

Vicki



Coneburn Area Resource Study

October 2002

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RESOURCE STUDY CO-ORDINATION BY DARBY PARTNERS LIMITED

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View of the Coneburn Area from Deer Park Heights

1.0 Introduction

This report presents the results of an area wide resource study of the Coneburn District. The study has been commissioned by the QLDC and prepared by a specialist team of resource consultants coordinated by Darby Partners Limited. The purpose of the study is to provide the QLDC, community and landowners in the Coneburn District with objective resource information for the area, a review of existing and potential land uses, an analysis of current planning policies, and guidelines for the ongoing management and development of the Coneburn area with particular regard to landscape and ecological values, public access and recreation, services and infrastructure.

The information contained within this document provides greater depth to the previous Section 32 Analysis undertaken for the Jacks Point Variation, by extending the study beyond the Jacks Point area to the greater visual and physical catchments of the Coneburn Area.

The study provides a resource based context for a number of current unresolved planning issues and concludes with guidelines for formulating a land use and landscape management strategy for this important area.

2.0 Methodology

The study approach is based on a traditional landscape planning methodology. Natural and cultural factors such as landform, vegetation and land use are computer mapped and overlaid in order to break the study area down into discrete landscape units or character types. The study area's visibility from public viewpoints is also computer mapped and analysed. Visibility combined with the landscape character provides a useful planning tool to identify the types of landscapes within the study area and their ability to absorb change. This information combined with other resource data enables site specific guidelines to be developed and a land use for a landscape management strategy for the Coneburn area.

The study can be broken down into four distinct phases leading to the conclusion of a strategy, (refer 2.1 Methodology Flow Chart).

Stage 1 Resource Studies & Information Gathering

Individual resource studies such as geological and ecological surveys were undertaken by appropriate specialists. Ten resource studies were undertaken for this study area. The layers of information compiled provide a good general understanding of the study area, its physical and visual make-up.

Stage 2 Resource Analysis

The above information is then analysed, looking for patterns in the landscape, which help to categorise it into discrete landscape units that possess similar characteristics (refer Figure 11). These units are not hard edged and the boundaries exist as blurred transitions, as one landscape type merges with another.

Other source data relating to both district planning and infrastructure, public access and recreation are also gathered to complete the Resource Analysis.

