BEFORE THE QUEENSTOWN LAKES DISTRICT COUNCIL HEARINGS PANEL

UNDER	the Resource Management Act 1991
IN THE MATTER	of the review of parts of the Queenstown Lakes District Council's District Plan under the First Schedule of the Act
AND	
IN THE MATTER	of submissions and further submissions by **QUEENSTOWN PARK LIMITED**

STATEMENT OF EVIDENCE OF SIMON HERBERT BEALE ON BEHALF OF QUEENSTOWN PARK LIMITED

ECOLOGY

CHAPTER 33 – INDIGENOUS VEGETATION

21 APRIL 2016

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Attachment A **Threatened Environment Classification**

1. EXECUTIVE SUMMARY

1.1 The Chapter 33 provisions clearly envisage some development in SNAs. In particular, sheep grazing is a Permitted activity.

1.2 Some traditional farming activities do not maintain, or enhance SNAs and can pose a threat to ecology values inherent to SNAs.

1.3 In my view, there are other activities (that benefit from establishing in a rural setting) that are better placed to protect, maintain, or enhance SNAs which the PDP does not enable to the extent it does farming in the rural zone.

1.4 The proposed gondola in conjunction with low impact recreational activities such as walking and mountain biking are compatible with the maintenance and enhancement of SNAs. The alignment to the proposed gondola and the construction access tracks do not encroach on the SNA proposed in the Rastus Burn.

2. INTRODUCTION AND BACKGROUND

2.1 My full name is Simon Herbert Beale.

2.2 I hold a Bachelor of Science in Zoology from the University of Otago and a Bachelor of Forestry Science from the University of Canterbury. I am a Member of the New Zealand Ecological Society, the Environment Institute of Australia and New Zealand and a full member of the New Zealand Planning Institute. I am a Certified Environmental Practitioner and currently the New Zealand representative on the Australasian Board of Certified Environmental Practitioners.

2.3 I am employed by MWH New Zealand Limited as a terrestrial ecologist and planner. My role as a terrestrial ecologist with the company spans nearly 20 years. The majority of my experience is in undertaking ecological assessments for infrastructure projects throughout New Zealand.

2.4 I have experience in the development of biodiversity provisions for Regional Policy Statements and District Plans. The most recent of these assignments was as technical advisor to Environment Southland during the drafting of the biodiversity provisions for the proposed Regional Policy Statement for Southland, including attendance at a hearing and at Council deliberations.

2.5 I am familiar with the ecological setting of the Queenstown Park Station (**the Station**) which is owned by Queenstown Park Limited (**QPL**). I have conducted site visits on behalf of the former landowner Stephen Laing in relation to a proposed upgrade to the existing farm track by the Kawarau River and more recently in relation to the proposed gondola between Remarkables Park and the Remarkables skifield and the proposed significant natural areas (**SNAs**) in Owen Creek.

2.6 In preparing this evidence I have read the Ecological Assessment of the Station prepared by Dawn Palmer from Natural Solutions for Nature Limited, the tenure review report prepared by Knight Frank Limited and significant natural area assessments prepared by the Queenstown Lakes District Council (**QLDC**) in relation to the proposed SNAs in the Rastus Burn and Owen Creek catchments.

3. CODE OF CONDUCT

3.1 I agree to comply with the Code of Conduct for Expert Witnesses as set out in the Environment Court Practice Note 2014. My qualifications as an expert are set out above. I confirm that the issues addressed in this evidence are within my area of expertise.

4. SCOPE OF EVIDENCE

4.1 My evidence will cover the following matters:

(a) The ecological setting of the Station;

(b) The terrestrial ecological values inherent to the Station;

(c) Threats to terrestrial ecology values posed by farming activities;

(d) Opportunities for restoration and enhancement of areas of ecological value; and

(e) Opportunities for diversification to non-farming activities.

