

THE REMARKABLES and Hector Mountains



Photo: Bob Entwistle

The Remarkables with a crest from 7000 feet to 7600 feet high rise steeply from the shore of Lake Wakatipu by a series of stupendous declivities, forming a spectacle that for absorbing grandeur is unrivalled in New Zealand.

Professor James Park, 1908¹

1. Landforms

The Remarkables are one of New Zealand's outstanding geological features. The great western face, thought to be a glacially modified fault-scarp, rises 2000 m above the shores of Lake Wakatipu. This perspective of the range has in no small way contributed to the national and international renown of Queenstown.

Eastern back-slopes of the Remarkables are mountainous but less spectacular, as are their southward extension, the Hector Mountains. The crest height of the Hectors lies between 1920 and 2225 m as far south as James Peak, south of which the country becomes less dissected. Then the height falls gently to 900 m at the southern limit of the Hectors above Garston.

The glaciated upper altitudes of these schist mountains illustrate the transition from the valley glaciations of the main alps to the Central Otago block mountains further east. Horn and arete systems, armchair cirques, hanging valleys, cirque moraines and periglacial deposits are well developed. Lake Alta in the Rastus Burn is dammed behind a moraine in the most spectacular

armchair cirque. The head-wall consists of the 520 m high north-east face of Double and Single Cones. Lake Hope, slightly larger, occupies another cirque at the head of the south branch of Wye Creek.

In the headwaters of the north branch of the Wye a hanging cirque above a 210 m high wall almost cuts off access to Single Cone from the south. Over sixty small lakes and tarns occupy glacial depressions the length of these mountains.

Smooth outlines on the lower Kawarau shoulder and Hectors indicate sculpturing by a Wakatipu glacier during the Pleistocene. Post glacial landforms such as extensive bedrock slumping and still active solifluction deposits are unusual in their complexity. Such features are not often seen in the main alps, although they are found in adjacent areas such as the Eyre Mountains to the west of Lake Wakatipu.

2. Vegetation and Wildlife

2.1 Vegetation

The flora of the area is somewhat unique in its combination of a few of the larger, more colourful alpine plants that characterise the wet mountains west of the Otago lakes, together with many of the distinctive high-alpine cushion plants that are a special feature of the drier Central Otago highlands. In addition there are a few alpine species of limited east-west range that are centred on the Remarkables and Hector's.²

The plant cover consists of a mosaic pattern of high-altitude snow tussock grassland, dwarfed cushion, snowbank, herbfield and bog, with sparsely vegetated fellfield and rock debris slopes. These different environments are separated chiefly by altitude and topography. The most extensive plant community is snow tussock grassland rising from 1000 m to 1800 m dependent on aspect. The narrow-leaved snow tussock gives way to slim snowgrass at 1200-1500 m, which in turn merges into blue tussock, or ends abruptly at the toe of the fellfield. The condition of the grassland is generally as good as, or better than, that found on the Central Otago ranges.

The extensive fellfields are relatively stable, consisting of jagged schist. The highest peaks of the Hector's are more rubbly than the central Remarkables and this is reflected by the restricted distribution of several fellfield species. A notable feature of these fellfields are heavy growths of leaf-like and twiggy lichens.

Unlike the Central Otago ranges, herbfields within the Remarkables and Hector's are infrequent, as are alpine bogs. The latter are largely confined to the vicinity of tarns in the upper Rastus Burn and Wye Creek.

At lower altitudes (up to 1000 m) the grassland consists of predominantly silver and fescue tussocks, with a wide zone on the western escarpment covered by bracken fern. The lower country is steadily being developed for pasture by oversowing, topdressing and more intensive stock management.

Isolated stands of mountain beech are confined to rough lower creek beds such as in the Wye and Staircase Creeks. These are only small remnants of a much more extensive forest cover, as shown by the occurrence of scattered logs of Hall's totara. These logs date from a forest destroyed prior to European settlement. The extent of forest cover at the time of pastoral settlement in the early 1860s has not been established.³

The Remarkables and Hector's form the Remarkables District within the Lakes Ecological Region.⁴

'String bog,' Doolans Basin.

Photo: Bob Entwistle



2.2 Wildlife

In summer, blacked-backed gulls are the most abundant bird species at higher elevations, nesting at the numerous small tarns scattered the length of these mountains. In small numbers, Paradise shelduck and pied oystercatchers frequent the same habitat as the gulls. Skylarks and pipits both have a widespread distribution. Keas and falcon are present but in low numbers.

Of a total recorded population of 13 keas in the Remarkables, 5 birds were removed during 1985 by the former Wildlife Service as a result of complaints of damage from the skifield operators. This move resulted in widespread public condemnation. Consequently *another* 5 birds were released in their place. The operators have now learnt to live with keas, as all major equipment that is vulnerable to damage has been 'kea-proofed.'⁵

Possibly because of the relatively large area of water, invertebrate fauna at the head of the Rastus Burn and Wye Creek is richer than on the drier Nevis flanks and probably explains the presence of many birds. A large black and silver moth, thought to be endemic, and two species of *Aciphylla* weevil have been found in the Lake Alta and 'Sugar Bowl' basins of the Rastus Burn. Two species of distinctive black alpine cicadas inhabit the alpine meadow and fellfield of the Remarkables, one of them being restricted to above 1500 m.⁶

The Double Cone area is a unique habitat for indigenous fauna, both because of its high altitude and because it is in the transition between the alps and the much drier Central Otago block mountains.⁷

Red deer are present in low numbers. Hunters generally prefer other mountain areas with higher animal numbers. Chamois have been recorded in low numbers. The presence of bull thar have been recently confirmed. Game birds such as quail and chukar are common on lower, warmer country and are popular with game bird hunters.⁸

3. History and Land Use

3.1 Pastoral Settlement

Lake Wakatipu was first seen by Europeans, at a distance, in 1853 but it was not until 1856 that the lake was first reached. The area was surveyed by Alexander Garvie who aptly named the Remarkables in 1857 when he sighted their jagged tops from Central Otago.