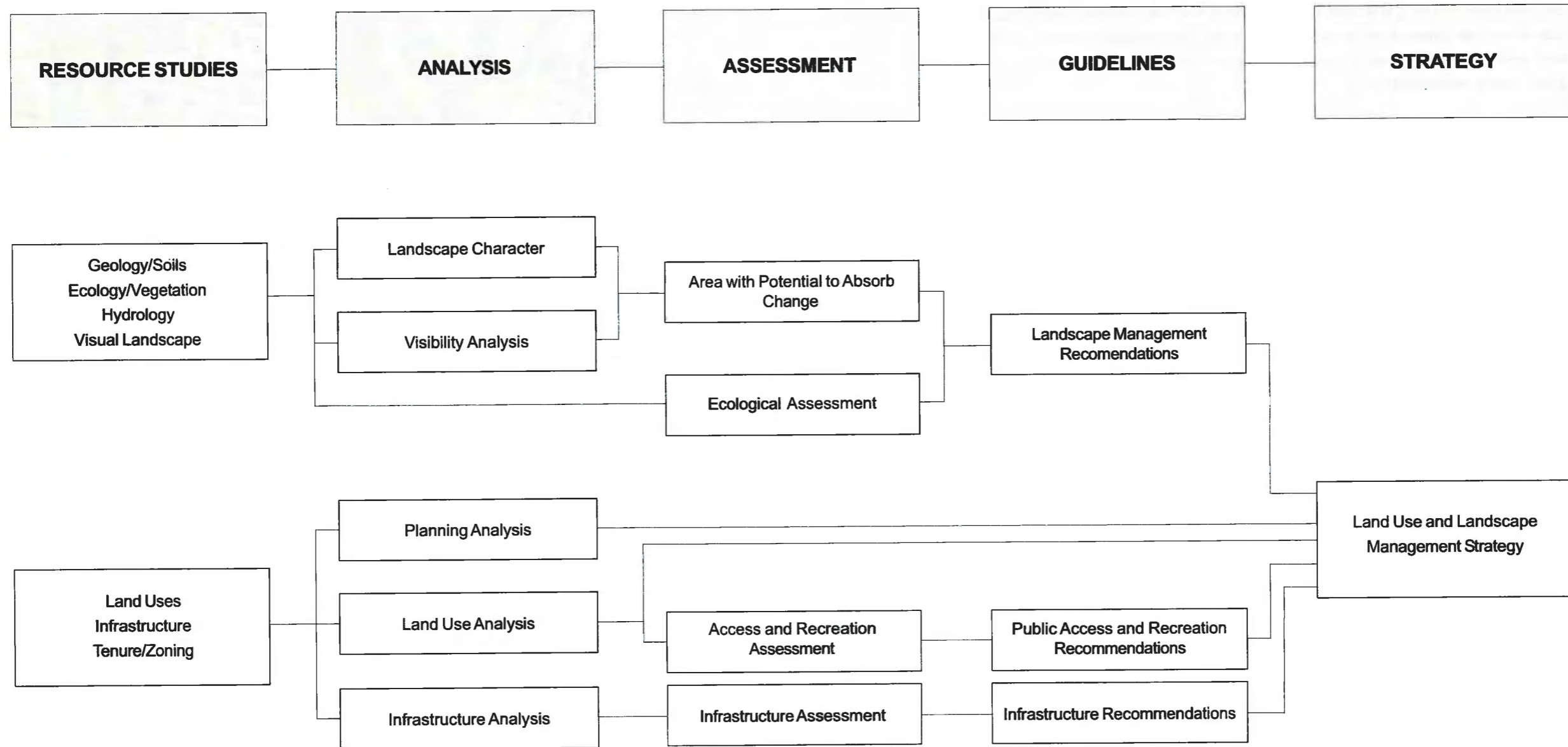
Stage 3 Resource Assessment

The study area is then assessed and categorised in terms of its 'Ability to Absorb Change' together with an assessment of the areas ecological heritage, access and recreation potential. The area's infrastructure to support development is also assessed.

Stage 4 Resource Summary & Recommendations

Tabulation of Stages 1 through 3, with recommendations in respect of Landscape Management, Infrastructure, Public Access and Recreation.

2.1 Methodology Flow Chart



3.0 Coneburn Study Area

The study area (refer Figure 1) is located 10 minutes drive south of Frankton Village, approximately 10 minutes drive from Queenstown airport and comprises approximately 5000ha (12,500 acres). The study area is clearly defined by topographical and physical boundaries, which the aerial photograph clearly illustrates (refer Figure 2).

The boundaries for the study are defined as follows:

- To the east is the Remarkables
- To the west is Lake Wakatipu
- To the south is Wye Creek
- To the north, is the back of Deer Park Heights

The study area has a varied and complex topography, comprising a lake escarpment along the entire western edge, rising up to an elevated schist ridge extending from Jacks Point in the south to Deer Park Heights in the north. This ridge then descends to the east into a central valley that is flat to slightly undulating. From here the terrain rises again giving way to a hummocky, channeled topography adjacent to the Highway. Outwash fans dominate the base of the Remarkables. To the south, the Remarkables descend down to the edge of Lake Wakatipu.