5. ECOLOGICAL SETTING OF QUEENSTOWN PARK STATION

5.1 The Station is located on the south side of the Kawarau River and encompasses a series of broad river terraces, alluvial fans and steep mountainous country situated with the northern flanks of the Remarkables

Range. The station lies within the Remarkables Ecological District and encompasses dryland environments.

5.2 The Station spans a wide altitude range from approximately 320 metres above sea levels (**masl**) by the Kawarau River to approximately 1200 masl where the Station abuts the Remarkables Conservation Area. The topography is highly variable ranging from flat to undulating terraces along the corridor of the Kawarau River to the steep to very steep hillsides interspersed with numerous bluffs, rocky outcrops and incised waterways that typify the low to mid reaches of the Rastus Burn and Owen Creek. The varied topography and wide altitudinal and climatic gradients provide for a diverse range of dryland vegetation types and range of habitats that support a varied assemblages of indigenous plant and animal species.

5.3 Polynesian fires and pastoral activities of Europeans has resulted in a significant modification of the vegetation cover across the property. In pre-settlement times the prevailing cover on the hillslopes was mountain and silver beech forest while short tussock grassland and shrubland would have prevailed on the drier river terraces and fans. Today the vegetation across the station features a mosaic of pasture, short tussock grassland and shrubland. The shrubland exists in areas where woody succession has occurred following cessation of burning primarily driven by marginal returns for farming.

5.4 The threatened environment classification shows that the terraces and fans and lower hill slopes lie within acutely and chronically threatened land environments where the extent of indigenous vegetation cover remaining is less than 20%[1]. Indigenous shrubland and short tussockland vegetation on the land environments of the higher hillslopes is greater than 30% in extent but less than 10% of this cover is formally protected at a national scale. An explanation of the threatened environment classification including a map showing the threat categories across the Station is provided in **Attachment 1**.

6. SUMMARY OF TERRESTRIAL ECOLOGY VALUES

6.1 Despite the significant modifications to the indigenous vegetation cover since human settlement, dryland plant communities and habitats of ecological value persist on the Station. These are:

[1] Determined from Land Environments New Zealand (LENZ) Level IV Classification and Land Cover Database (LCDB4, based on 2012 satellite imagery) overlay.

(a) Extensive areas of grey shrubland[2] that occur in the low to mid reaches of the Rastus Burn and Owen Creek catchments and within the catchment an unnamed tributary of the Kawarau River situated between the Rastus Burn and Owen Creek; and

(b) Plant communities associated with cliff faces and rocky outcrops within the Rastus Burn and Owen Creek catchments and at the eastern extremity of the Station.

6.2 A large proportion of the grey shrubland is located within four SNAs. Three are within or adjacent to the Owen Creek catchment and one is within the Rastus Burn catchment. The SNAs were selected by ecologists contracted by the QLDC following aerial observations and evaluations using the significance assessment criteria contained in Appendix 5 of the District Plan.

6.3 Criteria underlying the selection of these areas is their degree of representativeness of excellent examples of shrubland vegetation within the Remarkables Ecological District, their large size and extent of closed canopy, the diversity of plant species associated within the constituent riparian and hillside communities and the relatively uninterrupted sequence of shrubland communities which extend over a wide altitudinal range.

6.4 Grey shrublands and the numerous cliffs and rocky outcrops they contain are important habitats which support diverse and abundant populations of indigenous invertebrates, lizards and avifauna as well as specialised plants. The cliffs and rocky outcrops are naturally uncommon ecosystems.3

6.5 Grey shrublands provide habitat for a variety of species of exotic and native passerines (perching birds) which are important prey species for New Zealand (Eastern) Falcon which has a threat classification of At Risk - Recovering.

6.6 The cliff faces and rocky outcrops in the Owen Creek catchment and at the eastern extremity of the Station are likely to support populations of the

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2 Grey shrubland is characterised by vegetation dominated by small leaved shrubs such as matagouri, *Coprosma* spp. and *Olearia* spp., grasses, ferns and low growing trees.

