

**B. GROUND SUPPORT AND ASSOCIATED FACILITIES AND AMENITIES:**

Directly integrated with the ski area proposal is the concept establishment of resort accommodation and a cross section of ancillary services.

In our belief the ground level and sub ground services already existing in Twizel are an excellent starting point from which to plan resort facilities, these should be either as they exist at present or in suitably modified form - e.g. shopping mall and community centre.

Planning of the townships redevelopment would be based upon a greatly reduced population density (say a maximum of 3,000) and would include standards and format to result in construction and landscaping in total complimentary harmony with the location and surroundings.

Accent would be directed towards tourist accommodation, facilities and amenities and supporting accommodation and services for the significant number of persons employed in the resort locality.

We do not propose planning for holiday home development but rather for the establishment of numbers and a cross section variety of tourist accommodation and services.

**3. ORGANISATION STRUCTURE AND FINANCE:** The proposals under investigation and feasibility study are potentially of great proportions with an accompanying need for substantial investment and organisation.

Accordingly the promoters are working upon the hypothesis of the following considerations:

- A. Establishment of a pilot development company for initial activity and organisation:
  - a maximum of 10 x \$2,500 shareholders = \$25,000.00
- B. Progression of the development company to proportions and expenditure in depth capable of conducting and concluding necessary feasibility studies, project planning and related approvals:
  - = estimated \$250,000.00 to \$300,000.00
- C. Establishment and organisation of the final fully capitalised operations company = estimated some millions of capital dollars.

**NOTE:** All of the above progressions are dependent upon each preceding stages being successfully proven to the point of warranting growth to the following stage.

**INVESTMENT IN THE VENTURE IS CONCEIVED TO INCLUDE A NUMBER OF FACETS WHICH INCLUDE:**

- A. The promoters.
- B. Various parties expert in the many requirements of the project. i.e.
  - Accommodation and ancillary services.
  - Tourist sales, marketing and operations.
  - Ski-field operation.
  - Transport operation.

**C.** A range of investor types i.e.

- Substantial overseas parties especially with skills of use to the project.
- Up to three or four of these are envisaged and are likely to hold as much as 60% of capital in initial stages (this percentage is expected to be reduced by New Zealand buy back over a term).
- To two or so New Zealand interests of similar proportion to those in category one.
- 20% or so of capital to general small holders in New Zealand and Australia.
- The resultant company will most likely be a public one.
- Investment is proposed to be on a broad basis: i.e.
  - i) Substantially in the ski-field.
  - ii) To a lesser percentage in the town facilities and ancillary services.

**METHOD:** At this point it is hoped that the townsite can be leased for a long term. Failing this the concept of purchase would need to be considered.

- The head leasee would then sublease sites to individual operators for approved construction.
- The Development Company would be total owner and operator of the ski area facilities on ground under lease/hold from the crown.
- Resort area leasees would be required to hold a percentage shareholding in the development company (such computed per resort site investment amount).
- The development company will take a percentage investment in resort area facilities.

The result of the foregoing cross investment which enhances the capability of united activity, promotion, planning and management of the project in totality. Revenue opportunities will also be spread in both appeal and risk if such exist.

Management and venture direction will be by normal methods as appropriate.

**ECONOMY GENERATION:** This project possesses a number of important elements which are conceived as being contributory to it's success.

- i) The geographic location is very strategic as it lies approximately midway between the Christchurch gateway and the tourist meccas of the southern lakes, Queenstown and Fiordland.
- ii) The location and locality is at present of vast appeal, but has no substantial focus or core point. Within one hour are:
  - Several Lakes.
  - Mount Cook and Tasman Glacier.
  - Tekapo Ski Area.
  - Ohau Ski Area.

*Submission to L.S.B.**11/2/86**Willis & Associates**Architects, Chgo.***SUBMISSION**

In the matter of attaining the leases and/or easement necessary to the needs of this project we understand that it is not usual Board policy to grant rights of this nature to any particular party without giving other interested parties the opportunity to apply and receive impartial treatment from the Board.

We wish to request the Board to consider taking the unusual steps of granting us an exclusive investigating right culminating in a limited term, in a right of first application for the appropriate leases and easements.

**The reason for this is as follows:**

As can be seen by the information shown in this submission a certain amount of preliminary study has been carried out. It must be emphasized however that this is as yet of a highly speculative nature.

It is estimated that a complete study of this project, detailed enough to cover both the requirements of the board as well as ascertaining the suitability of the whole project as a viable venture, would necessitate the spending of several hundred thousand dollars. This study would include detailed engineering studies of access and facility placement, meteorological studies, detailed costing and market research and of course the necessary environmental impact studies.

This project has attracted considerable commercial interest but owing to the large preliminary expenses above mentioned we find it difficult to justify the spending of sums of this magnitude unless some security or assurance can be obtained in order to at least to some extent absolve us from the risk of a competitor jeopardising our chances of obtaining the essential leases or easements.

To this end then, we request the Board to consider the possibility of granting us a right of first application for the leases and easements when they become available. We understand that any application must be accompanied by a satisfactory report on the project and be subject to any other condition the board may see fit to impose.

To further clarify the situation we are available to meet the Board and clarify our intentions and the nature of the project at any time.

CONTENTS:

- i) General proposals
- ii) Appendice 1. Outline of ski field proposal
- iii) Appendice 2. Outline of building requirements
- iv) Demographic evidence of skier demand for Pacific basin
- v) Comparison of existing N.Z. field with international U.S. resorts

built into the Mackenzie Basin then the whole facility would be reduced to the level of any other skifield in the County of which there is an over-supply. This is a very important consideration and addressed in the report from the Tourist and Publicity Department (Mr Don Hayman). The company considers that, if anything, the avalanche risks on the Mackenzie Basin route would be significantly greater - because of the greater vertical length of avalanche prone slopes traversed by this route.

*How do they know.*

(iv) Snow Retention:-

One matter which appears not to have been taken into full consideration and upon which the company wishes to be reheard is the fact that the snow retention in the Duncan Basin is considerably greater than that of the Mackenzie Basin, especially in the lower reaches late in the skiing season.

*How do they know*

In simple terms, the Mackenzie Basin alone would not provide a sufficiently long ski season for development in that basin alone to be viable. This factor has become of vital importance in view of the Decision as it stands. Further photographic evidence is available for viewing.

Please acknowledge receipt of this application and let us know the procedure to be adopted for the rehearing.

Yours faithfully,  
HILL, LEE & SCOTT,

Per: 

BSP:PS

*Duncan Basin*



CONSERVATION

02861

*File 641*

22 May 1987

Gerry McSweeney  
Conservation Director  
Royal Forest and Bird Protection Society  
PO Box 631  
WELLINGTON

Dear Gerry

Find enclosed copies of the following letters.

- a) Minister of Tourism to Hill, Lee and Scott.
- b) Hill, Lee and Scotts letter to Minister of Tourism.
- c) LSB letter to Hill, Lee and Scott.

Following your verbal request.

They are provided to you under the Official Information Act.

*J Pfahlert*  
J Pfahlert  
for Director General

- iii) The location is on the main tourist trunk.
- iv) The vicinity is capable of having a greatly upgraded air strip and flight facilities.
- v) There is potentially considerable appeal both summer and winter.
- vi) The locality lends itself to significant overseas promotion and appeal.
- vii) The areas main attributes already exist and are capable of being developed to operation status with a minimum of physical manipulation of the local environmnet.

The concept as proposed is envisaged to be of proportions which will be capable not only of adding to facilities for existing trade, but also most importantly able to generate and justify a much greater number of tourist visitors from overseas including far afield such as U.S.A. and Japan.

The project is capable of being the largest ski area development in the Southern Hemisphere and it is only these proportions which will attract large numbers of Americans and Japanese.

The summer potential will be a great aid to the provision of a viable economy in support of volume winter facilities.

Apart from investment opportunities the finished project has potential to supply as many as 2,000 jobs either directly or indirectly in the locality.

We have considered existing area accommodation and facilities and conclude that none should be losers, but rather that they stand to gain.

The present accommodation at Mount Cook, Ohau, Omarama and Tekapo will benefit from being in the area with improved tourist opportunities and greatly increased numbers.

Other area amenities must benefit from the increased numbers.

Integral with the project is the concept of co-operative funding of a very sizeable marketing and promotion purse. In present day terms an amount of \$200,000.00 to \$300,000.00 would be a reasonable estimate. Further more the affiliation and skills of the proposed overseas participant is planned to be exceedingly beneficial.

5. STATUTORY SATISFACTION: The promoters are fully aware of the need to satisfy statutory requirements and planning includes full co-operation in filling these needs.

Furthermore it is the promoters wish to found a project of very special appeal and in full keeping with its beautiful environment and surroundings.

Accordingly, we believe the development will in its standards greatly exceed statutory and private lobby asthetic, conservation and environmental standards.