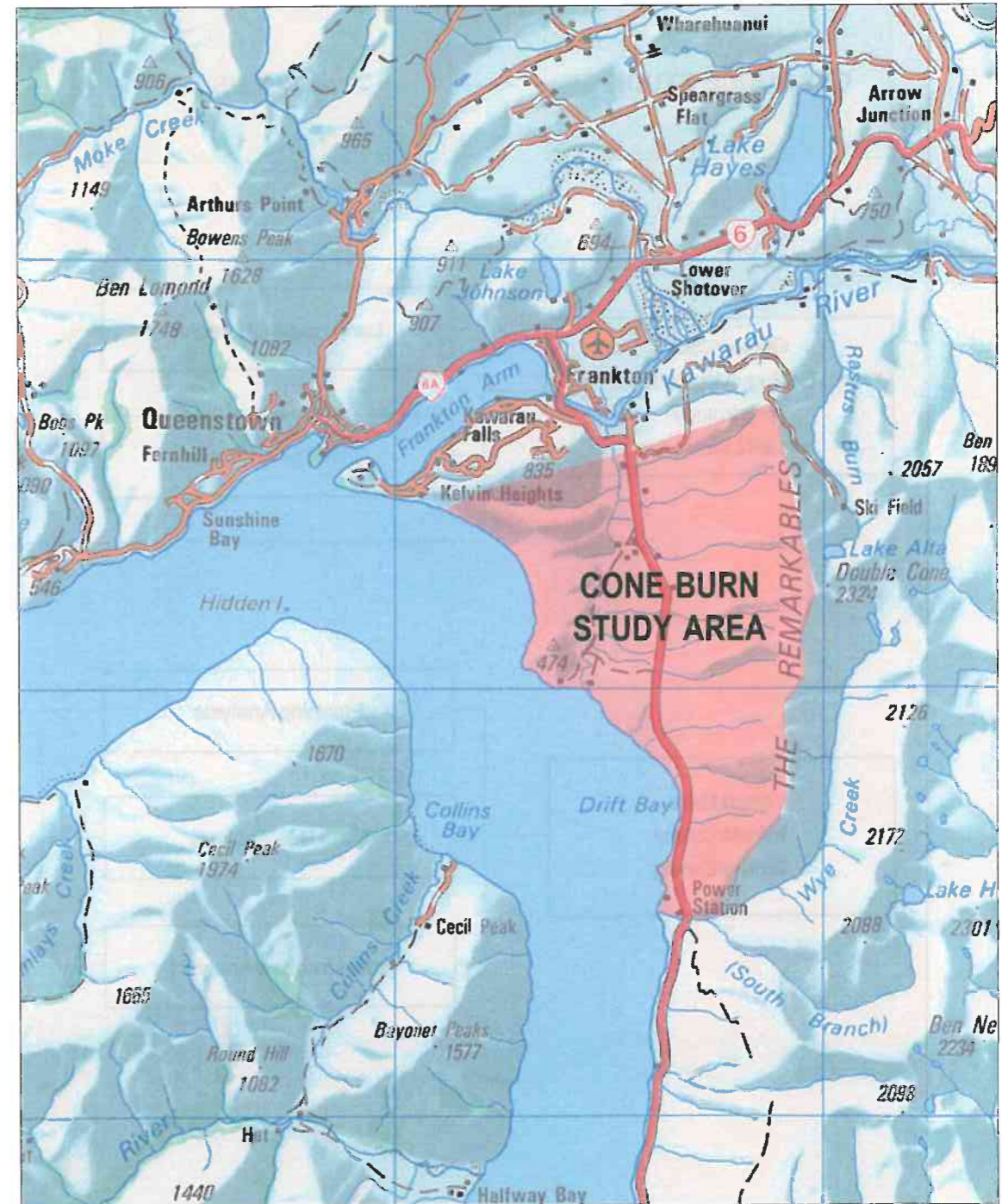
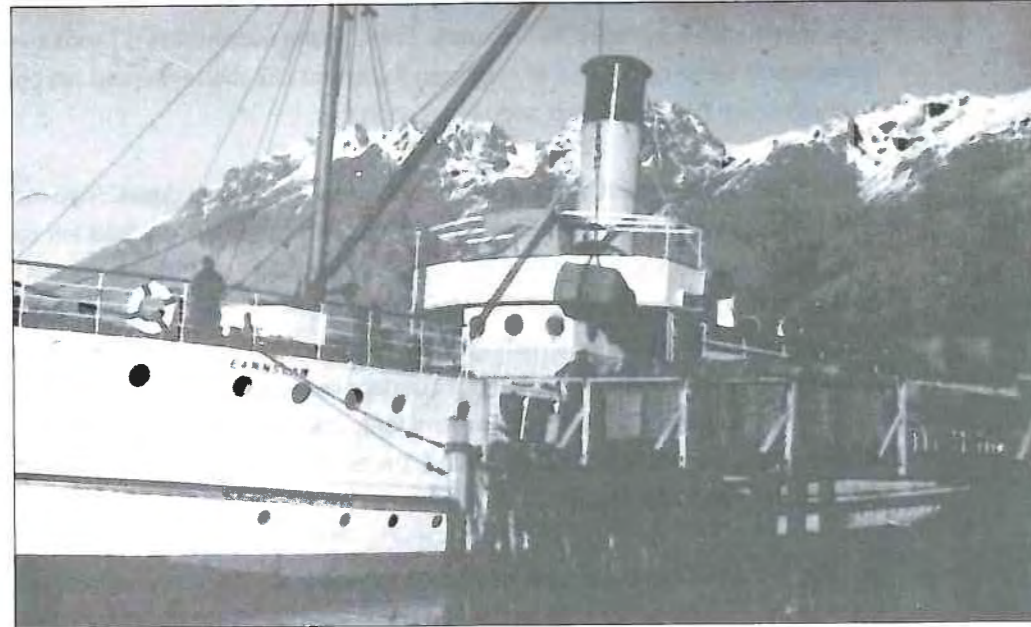


Figure 1 - Location Plan

4.0 Resource Studies

4.1 Historical/Cultural/Heritage



The Earnslaw taking on a load of wool at the Woolshed

4.1.1 Pre European Period

Prehistoric use of the interior is well known from archaeological, historical and traditional sources. Routes to the interior from the coast often followed river courses, and while inland journeys would be made on foot, the return to the coast would often be made by raft back down the river. The "Natural Bridge" over the Kawarau River near the Roaring Meg was the crossing point on one of the inland routes, and continued in use into the historic period.