3 Naturally uncommon ecosystems contribute disproportionately to national biodiversity. These ecosystems typically arise due to unusual environmental conditions, are mostly small (<1 to 1000 ha) and non-forested, and often support unique biodiversity. They are often threatened, and not distinguished in national-scale land cover classifications.

Kawarau cress Lepidium sisymbrioides subsp. Kawarau which has a threat classification of Nationally Endangered.

6.7 The shrublands are important in terms of the ecological services they provide, most notably in reducing erosion and in maintaining water quality.

7. THREATS TO TERRESTRIAL ECOLOGY VALUES ASSOCIATED WITH FARMING

7.1 The clearance or modification of the indigenous vegetation during the development of the Station for farming yielded productive areas of pasture but also created suitable conditions for the establishment of exotic weed species, many invasive in nature. Notwithstanding this, the PDP provides for sheep grazing in SNAs as a permitted activity.

7.2 The vegetation cover that exists today on the Station includes a strong representation of exotic woody weeds species such as hawthorn and buddleja as components of the shrublands especially on the more modified lower country while herbaceous weeds such as the hawkweed, Scotch thistle, dock and wire weed are locally common in unimproved pasture. Farming activities such as fire, grazing and tracking can accelerate the spread of weeds if not properly managed adversely affecting indigenous plant communities and the productive capacity of pasture.

7.3 Intentional or accidental fires pose the greatest threat to woody indigenous plant communities with inherent ecological values such as grey shrubland that remain on the Station. An uncontrolled fire could lead to an extensive loss of shrubland cover due to the flammability of the vegetation and the steep and difficult terrain making controlling a fire very challenging. The loss of habitat for avifauna, lizards and invertebrates, including species with threat classifications could be significant.

7.4 The construction of farm tracks in shrublands create lineal corridors that can fragment shrublands if they are poorly aligned and lack suitable mitigation measures that provide for rehabilitation of track margins.

7.5 Loss of shrubland cover due to fire and tracking would lead to a rapid invasion of the cleared areas by the invasive weeds such as buddleja, sweet briar and contorta pine in the absence of control measures. Sweet briar and buddleja are well established across the Station and have colonised open

areas within the shrublands where unimproved pasture previously existed, along the margins of creek beds, on stable scree slopes and areas affected by erosion. Sweet briar and to a lesser extent buddleja occurs within the shrubland up to an altitude of around 900 masl.

7.6 Cattle also pose a threat to shrublands through trampling which can lead to opening up of areas of shrubland to weed invasion. The adverse effects caused by cattle can be cumulative if cattle grazing occurs on an ongoing basis. By comparison grazing by merino sheep is considered to have a low impact on shrublands and may in some areas be beneficial in terms of controlling invasive herbaceous weed species.

7.7 Overall pastoral farming activities have the potential to reduce the extent and condition of indigenous vegetation communities and the quality of habitats of indigenous fauna if they are not undertaken in a sensitive manner.

8. OPPORTUNITIES FOR RESTORATION AND ENHANCEMENT

8.1 Opportunities for restoration and enhancement of grey shrubland and cliff face plant communities including habitat quality for indigenous fauna is most likely to be achieved by allowing natural regenerative or successional process to occur unimpeded. This will lead to a dominance by woody indigenous species over woody and herbaceous exotic species or at the least co-existence. Achieving this outcome requires the prevention of fire, exclusion of cattle and avoidance of farm tracking activities from within the shrublands.

8.2 Control of pests such as possums, hares, and rabbits by aerial poisoning is recommended as this will reduce browse pressure and seed spread and assist in improving shrubland regeneration, species diversity and habitat quality. Pest control is likely to assist in the protection of palatable plants including nationally and regionally rare plants such as the Kawarau cress and kowhai. Pest control is also recommended in the alpine areas including the ski area sub zone where stoat predation of kea and NZ Falcon is impacting significantly on local populations of these species.

8.3 Targeted and ongoing control of Pinus contorta and other invasive woody exotic species such as hawthorn is recommended as they have the propensity to establish freely in shrubland and outcompete indigenous shrubland vegetation.