While there was still plains country in the South Island available for pastoral settlement, interest in taking up the rugged Wakatipu district for grazing was slow to develop. It was not until 1860 that the Crown granted the first depasturing licence to cover the entire length of the Remarkables and Hector Mountains. However this run (Staircase) was not stocked and it passed into the hands of W.G. Rees and partners.

Rees entered the district early in 1860 and took up two runs from Queenstown to Glenorchy, establishing his homestead in Queenstown Bay. On behalf of his partnership he acquired 'The Staircase' and 'Peninsula' runs which covered the northern flanks of the Remarkables.⁹

The November 1862 gold discoveries in the Arrow and Shotover Rivers resulted in a rush to the district and Rees' two northern runs were declared a goldfield. Gold mining did not directly affect the Remarkables, however it hastened its pastoral use. Rees, displaced from the new goldfield, shifted his operations to the previously unused Remarkables runs. These become known as Kawarau Falls Station being in excess of 4000 ha.¹⁰

Stock numbers were steadily increased to a peak of 29,000 sheep in 1877, however 'The Big Snow' of 1878 and a rabbit plague resulted in a reduction to 6,000 sheep. Hard times continued and in 1886 the station was abandoned to the mortgage company. It, in turn, went bankrupt in 1894. The original Kawarau Falls Station has subsequently been subdivided into six runs, with 'Cone Peak' and 'Remarkables' sharing the mountainous feature of the district.

3.2 Land Tenure and Access

The area is predominantly pastoral lease (9 leases), but with significant areas of reserve and DOC stewardship areas in the north.

5117 ha of the rugged western face, the Wye catchment and the Lake Alta cirque has been allocated to DOC and awaits gazettal as scenic reserve. This is south of the 3rd ridge from the left on the main face and includes the Wye catchment, as far south as the South Branch at Lake Hope, to the dividing ridge with Doolans. Broad strips of land on the north bank of Wye Creek, and the south bank of Lumberbox Creek above State Highway 6, provide public access to the DOC controlled land. The 2nd and 3rd ridges, on Cone Peak Station, have traditionally been available for public foot access to Lake Alta and were the main foot access routes before the present road was constructed.

700 ha of the upper Rastus Burn, excluding Lake Alta, is recreation reserve (gazetted 1980) and abuts the future scenic reserve along the main ridge crest. A short-term lease over the total area of this reserve has been issued to the Mount Cook Group for the duration of skifield development. On fulfilment of its

conditions a long-term lease and rights of way will be issued but only over the area occupied by the building complex, car parks, road and lift lines (10.5 ha total). While the company has a lease over the total recreation reserve, the public has rights of free use of the reserve, except for buildings and other facilities, if behaving in an "orderly and seemly manner." On the road the public has right of free foot use, and right of vehicle use on payment of a fee.¹¹

A special lease has been issued over a narrow strip along the foot of the western face of the Remarkables, with public foot access up Wye and Lumberbox Creeks provided across this to the DOC land. A grazing permit (unused to date) has been issued in the north branch of the Wye valley. This area is of exceptionally high botanical value due to an absence of grazing for many years.¹² Three thousand nine hundred and fifty ha of 'retired' lands between the Wye south branch and Staircase Creek is under grazing permit, and along with all the stewardship and reserve areas, are available for public recreation.

3.3 Land Use Capability

Land generally above 900-1000 m is Class 7; above 1350-1500 m is Class 8. This comprises 75 percent of the areas still under pastoral occupation. The balance is Class 6 or better.¹³ These lowest altitude Nevis, Kawarau and Wakatipu faces have potential for increased production by oversowing and topdressing.¹⁴

A third of the total area has been assessed to be severely eroded, however only a quarter of such lands have been retired or partly destocked from grazing.¹⁵ Only a small proportion has been surrendered from pastoral tenure.

Single Cone, Remarkables from North Wye head-basin.

Photo: Neill Simpson



3.4 Remarkables-Hectors Management Study ¹⁶

At the conclusion of a year-long study in 1977, a Lands and Survey study team, commissioned by the former Land Settlement Board, recommended that a 20,000 ha scenic reserve be gazetted over the alpine zone of both the Remarkables and Hector Mountains. This was to include the high altitude Class 7 and all Class 8 lands between the Rastus Burn in the north, and Staircase and Commissioners Creeks to the south. The team concluded that only the Right Branch of Doolans Creek was suitable for skifield investigation.

Only a small part of the reserves recommendation has been implemented and the skifield recommendation disregarded by Government decision. However there remain strong recreation and landscape reasons for a large scenic reserve covering the northern Hector Mountains, retired pastoral lease and stewardship lands.

The Remarkables escarpment has been identified as a candidate for national reserve status, being an outstanding natural landmark.¹⁷ The National Parks and Reserves Authority requested the Department of Lands and Survey to investigate the Remarkables for national reserve ¹⁸ but this request remains unactioned.

3.5 District Scheme Zoning

Three territorial local authorities share jurisdiction over the region.