These inland journeys were made for a variety of reasons. Most commonly they were for resource-gathering. Prior to the extinction of the Moa, hunting expeditions were made in pursuit of these birds, and numerous moa-hunting sites are known in Central Otago. Lithic resources were also very important, with nephrite (pounamu) now being the best known, but other materials such as silcrete was also sought. Movements into the interior during periods of warfare also occurred. Historically, eeling trips were documented by a number of early European observers, as were the remains of a number of village and campsites.

However, it is unlikely that the area under study was ever intensively used by Maori. Communication along the lake would have been by canoe, particularly as the eastern shore is very rugged. A good landing is to be found to the south, by the Remarkables Station homestead, but the shoreline of the study area itself is steep and rocky. There are no recorded archaeological sites in the area, and the landowner of Remarkables Station has found no evidence of prehistoric activity.

4.1.2 European History

Historically, the first European to venture into the interior was Nathaniel Chalmers in

September 1853. He was guided by the chief Reko from Southland, up the Mataura River, crossed the Natural Bridge over the Kawarau, and reached as far as the Clutha at Lake Hawea before he became too ill to travel. Reko constructed a mokihī (flax raft) in which they travelled down river to the coast. By the end of the decade the pastoralists had begun to move into the area, taking up depasturing licences over large areas of land. This settlement was rapidly followed by the Otago goldrushes of the early 1860s, which brought vast numbers of miners to the interior, closely followed by merchants, hoteliers, packers etc. Canvas towns quickly grew up and died as rushes occurred and died away, although some of these towns survived to become regional service centres. Queenstown grew up on the site of W G Rees station buildings and is now the main local centre.

4.1.3 Brief History of the Remarkables Station – Coneburn

Towards the end of January, 1860 a party set out from Dunedin to penetrate the relatively unexplored central region of Otago in search of suitable pastoral lands. They made their way inland via the Waitaki river and the Lindis Pass. After making an extremely hazardous and costly crossing of the Clutha river and many disappointments in their search, only two of the party decided to continue – W G Rees and N P B von Tunzelman. About February 12 they surmounted the Crown Range and the great Wakatipu Basin lay before them.

They spent several days investigating the area and decided to apply for grazing rights, Rees on the eastern side of the Lake and von Tunzelman on the west.

By January 1861 Rees, on behalf of the partnership of Grant, Gammie and Rees, had stocked Run 356 which he named Shotover and begun stocking Run 346, named the Bucklerburn. He then obtained Run 331 from A A Macdonald and J McIntosh, which became known as Staircase Run. This Run included all the country on the east side of the south arm of the Lake. By September 30, 1862 he had taken over Run 345 from Shenans. This Run, known as the Peninsula Run, encompassed all the land to the south of the Kawarau river from Doolan's Creek to the Lake.

What promised to be a huge pastoral empire soon encountered insurmountable difficulties when, in 1862 gold was discovered in the Shotover and Arrow rivers. Run 356 was formally declared a Goldfield by the Provincial Government on January 6, 1863. Rees, anticipating the inevitable, moved his pastoral activities to his southern Runs and commenced building a homestead near the outlet of the Lake in the latter part of 1862, completing it early in 1863. Runs 331 and 345 were now, for all practical purposes, combined and named Kawarau Falls by Rees.

The partnership of Grant, Gammie and Rees was dissolved "by effluxion of time" on the 27th July, 1865 and Kawarau Falls Station was sold to Charles Crofton Boyes and Frank Campbell Boyes on 7 December 1866.

In the years that were to follow the Station, through boundary adjustments and sales, gradually became reduced in size to 46,600 acres and, having passed through a succession of ownerships, was purchased on the 14th September 1922

by Dickson Jardine, who owned the 60,747 acre Glencoe Station near Arrowtown. On 11th April 1923 Dickson moved his family from Glencoe to the Kawarau Falls homestead where, at that time, the only means of access was by boat. On the 5th July 1928 Dickson sold Glencoe to a Dr Aitken and concentrated on Kawarau Falls. On the 24th January, 1924 the Kawarau Gold Mining Co. was granted a licence to construct a dam and bridge across the Falls. It was completed and opened on the 23rd August 1926.