DEVELOPMENT OF RUN 264D U S K YRETIREMENT AREA AS A SKI AREAReasons for considering this area:

1. The altitude and geographical position assure reliable snow.
2. Access by way of the Duncan Stream will require no grade more than 1 in 9, will need no hairpin bends, and presents no extraordinary engineering problems.
3. Large amount of vertical available.
4. Large amount of room for expansion.
5. Overnight accommodation can be developed nearby.
6. Airfield (Pukaki) is nearby.
7. Near established bus routes.
8. Ample water is available to allow for ice skating and possible snowmaking.
9. The topographical features of the valleys lend themselves to excellent skiing, both downhill and cross country, there being a mixture of gentle slopes and steeper ones in suitable proportions.
10. All these attributes combine to give this area the potential of becoming the largest and best winter resort in New Zealand and the first of sufficient calibre to attract North American and European skiers.



IN ORDER TO DEVELOP THIS AREA SUITABLY IN ORDER TO ATTRACT TOURISTS  
FROM OVERSEAS THE FOLLOWING FACILITIES WILL BE NEEDED:

1. Two lane gravel road into Duncan Valley.
2. A minimum of three chairlifts (potential for eight or more).
3. Provision of adequate day lodge facilities.
4. Provision of skating facilities.
5. Mapping of cross country trails.
6. Provision of snow grooming services.
7. Provision of ski hire equipment.
8. Provision of Ski School.
9. Promotion of friendly atmosphere.

ENVIRONMENTAL FACTORS:

1. ACCESS:

Because of easy grade of road, damage to the environment will be negligible.

2. As all public accommodation will be at Twizel, no danger to the environment in the form of pollution of any sort is likely.
3. Summer activities will be conducted with regard to the alpine vegetation.

POSSIBLE PLAN OF DEVELOPMENTPreliminary Stages:

1. Study of weather and snow patterns.
2. Market research to confirm trends already evident in New Zealand.
3. Negotiations with Dept of Crown Lands and runholders with respect to the appropriate leases and easements.
4. Negotiations with the appropriate public bodies aiming at the retention of Twizel, or rather its infrastructure, so that a suitable tourist town can be built in its place.
5. Company formation and the raising of the necessary capital to carry out project.

YEAR ONE.Required:

- Road, two lane highway from main road to 5000 ft. level in Duncan basin.
- Detachable type chairlift from 5000 ft. level to 6000 ft. level over easy terrain.
- Stage one of daylodge and skating complex at top of chair lift.

YEAR TWO.Required:

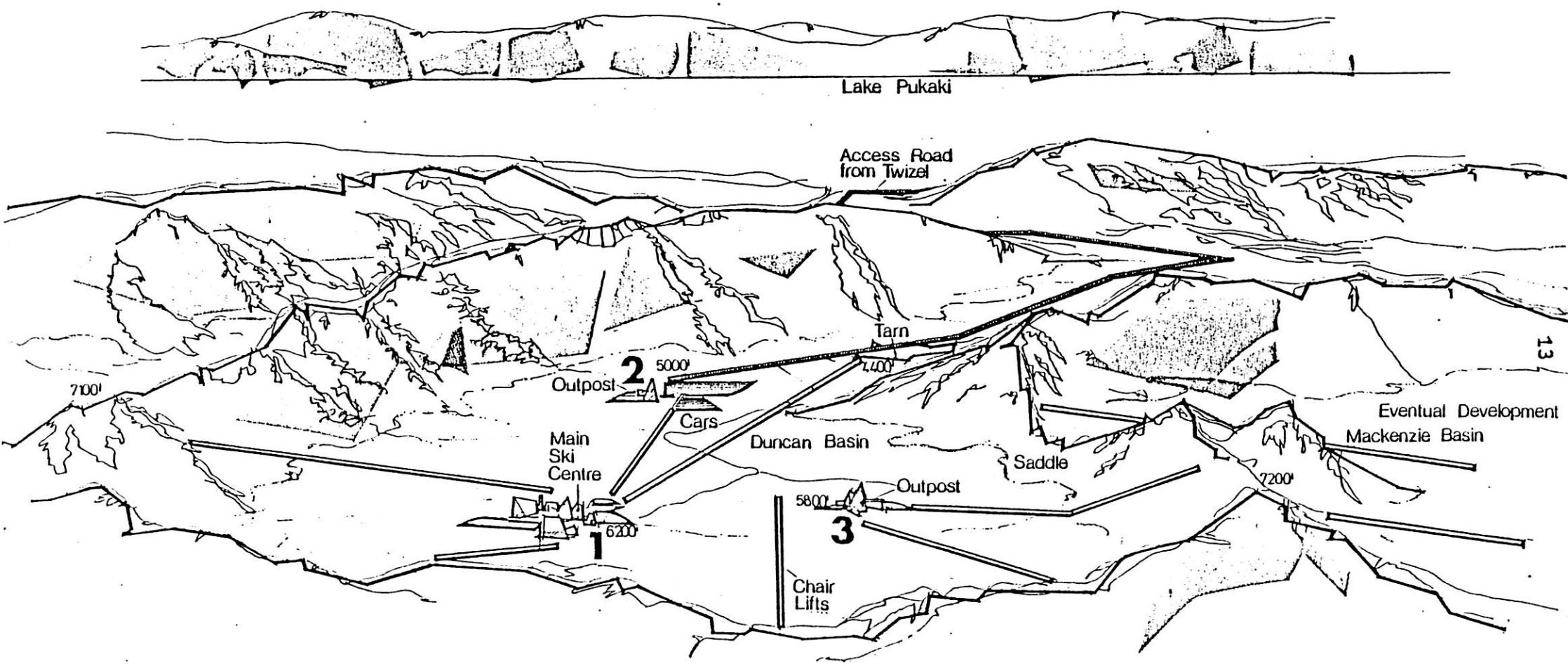
- Chairlift from 6000 ft. level to 7000 ft. level.
- Further development of daylodge and ancillary facilities.

YEAR THREE.Required:

- Chairlift from 6000 ft. level to 7000 ft. level, ie. from lodge complex vicinity to another place on ridge or between 4400 ft. level and 6000 ft. level in order to open eastern end of basin.
- Further extension of ancillary services depending on demand.

FULL POTENTIAL.

The full potential of this area would only be realised when as many as seven or eight lifts are in operation along with the associated facilities. There is obviously ample room for further expansion. Further potential exists in the Mackenzie Basin. The two basins could be linked by lifts near the pass dividing these two areas.



Sketch of Duncan Basin and Surroundings

1

We maintain that the potential of this area is sufficient to create a resort of international proportions and to be of suitable calibre to attract skiers from Japan, Canada, U.S.A. and Australia in reasonable numbers and in a manner not yet attained by the ski industry in New Zealand.

As this development will be able to attract skiers from North America and Japan in significant numbers we point out that this project will give a boost to New Zealand ski industry by exposing them to skiers which they are unable in themselves to attract to New Zealand and generally give a significant contribution to the tourist industry as a whole.

INDICATIONS ON OVERSEAS FUNDS GENERATION.

According to the New Zealand Tourist & Publicity Department in their study "Ski Holiday Destination New Zealand". The average expenditure made by Australian skiers in the 1980 season was between \$N.Z. 1,000 and \$N.Z. 1,500.

When this project has been operating for two years and has its infrastructure operating at its initial economic level the number of skiers attracted for the third operating season from Japan, Australia, Canada and Australia is forecast as being in the region of 15,000 skiers.

Thus initially, overseas exchange generation can be estimated at between \$15,000,000 and \$22,000,000 over and above the present intake.

As many of the skiers that will be attracted to this field will be coming from further afield than Australia the above estimate can be considered to be conservative in the extreme.

O B J E C T I V E

TO ESTABLISH AN INTERNATIONAL SKI AREA IN THE DUNCAN BASIN OF THE BEN OHAU RANGE WITH ALL ANCILLARY SERVICES, ACCOMMODATION, TRANSPORT LINKS, ETC.

ENVIRONMENTALSki Area and Road:

Preparation of environmental impact report incorporating proposal for road access, and mountain area facilities.

Twizel Area:

Preparation of a study showing existing and potential recreational uses - and environmental impact report on total redevelopment.

Investigation of Ski Area:

Avalanche and natural hazards, snow depths, wind studies, effluent disposal.

SKI AREABuilding Required:

- DAY LODGE with restaurants with capacity for several types of food service, administration offices, sales, shops; ski hire and repairs, creche, staff accommodation, ski patrol, public toilet, instructors, tour operators.
- Workshop, garages, generators.
- Bus Station.
- Public Toilet Block.
- Road toll control area, and chains service area.
- Ski lift motor buildings.

FACILITIES

- Car parking - 500 cars, 50 coaches.
- Helipad.

TWIZEL AREA

- Study potential of existing buildings and services.
- Redevelopment of town centre, shopping complex etc. school etc.
- Development of new accommodation in several stratas, hotels, condominiums, lodges, private dwellings and staff housing etc.

- Development of recreational facilities, tennis, squash courts, golf course, recreational centre, boating, rowing.
- Provision of public services, police station, fire service, medical.
- Comprehensive landscaping programme to create "People Spaces" for summer and winter utilisation.
- Development of Twizel air field, to service jet airliners, terminal building, car parking etc. up grade to 24 hour operating status.
- Possible management of the town and head lease to be under Ski - Field Co. control if County is reticent to accept financial responsibilities.