Within Lake County the Kawarau, lowest Wakatipu faces of the Remarkables, and western face of the Hectors are zoned 'Rural B' which permits farming of any kind, but commercial forestry, farm tracking, and rural industries are conditional uses. The Council will impose such conditions as it sees fit to conserve scenic values in rural areas. The intended Remarkables Scenic Reserve is designated and has an underlying 'Rural L' (Landscape Protection) zone. The Rastus Burn Recreation Reserve is zoned 'Recreation S' (Skifield). The balance of the Remarkables and the northern Hectors is 'Rural C' (Soil and Water Conservation).¹⁹ The remainder of the Hectors within Lake County (the western face) is 'Rural B.'

Most of the Nevis catchment on the eastern slopes of the Remarkables and Hectors is zoned 'Rural 1' within Vincent County. This permits farming, soil and water conservation schemes and reserves as predominant uses, with rural industries such as forestry conditional uses.²⁰

South of Lorn Peak the Nevis catchment is within Southland County. The 'Rural A' zone permits farming of any kind as a predominant use, and rural industries and forestry as conditional uses. 'A Rural B' (water and soil conservation) zone covers the highest Hector tops southwards to Tennants Peak. Retirement from grazing, pastoral farming in accordance with approved management plans, huts and tracks are predominant uses. Farming and tourist facilities are conditional uses.²¹

3.6 Reserve Zoning and Management ²²

Three areas of bog and small tarns within the Rastus Burn Recreation Reserve are zoned 'natural environment.' No development or vehicles are permitted within these areas. Policies for slope protection during skifield development and operation include controls on boulder removal and slope grooming. Tracking is permitted within the reserve only to provide summer walking opportunities and essential services.



Climbing party at Lake Alta 1890s. Photo: Lakes District Centennial Museum

4. Recreational Opportunities

4.1 The Setting

The Remarkables, since the time of the earliest European settlement, have been regarded as the single most spectacular feature in a highly scenic region.

Passive appreciation remains its greatest recreational value. The "stupendous declivity" of jagged crags, from level base to saw-toothed summit ridge, has a dominating presence over the Queenstown district. It is unrivalled by any similar landform in New Zealand and provides a backdrop for all manner of outdoor activities undertaken by many thousands of visitors from throughout New Zealand and overseas. For many it is an object of marvel and inspiration, without generating a need to touch or climb. The absence of any natural or man-made weaknesses in the 'declivity' inspires almost mystical qualities that give it a value beyond mere rock and cleft.

4.2 Tramping and Climbing

Government geologist T.N. Hackett and party made the first recorded ascent of Double Cone in October 1864.²³ As Queenstown became less of a goldrush town and more of a resort, interest in climbing to the summit increased. Since at least the 1890s the climb up the northern Kawarau face or the western face, to Lake Alta and the summit, has been a popular attraction.

Before road construction, the Lake Alta area of the Rastus Burn was the focus of attention for trampers and climbers, with Single or Double Cone the objective. Two days, or a very long day, was required for the return trip. The only recorded indication of activity immediately prior to road construction was 108 people

who were known to have set out for the Remarkables by the main northern access routes over a 10 week period of the 1979-80 summer. During the same period another 10 climbed the main face and 27 went via Wye Creek.²⁴ An ascent had considerable appeal for those who were prepared to expend the considerable energy required for the 2000 m vertical climb. This was regarded as a physical challenge, prompting many clubs and individuals to make annual 'pilgrimages.'

The usual approach was up one of three ridges at the northern end of the western face, followed by a sidle into the head of the Rastus Burn. An alternative approach or departure via the north branch of the Wye was also popular. Public access has now been improved through the Wye by the local mountain club cutting a track through the beech forests of the lower valley.

A variety of steep rock routes can be chosen to the summit; the Alta-Wye saddle, boulder fields and a final steep gully (rope advisable for the less confident) being the usual route to Single Cone. Rock quality tends to be good, with coarse quartz crystals providing good holds in the hard schist. Climbers have numerous direct routes to all the main peaks above Lake Alta to choose from, or alternatively up the west face, providing steep tussock approaches, generally free gully climbing in summer, and steep snow gullies in winter. In snow conditions the summit 'pyramid' is a serious technical climb.

Only isolated patches of snow persist year-round, however climatic conditions are alpine in all seasons. The orographic influence on the weather of this high, isolated mountain-mass can cause snow and ice conditions, strong winds and cloud obscurity at any time of the year. Weather changes can be sudden and severe.

The availability of road access since 1985 has naturally made the Rastus Burn-Lake Alta area very accessible, especially for day walking, with greater use of the Wye as a day or overnight departure route. A variety of groups, including DOC summer programmes now visit this valley. However a deterrent to greater activity is a lack of signposting during summer specifying public use rights over the road.

To avoid damage to alpine bogs, a board-walked trail has been established to the spectacular scene at Lake Alta. Unfortunately litter, arising from the ski season, is now widespread throughout the upper valley and is very apparent during the rest of the year, as are ski and machinery trails on the skifield. The

collection and disposal of litter is a responsibility of the Company.²⁵ On-going removal of rocks and boulders is also altering the natural character of the basin.

The Hector Mountains attract sporadic but increasing tramping activity, with western approaches usually used. The longer access from the Nevis Valley is infrequently used. Lake Hope, Ben Nevis, James Peak and Staircase Creek are the more usual objectives for tramping parties.

Public recreational activity has become well established over the pastoral lease properties. The physical effort of climbing into these areas in the past tended to impose limits on numbers, so that use levels presented few conflicts with pastoral activities.