On 27th April 1927 the Public Works Department commenced building a road to Kingston with unemployed labour. The road, little more than an access track, reached the Staircase bluffs from both ends in 1929. Work then ceased until August 1934 and the road was officially opened on 4th April 1936. This road was more of a curse than a benefit to the Station.

In October 1929 Dickson took up the lease of the McAdam Brothers Soldier's Settlement farm which he subsequently freeholded.

On the 19th September 1941 Dickson took his two sons, Grieve T and Dickson G, into partnership, management being undertaken by DG. Because of depressed

wool prices the decision was taken to dispose of the fine wool flock meantime and move into fat lamb production. The sale of the fine wool sheep was held on the property on the 20th March 1944.

In 1947 Dickson subdivided the property between his sons, the necessary documents being signed at the Homestead 17th February, 1948. In the subdivision GT took over the freehold Homestead Block and name of Kawarau Falls and DG the leasehold hill country and part freehold which he named Remarkables Station.

In 1955 the quarters built by Rees at the woolshed were burnt down. Two rouseabouts, the only members of the shearing gang present apart from the cook, had left candles burning while they had tea and by the time the fire was noticed it was beyond control. All they could do was to drag out the swags of the 10 other members of the gang who had not yet arrived. DG was in Queenstown for shearing items when he received word, by the time he and the fire brigade reached the Woolshed the quarters were completely destroyed. Shearing was put off for a day until a large marquee and tents could be set up to accommodate the gang. New quarters were built in 1956. In 1960 GT sold Kawarau Falls to F Mee and the Homestead block to the Methodist Church.

In 1966 DG purchased the farm known as McAdam's. The small adjoining Run known as Loch Linnhe came up for sale and was purchased by DG for the older son DS. The Land Board approved the sale subject to a substantial portion of the Station leasehold being amalgamated with the smaller property. The decision was taken in 1974 to dispose of the Loch Linnhe property and further develop the remainder.

In 1973 DG took his two sons Dickson S and Andrew G into partnership in Remarkables Station and in process the property was subdivided between them, Dickson S taking the leasehold hill country and part of the freehold, including McAdam's Farm and Remarkables Homestead, retaining the name of Remarkables Station. Andrew G took the balance of the Freehold, which included the original Remarkables Homestead, naming his property Henley Downs.

4.1.4 Cultural Landscape Today

The cultural landscape and land use pattern we see today, is strongly influenced by farming practices both past and current: For example:

- Farm buildings located on foreshore next to wharf access.
- Dwellings located in close proximity to roading and services.
- Fencelines demarcate both cadastral boundary and farm management units.
- Shelterbelts reinforce the above delineation and provide the functional requirement of shelter for stock.

This culturally modified landscape extending back from the lake edge, contrasts with the untamed landscape of the Remarkables, as the cultural landscape makes a rapid transition into the natural.

4.1.5 Architectural Heritage

Many historic buildings have been lost over the years for one reason or another. Only one structure has been included in the inventory of Protected Features, that being Ref. No. 78

Stone Cottage (Rees) near Kawarau Falls SH6, at the base of Deer Park Heights. It is a white washed cottage which sits adjacent to the road.

4.2 Tenure (Refer Figure 3)

The landownership of the study area is shown in Figure 3, with the majority of the land being held by four main parties:

- Remarkables Station (2000ha)
- Jacks Point Limited (420ha)
- Henley Downs Limited (706ha)
- Dept of Conservation
- Various individual landowners

4.3 QLDC Zoning (Refer Figure 4)

Figure 4 is a reproduction of the appropriate QLDC Proposed District Plan zoning map relevant to this area. 99% of the land is zoned 'Rural General' with a small pocket of 'Rural Residential', being Lakeside Estates.

4.4 Geological Survey (Refer Figure 6)

Mr Royden Thomson was commissioned to provide a geological survey of the Coneburn area and to identify areas of potential natural hazard (refer Appendix 4).

Key points of his report are:

- a. The terrain generally west of The Remarkables, and between the Kawarau River and Wye Creek, varies from flat to precipitous and there is a relative relief difference between Lake Wakatipu and the mountain crest in excess of 2000m.
- b. Most slopes are west facing in the area studied.
- c. No faults have been located in the study area but some structural control is likely as inferred from the lineal nature of the valley at and west of SH6. An active fault daylighting further east in the Nevis Valley dips west beneath The Remarkables and Lake Wakatipu. There is ongoing seismic activity associated with this feature.
- d. Repeated glacial erosion during Quaternary times has sculptured the area and routinely removed surficial deposits. The last glacial incursion was 18,000 years ago. When the ice melted a proto Lake Wakatipu formed at higher levels then dropped to its present dimension after capture by the Kawarau River. The changing lake margin is evident through the study area.
- e. Surficial deposits of various ages and types are present throughout much of the moderate to low relief terrain. These include glacial till, glacially related fluvial sediments, lake deposits and fans. In many localities there is a sequence of lithologies, the lower of which are imprecisely understood.
- f. Landslides and rockslides are present on many steep slope elements in schist. No catastrophic failures have been identified.
- g. Obvious hazards are posed by rockfall, floods and debris flows. However, these are relatively minor and should be able to be avoided or mitigated should developments

occur in the future in the study area. Seismotectonic effects need to be addressed in line with standard practice for the Queenstown area.