OVERSEAS MARKET SEGMENTS

MARKET SEGMENTS TO BE SOUGHT AFTER:

1. SKIERS AGE 40 - 45 Require:
  - Comfortable Accommodation
  - Easier slopes
  - Good dining facilities
  - May have children 10 - 14 years
  - In higher income bracket
  - Passive entertainment
2. SKIERS AGE 30 - 39 Require:
  - Reasonable accommodation
  - More challenging slopes
  - More active entertainment
  - Good dining facilities
  - Single or childless couples
3. SKIERS AGE 20 - 30 Require:
  - Budget accommodation
  - Expert slopes
  - Active Entertainment
  - Mainly fast food or self-cooking facilities

LOCAL SEGMENTS

SOME FALL INTO ABOVE CATEGORIES:

Large segment need;

- Budget accommodation for family
- Limited entertainment
- Self cooking facilities
- All types of slopes



COMPARISON OF THE NEEDS OF THE AMERICAN SKIER

AND WHAT NEW ZEALAND HAS TO OFFER

Canadian Ski Industry Study

Our Opinion

From Page 94

Factors Influencing American Skier's  
decision of ski location:

How New Zealand would rate:

Snow Conditions	B
Slope Variance and Length	E
Short Lift Lines	C
Ski Costs/Value	E
Proximity to other Ski Areas	D
Qualified Instruction	B+
Skier Friendliness	C

For Older Skiers:

Quality of Accommodation	C
Proximity of Accommodation to Skiing	D
Ski Packages	B
Weather	B
Type of Dining Facilities	D

For Younger Skiers

Apré Ski Activities	D
Ski Facilities that Appeal to Peers	?

To justify the "E" s, following is a comparison of verticals. Vertical is a function of slope Variance and Lenght, and is always mentioned in any review of an area's facilities in the United States.

Cost/Value: Average lift price in North America (1982/83) - \$25.00  
Mt Hutt - \$14.00 (NZ)

Vertical Transport Feet per Hour:\*                      Average in:  
Canada - 2,298,000  
Mt Hutt - 1,000,000

Furthermore almost all of the respondents to this study indicated that other winter activities were not important: they ski as long as conditions permit.

(Page 95)

- \* Vertical Transport Feet per Hour = manufacturer's rating of lift capacity multiplied by vertical of lift multiplied by the number of lifts in the area.

From this comparison it can be seen that New Zealand ski fields must rate very poorly.

Comments we have heard from Americans and Europeans on New Zealand skiing:

- Good Summer Skiing.
- The only place in the world in which you can ski in the morning and have a round of golf in the afternoon.
- (Treble Cone) has the most picturesque skiing we have seen.

Notice how polite they all are, but they all carefully avoid a direct evaluation of the actual skiing and the features mentioned are not according to the study of the American Skiers Criteria (Page 94, Canadian Ski Industries Study): features which influence the Skier to come to any particular area to ski.

However the first comment serves to remind us that we are not in direct competition with northern hemisphere ski fields: they have merely set a standard which must be met!

Furthermore the New Zealand ski season coincides with the

AMERICAN "SUMMER VACATION":

S U M M A R YNEW ZEALAND

<u>AREA</u>	<u>VERTICAL</u>	<u>NUMBER OF LIFTS (SURFACE)*</u>	<u>AERIA</u>
Mt Hutt	2,400 f.t.	4	1
Coronet Peak	1,500	2	2
Ohau	900	1	0
Treble Cone	1,400	2	1

\*Excluding novice and rope tows

NORTH AMERICA

<u>AREA</u>	<u>VERTICAL</u>	<u>NUMBER OF LIFTS</u>	<u>AERIA</u>
Vail	3,060 f.t.	1	17
Jackson Hole	4,130	0	5
Steamboat	3,600	2	10
Mont Tremblant	2,301	4	7
Mt Snow	3,000	14 (Unspecified including 2 gondolas)	
Park City	3,000	0	12

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North Americans generally find skiing facilities in New Zealand unsatisfactory.

In New Zealand ski facilities, in terms of snow conditions, vertical distance available for skiing, and crowds, are equal or better than Australia, but inferior to that of North America and Europe.

This is easy to assess; basically skiers look for vertical skiing distance (this is evidently recognised in North America if one notes the frequency that vertical is quoted in their advertising).

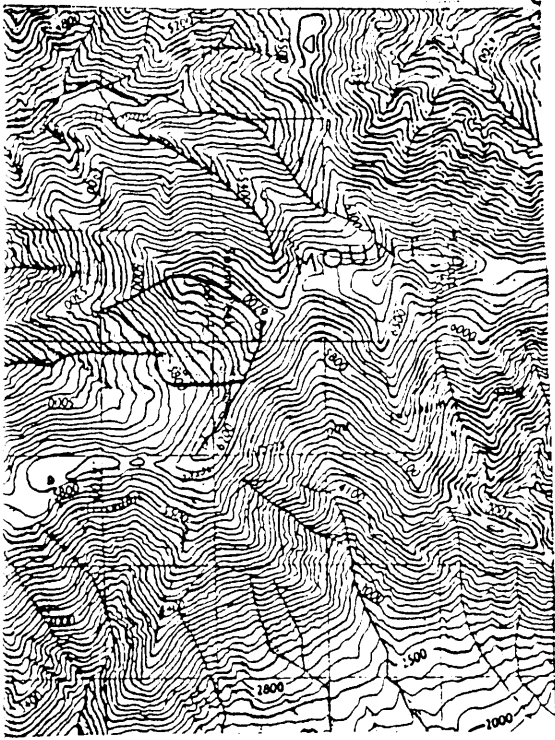
Vertical is important for the tourist as he is unlikely to be a rank beginner if he travels all this way, and thus needs the longer distances in order to gain satisfaction.

*Vertical distance = gradient*

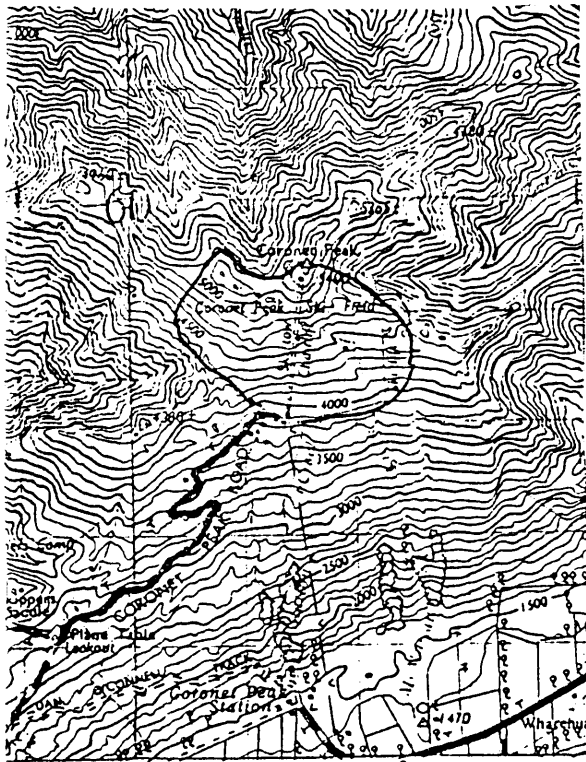
In spite of advertising claims to the contrary we maintain that New Zealand does not yet have a ski resort of INTERNATIONAL CALIBRE.

The following pages show Lands and Survey Dept. maps of some of the major ski fields in New Zealand.

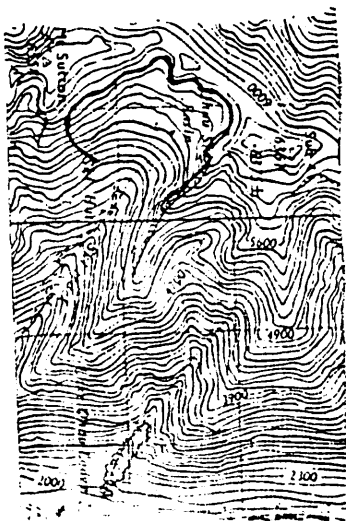
Contrast these with the advertising of North American resorts following.....



