

KAWARAU REMARKABLES CONSERVATION AREA

Landscape and Visual Assessment

October 2020

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October 2020 : Status **DRAFT**

KAWARAU REMARKABLES CONSERVATION AREA LANDSCAPE ASSESSMENT REPORT

1 INTRODUCTION

This landscape assessment report contributes to the Kawarau Remarkables Conservation Area (CA) Reclassification Project. The area was inspected by aerial overview on May 27, 2020.

The area under reclassification includes two separate land areas. The larger northern area is centred on the Kawarau/Remarkables Range and the southern area (previously part of Glen Nevis Pastoral Lease) is on Tāpuae-o-Uenuku / Hector Mountains.

This report provides a landscape framework that contributes to the multidisciplinary assessment that will be used to justify status/classification recommendations.

The report is structured as follows:

- Section one: includes a description of the assessment areas location, the regional landscape context and the assessment methodology.
- Section two: includes a landscape analysis and evaluation and recommendations and conclusions. This forms the bases for informing future status and reclassification.

2 METHODOLOGY (SECTION 1)

The process of landscape assessment includes the following steps:

1. A description of the landscape context. This places the area within the context of the wider regional landscape.
2. Landscape units are defined and the broad characteristics of each unit described.

The whole of the Kawarau/Remarkables and Tapuae-o-Uenuku/Hector Mountains could be described as a single landscape unit or entity. However, for the purposes of description, analysis and evaluation the area has been divided into 4 units or landscape types and 6 subunits.

The landscape characteristics used to describe the landscape include:

- Natural science factors (geological, topographical, ecological and dynamic components of the landscape.
- Historical aspects and cultural elements and features.
- Other characteristics e.g. remoteness, isolation, wildness.

For this assessment the landscape units are predominantly catchment boundaries. It is important to note that landscape unit boundaries are not rigid and that there is overlap between units. This is the case on the upper slopes and summit ridge of the Remarkables and Hector Ranges where the landscape characteristics are generally consistent across the

entire upper slopes and ridge crest i.e. on both the Lake Whakatipu Waimaori and Nevis Valley side but are defined as separate landscape units.

3. A description of the visual and scenic values. Visual and scenic values can be considered in two ways: firstly by inherent visual values, and secondly by visibility from public places such as roads, lakes, waterways or public land.

4. Landscape values are assessed using the 6 criteria outlined below.

5. An assessment of landscape vulnerability.

6. A summary evaluation and significance of the unit.

The definition of the **6 CRITERIA** used to assess landscape values for individual units are:

NATURAL FACTORS - Considers the condition of the natural vegetation, patterns and processes and the degree of modification present.

LEGIBILITY - refers to its expressiveness - how obviously the landscape demonstrates the formative processes leading to it.

AESTHETIC FACTORS - include criteria such as distinctiveness, coherence, memorability and diversity. Distinctiveness is the quality that makes a particular landscape visually striking and impressive. Frequently this occurs when contrasting natural elements combine to form a distinctive and memorable visual pattern. Coherence is based on characteristics including intactness, unity, continuity, and compatibility. Intrusions, alterations, and disruptions tend to detract from coherence. Memorability refers to how memorable the landscape is. Diversity is the diversity of the features and characteristics of the landscape.

HISTORIC/CULTURAL VALUES - refers to cultural and historically valued attributes. This includes Tangata Whenua values and European history and values and their expression as cultural landscapes and features.

TRANSIENT VALUES - including presence of wildlife or other values at certain times of the day or year.

VISIBILITY - refers to the visibility from public places such as highways, waterways or local vantage points.

3 LOCATION AND LANDSCAPE CONTEXT

The Kawarau Remarkables Conservation Area is located on the Kawarau/Remarkables and Tapuae-o-Uenuku/Hector Mountains situated on the eastern side of Lake Whakatipu Waimaori on the doorstep of Queenstown, New Zealand's premier tourist destination.

Kawarau (The Remarkable Mountains) is perhaps the most iconic and instantly recognised mountain ranges in New Zealand. Double Cone (2319m) is the highest peak within the CA and the wider Central Otago area. The highly distinctive Remarkables mountain range is synonymous with Queenstown and in particular the spectacular and iconic western flank which overlooks and dominates the town.

The CA is dominated by uplands and alpine areas. Physically the area divides Lake Whakatipu Waimaori and Whakatipu Waimaori Basin from the Te Papapuni Nevis Valley. The area extends down to c. 550m along the western side of the Remarkables and c. to 480m at the Wye Creek bridge on SH6. The area extends down to c. 680m along Te Papapuni (the Nevis River) in the floor of Te Papapuni/ Nevis Valley and to c. 400m in Doolans Stream in the east.

The CA lies in the transition zone between the wet western alps and the drier semi-arid Central Otago Mountains. It is in the rain shadow of Ka Tiritiri-o-te-Moana (the Southern Alps) and so is subject to a semi-continental climate with warm summers and cold winters. The rainfall ranges from c. 600mm/year on the floor of Te Papapuni/the Nevis Valley,

rising to c. 1500mm on the mountain tops. Winters bring intermittent snow to lower elevations; however permanent snow may lie in shady sites in higher parts. The floor of Te Papapuni/the Nevis Valley is subject to severe frost.

There have been no published Otago wide regional landscape assessments to provide a regional landscape framework for the study area. However, the Otago Conservation Management Strategy 2016 (CMS) places the Remarkables Conservation Area within the Western Lakes and Mountains/Ngā Puna Wai Karikari a Rākahautū and broadly describes this place as incorporating the tussock covered ranges and lakes west of the Central Otago block mountains. It further describes it as an area of spectacular glaciated mountain ranges. A complete sequence of indigenous vegetation exists from high alpine fellfield and low alpine snow tussock lands through to mixed shrublands and beech forest to tussock grassland on the flat valley floors¹.

It further defines the mountain crests such as the Remarkables as forming a transition between the broader, semi-arid landscape of Central Otago.

The CA includes a large part of the west enclosing range to the Te Papapuni/Nevis intermontane Valley and consequently a major component of Nevis Valley landscape. The Nevis catchment is an elongated north east oriented, upland valley approximately 35km long, and an upper and lower gorge. The valley is defined on the western side by the rugged and glaciated Hector and Remarkable Mountains a major feature of the valley. These mountains separate the ice-gouged valley of the Kingston Arm of Lake Whakatipu Waimaori.

To the east and south east, the Nevis Valley is bounded by the Garvie Mountains which merge to the north with the Old Woman Range and Carrick Range. The Garvies, Old Woman and Carrick Ranges are remnants of the uplifted schist block faulted mountains of Central Otago with characteristic 'flat topped' range and more subdued landform compared to the Remarkables Hector Mountains. A distinctive feature of the Garvie Mountains is the Nevis high plateau that projects out from the western flanks of the range below the main summit ridge at around 1300-1400m. Located on the high plateau is the Nokomai patterned mire which is a spectacular example of string bogs, mires and wetlands. The northern part of which drains to the Nevis Valley. This natural feature is of international significance¹ being one of the few southern hemisphere examples of sub-Arctic landform/hydrological feature.

The geology and geomorphology of the CA comprises extremely steep to steep, rugged and dissected north-south trending mountain range to 2234m, predominantly of high-grade schist in a subhumid to humid environment. Strongly glaciated at higher elevations with smaller glacial valleys terminating in cirques containing tarns (eg Lakes Alta and Hope), but no permanent ice fields. Areas of permanent snow can persist in shady locations. Rock outcrops and bluffs are a feature of its western flank, extensively modified by the large Whakatipu Waimaori trough glacier² Scree is common above 1600m together with fell field.

The Nevis Cardrona fault runs north south through the Nevis Valley and has been largely responsible for the creation of the Nevis Valley. There are other secondary faults within the intermontane valley system. The diverse landforms of terraces, outwash fans, incised channels floodplains and gravel braids are of fluvio-glacial origins. Old lake deposits comprising clay, silt, oil shale and lignite occur along the Nevis River. These and old totara logs suggest a lake occupied the valley in a previous age. There is debate however about whether ice advanced up the Nevis Valley but there is agreement on evidence of glacial patterns.