4.5 Soils (Refer Figure 7)

Soils information from the Landcare Soil Survey has been transposed over the site. The survey did not cover the entire study area, but gives a good general overview for the type and distribution of the soils over the majority of the site. The table in Appendix 6 summarises some of their major attributes and assesses their versatility and land use options. The most common soils are those of the Wanaka and Blackstone soil series.

4.6 Ecological Patterns & Processes (Refer Figure 8)

Boffa Miskell (Christchurch) were commissioned to undertake a description of the ecological patterns and processes within and between habitat types in the Coneburn Study Area. That full report is contained in Appendix 5. Key conclusions are:

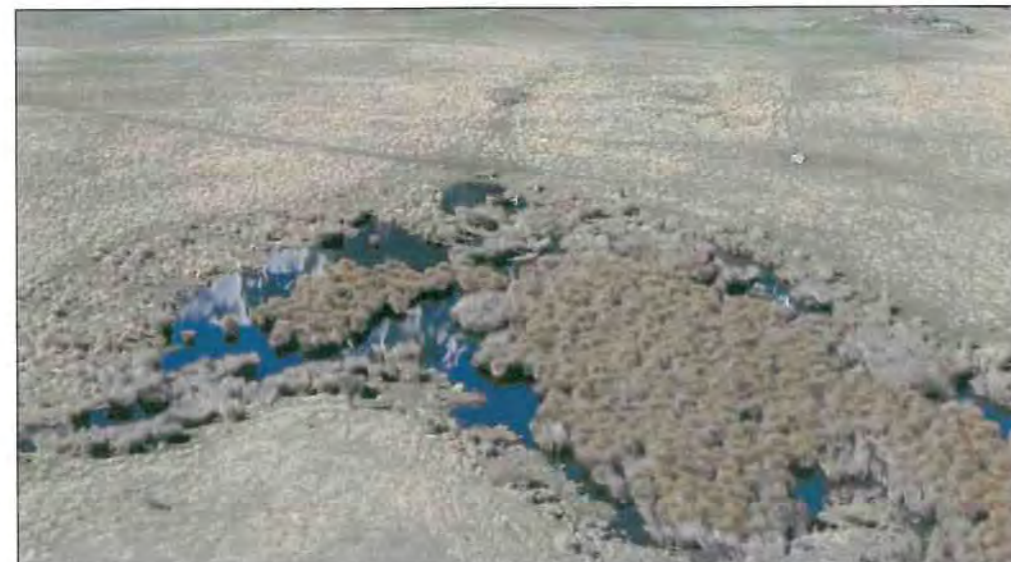
HABITAT TYPE	COMMENTS
1. Snow Tussockland on Steep Mountain Slopes	<ul style="list-style-type: none"> • Control exotic weeds • Exclude grazing
2. Remanant Beech Forest	<ul style="list-style-type: none"> • Control linkages • Lowland revegetation
3. High Energy Ephemeral Streams	<ul style="list-style-type: none"> • Control linkages • Weed control
4. Bracken Fernland i. on mid altitude mountain slopes ii. on moraine and fluvial outwash fans and terraces	<ul style="list-style-type: none"> • Reduce disturbance
5. Grey Shrubland i. on mid altitude mountain slopes ii. on moraine and fluvial outwash fans and terraces iii. on roches moutonee	<ul style="list-style-type: none"> • Create more shrub diversity • Weed control
6. Schist Rock Tors and Scarps i. on mid altitude mountain slopes ii. on roches moutonee	<ul style="list-style-type: none"> • Control skink predators • Introduce skink food plants • Link to other habitats • Add threatened plants
7. Wetlands	<ul style="list-style-type: none"> • Enhance wetlands • Link wetlands
8. Broadleaf Forest on Lakeshore Escarpments	<ul style="list-style-type: none"> • Introduce rata • Control weeds and pests • Create link to other habitats



Remnant Beech Forest on the Remarkables



Lakeshore Native Revegetation



Wetlands

4.7 Slope Analysis (Refer Figure 9)

Slopes in excess of 25% gradient are largely unsuited to any form of development other than revegetation. These are mapped in Figure 9.