4.3 Sightseeing

Sightseeing from a spectacular lookout at 1980 m on the brink of the western face was promoted by the skifield developers as a major component of the Remarkables development. Access is by chairlift to below the ridge crest, with a short walking track provided for the final approach. This facility was heavily promoted during the first two years of operation, however the operators have discontinued this service and closed the base building during the non-ski season. The Company has stated that it has no intention of generating further sightseeing activity in the area.²⁶

4.4 Skiling

4.4.1 Heli-skiing

During pre-skifield years there was a steady use of the Remarkables for heli-skiing and ski touring. Throughout the winter, conditions permitting, a daily helicopter service operated in the Remarkables. However strong winds and cloud obscurity were a major inhibition to operations, resulting in 25 to 40 percent cancellation of bookings.²⁷

The three basins of Rastus, Doolans (right branch) and Wye basin (north branch) were regularly skied. The extensive Doolans basin provides an attractive variety of runs, usually with good snow cover. The adjacent Wye basin is notable for extremes in gradient, from flat to very steep. This was used for heli-skiing but is better suited to 'nordic' skiing. Frequently the Rastus Burn proved unskiable over part or the whole of its length.²⁸ Ninety percent of the time the Doolans and Wye were skied by clients and guides in preference to the Rastus Burn.²⁹

DOC summer guided party above Lake Alta.

Photo: Neill Simpson



The Wye Creek approach, Lake Wakatipu below.

Photo: Ken Mason



In the last few years unauthorised heli-skiing activity has taken place most winters in the Doolans and Wye. Applications for heli-skiing recreation permits within the area of the proposed Remarkables Scenic Reserve were put on hold pending completion of a management plan for the reserve. However areas within the Hector Mountains and Doolans basin are now under application.

4.4.2 Ski Touring

Parties of ski mountaineers regularly visit the Remarkables and northern Hectors, with occasional traverses of both ranges. Although limited use can be made of cross country skis within individual basins of the Remarkables the southern Hectors provide the only extensive scope for traverses on 'nordic' skis. Eight km south of James Peak (at 2072 m) the range dips gently southward for approximately 17 km to Tennants Peak. The terrain is generally less dissected, with rounded ridges and easier gradients than to the north. The altitude varies between 1645 and 1370 m, with skiable conditions often available down to 1060 m along the Garston-Nevis Road at the southern extent of the range.

The Doolans and Wye basins provide the most attractive terrain for touring in the Remarkables. With the advent of road access into the adjacent Rastus Burn, these two basins are receiving greater attention for day and weekend ski trips, providing one of the few such opportunities in the main mountains of Otago. Noise intrusion from helicopter use is an on-going detraction for tourers.

4.4.3 Skifield History ³⁰

In 1936 the Southland Ski Club established a skifield on the southern end of the Hector Mountains above Garston. A twenty bunk pre-fabricated hut was erected at a site at 1000 m. An east-facing basin at the crest of the range, between 1140 and 1060 m, provided easy slopes with skiing occasional down north-west slopes below the hut. A two hour walk into the hut was required during winter.

In 1947 a rope tow was installed and was in use until 1955 when it became unserviceable. By 1957 the Club had abandoned its Garston field in favour of Coronet Peak.

4.4.4 Rastus Burn Skifield

In 1973 the Mount Cook and Southern Lakes Tourist Company made application to the Land Settlement Board for a lease within the Rastus Burn for the purposes of skifield development. The objectives for this proposal included: ³¹

- providing for greater capacity as Coronet Peak was projected to reach skier capacity within a few years;
- developing a high altitude skifield to ensure a longer and more reliable ski season.

The Company claimed that these objectives could be attained in the Rastus Burn as they considered that the higher altitude (approximately 420 m) of the Rastus Burn in relation to Coronet Peak would give a better guarantee of snow as well as an extended ski season. The Company further stated its intention of extending skiing operations into the Doolans as the "quality and extent of this snow field is superior to any other known area adjacent to Queenstown."³²The means of access to this basin was to be either chair lift or tunnel from the Rastus Burn.

The Company received major criticism of aspects of its plans from government agencies, skiers, mountaineers, environmental and recreational organisations, and some local residents. However the overall response from local interests was to welcome (any) development as it was perceived to be essential to the economic well-being of Queenstown.

Despite protracted objection and appeal procedures, the Company finally cleared all legal obstacles, and after an extension to planning consent commenced road construction in 1983, opening for skiing in 1985 with two chair lifts. A third lift was added in 1986.