8.4 Control measures will require programmed rounds of monitoring before and after implementation to ensure successful operations.

9. OPPORTUNITIES FOR DIVERSIFICATION

9.1 The distinctive and rugged landforms and existence of extensive areas of grey shrubland contribute significantly to the scenic and recreational appeal of the Station. Within the confines of the Rastus Burn and Owen Creek catchments for example, the shrubland enhances the degree of naturalness and sense of remoteness providing opportunities for low impact recreational and tourism related activities compatible with the maintenance and enhancement of the shrublands.

9.2 Low impact activities include mountain biking, walking, and glamping as they either involve the construction of narrow trails (≤1.5 metres) or placement of poles or waratahs as route markers. Narrower trails are preferable as they are easier to align around areas of ecological value. The extent of clearance of indigenous vegetation and earthworks required during construction of a trail for walking or mountain biking is considerably less than is required for a farm access track. Narrower trails are easier to rehabilitate.

9.3 Some traditional farming activities do not maintain, or enhance SNAs and can pose a threat to ecology values inherent to SNAs and, in my view, there are other activities (that benefit from establishing in a rural setting) that are better placed to protect, maintain, or enhance SNAs which the PDP does not enable to the extent it does farming in the rural zone.

9.4 There are examples of stations bordering the Wakatipu Basin where farming occurs in tandem with a range of tourism ventures. These ventures take advantage of the scenery afforded by the indigenous vegetation cover and diverse landforms. They include Ben Lomond Station's high country horse treks, Queenstown Hill Station's quad bike adventures and Glenroy Station's safari hunting ventures.

9.5 Within the ski area sub zones there are considerable opportunities for year round activities such as walking and mountain biking to take place. Providing for these activities requires careful selection of trail routes to avoid ecologically sensitive areas such as cushion bogs, cushionfields and stream margins and employment of construction techniques that involve progressive

replacement of tussock grassland vegetation along the trail margins to maximise survival rates of displaced tussocks.

9.6 The proposed gondola will be a draw card that encourages people to access the ski area sub zone in the head of the Rastus Burn and participate in recreational activities such as walking and mountain biking especially over the summer and autumn months.

10. CONCLUSIONS

10.1 The retention of and enhancement of the shrubland vegetation in the Rastus Burn, Owen Creek, and unnamed tributary catchment that form part of the proposed SNAs contributes significantly to the scenic and recreational appeal of the Station.

10.2 The PDP clearly envisages and provides for some development in SNAs.

10.3 Extensive grazing of unimproved grassland within the shrublands by merinos is considered to be a compatible land use notwithstanding the threats that farming activities pose to terrestrial ecology values.

10.4 The shrubland provides ecological services in the form of erosion reduction and through maintaining water quality and enhances opportunities for low impact recreational and tourism activities.

10.5 I consider that there are other non-pastoral activities (which occur in rural areas because they benefit from a rural setting) that are better able to protect, maintain or enhance the SNAs.

21 April 2016
Simon Beale

Attachment A
Threatened Environment Classification

The Threatened Environment Classification (**TEC**) provides national scale background information on New Zealand's land environments.

It shows how much native (indigenous) vegetation remains within land environments, and how past vegetation loss and legal protection are distributed across New Zealand's landscape. The TEC uses indigenous vegetation as a surrogate for indigenous biodiversity. This includes indigenous ecosystems, habitats and communities: the indigenous species, subspecies and varieties that are supported by indigenous vegetation, and their genetic diversity. The TEC is most appropriately applied to help identify places that are priorities for formal protection against clearance and/or incompatible land-uses, and for ecological restoration to restore lost species, linkages and buffers. The TEC is a combination of three national databases: Land Environments New Zealand (**LENZ**), classes of the 4th Land Cover Database (LCDB4, based on 2012 satellite imagery) and the protected areas network (version 2012, reflecting areas legally protected for the purpose of natural heritage protection).[4]

[4] http://ourenvironment.scinfo.org.nz/ - Threatened Environments