Cultural values associated with the CA include important Tangata Whenua values associated by Maori for Moa hunting, food gathering and travel. European history is associated with early pastoralism and gold mining. The Nevis Valley has

¹ Kawarau Land Classification Summary of Values and Management Issues

² Lucas Associates. Indigenous Ecosystems. An ecological plan structure for QLDC

a significant early gold mining heritage and has been described as ‘the most intact goldfields landscape in Otago.’ Part of this is include in the CA.

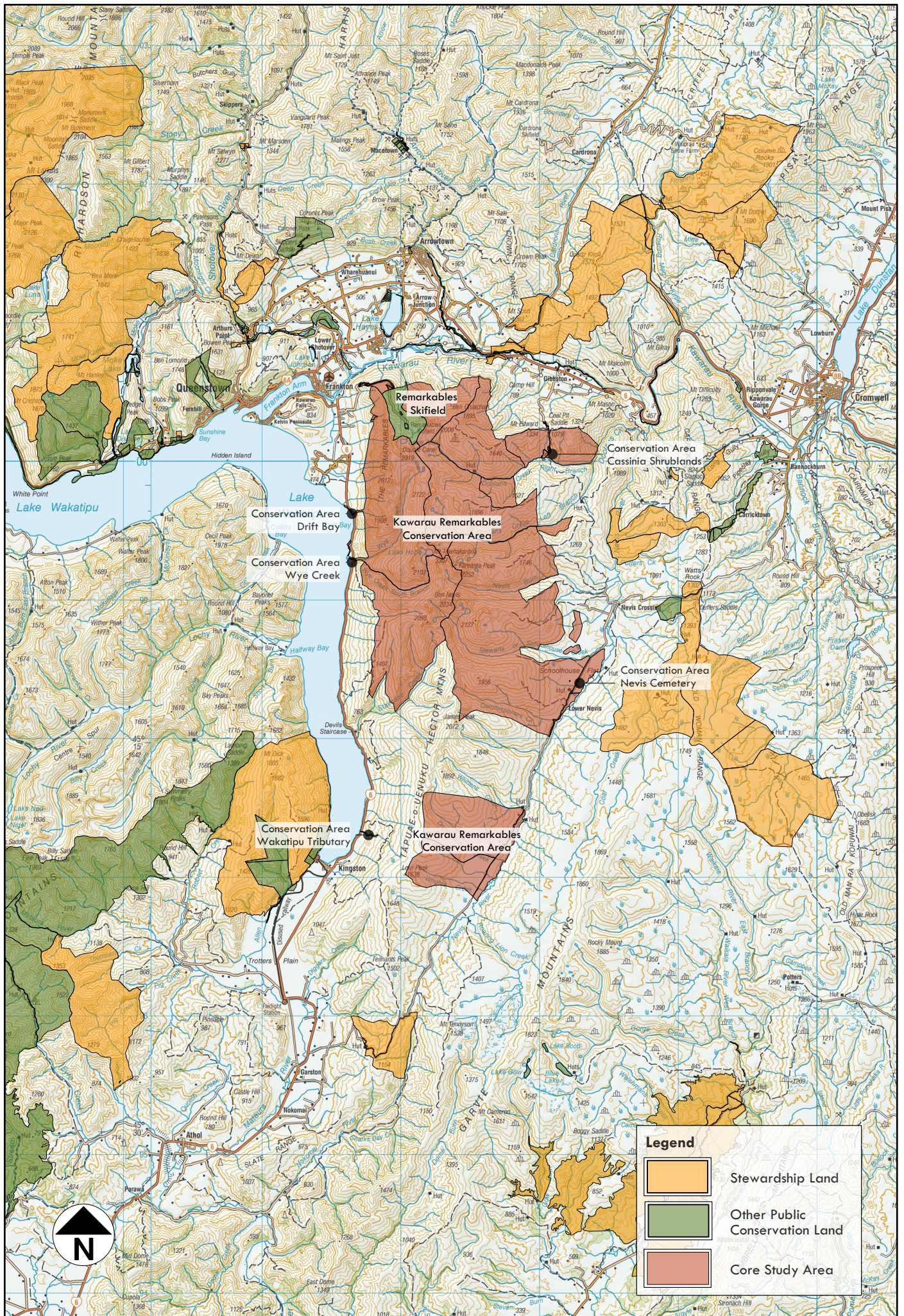
The entire upland area forms the mountainous visual backdrop to large parts of Central Otago and Northern Southland.

The study area straddles two District Councils; the Queenstown Lakes District and Central Otago Districts with the boundary located on the summit ridge of Kawarau/Remarkables and Tapuae O’Uenuku/Hector Mountains.

The Remarkable Skifield operating since 1985 is situation within the Rastus Burn Basin but outside the Conservation Area. The ski area excludes Lake Alta and its enclosing cirque basin.

The whole of the CA and all of the Nevis Valley and Gorges are classified as Outstanding Natural Landscape. This classification is a clear indication of the very high landscape values of the Remarkables Conservation Area and adjoining areas as a whole.

3.1 LOCATION PLAN



4 LANDSCAPE ANALYSIS AND EVALUATION (SECTION TWO)

The 4 **LANDSCAPE UNITS** and 6 subunits described for the Kawarau/Remarkables Conservation Area include:

LU1 REMARKABLES:

Subunits

- (a) Western lake face
- b) Wye Creek
- c) Lake Alta Basin

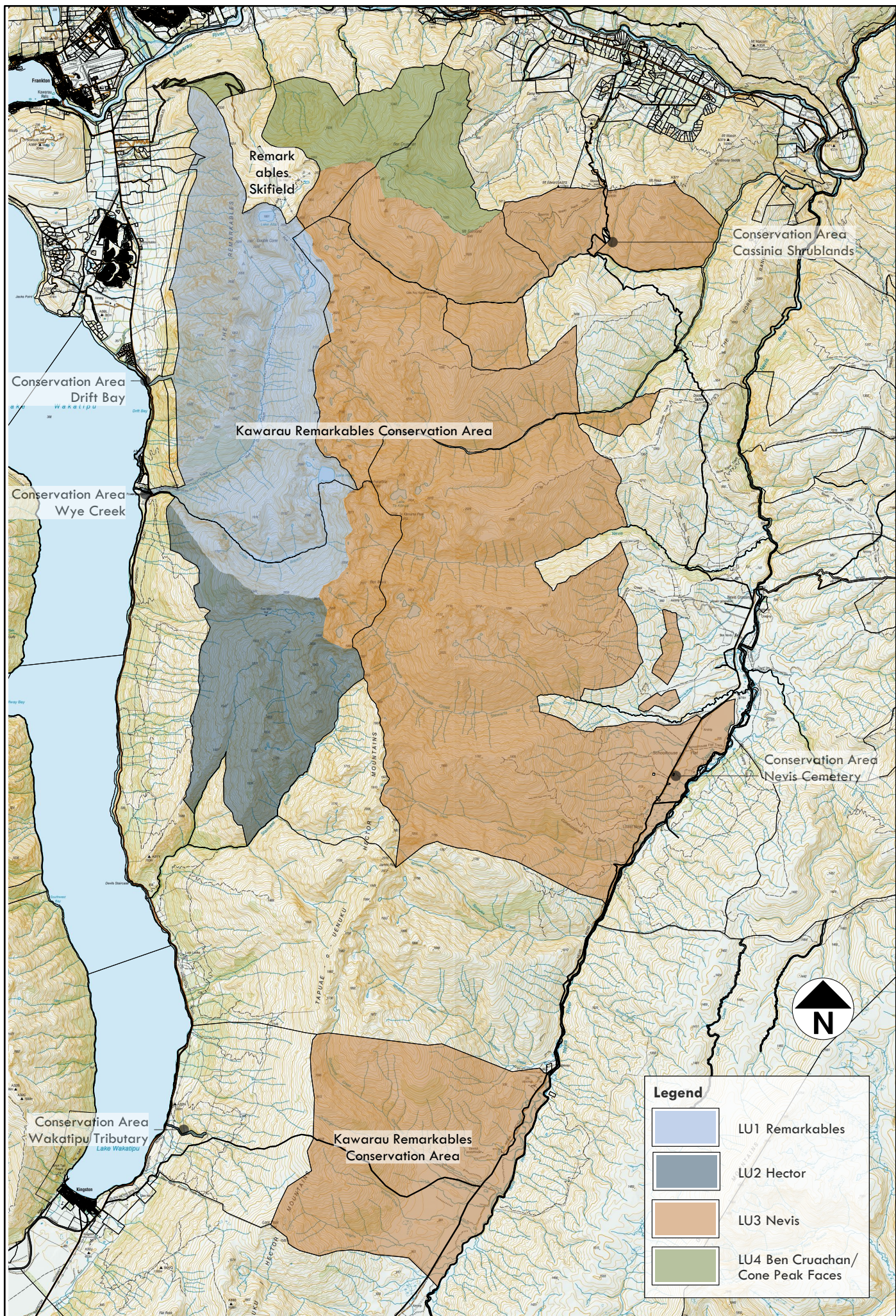
LU2 HECTORS: - (Upper lake faces/Staircase Creek and Summit Ridges)

LU3 NEVIS

Subunits

- (a) Upper Nevis/ Glen Nevis
- (b)) Lower Nevis tributaries
- (c) Doolans

LU4 BEN CRUACHAN/CONE PEAK FACES



4.1 LANDSCAPE UNIT 1 (LU1) KAWARAU REMARKABLES (REFER FIGURES 1-22 APPENDIX 1)

4.1.1 CHARACTER DESCRIPTION

This unit includes the iconic Remarkables western face, Wye Creek north and south branch and Lake Alta and Basin (outside the Skifield lease).