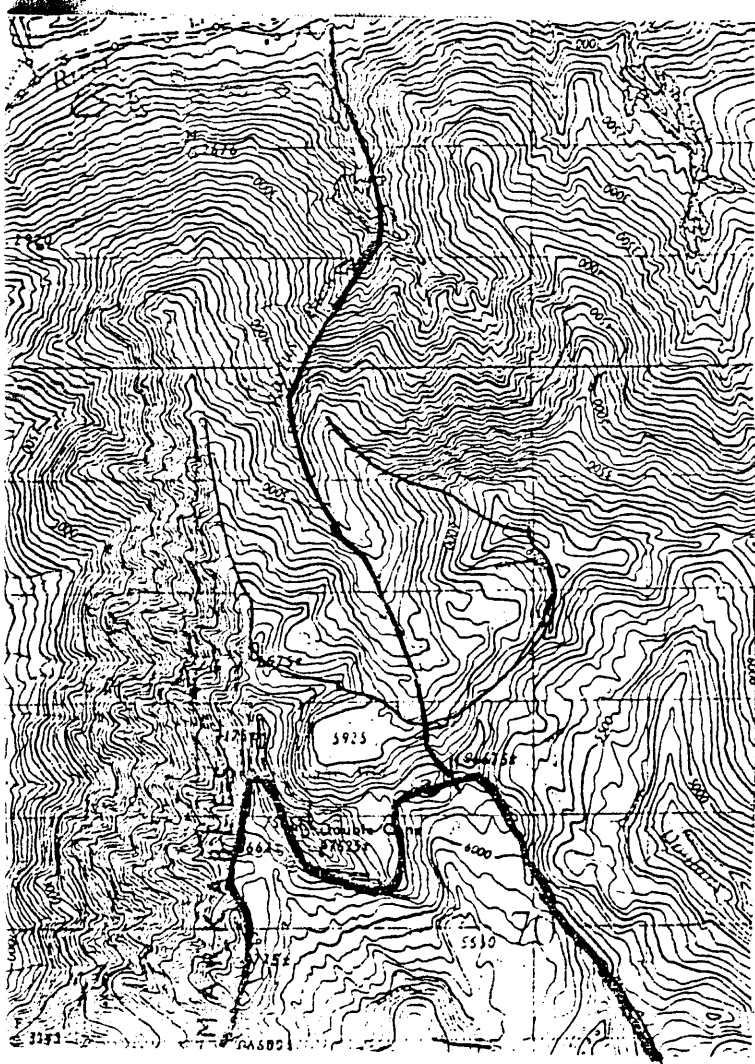
Mt Hutt  
Vertical approx 2,400 ft.



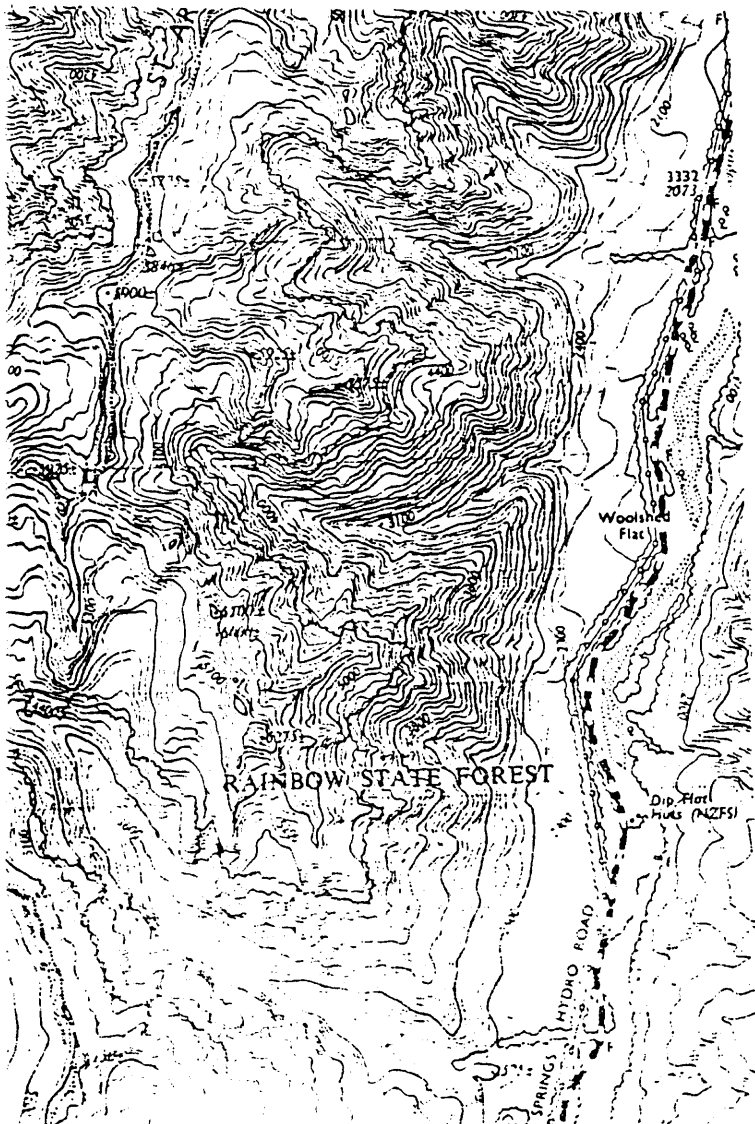
Coronet Peak  
Vertical 1,400 ft.



Ohau  
Vertical approx 900 ft.



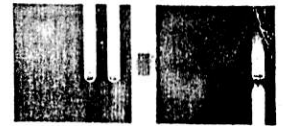
Proposed Remarkables ski field  
 Probable vertical 1500 approx  
 Note road at 6,500 ft!



Rainbow Ski field in  
 St Arnaud range  
 vertical approx 900 ft.



# WILLIS & ASSOCIATES - ARCHITECTS



The Mackenzie Highlands Development Company

P.O. Box 380  
Telephone 67-363  
Christchurch  
New Zealand

6th October 1986

The Members of The Land Settlement Board,  
Dept. of Lands and Survey,  
WELLINGTON.

11/12/86

Dear Sirs,

In the Matter of the Designation of the Retired Land known as the Duncan Basin.

The Mackenzie Highlands Development Company is a group who have come to realise the need in New Zealand for a truly International Skiing Resort. Some eight years ago the Duncan and Mackenzie Valleys were brought to the notice of the group and subsequent study has shown that this location is unique in New Zealand for this purpose.

For more than six years now the group has been negotiating with the Department of Lands in order to attain some commitment as to the future of the land. Such a commitment would enable the group to justify the expenditure of the necessary capital needed to carry out a full investigation.

Negotiations and discussions have also taken place with the Mackenzie County Council. Waitaki Catchment Commission, local community organizations and the Runholders of Pukaki Downs and Ferintosh whose leases cover the access to the two valleys. The interest and support of the runholders is shown by their joining with us in this submission and their signatures at the end of this document.

The extreme interest shown by the International Tourist Industry has encouraged us to continue promoting this project in spite of the length of negotiations involved.

If this project proceeds to the full potential that preliminary studies indicate, New Zealand would gain the largest Winter Tourist Resort to date, and Tourism, presently our fastest growing export would receive significant gains. The favourable economic impact which South Canterbury and New Zealand as a whole would receive from this project is readily

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apparent.

It is also apparent to any one involved in tourism that there is an enormous market potential for skiers. This not only takes into account the rapidly growing sector of New Zealanders who increasingly are demanding better facilities but the enormous numbers in the Pacific Basin.

Research has shown that in Japan alone there are more than ten million skiers. Estimations of the markets in the Western United States and Canada indicate further untapped potential (see appendix).

Australia has traditionally been a prime market for New Zealand as the local Australian fields are limited geologically and suffer from extreme congestion.

To a limited degree the eastern U.S., Canada and Europe are also potential markets.

To date these markets have not been significantly penetrated by New Zealand simply through lack of suitable facilities. All New Zealand Ski areas at present are prevented from attaining the necessary standard because of geological constraints of size and access. This includes our most heavily marketed resorts in Canterbury, Otago and Ruapehu.

We wish to bring to the Board's attention the fact that the Duncan & Mackenzie Basins if developed correctly will give New Zealand for the first time the facility to penetrate these markets.

The uniqueness of the Valleys can be described under the following headings.

### 1. Geographical Position

The Valleys are situated on an already busy tourist route within easy driving distance of the existing accommodation centres of Twizel, Mt Cook, Omarama and Ohau Village, all of which are under utilized at present during the winter months.

The site is equidistant between Christchurch and Dunedin and the same distance as Queenstown is from Dunedin.

The site is very close to three excellent airports. Twizel, Glentanner and Mt Cook.

### 2. Geological

The size of the two basins encompasses some five and one half square

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miles and embraces a skiable vertical drop of 2800 ft between 7200 ft and 4400 ft. This gives at least 6 times the skiable area of our present largest ski fields and is in line with the expectations of overseas markets.

Access to the Duncan Basin by way of the Duncan Stream would enable a road to be built with a maximum grade of 1:10 and no significant bends. Alternative access by way of the Boundary Stream would allow a shorter road of similar grade but with a significant winding stretch.

Compare this with the Mt Hutt road with a maximum grade of 1:7 and the tortuous route to the Remarkables Ski Field.

Access to the Mackenzie Basin is unfavourable requiring steep grades and tortuous bends. It is only feasible to approach this valley through interconnecting lifts from the Duncan Basin.

(Any difficult access makes the project unsuitable for the International Market).

The presence of five large tarns in the Duncan Valley give sufficient reservoir of water to maintain a facility of the size proposed.

The slopes lie naturally in the correct direction for maximum retention of snow and are generally of "Beginner-Intermediate" gradient. No modification of the terrain (moving of boulders etc) would seem necessary.

#### **Use of the Valleys.**

During the winter the valleys would be used for skiing both cross country and downhill. Water would be drawn from the natural reservoir available, to flat areas near the base facilities for skating. The use of Detachable type lifts would allow sightseers to be catered for with no disruption to the skiing.

Summer operations would consist of transporting of tourists to the top of Mackenzie Peak for sighting of Mt Cook and surrounding areas. Once again the use of detachable lifts makes this feasible. Walking, confined to prepared trails as widely maintained by the Dept of Forestry and Lands & Survey would enable the general public to view and appreciate the excellent examples of native alpine flora which are present.

#### **Facilities Proposed.**

The following is the minimum required for an International Type Resort.