4.8 Visibility Mapping (Refer Figure 10)

Part of the resource mapping involves assessment of the visibility of certain parts of the study area as viewed from prominent public viewpoints. These were deemed to be the following:

- SH6 road corridor
- Lake Wakatipu

Visibility of the study area has been mapped at 2 levels of accuracy, which was dependent upon the quality of contour information available. Of the 11km of SH6 running through the middle of the study area, contour information ranging from 0.5m to 2.5m contour interval existed for approximately 6km. This encompassed Henley Downs, Jacks Point and Homestead Bay of Remarkables Station. Of the remaining 5km, of which 3km lay to the south, the area has been mapped using 20m contours supplied by Terralink, combined with ground survey.

From here the visibility analysis tool of the specialist computer graphics software, GEOPAK is employed. A 3-dimensional model of the study area is created and all areas visible from specified viewpoints are mapped with a radiating line of sight at 1 degree intervals from each point. The 150m interval between viewpoints along SH6 represents approximately 5 seconds of travel based on a vehicle travelling at 100km/hr and 16 seconds for a 500m interval.

For the analysis the viewers eye level was set at 3.00m above existing ground (road level) to best replicate the view from a tour bus being the highest likely road user viewer level. No existing vegetation has been taken into consideration in this mapping.

The GEOPAK software identifies the extent of the site visible from the nominated viewer position and height. Each viewpoint is individually mapped and a composite plan showing the visibility from all viewpoints is generated. The intensity and overlap of mapped colours gives an immediate graphic indication as to the extent of visibility of various parts of the study area from specified viewpoints along SH6.

This same procedure was repeated for specified viewpoints on Lake Wakatipu. To account for the more random location of viewpoints on the lake a series of representative viewpoints were selected at 500m, 1.00km, 1.50km and 2.00km intervals from the shoreline. The viewer's eye level was set at 4.00m above the lake level, to represent the viewer level from the TSS Earnslaw (presently the highest on Lake Wakatipu – although it does not usually travel down this arm of Lake Wakatipu).

The extent of the study area visible from various viewpoints is illustrated on Figure 10.

5.0 Resource Analysis

5.1 Landscape Character (Refer Figure 11)

The visual character of the landscape is a key determinant in the ability of the study area to absorb change without significant adverse effects on landscape values. To assess this, it is necessary to break the site area down into discrete landscape units based on a common visual landscape description or defining character.

Character is a unique combination of landscape elements such as landform, vegetation, water or built elements and/or spatial qualities. Distinct character types or landscape units were identified within the Study Area and are illustrated in Figure 6 and described below:

Landscape Character Types (Refer Photographs A to F)

CHARACTER TYPE	DESCRIPTION
Remarkables	An iconic landscape feature of the Wakatipu Basin, characterised by precipitous schist terrain and a dominant ridge line. Remnant and regenerating beech forest are to be found in the deep sheltered gullies.
Fans & Lower Slopes	<p>This landscape unit stretches from Lakeside Estates in the south to past the Remarkables Ski Area access road to the north. It is a gently rolling landscape, cut by ephemeral streams. The landscape to the south has been modified for farming and characterised by fencelines, amenity planting, farm dwellings, shelterbelts and wilding tree species on the higher slopes.</p> <p>To the north, the landscape has undergone a greater degree of domestication with small farmlet blocks and commercial uses becoming obvious. The Remarkables Ski Area access road is the clearest example of the change in land use at this end of the study area.</p>
Hummocks	Elevated, undulating plateau intercepted by strongly channelled ephemeral streams, gentle contour in improved pastures with shelterbelts and fencing, rougher areas characterised by grey shrubland.
Central Valley	Broad open valley floor running north south contained either side by gentle slopes. Contained views and sense of enclosure.
Tablelands	Elevated broad schist ridge and plateau, gentle contour with localised hummocky terrain, tarns and largely unimproved pasture and matagouri stands contrasting with small localised spaces defined by schist rock outcrops and ridges.
Jacks Point Knob	Very elevated, steeper contour rising to a dominant outcrop with small rock enclosed spaces and localised tarns. Predominate vegetation unimproved pasture, short tussock and matagouri stands.
Lake Escarpment	Lake margins and rocky bluffs with native shrubland dominate the character of this lake edge landscape.
Lake Terraces	Occurs in two locations along the Lake edge: from Homestead Bay to Lakeside Estate and further south at Wye Creek. Terraces set back 200m-400m from lake edge. Landscape mostly modified by farming and subdivision and characterized by improved pasture, shelterbelts, fencelines, water tanks and amenity planting. Lakeside Estates and Wye Creek are the two small subdivisions totaling 38 and 15 lots respectively.