The upper slopes and crest have broadly similar characteristics. These include extensive bare rock, scree and glacial and peri-glacial features as well as extremely rugged, gnarled rocky summit ridges and terrain throughout. Cirque basins, glacial tarns and debris, seeps and wetlands are features of the summit ridges. These broad features are common to the upper slopes and summit of the Kawarau/Remarkables and northern end of the Hector Range across the whole of the mountain range (on both the Whakatipu Waimaori and the Nevis side). The highest most rocky peaks include fellfield, sparse alpine vegetation and lower down, diverse alpine and sub-alpine shrubland, tussock and shrubland communities.

SUBUNIT (A) REMARKABLES WESTERN FACE

The highly distinctive western escarpment face of the Remarkables extends from the Remarkables Skifield Road in the north to Wye Creek in the south. The iconic west face is renowned for sheer, vertical, buttressed, dark grey/black jagged rocky ridges and over-steepened bluffs rising spectacularly above Lake Whakatipu Waimaori. The jagged skyline ridge and silhouette culminating in Double Cone is also a distinctive feature.

The over-steepened rocky topography and bluffs have been dramatically shaped by movement of the Whakatipu Waimaori trough glacier.

Vegetation comprises bands of snow tussock clinging precariously to steep faces and contrasting with dark grey/black rocky ridges. Native shrubland extends onto fans at the base of escarpment face intersecting with the lower boundary of the CA. Small narrow ribbons of remnant mountain beech are confined to watercourses in very limited locations.

SUBUNIT (B) WYE CREEK

Wye Creek divides into the north and south branch. These classic, glacial, wide bottomed and steep-sided U-shaped valleys terminate at their head by alpine tarns enclosed within upper cirque basins. The North Branch curves to the north culminating in a cirque basin with Double Cone at the head. The South Branch is shorter and also curves around to the north to its source at Lake Hope, the largest alpine lake within the Conservation Area. The upper slopes of both branches are characterised by extensive bare rock, scree and extensive glacial and peri-glacial features as well as extremely rugged, gnarled rocky summit ridges.

Mid slopes are characterised by tawny coloured snow tussock and grass covered valley floor contrasting with outcrops of black/grey schist bedrock. Dracophyllum mats are prominent on upper slopes. Mid valley areas of both branches are relatively narrow and gentle in their mid reaches with grassy, tussock covered flats with isolated rock outcrops and a watercourse meandering across the valley floor. Impressive boulder fields, talus slopes and herbfield feature at the lower end of the North and South Branch above the confluence. The lower Wye is heavily dissected into the Remarkables face and drops steeply to the lake below the confluence and is enclosed by steep ice-shorn bluffs. Beech forest and mixed regenerating shrubland are features of Wye Creek lake faces. The CA connects with the lake via a narrow strip.

There are multiple layers of cultural heritage associated with the Wye. For Ngāi Tahu there are both historical and modern occupation areas that look to access the resources and recreational/navigational advantages of the area.

Colonial historical associations are pastoralism and limited to some signs of past grazing and burning especially on the valley floor but is not obvious and has minimal effect on landscape values.

SUBUNIT (C) LAKE ALTA BASIN

Lake Alta basin has been included within the Kawarau Remarkables LU (though is part of the Rastus Burn catchment) because is integral to the Double Cone massif. It is the classic alpine cirque basin with Lake Alta as the central focus. Bare rock, extremely rugged, rocky bluffs and outcrops, scree, debris boulders, interspersed with bands of snow tussock are the key features.

4.1.2 VISUAL AND SCENIC VALUES

The whole of the Remarkables/Kawarau unit has clearly obvious and very high and outstanding visual and scenic values arising from impressive and diverse natural characteristics and features. The western face is one of the most iconic and unique mountain range and alpine areas in Aotearoa/New Zealand made more famous by its relationship and proximity to Queenstown. It dominates Queenstown and Lake Whakatipu Waimaori and is synonymous with Queenstown's identity and tourism.

OTHER CHARACTERISTICS

Apart from the lake faces the whole of the Remarkable/Kawarau unit has a remote and backcountry character despite its closeness and proximity to a major tourism resort.

4.1.3 LANDSCAPE VALUES EVALUATION – KAWARAU/REMARKABLES UNIT

TABLE 1

CRITERIA	VALUE	COMMENT
Naturalness	V.High	All natural processes and patterns intact.
Legibility	V.High	Glacial, fluvial, erosional/slumping processes very clearly expressed and legible.
Aesthetic Factors	V.High	The whole of the unit is highly distinctive, visually striking and memorable with a high level of visual coherence. The visually striking western face is iconic and spectacular.
Historic/Cultural Factors	High	For Ngai Tahu, very high values. Pastoral history is also significant.

Transient Values	V.High	Many transient effects of light, shadow, mood and seasonal change are memorable and important especially the much viewed western face. Snow-capped tops are a feature over many months of the year.
Visibility	High	Western face has extremely high visibility. Wye Creek faces are highly visible from SH6 (Kingston Highway) and from Lake Whakatipu Waimaori. Wye Creek tributary North and South Branch are concealed from wider public views and have low visibility.

4.1.4 LANDSCAPE VULNERABILITY

The Kawarau/Remarkables is a fragile alpine landscape. Threats to landscape values include:

- tourism activities and development e.g. aircraft noise impacting on remote/backcountry character, overuse by tourism operators, Ski Area expansion and development.
- Introduced mammals and spread of introduced weeds and plants.
- Inappropriate development on lower slopes (below the CA boundary) which impacts on landscape values as a whole eg Remarkables western face escarpment is only partly within the CA. Structures, earthworks, utilities, development etc on the lower slopes impacts on the overall values of the Remarkables face.
- Fire

4.1.5 EVALUATION AND SIGNIFICANCE – KAWARAU/REMARKABLES UNIT

This unit is the core of the Kawarau/Remarkables Mountains and overlaps with the upper mountains on the Nevis side. It includes the areas and many characteristics that most people associate with the Remarkables Mountains including the iconic and instantly recognisable western face, Double Cone and Lake Alta and the northern mountainous area of the range alongside Lake Whakatipu Waimaori and all its alpine grandeur and magnificence. The close proximity to Queenstown and accessibility is part of its significance.

4.2 LANDSCAPE UNIT 2 (LU2) TAPUAE O’UENUKU/ HECTOR: (REFER FIGURES 23-30 APPENDIX 1)

4.2.1 CHARACTER DESCRIPTION

Within the CA the Hectors unit includes the upper lake faces south of Wye Creek and upper south facing tributaries of Staircase Creek and the high alpine and upper summit slopes to the summit ridge.

This section of the lake faces included within the CA extends from approximately 1100m to the ridgeline from Wye Creek south to Devils Staircase. As such it forms a continuation of the upper alpine zone of the Remarkables/Hector mountains. The unit extends from the ridge above the South Branch of Wye Creek and south following the summit ridge between the Lake Whakatipu Waimaori and the Nevis.