- 1) A two lane road to the 5000 ft level in the Duncan Basin.

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- 2) High class accommodation facility and other base facilities at the road terminus.
- 3) Detachable chair lift to 6500 ft level.
- 4) Minor base facility at this level.
- 5) Detachable lift from this base to the top of Mackenzie Peak (7200 ft).
- 6) Normal chair lifts to selected places on the Duncan Basin Ridge (North of Mackenzie Peak).
- 7) Lifts in the Mackenzie Basin located to enable skiers to use the pass between the two valleys.
- 8) Other lifts as demand dictates.

International standards of Ski Resorts demand that some accommodation should be on site. Our Consulting Engineers report that there is sufficient reservoir from the five tarns in the basin to support this. However the amount and location of accommodation on site must always be guided by the environmental constraints of the valleys and consequently the bulk of accommodation to service this area will be from Twizel, Mt Cook and the surrounding areas. The Consulting Engineers also report it is feasible, once a certain scale is attained to transport all effluent completely out of the region (to Twizels Oxidation Facility), we feel this is in keeping in consideration of the delicate nature of the area.

#### **Preliminary Studies.**

The need for careful planning for such a project is self evident. On the granting of permission for this project to proceed, the Lands Department may be assured that the need for careful study and planning relating to the use of the land will be given full consideration and cooperation.

#### **Initial Studies will Consist of:**

1. Environmental (as required by the Dept of Lands)
2. Marketing. (In depth studies of Japan, Canada, United States and Australian markets).
3. Meteorological.
4. Engineering. (Road design, lift placement, reticulation and sanitation).
5. Architectural and general area use planning.

In summary, we sincerely request the Board to consider the following points.

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- 1) The total lack of International Class Facilities available in New Zealand.
- 2) The fact that there is an enormous as yet untapped potential of winter tourists in Japan, Canada and the United States.
- 3) The unique suitability of the Duncan & Mackenzie Basins geographically and geologically for this purpose.
- 4) The fact that our preliminary studies indicate that this facility can be attained with the minimal visual and environmental impact.
- 5) The potential for a sizeable, favourable economic impact for the region and a significant impact for all of New Zealand.

Geof. A. Mead, B. Com.

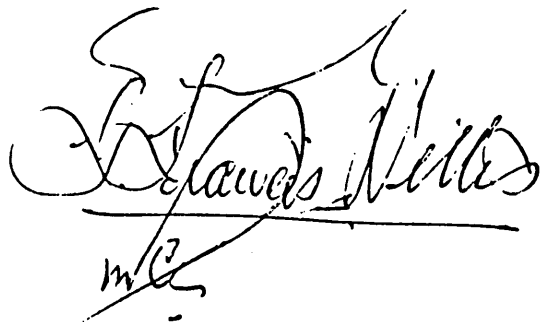
Gavin Francis Willis, F.N.Z.I.A.

Brian D. Palliser, B.A. LL.B.

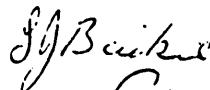
L. J. Baikie

R. A. Baikie, Pukaki Downs Station.

G. D. Seymour, Ferintosh Station.



A large, stylized handwritten signature in black ink, which appears to read 'Gavin Willis'.



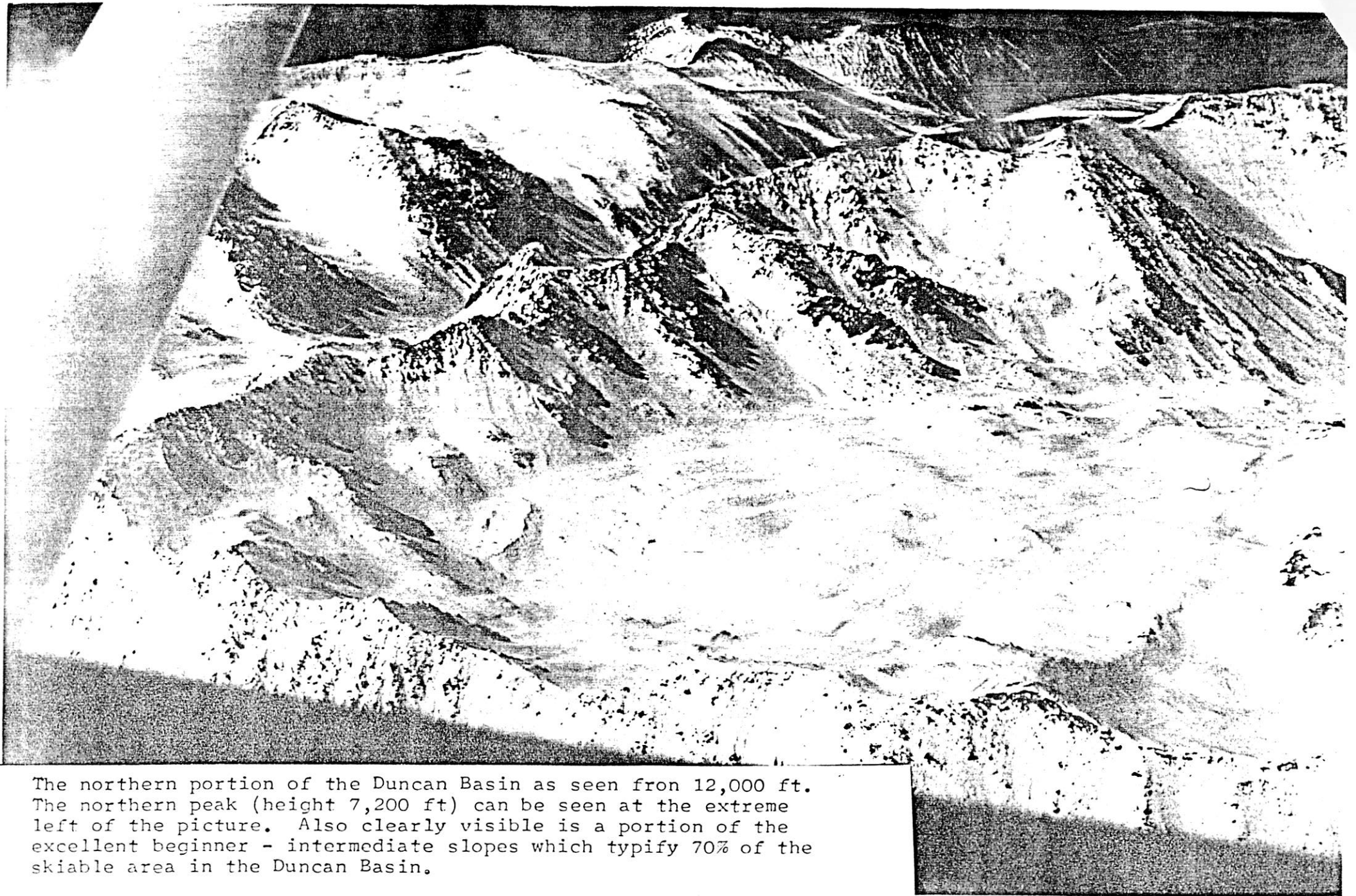
A handwritten signature in black ink, which appears to read 'L. J. Baikie'.



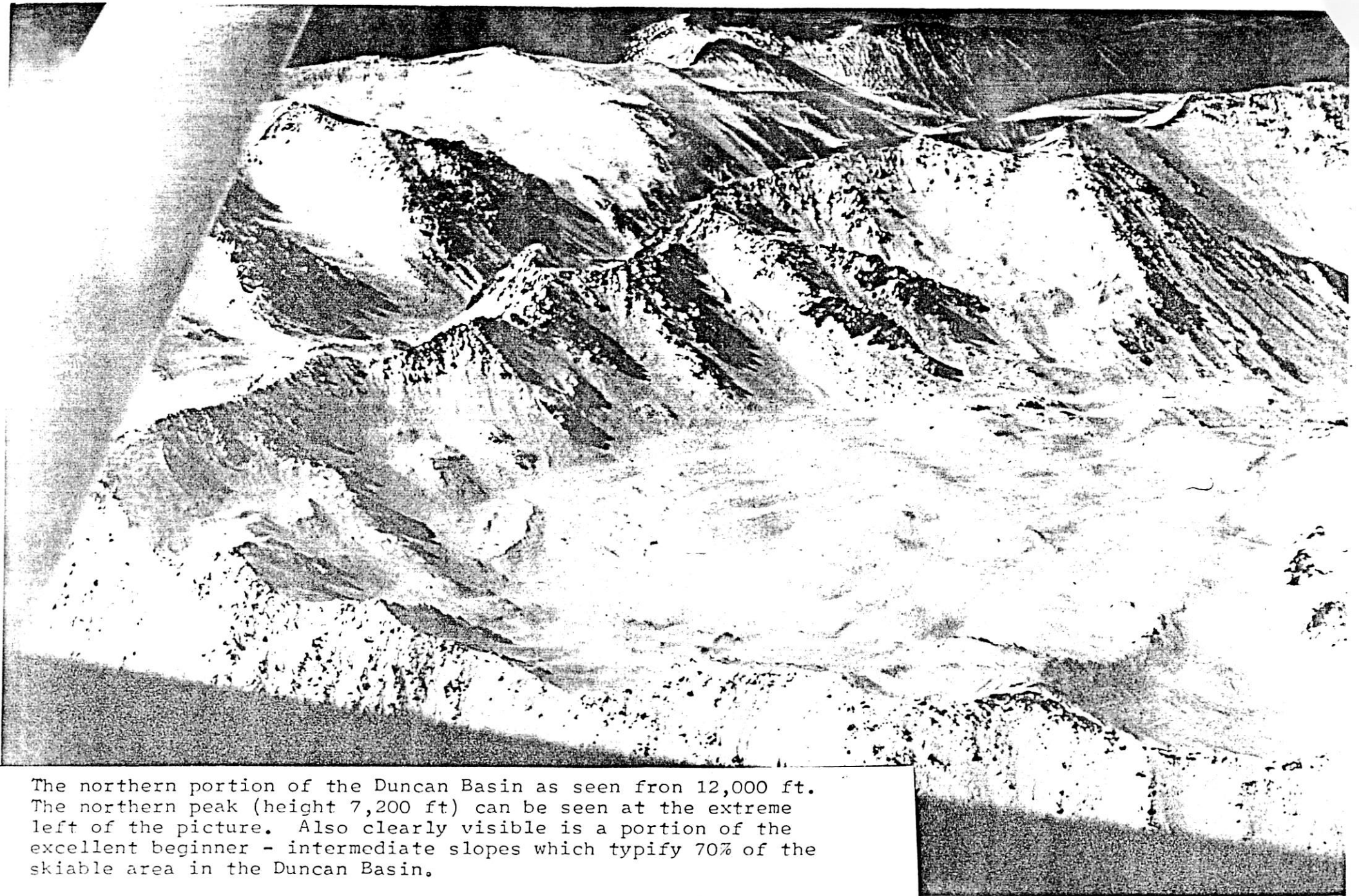
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A handwritten signature in black ink, which appears to read 'G. D. Seymour'.