Lake Escarpment



Lake Terraces



Jacks Point



Remarkables



Fans, Fan Delats and Lower Slopes



Central Valley



Hummocks



Tablelands



5.2 Visibility Analysis (Refer Figure 11)

Having mapped the study areas visibility it is possible to further categorise the study area into areas of relatively high visibility through to low visibility. The categories are defined by applying the following criteria:

CLASSIFICATION	CRITERIA
HV - Highly Visible	<ul style="list-style-type: none"> • Readily visible from a specified viewpoint/viewpoints eg SH6 • Viewing distance less than 1.00km • Visible for greater than 5 seconds from road corridor (i.e. distance of greater than 150m assuming a vehicle travelling at 80-100km/hr).
MV - Moderately Visible	<ul style="list-style-type: none"> • Visible or intermittently readily visible from a specified viewpoint / viewpoints • If readily visible, then visible from road for less than 5 seconds or 150m of the road corridor. • Viewing distance greater than 1km
LV - Low Visibility	<ul style="list-style-type: none"> • Intermittently visible or not readily visible from a specified viewpoint / viewpoints. • Viewing distance greater than 2km.
NV - Not Visible	<ul style="list-style-type: none"> • Cannot be seen from specified viewpoint / viewpoints.

Figure 10 provides a map of the study area broken down into different levels of visibleness as defined by the above criteria.

5.3 Land Use Analysis (Refer Figure 2)

Semi-extensive pastoral farming is the dominant existing land use of the Coneburn study area, however the following land uses also play a significant role in creating the land use fabric that makes up the Coneburn catchment.

5.3.1 Rural and Residential Living

This is presently limited to less than 120 dwellings and is situated in two areas, the northern area adjacent to the Remarkables Ski Area Road and the southern end in the Lakeside Estates and Wye Creek developments.

5.3.2 Quarrying

Two quarries are located in the area. One is adjacent to the Remarkables ski area road, the other is east of Lakeside Estates.

LANDOWNERS	EXISTING USES	FUTURE POTENTIAL LAND USES
Jacks Point Limited	<ul style="list-style-type: none"> • Semi-extensive pastoral farming 	<ul style="list-style-type: none"> • Integrated residential and visitor community • Open space network with golf course and recreation • Village
DS & JF Jardine	<ul style="list-style-type: none"> • Semi-extensive pastoral farming ie. deer, cattle and sheep • Temporary film set location • Airfield and parachute operations 	<ul style="list-style-type: none"> • Continued farming • Integrated community village and visitor community • Farm buildings and craft activity area • Horticulture on appropriate soils • Open Space network with public access to walkways and lake edge • Native Revegetation of foreshore and gully areas • Wharf, Boating Facility and complementary activities area
Henley Downs Limited	<ul style="list-style-type: none"> • Semi-extensive pastoral farming 	<ul style="list-style-type: none"> • Integrated community • Open Space network with outdoor recreational activities • Village • Defined neighbourhood precincts with design controls • Native Revegetation • Semi-extensive pastoral farming • Film Studio
Lakeside Estates Limited	<ul style="list-style-type: none"> • Medium density rural residential estate with extensive exotic tree planting and landscaping 	<ul style="list-style-type: none"> • Medium density rural residential
Various Landowners North of SH6 (near Remarkables Ski Field access road)	<ul style="list-style-type: none"> • Rural lifestyle 50 acre residential area • Farm forestry • Quarrying • Earth moving depot 	<ul style="list-style-type: none"> • Continued rural living



Farm Forestry



Quarry Operations



Farming Remarkables Station



Lakeside Estates



Film Set

5.3.3 Farm Forestry

A pine forest has been planted adjacent to the highway at the foot of the Remarkables. The plantation is probably half way through its cycle.

5.3.4 Temporary Film Set

An area on the Henley Downs property was used as a temporary film set for the filming of the movie called the Vertical Limit. Part of this has been dismantled, the other portion remains, with its current use unknown.

5.3.5 Airfield & Sky Diving Operation

A skydive operation is set up on the Jardines Airfield which is an extremely popular attraction. The valley itself is all the site for low level flying practice by the aero club (call Richard Hanson to confirm)

5.3.6 Trucking / Construction Yard

One of the local construction firm uses an area off the highway, close to the ski field road at the northern end of the valley, as a storage/maintenance depot for its equipment and materials.