South from Wye Creek the topography is steep with prominent ice shorn bluffs. Further south is an unnamed tributary basin which extends to the main ridge with the same characteristics of other high-altitude basins. The upper lakes faces at the Hector end of the range contrasts with the very rugged rocky Remarkables western face to the north. It forms more subdued topography comprising undulating, smooth landform dominated by snow tussock. Viewed together the Tapuae-o-Uenuku Hectors end appears as the southern ‘tail of the range’.

The snow tussock belt grades into sub-alpine scrub and fellfield towards the summit ridge. As with all summit and upper basins across the whole of the CA the high alpine zones display extensive signs of cirque glaciation, including small tarns, peri-glacial features and extensive rock and scree. There are few signs of human induced change in this alpine zone apart from some vegetation modification.

The upper true right of Staircase Creek is within the Conservation Area and is south facing and deeply incised. The unnamed side tributary of Staircase Creek is very steeply incised into the range face.

The boundary of the CA and Loch Linnhe Station fragments the catchment and the wider Hector Range. It is important to note that adjoining land outside the CA has similar characteristics and values and is contiguous in a landscape sense.

4.2.2 VISUAL AND SCENIC VALUES

The Hectors unit (within the CA) is integral to the Remarkables Hector Mountains as a whole and visually forms the continuation of the eastern enclosing range and lake faces to Lake Whakatipu Waimaori. Visual and scenic values are also very high though less dramatic and spectacular than to the north.

The upper mountain slopes and summit area is an impressive and highly memorable alpine area with very high visual and scenic values. Large areas of bare rock, distinctive glacial features including cirque basins, numerous small tarns, sharp peaks and ice shaped features on the ridge area, along with sub-alpine and alpine vegetation patterns.

The majority of the unit has high visibility particularly from Kingston and the Kingston end of the lake.

OTHER CHARACTERISTICS

The upper slopes and summit have a relatively remote, backcountry character especially the summit and upper basins despite being close to Kingston and Queenstown.

4.2.3 LANDSCAPE VALUES EVALUATION - TAPUAE O’UENUKU/HECTORS UNIT

TABLE 1

CRITERIA	VALUE	COMMENT
Naturalness	V.High	Natural processes and patterns intact within the full extent of the CA. Some vegetation modification from past grazing and wild animals apparent

Legibility	V.High	High in all areas. Effects of glaciation and erosion processes very legible.
Aesthetic Factors	V.High	Integral part of the upper range and lake faces. High level of intactness, distinctiveness and visual coherence.
Transient Values	High	Dramatic seasonal change with snow cover in winter and light and shadow effects etc
Historic/Cultural Factors	High	Tangata Whenua uses/values – mahinga kai, nohoanga and te ara tawhito. European cultural values associated with high country pastoral use.
Visibility	High	Highly visible from wider Basin, Lake Whakatipu Waimaori and Kingston end of the Basin including SH6 Kingston Highway.

4.2.4 LANDSCAPE VULNERABILITY

Inherently fragile alpine environment and potentially vulnerable to all forms of human land use or activity.

Specific threats to landscape values:

- fire, wild animal damage, weeds
- tourism activities, aircraft noise
- land use and activities on adjoining land that are incompatible and could impact on the values of the CA.

4.2.5 EVALUATION AND SIGNIFICANCE – TAPUAE-O-UENUKU/ HECTORS UNIT

The unit also has very high natural landscape characteristics and values. Only part of the Hectors unit is within the CA with other areas in pastoral lease tenure. It therefore fragmented with large areas with similar values and characteristics outside the CA.

4.3 LANDSCAPE UNIT 3 (LU3) NEVIS (REFER FIGURES 31-50 APPENDIX 1)

The Nevis unit encompasses all of the CA within the Nevis catchment and includes the separate parcel of land on the Tapuae-o-Uenuku/Hector Mountains within the upper Nevis Valley and all of the Nevis portion of the larger land parcel of the Conservation Area (including the Doolans). All are a major part of the Kawarau/Remarkables and Tapuae O’Uenuku/Hector mountain slopes and forming the western enclosing range of the Nevis Valley and parts of the lower slopes and valley floor of the Nevis Valley.

The Nevis Cardrona fault runs north south through the Nevis Valley and has been largely responsible for the creation of the Nevis Valley.

The Nevis side (within the CA) includes the rugged, spectacular glaciated peaks and alpine zone including the many glacial and peri-glacial features common to the whole of the summit area. These characteristics include high alpine

cirque basins, small lakes or tarns contained within the high basins, nivation features, large areas of bare rock, scree and long periods of snow lie. (and described more fully elsewhere). Numerous unnamed peaks are above 2000m. Named peaks include Mt Tūwhakaroria (2307m), Te Karearea Peak (2252m).

4.3.1 CHARACTER DESCRIPTION

SUBUNIT (A) UPPER NEVIS (GLEN NEVIS BLOCK)

Includes the full altitudinal sequence from the Nevis River to the summit ridge on the eastern side of the range and covering the tributaries of Drummond Creek, Kingston Creek and Wrights Creek. The upper mountain slopes and summit are physically less dramatic and rugged compared to the northern area on the Kawarau/Remarkables and Tapuae-o-Uenuku/Hector mountain ranges. The summit forms undulating slopes transitioning to upper basins with strongly glaciated features, steep headwalls and cirque basins supporting scattered snow tussock, short tussock, cushionfield, herbfield, snowbank and stony ground.

The mid slopes (in common with all of the Nevis side) is a series of long ridge and gully systems with slump topography interspersed with scattered rock outcrops. Snow tussock is the dominant vegetative cover grading into short tussock below approximately 1100m and exotic grasses. Dracophylum mats are a significant feature on ridges forming distinctive brown/red patches. The Nevis flats comprise fans, terraces and alluvial flats with a mix of tussock and exotic grasses and red tussock wetlands extending over broad areas.

The Upper Nevis River is the CA lower boundary and includes the true left floodplain of the Nevis River which features a meandering river form and floodplain consisting of oxbows, cut off channels and backwaters.

Goldmining and pastoralism are the main aspects of European history in the Upper Nevis (and Lower Nevis) and both have left a lasting imprint to the present character of the lower slopes and valley floor of the Upper (and Lower Nevis) Valley and (included within the CA). Gold mining in particular has left many historic sites and features eg dredge ponds, tailings and distinctive rusty coloured sluicings, head races and reservoirs and stone building and numerous relics. Ground sluicings, elevating and hydraulic sluicings were the main methods of mining used³.

The upper Nevis has a remote, relatively isolated, and a 'lost in time' feel derived from its gold mining heritage which is an important aspect of its landscape character.

SUBUNIT (B) LOWER AND MID NEVIS TRIBUTARIES

Includes a large central part of the eastern Kawarau Remarkables/Hector Range faces extending across the major tributaries of Commissioners Creek, Stewarts or Schoolhouse Creek and the Nevis Burn (within the Lower Nevis Valley) and altitudinally from the summit ridge to the lower slopes and valley floor.

Much of the lower boundary of the CA within the Lower Nevis forms an arbitrary boundary as an outcome of Tenure Review of Ben Nevis Station. The southern end however forms a natural boundary with the Nevis River and includes Schoolhouse Flats. North of Schoolhouse Creek the lower CA boundary cuts across the lower faces of the range and doesn't include the full altitudinal sequence from the summit ridge to the valley floor. There is also a separate, isolated parcel of land below the main land parcel which recognises remnant red tussock.

³ Environment Court Evidence of Philip Blakely relating to Amendments to the Kawarau WCO.

All tributaries are incised deeply into the Range. Features consistent to all tributaries are a jagged, 'razorback' upper mountain skyline of bare rock faces and bluffs, scree and cirque basins with a diverse array of sub-alpine and alpine vegetation. Cirque basins and numerous tarns are strong features of the upper tributaries.

Mid and lower slopes are dissected, 'rippy,' colluvial, and predominantly 'tussock covered' mountain slopes. Tussock is depleted on lower slopes replaced by exotic grasses and some weeds. The grey appearance of mouse ear hieracium is prevalent on the lower slopes and alluvial flats including Schoolhouse Flats.