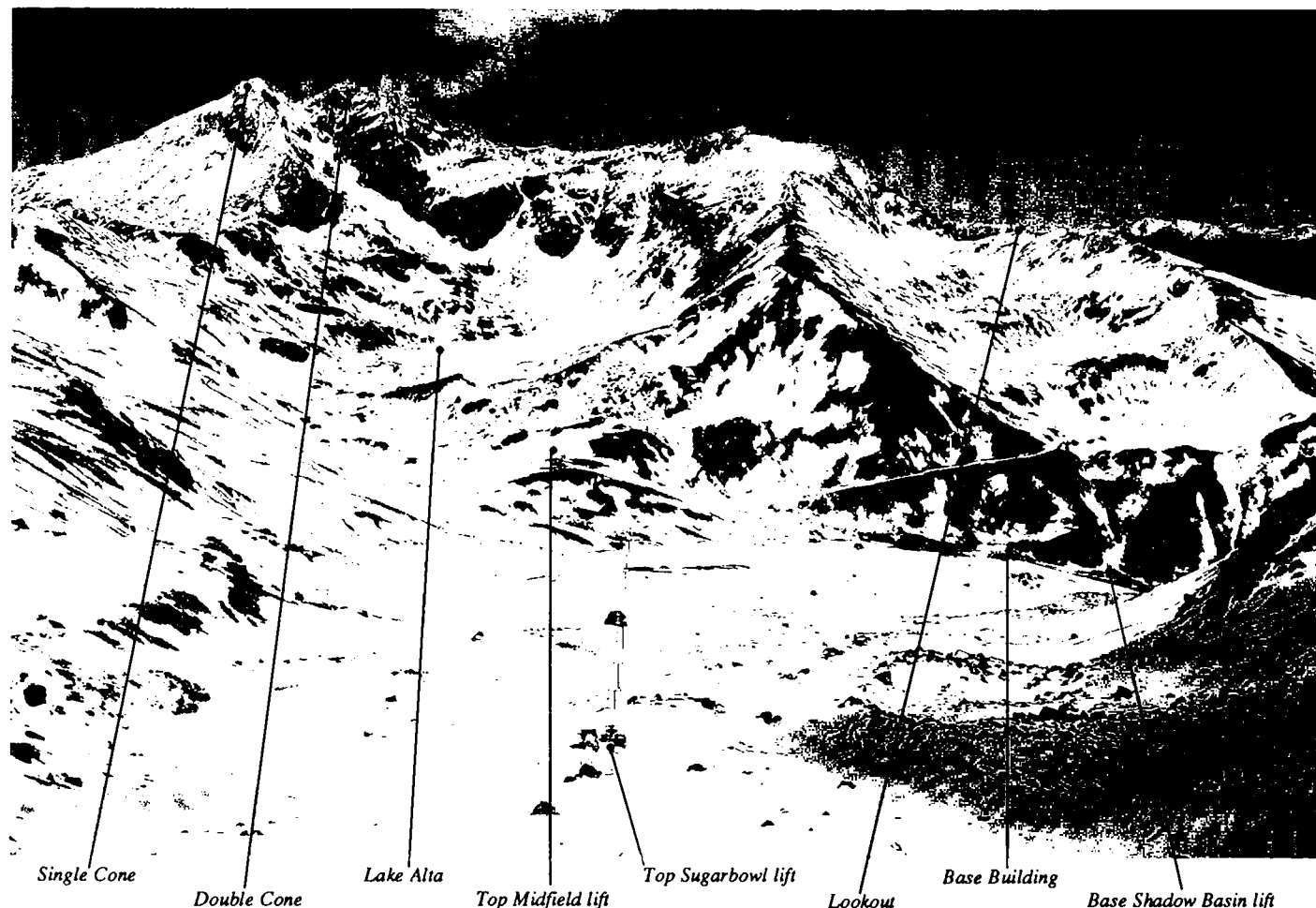
On the crucial question of site suitability for a skifield, the Land Settlement Board initially expressed reservations "that the site applied for was the best one and that other areas could be more suitable."³³The Commission for the Environment recommended that the overall need for further skifields in the region be considered, as well as a re-evaluation of the intrinsic suitability of the Rastus Burn as a skifield.³⁴

In spite of the Land Settlement Board's initial reservation and its own commissioned land use study recommending that only the Doolans Basin was suitable for further skifield investigation,³⁵ in 1977 the Board approved in principle the Company's application subject to Town and Country Planning consents. These were obtained from the Lake County Council in 1979 and from the Planning Tribunal in 1980. These approvals were given despite well documented evidence contradicting the Company's assertions that the Rastus Burn was suitable for skifield use.³⁶The criticisms have in part being borne out by the company shifting further major skifield investment back to Coronet Peak. It is understood that this is based on independent advice that development in the Rastus Burn has exceeded its slope capacity, and that it is not feasible to expand into the Doolans from the Rastus Burn. The road is also proving to be a deterrent to many potential users.

Most objectors' concerns centred on the likely visual impact of road access construction across the prominent western and Kawarau faces. The objections did not prevent the works but they did prevent what one Planning Tribunal member predicted would be "a weeping sore on the landscape."³⁷Stringent design specifications and requirements for revegetation of batters were imposed. These have largely been met, except for several locations where slumping of batters is inhibiting revegetation efforts. Some 100,000 tussocks have been hand-planted, with more to follow.

Ski touring Doolans basin.





There remains the risk of slope failure and loss of road access due to deep-seated geological instability, in particular on the Kawarau face. Overall however the works are probably the tidiest road construction to have occurred in the New Zealand mountains in recent decades. Considerable follow-up works and care in day-to-day maintenance is still necessary to ensure that the design standards set, at considerable public and private expense, are realised.

The controversy over skifield development in the Remarkables has been a classic battle between conflicting interests. The full ambit of legal public participation procedures were employed in the decision making process. In addition to the developer's expenses in obtaining approval, individuals and public interest groups expended thousands of hours, being mainly voluntary effort, towards compilation of evidence and submissions. This was over a span of several years. Monetary costs for objectors were considerable. However at the end of the day the recommendations of two government agencies and the concerted efforts of individuals and private groups proved insufficient in the face of a determined and influential developer.

One outcome from the protracted legal manoeuvrings of the skifield debate was recognition of the area's national significance. The Planning Tribunal concluded "that the whole of what we describe as the appeal area [The Remarkables] has national significance, particularly from the point of view of its physical attributes as a place of outstanding scenic beauty, as a place of importance for those wishing to use it for outdoor pursuits of the unstructured kind, particularly tramping and climbing."³⁸

In spite of the company's initial enthusiasm and commitment to development in the Rastus Burn, major reservations remain as to the viability of skifield operation on anything but its present limited scale, that is unless major slope modifications and snow making is embarked upon. The former was not applied for³⁹ or contemplated in any of the official approvals given for the development.

