for extended walking.

6.5 The Waitaki County Council withhold planning consent for forestry within the Pigeon and Kurinui creek catchments.

6.6 The new Waianakarua Scenic Reserve be extended to ridge-line boundaries at the head of the Middle Branch.

6.7 As a matter of high priority, DOC take steps to ensure the protection of tussock grassland vistas between the Pigroot summit and the upper Swin Bum.

6.8 The crest of the Razorback Range be protected by landscapcovenants.

6.9 The Maniototo and Waihemo County Councils amend their district schemes to provide for landscape protection in the Pigroot, Horse and Razorback range areas.

6.10 Forestrycorp continue encouragement of recreational activities within areas under its control.

6.11 Public foot access easements be provided at convenient locations across the *open space zone* to future reserves, and surrendered high country.

6.12 Walkways should be confined to coastal and lower hill country, therefore long term plans for walkways to the crest of the Kakanuis, including Siberia Hill and Mt. Alexander, should be abandoned.

6.13 The considerable potential for walkways in the Horse-Razorback range area should be pursued. In particular, the crest of the Razorback Range from Sweetwater Road to the Horse Range Road, with connecting side walkways to McLew Road, and upper Pigeon and Trotters creeks.

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