The outwash fan of Schoolhouse Flat (within the CA) is a unique feature of the Lower Nevis Valley. It has been described in the Ben Nevis Conservation Resources Report as:

'the large alluvial outwash fan at Schoolhouse Flat which is a dominant geomorphic feature as it is an extensive outwash fan of some 4km in lateral extent'.⁴

The Schoolhouse Creek outwash flats merges with the Nevis River floodplain. The floodplain contains a number of natural cut off meanders or oxbows together with dredge ponds and piles of tailings left from the gold mining area. The Nevis River is the central feature of the valley and renowned for its pristine, and extremely clear waters as well as the unique landscape setting and recreation values. It is recognised for its outstanding natural characteristics in the Kawarau and Tributaries Water Conservation Order.

Vegetation of Schoolhouse Creek includes a mix of hard tussock, red tussock associated with the fan and the river floodplain.

As with the Upper Nevis, gold mining and pastoralism have left a lasting imprint to the present character of the lower slopes and valley floor of the entire Nevis Valley. The Nevis Cemetery, signs of early habitation and mining relics contribute to a heritage landscape which is an important aspect of the Nevis Valley.

The CA includes part of what has been called '*the most intact goldfields landscape in Otago*' referring the Nevis Valley as a whole.⁵

SUBUNIT (C) DOOLANS

Divides into Right and Left Branches. The lower boundary of the Conservation Area is again random and arbitrary with significant parts of both branches of the Doolans outside the CA.

Both tributaries are narrow and deeply incised along their full length and the topography (as with all the Nevis tributaries) consists of predominantly ripply, colluvial slopes.

On lower slopes vegetation patterns include mainly depleted short tussock with extensive and dense grey shrubland communities which are a feature of the lower tributaries. Access tracks and disused water races and changes to native vegetation signal human activity and features.

Small grassy fans are notable at the intersection of side tributaries with the main stem.

Upstream, both branches of the Doolan are strongly fluvially down cut tributaries, with slump topography and a dense cover of predominately snow tussock. Contrasting Dracophylum vegetation is also prominent especially on shady, steep faces. The effects of glaciation in the upper basins is pronounced with hummocky debris material, erratic glacial boulders and glacially deposited rock and debris. On upper slopes the main features are extensive rock, scree, many

⁴ Ben Nevis CRR

⁵ Hamel J The Cold Sequestered Nevis. 1994. Report to the Department of Conservation

alpine tarns, rocky peaks, stringy bogs and wet areas common with the whole of the Kawarau/Remarkables Range summit.

4.3.2 VISUAL AND SCENIC VALUES

The whole of the Nevis side also has very high visual and scenic values. Visually it is major part of the spectacular Nevis Valley that includes the highly memorable and distinctive rugged, upper glaciated range of the Kawarau/Remarkables and Tapuae-o-Uenuku/Hector Mountains and the steep mountain slopes of the range with a dominance of tussock and shrubland communities. The Upper Nevis Valley and the southern end of the Lower Nevis within the CA includes the full altitudinal sequence from the Nevis River to the summit ridge. The more recent and tangible cultural overlay of early gold mining contributes to visual and scenic values with the many relics, dredge ponds, sluicings and signs of human habitation from that era softened by the passing of time. The very open, dry landscape is highly visible and spectacular from the Nevis Road and Duffers Saddle. The unique and spectacular view from Duffers Saddle across the open and dry landscape of the Nevis Valley to the Kawarau/Remarkables and Tapuae-o-Uenuku/Hector Mountains is one of the most impressive and memorable views in Otago.

OTHER CHARACTERISTICS

The relative isolation of the Nevis Valley and the lack of change contributes to a remote, backcountry character. There is a degree of wildness associated with its unique location and landscape. The openness, and the arid, dry appearance of the landscape and absence of trees are also important characteristics of the Nevis Valley and Nevis side of the CA.

4.3.3 LANDSCAPE VALUES EVALUATION - NEVIS UNIT

TABLE 1

CRITERIA	VALUE	COMMENT
Naturalness	Medium to High	Overall a very high level of natural character. A degree of human modification is apparent on lower slopes from pastoral activity and gold mining.
Legibility	High	Tectonic, and fluvio-glacial landform patterns are highly legible throughout the Nevis unit. Rugged, glacial formed peaks and upper basins, extensive slump topography and glacial and alluvial outwash surfaces and extensive wetlands. Fluvial processes clearly expressed as fans, terraces, and gorges.
Aesthetic Factors	High	The whole is extremely distinctive, striking, cohesive and memorable.
Transient Values	High	Highly valued for daily and seasonal changes and spectacular lighting effects. Presence of wildlife is also important.
Historic Factors	High	The historic/cultural overlay of early Maori routes and mahinga kai through the area and early pastoral settlement contributes to diversity, layers of human history and overall richness of the landscape.

Visibility	Low	The Nevis side of the CA is highly visible from Duffers Saddle, Nevis Road
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4.3.4 LANDSCAPE VULNERABILITY

The significant and fragile natural and historic/cultural characteristics and features within the Nevis side of the CA are vulnerable to inappropriate human use and change.

The CA area is fragmented and discontinuous and the lower boundary is arbitrary.

Management of adjoining land (beyond the CA boundary) is vulnerable to change or inappropriate management which could impact on the landscape values of the CA and the wider landscape as a whole.

Specific threats to landscape values:

- overuse/development from tourism activities, aircraft noise impacting on values
- Ski area development into the upper Doolans.
- fire, wild animal damage on upper slopes, weeds.
- land use and activities on adjoining land potentially degrading and impacting on the CA eg farm development such as vegetation removal, farm tracking etc. impacting on biodiversity values.
- modern mining

4.3.5 EVALUATION AND SIGNIFICANCE – NEVIS UNIT

The Nevis Valley side of the CA (and outside the CA) is a unique and spectacular natural landscape combined with important and significant cultural values both Tangata Whenua and European. The latter associated with the goldfield's era and pastoralism. In a national context the natural characteristics and values are considered at the highest end in terms of significance. The cultural overlay represents an important 'heritage landscape' and has been described as 'the most intact goldfields landscape in Otago.' The Nevis Valley also has important characteristics of remoteness, sense of isolation and wildness.

4.4 LANDSCAPE UNIT 4 (LU4) : BEN CRUACHAN/ CONE PEAK FACES (REFER FIGURES 51-53 APPENDIX 1)

4.4.1 CHARACTER DESCRIPTION

A comparatively small unit that includes the upper north faces (above approximately 1100m) of Ben Cruachan and Cone Peak from Mt Salmond in the east to Ben Cruachan (1895m) to the boundary with the Remarkables Skifield.

It includes upper north facing side tributaries of the Kawarau River including part of the Rastus Burn (outside the Skifield lease area, Owens Creek, Tom Creek and Camp Creek. The summit forms a clearly defined ridge punctuated with rocky outcrops. It drops down to Mt Salmond (1640m) at the eastern end. The unit clearly highlights the eastern extent of glaciation which is evident on the upper Ben Cruachan faces at the western end but not evident towards Mt Salmond. The upper range is characterised by rugged bands of very rocky derivative slopes below the main ridge facing the

Whakatipu Waimaori Basin. Between the rocky bands is scree and slope mantle which grades below to steep mountain slopes of predominantly snow tussock. Slump topography and erosional features are also features.

4.4.2 VISUAL AND SCENIC VALUES

Forms the upper enclosing range to the Arrow Basin and Gibbston end of the Whakatipu Waimaori Basin and as such has important visual and scenic values that contribute to the wider Basin's setting and scenic values. The visual values are defined by the impressive mountain slopes comprising dark rocky outcrops contrasting with the upper alpine scree zone and the dominant snow tussock. Ben Cruachan (especially with snow cover) is a distinctive and dominant mountain feature of the Gibbston Valley. Views from the summit and DOC tracks in all directions are outstanding.

OTHER CHARACTERISTICS

Views from the summit and DOC tracks in all directions are outstanding.

4.4.3 LANDSCAPE VALUES EVALUATION - BEN CRUACHAN /CONE PEAK FACES

TABLE 1

CRITERIA	VALUE	COMMENT
Naturalness	High	High degree of naturalness within the C.A. All natural patterns and processes intact.
Legibility	High	Glacial, fluvial and erosional processes clearly expressed.
Aesthetic Factors	Medium to High	High level of intactness, unity and continuity. Visually coherent. Ben Cruachan is a distinctive local feature.
Transient Values	High	Daily and seasonal change significant. Snow cover on upper slopes in winter months. Presence of wildlife important eg NZ Falcon and Harrier Hawk.
Cultural/Historic Factors	Medium	Associated with navigation and personification of landscape by Ngai Tahu (refer Summary of Ngai Tahu Values, Practices and Association Report prepared by Kauati. European associations with pastoral use and early European settlement
Visibility	High	All highly visible from Whakatipu Waimaori Basin

4.4.4 LANDSCAPE VULNERABILITY

As with all of the CA, it is a high alpine area, inherently fragile and visually sensitive to change.