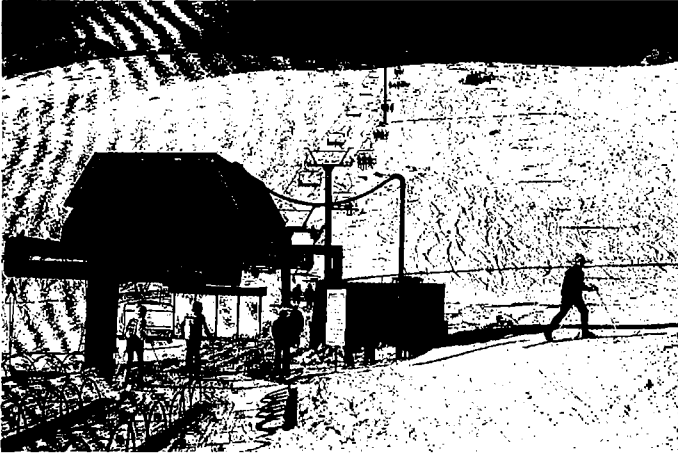
Skifield Capacity

In 1979 Mason estimated the skiable area of the Rastus Burn to be one third that of Coronet Peak, with capacities, in terms of skiers that could be comfortably accommodated on-slope, to be one fifth.⁴⁰

The Rastus Burn slopes are characterised by extremes of gradient with extensive rock exposure. More obvious but less hazardous boulders abound. Skiing is largely confined to main trails where the rock hazard has been reduced. Ski slopes range from steep advanced and expert skier terrain to gentle beginner-novice slopes in the valley floor. The three chair lifts provide between approximately 120 and 310 vertical m of skiing. By comparison Coronet Peak provides a maximum of 445 m.

The Company claims that the Rastus Burn is "ultimately a larger field than Coronet Peak" and expresses the intention of "continual improvements" to lesser trails.⁴¹ Unsightly groomer and ski trails already detract from the summer scene. The Company now argues that "a prerequisite for a full [snow making] system would be extensive ground preparation."⁴²

5. Zoning



'Sugar Bowl' lift, Rastus Burn.

Snow Cover

Factors of terrain, slope aspect, altitude, snowfall, and wind exposure have interrelated influence on suitability for skifield operation.

Mason's observations of snowlines in the Rastus Burn in 1975 and 1979 produced a conclusion that any advantage of higher altitude over Coronet Peak is cancelled out by higher snowlines. This is principally due to the predominant sunny, northerly aspect.

Recent simulations of former snowlines in the Remarkables 1931-84, based on computer modelling, has calculated the average winter snowline to have been higher than the present base area in the Rastus Burn. This was particularly so during the 1940s and 50s but with intervals of high snowlines throughout the study period. A slight decrease in snowline since 1970 was also calculated, but with no overall trend apparent.⁴⁹ Two of the four operating seasons for the Remarkables field have experienced good snow cover in relation to Coronet, however this is too short a record to be confident of the success or otherwise of the development.

Like Coronet Peak, there is no latitude for higher snowlines arising from possible climatic warming of the 'greenhouse effect.'

Conclusions

There is a danger that large-scale modification to the environment will be pursued in an attempt to make a marginal skifield less so. While snow making (already done on a small scale) could be undertaken with minimal environmental impact, for maximum benefit of patrons, the same cannot be said for rearranging the Remarkables. The Company went ahead with development in full knowledge of the serious limitations of the site. The national importance of this highly acclaimed mountain area must not be further compromised by an irreversible public 'subsidy' of landscape detraction. In the writer's view full liability for the decision to proceed with development should lie with the Company.

FMC is in favour of skifield development when soundly based on skier need and physical suitability as this enables member clubs as well as the wider skiing community to extend their activities. However the Federation's position is conditional on adequate environmental safeguards being provided in sensitive natural areas, as well as minimum displacement of or interference with other forms of mountain recreation and enjoyment.

5.1 Natural Experience

The imposing alpine features of the Remarkables and Hectors, excluding the Rastus Burn skifield, are zoned 'natural experience.' The zone is generally above 1200-1300 m elevation, or follows 'retirement' fences, and includes the Wakatipu face of the Remarkables from its base.

Note:

- The zone provides opportunities for a wide range of recreational activities and experiences ranging from small scale remote to easily accessible. The presence of road access to the core of the Remarkables and along the western base will, with formal provision for public use, result in considerably greater public activity.
- The whole zone should be excluded from pastoral tenures and reserved.
- Provision for additional public foot access is required at regular intervals around the perimeter.
- No skifield or other tourist development should be permitted within this zone, nor concessions involving regular or scheduled aircraft landings. A prohibition of further skifield development is necessary as development would destroy the best remaining opportunities for day and weekend ski touring in the Otago alps. For the same reason aircraft intrusion should be prohibited. Heli-skiing and downhill skiing are very well catered for in the rest of the Otago high country.

5.2 Cultural Experience

It is within the Rastus Burn that dependence on intensive use recreational facilities should be confined. The extent of the recreation reserve affected by skifield development is zoned 'cultural experience.'

To the greatest extent practicable, the remaining natural values of this reserve should be protected for the benefit of all recreational users and as a key approach to a future national reserve or equivalent. High standards of facility design, site restoration, and landscape protection must be maintained.