The northern portion of the Duncan Basin as seen from 12,000 ft. The northern peak (height 7,200 ft) can be seen at the extreme left of the picture. Also clearly visible is a portion of the excellent beginner - intermediate slopes which typify 70% of the skiable area in the Duncan Basin.

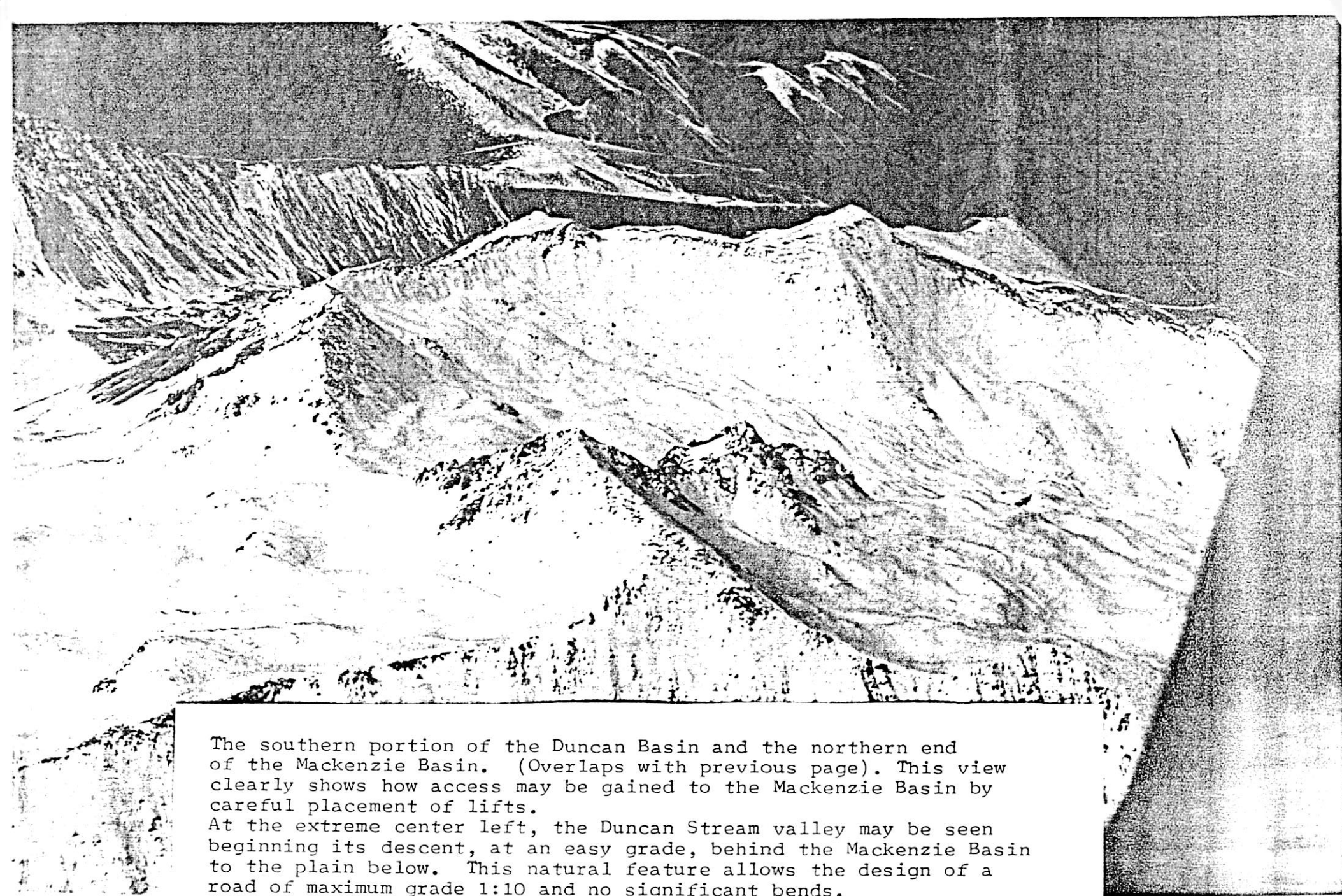


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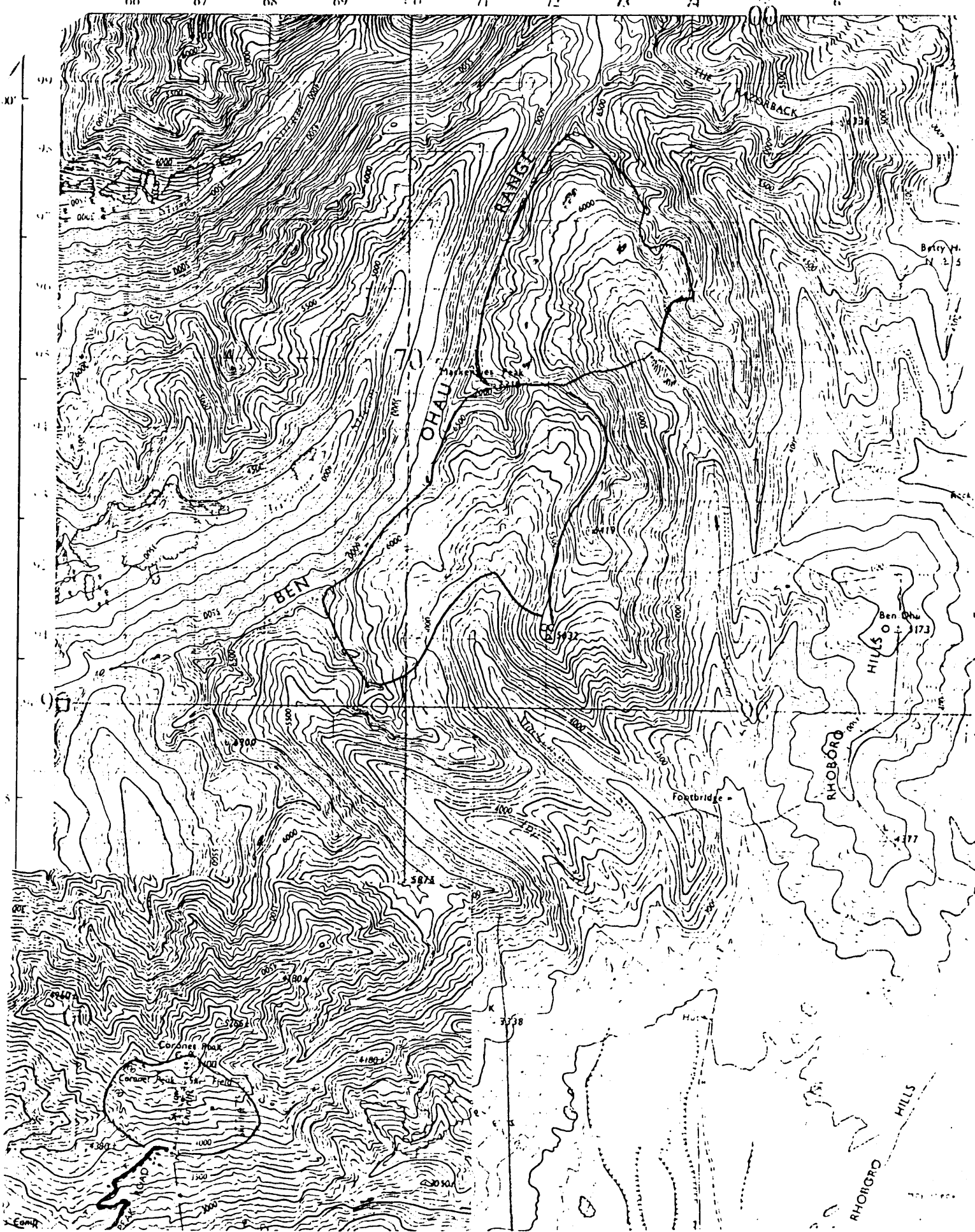
The central portion of the Duncan Basin. (overlaps with the previous photograph). Lake Pukaki is visible in the background. The basin is so vast that even after complete development (an investment of more than \$100 Million) few places would be intensively skied.