Specific threats to landscape values include:

- Structures and utilities impacting on landscape values
- fire, wild animal damage on upper slopes, weeds
- land use and activities adjoining and below the CA ie vegetation modification for farming activities, burning/chemical spraying /new tracking/earthworks
- Tourism development e.g. proposed gondola linking Frankton and Remarkables Skifield and other associated development

4.4.5 EVALUATION AND SIGNIFICANCE – BEN CRUACHAN/CONE PEAK FACES

Important upper slopes and summit forming backdrop and setting to the Arrow Basin and Gibbston. Clearly displays the transition from the effects of glaciation on the upper slopes (west end) to the dry and Block Mountain Ranges of Central Otago.

5 RECOMMENDATIONS AND CONCLUSIONS

The Remarkables/Kawarau Conservation Area as a whole supports nationally significant landscape and visual values. The significance is multi-faceted and include:

- the location and context of the CA at the edge and spanning the semi-arid landscape of Central Otago and the wetter western lakes and mountains of Otago;
- the unique geology, topography, vegetation and cultural history (both Maori and European) of the CA and including the Nevis Valley of which a significant part is included within the CA;
- the spectacular natural landscape characteristics including the glaciated mountains on the edge of the sparkling and pristine Lake Whakatipu Waimaori;
- the iconic Remarkables western face;
- the sequence and intactness of indigenous vegetation from high alpine fellfield and low alpine snow tussock lands to mixed shrubland and small pockets of beech forest;

The close proximity, association and importance to Queenstown and Whakatipu Waimaori Basin both in terms of its identity, setting, the tourism brand, and for recreation contributes to its significance.

The whole represents an outstanding landscape resource which justifies greater protection and recognition of its values and significance in a local and national context.

The primary vulnerability and threat is from the discontinuous, fragmented parcels of land and often arbitrary boundaries. Arbitrary boundaries are seldom appropriate in a landscape sense. In addition human activity and land use on, and adjoining the boundaries of the CA potentially threaten both values within it and the wider landscape values outside the boundary. The lower boundary of the CA in many areas divides and does not coincide with natural landscape boundaries. This represents a potential threat to the landscape values and landscape management of the CA as a whole.

The overuse of tourism activities and possible expansion of ski area development further into the Conservation Area are additional potential threats to landscape values.

The Outstanding Natural Landscape classification which covers the entire Conservation Area as well as the important adjoining areas which collectively make up the broader landscape resource (including the entire Nevis Valley and lower country of Kawarau/Remarkables Mountains outside the CA) serves as complementary recognition and protection for this broader landscape resource.

Future additions to the CA are likely to lesson fragmentation and cross boundary and complementary management of areas outside the CA will be important for landscape management going forward.

5.1 REFERENCES

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Department of Conservation. **Conservation Resources Report (CRR)** Loch Linnhe Station Pastoral Lease

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Turnbull I. M. (Compiler) Institute of Geological & Nuclear Sciences Ltd. 2000. **Geology of the Whakatipu Waimaori Area**

6 APPENDICES

6.1 APPENDIX 1 FIGURES (PHOTOS)

LU1



Figure 1: Remarkables western escarpment face. Kowarau River in the foreground.



Figure 2: View south of Remarkables western escarpment face and Kingston Arm of Lake Wakatipu.

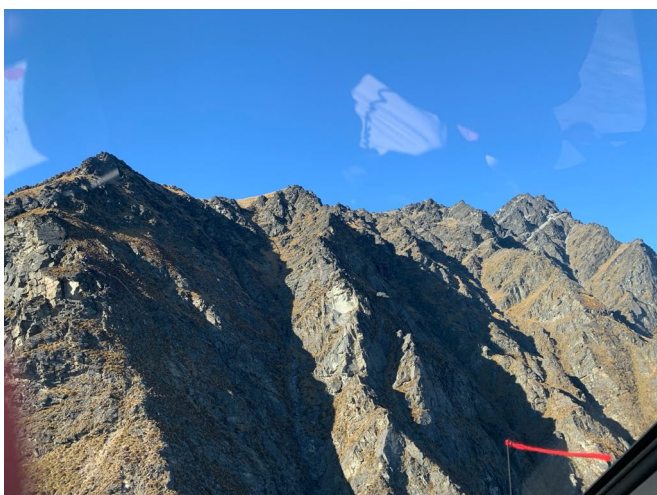


Figure 3: Upper Remarkables face with Double Cone on right.

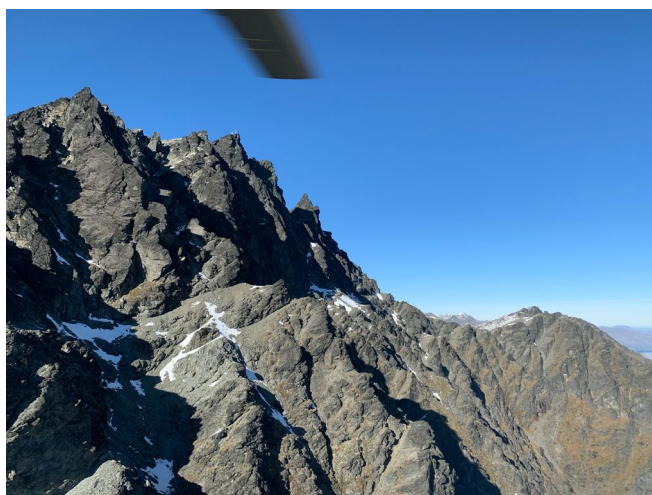


Figure 4: Distinctive, and extremely rugged upper slopes and skyline

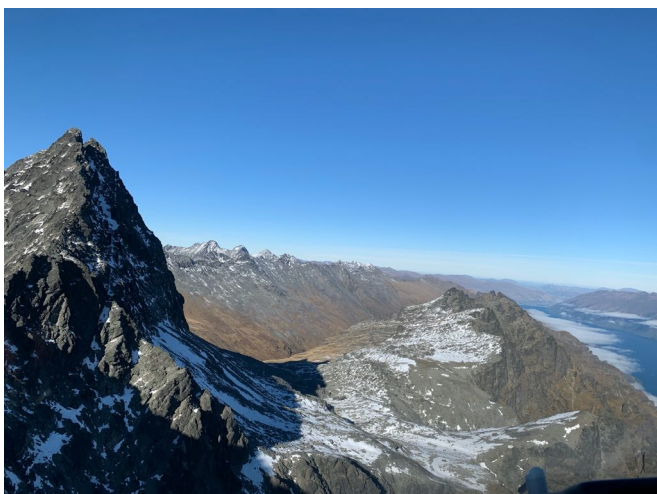


Figure 5: Double Cone and view south down Wye Creek (North Branch).

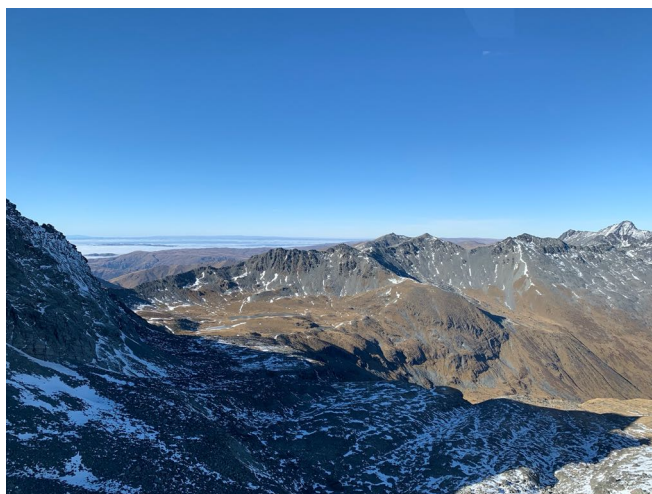


Figure 6: View east near Double Cone across upper Wye Creek

LU1



Figure 7: View north up Wye Creek (North Branch).