5.3 Open Space

All the lower country is zoned 'open space.' This includes the lower Nevis catchments, the Kawarau and most of the Wakatipu faces. These areas have already had considerable pasture improvements, farm tracking and fencing with potential for further development. Despite such developments the whole zone should remain a large-scale, uninterrupted landscape, with farming or other influences relatively insignificant within the total mountain setting.

Particularly sensitive landscape treatment is required in the 'open space' zone along the western and Kawarau faces of the Remarkables.

Forestry development should be discouraged within this zone. Full revegetation of all skifield road batters must be strived for due to the prominence of these scars as seen from the Arrow basin.

6. Recommendations

6.1 The proposed Remarkables Scenic Reserve, ultimately with extensions to include the complete Wye and upper Doolans catchments (both branches), be designated national reserve, or equivalent status under new legislation.

Note:

- National status will ensure priority being given to the protection that these distinctive mountains deserve.
- The above boundaries incorporate all areas of high actual and potential recreational use. One unifying classification of reserve is desirable to ensure balanced management of the recreational resource.
- Gazettal as (scenic) reserve is required under the Reserves Act before national reserve status can be conveyed under present legislation. The option of a 'tussockland' conservation park as an alternative to national reserve status may arise out the current review of protected areas' legislation.

6.2 The balance of alpine areas be progressively removed from pastoral tenure and reserved as a Hector Mountains Scenic Reserve.

6.3 To maintain a regional diversity of recreational opportunity and to ensure protection of natural values, all future recreational facility development be confined to the Rastus Burn Recreation Reserve.

6.4 The Rastus Burn Recreation Reserve Management Plan be amended:

- to include 'landscape detraction' as a basis for declining consent for construction of tracks, slope grooming, and boulder removal;

- to provide a minimum snow depth for the operation of snow groomers to ensure protection of native vegetation.

6.5 Public use rights over the skifield access road be sign-posted at the foot of the hill.

6.6 Additional legal public foot access be provided:

- to the crest of the Hector Mountains from the Garston-Nevis Road;
- from Coal Pit Saddle to Mt Edward and beyond;
- to the Staircase Creek-James Peak area from State Highway 6.

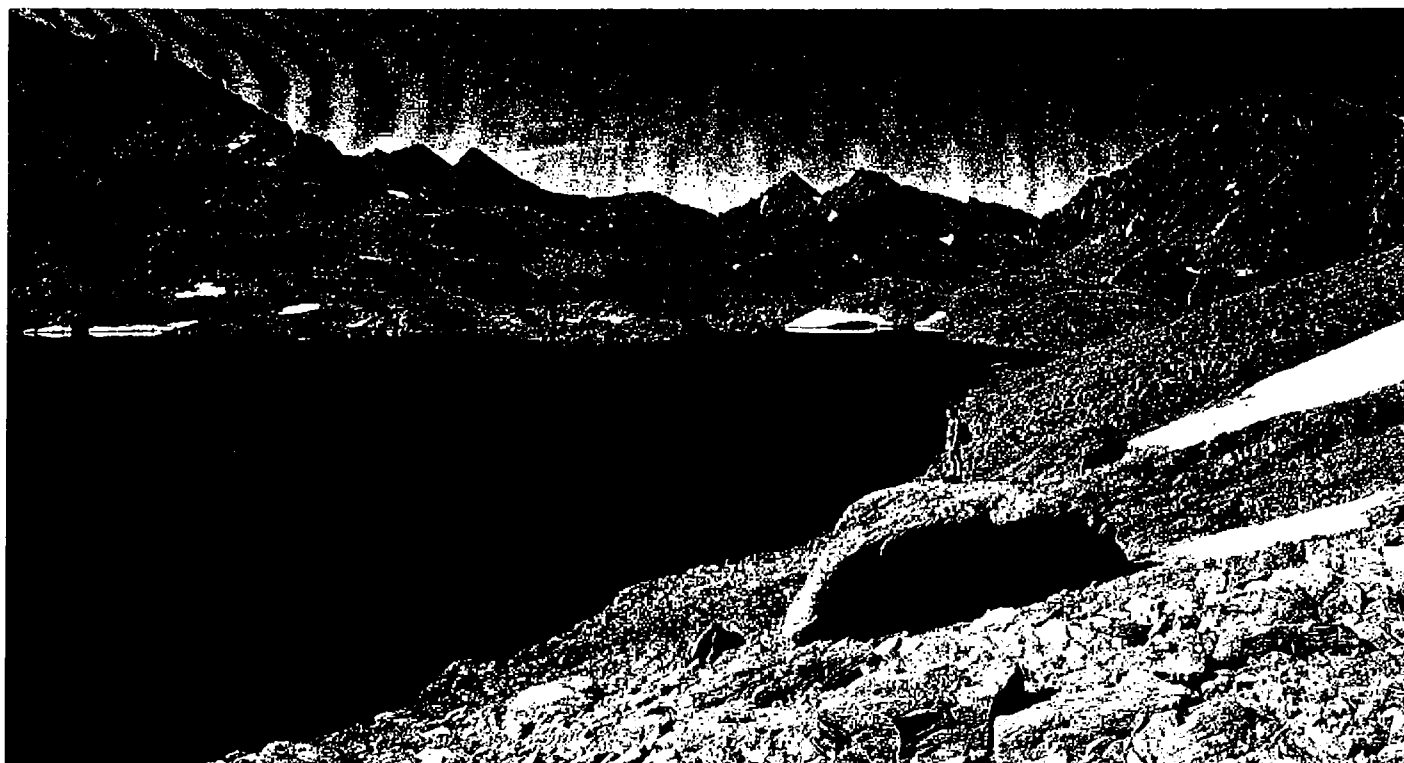
6.7 That in the interests of equality of recreational opportunity the area of the proposed national reserve and Hector Mountains Scenic Reserve be kept free of recreational aircraft landings, because:

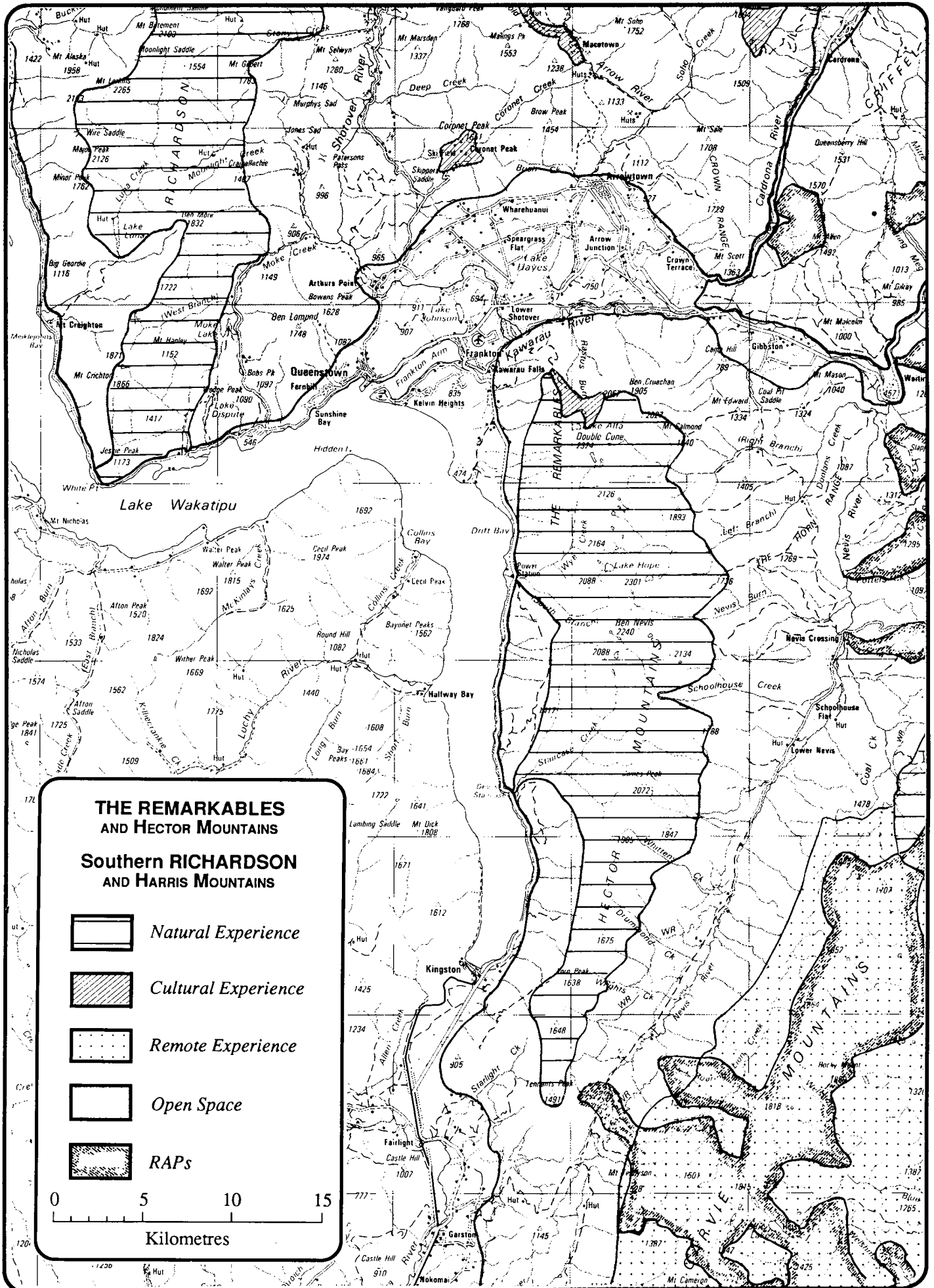
- there are now few, winter-accessible mountain areas in the Queenstown-Wanaka region that are free from helicopter intrusion;
- far better, and more extensive, areas are available for this activity elsewhere in the Lakes district;
- the Remarkables and Hectors are readily accessible on foot during winter;
- few alternatives exist elsewhere in Otago and Southland for accessible alpine ski touring.

6.8 That the Lake County Council amend its district scheme to prohibit further inappropriate uses within the 'open space' zone. For instance like the existing oil installation adjacent to State Highway 6, or forestry development along the Lake Wakatipu face of the Remarkables. The 'Rural L' (Landscape Protection) zone should be extended downslope to the state highway.

Lake Hope, Hector Mountains.






Photo: Bill Hislop

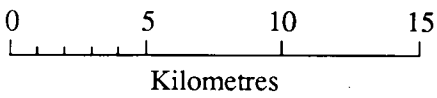




**THE REMARKABLES
AND HECTOR MOUNTAINS**

**Southern RICHARDSON
AND HARRIS MOUNTAINS**

-  *Natural Experience*
-  *Cultural Experience*
-  *Remote Experience*
-  *Open Space*
-  *RAPs*



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