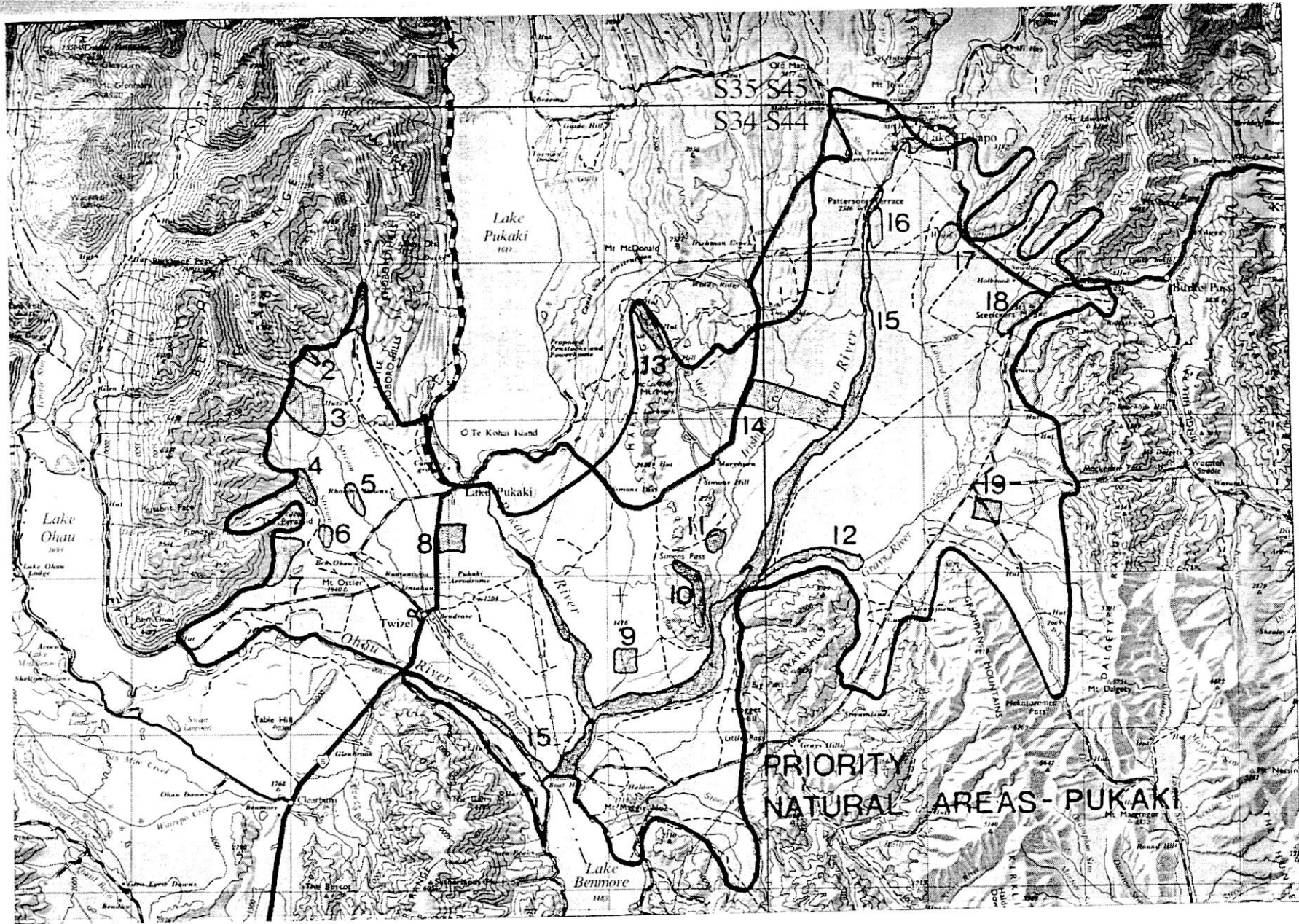
The southern portion of the Duncan Basin and the northern end of the Mackenzie Basin. (Overlaps with previous page). This view clearly shows how access may be gained to the Mackenzie Basin by careful placement of lifts.

At the extreme center left, the Duncan Stream valley may be seen beginning its descent, at an easy grade, behind the Mackenzie Basin to the plain below. This natural feature allows the design of a road of maximum grade 1:10 and no significant bends.



The Duncan and Mackenzie Basins (Outlined Area) compared with Coronet Peak. (Lower left hand corner)

N.Z. Topographical Map  
Scale 1:63,360



4.2.3

PUKAKI DISTRICT (63-2): Priority Natural Areas1. Lower Duncan Stream

Grid reference: S100 748875

- Snow tussock grassland on Piedmont Slope
- Red tussock grassland on Basin Fill Swamp

A good example of *C. rigida* on a low altitude, nutrient rich flush site. It is associated with plants characteristic of poorly drained sites. The red tussock shows morphological affinities with *C. rigida* which suggests a hybrid population. A good bog pine, *Phyllocladus*, *Podocarpus nivalis* community is located close to this PNA and requires investigation for possible inclusion (Grid reference S100 732890) (P. Hill personal communication).

Area : 190 ha  
 Altitude : 760-1005 m  
 Veg. card : 361, 541  
 Ecol. unit : 63-2-1

2. McMillan Stream

S100 715840

- Mountain beech on Fan Head Trench

The only stand of mountain beech in the district although there are larger remnants in the adjacent Ben Ohau District. An open stand confined to the stream bed with some regeneration. Endemic forest birds and insects are present.

Area : 16 ha  
 Altitude : 810-885 m  
 Veg. card : 293  
 Ecol. unit : 63-2-2

3. Gladstone Flats

S100 710810

- Red tussock grassland on Piedmont Slope
- Bog pine scrub on Piedmont Slope
- Fescue tussock grassland on Piedmont Slope

One of the best *C. rubra* grasslands in the entire Mackenzie basin. The majority of the tussocks are pure *C. rubra* with little or no hybridism. There are few weeds. *Chionochloa rubra* and *Oreobolis* in hollows grade into Fescue tussock grassland on better drained surfaces. This area contains an excellent community of *Dacrydium bidwillii*, one of two large stands remaining in the Region. This PNA forms part of an altitudinal sequence with the Upper Gladstone in the Ben Ohau district (PNA 3).

Area : 530 ha  
 Altitude : 610-825 m  
 Veg. card : 347, 348  
 Ecol. unit : 63-2-3, 63-2-4

4. Lower Fraser Stream

S100 700770

- "Site of Special Wildlife Interest, Outstanding Value"
- Matagouri/Coprosma scrub on Alluvial Terrace

This area is highly ranked by the Wildlife Service as a wader breeding and feeding site. This is a typical example of a stream bed scrubland.

Area : 40 ha  
 Altitude : 610-670 m

Veg. card : 507  
 Ecol. unit : 63-2-5  
 Reference : Wildlife Service (1978)

5. Dry Stream Swamp

S100 734765

- "Site of Special Wildlife Interest, Outstanding Value"  
 - Matagouri scrub on Valley Terrace Floodplain

This area is highly ranked by Wildlife Service as a wader breeding and feeding site. The vegetation consists of common wetland species and river course matagouri scrub.

Area : 125 ha  
 Altitude : 535-565 m  
 Veg. card : 352  
 Ecol. unit : 63-2-16  
 Reference : Wildlife Service (1978)

6. Ben Ohau Swamp

S100 720720

- "Site of Special Wildlife Interest, Outstanding Value"  
 - Wetland vegetation surrounded by matagouri scrub  
 on Valley Alluvial Terrace

This area is highly ranked by the Wildlife Service as a wader and waterfowl breeding and feeding site.

Area : 40 ha  
 Altitude : 520 m  
 Veg. card : 507  
 Ecol. unit : 63-2-5  
 Reference : Wildlife Service (1978)

7. The Pyramid

S100 695710

- Manuka scrub on Piedmont Slope

The only observed manuka community in the district. A low (<2 m) open stand intermingled with large *C. rigida* tussocks.

Area : 300 ha  
 Altitude : 535-610 m  
 Veg. card : 355  
 Ecol. unit : 63-2-9

8. Pukaki Flats above Airstrip

S100 803717

- Fescue tussock grassland on Piedmont Basin Floor

This is characteristic of the dry, well drained areas which supported fescue tussock grasslands. This was formerly the most extensive association in the district. Common tussockland fauna is abundant. The precise location of this area and its boundaries are open to discussion, it could equally well be situated adjacent to the river.