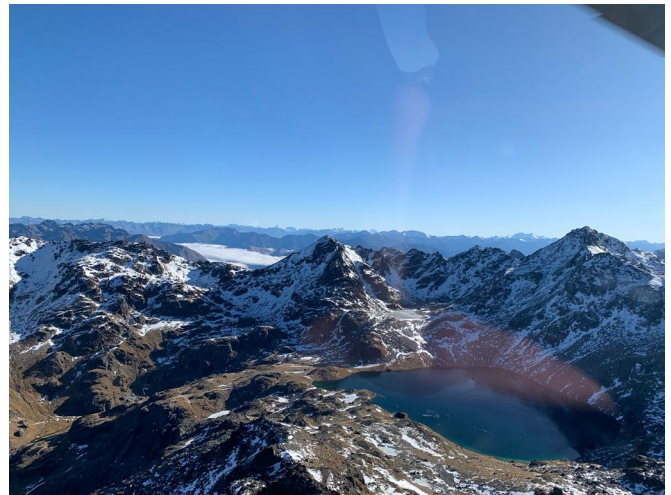


Figure 8: View SW. Lake Hope in foreground.



Figure 9: Typical summit rocky ridges with Double Cone in background.

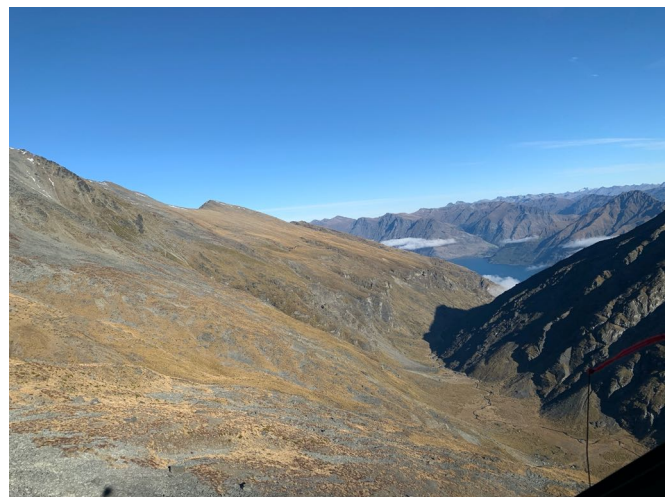


Figure 10: View SW down Wye Creek (North Branch) with Lake Wakatipu in background.



Figure 11: Wye Creek Delta and faces.



Figure 12: Upper Wye Creek below confluence of North and South

LU1



Figure 13: Wye Creek (South Branch). Gentle lower valley floor



Figure 14: Wye Creek (South Branch). Mid reaches.



Figure 15: Wye Creek (South Branch). North faces.



Figure 16: Wye Creek (South Branch). Upper Valley.



Figure 17: Wye Creek (South Branch). Upper Valley

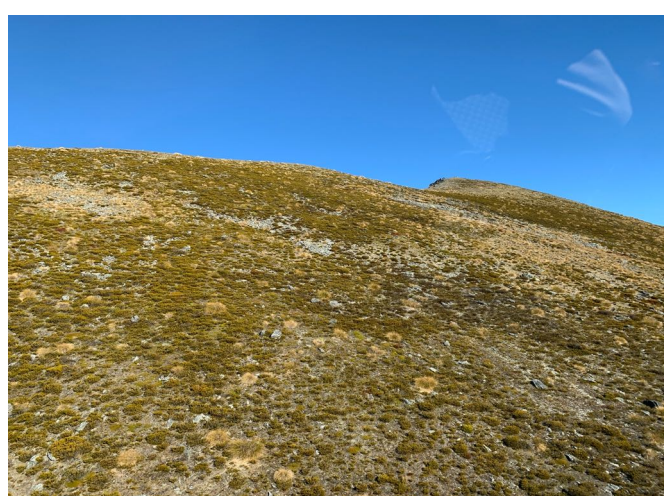


Figure 18: Wye Creek (South Branch). *Dracophyllum muscoides* cushionfield on summit ridges (mid valley).

LU1



Figure 19: View down Wye Creek (North Branch) from ridge with Rastus Burn Basin.



Figure 20: View west towards Lake Alta cirque basin and with Double Cone at rear.

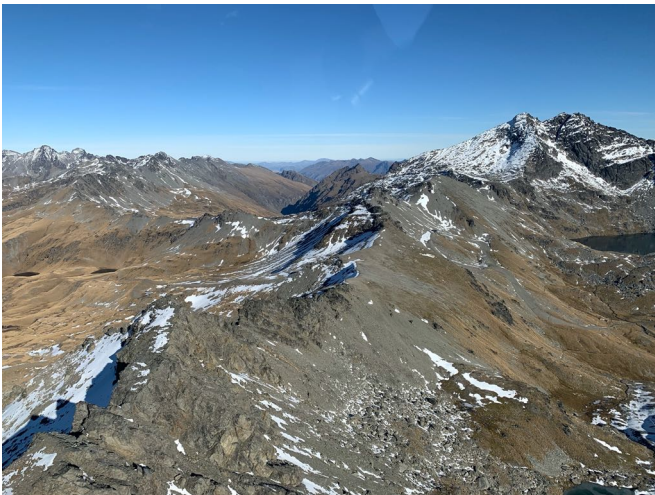


Figure 21: Wye Creek Saddle with Double Cone at rear

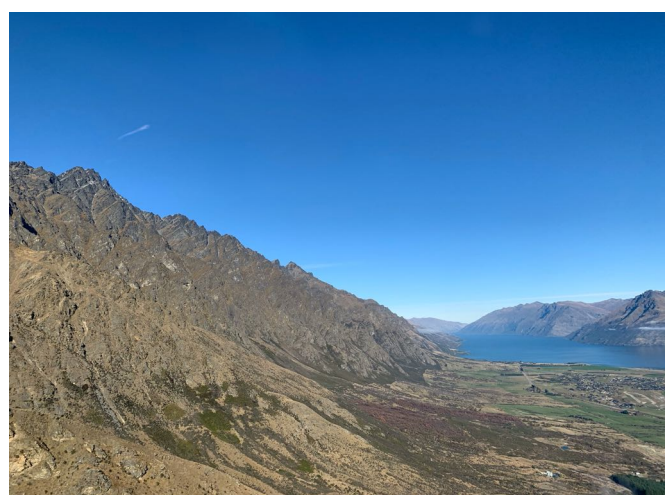


Figure 22: View south. Remarkables western face and Kingston Arm of Lake Wakatipu.

LU2



Figure 23: Unnamed upper catchment south of Wye Creek South Branch. Two Mile Hut in foreground.



Figure 24: Upper Staircase Creek.



Figure 25: View south. Upper lake faces with Staircase Creek on left.



Figure 26: Upper slopes and summit ridges linking Kawarau/Remarkables and Tapuae O'Uenuku Hector Mountains.

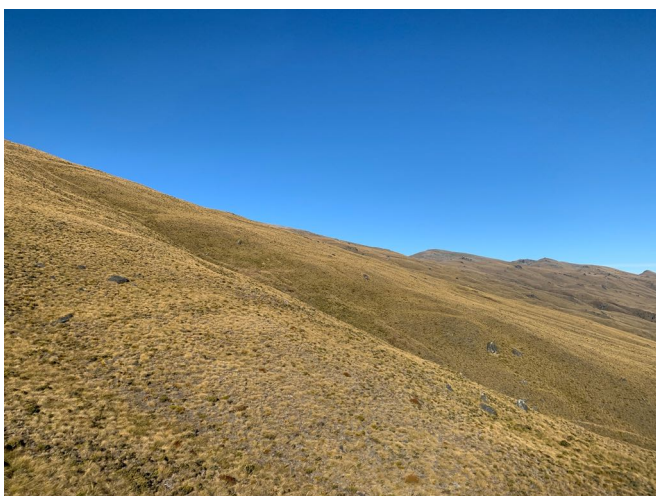


Figure 27: Upper lake faces. Smooth undulating topography and relatively uniform tall tussock.



Figure 28: Upper lake faces (outside Conservation Area)

LU2



Figure 29: View north. Loch Linnhe pastoral lease on lake side faces. Conservation Area on upper mountain slopes and 'tops'.



Figure 30: Crest within or adjacent to upper boundary of southern land area of Kowarau/Remarkables Conservation Area.

LU3



Figure 31: View north east of Upper Nevis Valley. Mountain slopes on east and flats are within the Conservation Area.



Figure 32: View north west to Kawarau/Remarkables CA from the edge of the Nokomai patterned mire on the Nevis Plateau of the Garvie Mountains



Figure 33: View North West to Kawarau/Remarkables Mountains.



Figure 34: Upper Nevis incised tributaries all have similar features consisting of steep, rippled topography extending up to glaciated headwalls and features.



Figure 35: Dracophyllum cushionfield and felfield on Commissioners Spur.



Figure 36: Nevis upper tributary Typically rugged summit slopes and ridges.

LU3



Figure 37: View southwest down Lower Nevis Valley. Schoolhouse Flats and Upper Nevis Gorge at rear.



Figure 38: View south west of Lower Nevis with Nevis Burn on right.



Figure 39: Nevis Burn.



Figure 40: View west Doolans Left Branch on right.



Figure 41: Lower reaches Doolans Right Branch.



Figure 42: Doolans Right Branch mid reaches.

LU3



Figure 43: Doolans Right Branch.



Figure 44: Doolans Right Branch. Deeply downcut. Highly natural patterns and features.



Figure 45: Upper Doolans. Glacial debris and features prominent.



Figure 46: View south east down Doolans Right Branch.

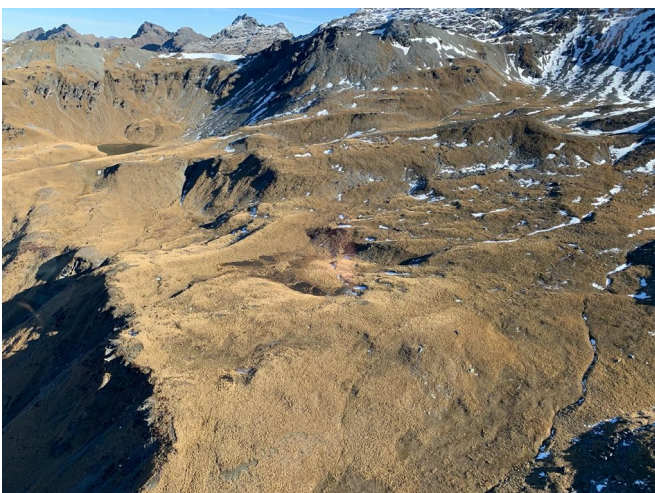


Figure 47: Upper Doolans Right Branch. Glacial basins, lakes and features.



Figure 48: View north west over Upper Nevis Valley.

LU3

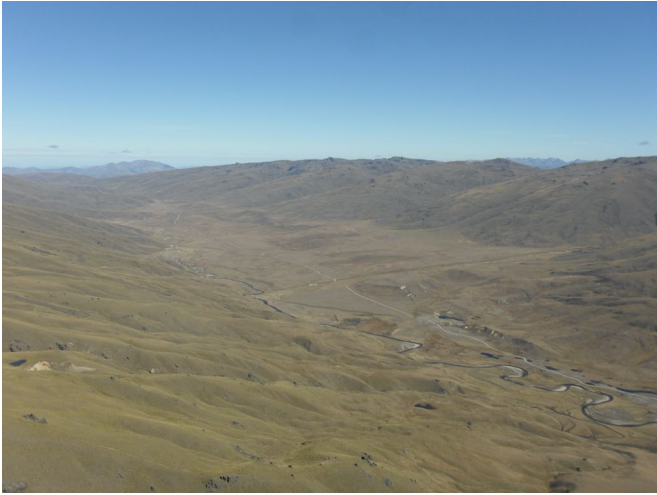


Figure 49: View North east. Upper Nevis Valley.



Figure 50: Upper Nevis Gorge and Nevis River. True left is within the CA.

LU4



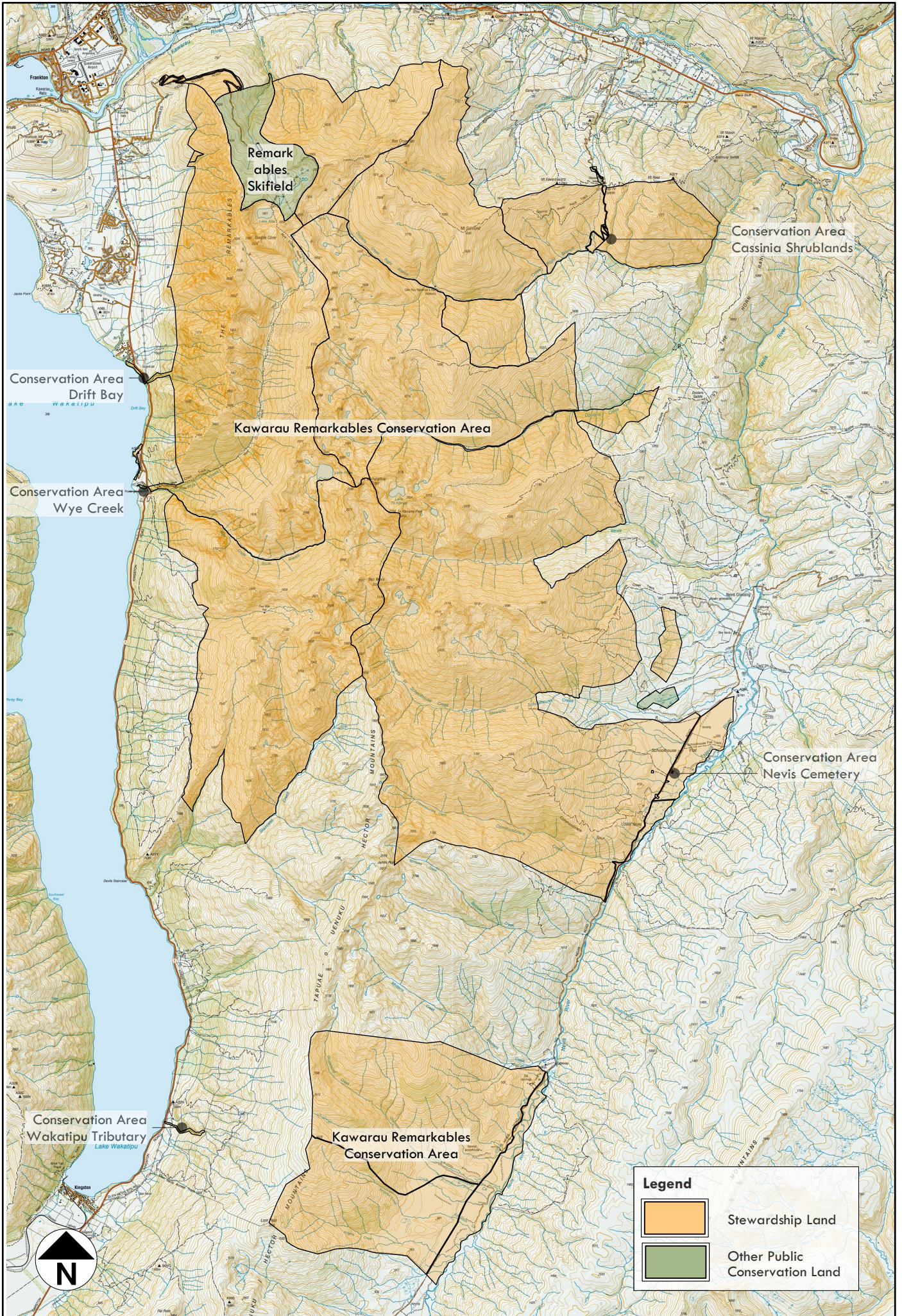
Figure 51: View south from Arrow Junction to Ben Cruachan. Rastus Basin and Remarkables Skifield at right.



Figure 52: View south west from Arrow River Gorge (Arrow Junction area) to LU4 Ben Cruachan and Cone Peak faces. Upper slopes and summit ridge is within CA.



Figure 53: View south west from Crown Range to LU4 Ben Cruachan and Cone Peak faces.



Remark
ables
Skifield

Conservation Area
Cassinia Shrublands

Conservation Area
Drift Bay

Kawarau Remarkables Conservation Area

Conservation Area
Wye Creek

Conservation Area
Nevis Cemetery

Conservation Area
Wakatipu Tributary

Kawarau Remarkables
Conservation Area

Legend



Stewardship Land



Other Public
Conservation Land