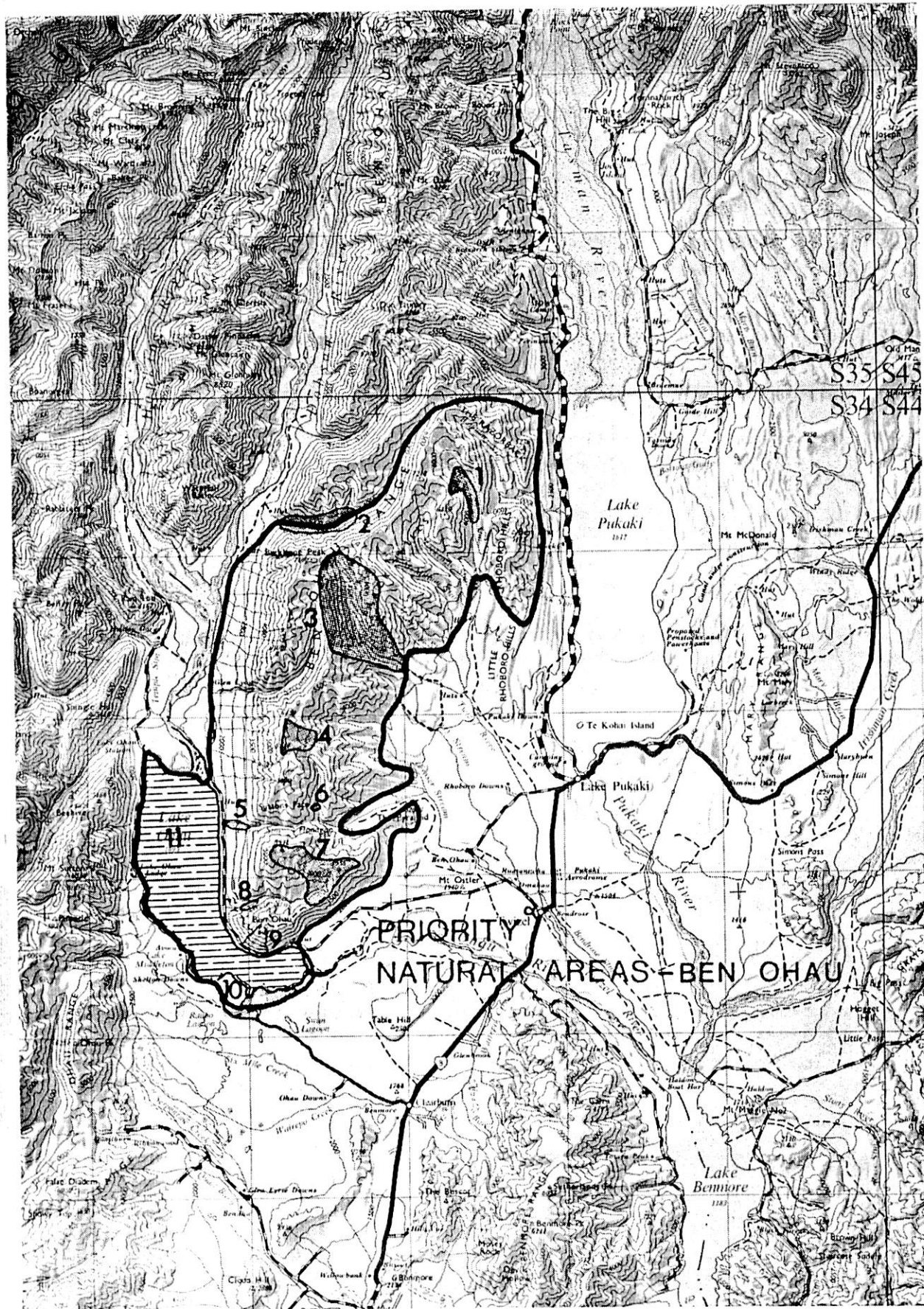
Area : 300 ha  
 Altitude : 490 m  
 Veg. card : 11, 13  
 Ecol. unit : 63-2-27

9. Tekapo-Pukaki River Flats

S 109 915645

- Fescue tussock grassland on Piedmont Basin Floor

PRIORITY NATURAL AREAS - BEN OHAU



## 4.3.3

BEN OHAU DISTRICT (63-3): Priority Natural Areas1. Upper Duncan Stream

Grid reference: S100 735950

- |                                 |                                    |
|---------------------------------|------------------------------------|
| - Snow tussock/fescue grassland | on Hill Sideslope                  |
| - Mountain celery pine          | on Hill Sideslope                  |
| - Snowbank community            | on Mountain Slope Moraine Deposits |
| - Snow/blue tussock             | on Hill Sideslope                  |
| - Fescue/Dracophyllum community | on Hill Sideslope                  |
| - Slim snow tussock             | on Mountain Slope Moraine Deposits |
| - Tree daisies                  | on Mountain Boulderfield           |

This area is an excellent example of the high altitude glacially derived tarns and cirques that typify the upper 1000m of the Ben Ohau Range. At 900m, depending on aspect, the fescue tussock intergrades with *C. rigida* which becomes the dominant tussock. This gives way at about 1700m to excellent *C. macra* stands which, depending upon aspect, snow lie and soil depths, may be superceded by snowbank vegetation, scree, fellfields or dwarf Dracophyllums. Boulderfields support *Podocarpus nivalis*, *Senecio cassinioides* and *Olearia* scrub communities. The terrestrial insects are highly varied.

Area : 180 ha  
 Altitude : 1115-1585 m  
 Veg. card : 54, 55, 292, 294, 295  
 Ecol. unit : 63-3-26

2. Irishman Stream Beech Remnant

S 99 645920

- Mountain beech on Hill Sideslope

A good, regenerating mountain beech community with little indication of animal browsing and trampling. This is probably the largest beech remnant in the Mackenzie Region outside of the Maitland Stream Valley. Forest-inhabiting birds and insects are present which do not occur elsewhere in the district.

Area : 425 ha  
 Altitude : 640-1280 m  
 Veg. card : 524  
 Ecol. unit : 63-3-2

3. Upper Gladstone Valley

S100 670860

- |                                  |                            |
|----------------------------------|----------------------------|
| - Snow tussock                   | on Hill Swamp Seepage Area |
| - Snow tussock/subalpine scrub   | on Hill Sideslope          |
| - Snow tussock/Matthews' tussock | on Hill Sideslope          |
| - Cassinia                       | on Hill Fluve              |
| - Matthews' fescue               | on Hill Sideslope          |

This area meets PNA 3 of the Pukaki District. This produces a continuous altitudinal sequence of tussock grasslands from the piedmont floor to the second highest peak in the Mackenzie Region. The upper part of this catchment contains large areas of *C. rigida* grassland with varying subdominants of *Festuca matthewsii*, *Schoenus* and hard tussock. There also exists areas of alpine scrub consisting of *Cassinia*, *Olearia* or *Dracophyllum* communities. These are usually restricted to the valley floors or shady faces.

Area : 2340 ha  
 Altitude : 825-2105 m  
 Veg. card : 286, 287, 288, 289, 345, 358  
 Ecol. unit : 63-3-6

4. Fraser Stream Headwaters

S 99 630789

- Slim snow tussock on Hill Sideslope

An example of *C. macra* grassland which grades into *Poa colensoi* and then into alpine herbfield, scattered amongst the loose scree. The common skink is present in large numbers. Terrestrial insects are numerous and diverse.

Area : 175 ha  
 Altitude : 1495-1980 m  
 Veg. card : 290  
 Ecol. unit : 63-3-25, 63-3-26

5. Dorcy Stream

S 99 590734

- Remnant mountain beech in Fluve  
 - Kame ridges of geological interest

A small riparian strip of mountain beech in a stream valley. It is well buffered by a 50m wide strip of scrub which includes lacebark and many *Coprosma* species.

Area : 27 ha  
 Altitude : 520-790 m  
 Veg. card : 528  
 Ecol. unit : 63-3-9  
 Reference : Judkins (1978)

6. Darts Bush

S 99 645740

- Remnant mountain beech in Hill Gorge

An open stand of mountain beech with restricted regeneration, confined to the sides and floor of a stream gorge. This distribution is probably due to periodical fires which have removed all the beech on open faces.

Area : 26 ha  
 Altitude : 915-1130 m  
 Veg. card : 293  
 Ecol. unit : 63-3-23

7. Upper Gretas Stream

S 99 645700

- Snow tussock on Hill Sideslope  
 - *Dracophyllum/Matthews' fescue* on Hill Sideslope

Good example of healthy high altitude *C. rigida* grasslands with extensive patches of *Dracophyllum pronum* and scattered *Festuca matthewsii* occupying the sideslopes on southerly aspects. The effects of aspect on the vegetation of the Ben Ohau Range is especially marked here.

Area : 800 ha  
 Altitude : 945-1615 m  
 Veg. card : 23, 24, 800, 881  
 Ecol. unit : 63-3-18, 63-3-20, 63-3-22

8. Lower Gretas Stream

S108 597683

- Mountain beech remnant in Hill Gorge

This is a good riparian beech strip occupying the gorge sideslopes and where possible, the valley floor. There is little sign of animal browsing or trampling. It is bordered to the south by a stand