

**MOKIHINUI HYDRO PROPOSAL
CONSENT APPLICATIONS**

**SUPPLEMENTARY EVIDENCE ON
RMA s6(A) & s6(B) MATTERS ARISING FROM LANDSCAPE
EVIDENCE PRESENTED BEFORE THE HEARING**

OCTOBER 2008

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Introduction

- 1 This evidence addresses matters raised in the evidence on landscape and visual effects presented to the hearing by Mr Peter Rough (for the applicant) and Mr James Bentley (for the Department of Conservation). In particular, I address the issue of the status of the Mokihinui Gorge in terms of sections 6(a) and 6(b) of the RMA:
 - 1.1 The effects of the MHP on the natural character of the Mokihinui Gorge; and
 - 1.2 Whether the Mokihinui Gorge and wider Mokihinui River landscape is an outstanding natural feature or landscape in terms of section 6(b)

Natural character

- 2 The professional assessment of naturalness in New Zealand landscape assessment practice is confused by the application to the assessment process of two worldviews on what constitutes natural character:
 - 2.1 The view that naturalness can be assessed objectively and scientifically with regard to biophysical landscape factors, according to the presence of natural elements, natural patterns and natural processes, and the extent to which these are modified by human intervention; and
 - 2.2 The assessment of what is commonly referred to as perceived (or what I term 'apparent' naturalness) – that which *seems* natural. Such assessments are generally conducted with reference to what Judge Jackson¹ has identified as criteria for naturalness:
 - (a) *Relatively unmodified and legible physical landform and relief;*
 - (b) *The landscape being uncluttered by structures and/or obvious human influence;*
 - (c) *The presence of water (lake, river, sea);*
 - (d) *The presence of vegetation (especially native vegetation) and other ecological patterns.*

¹ *Long Bay–Okura* (A078/2008) at para. [135]

- 3 Applied to the Mokihinui Gorge in its current state, the critical application of both approaches will lead to a conclusion that the Mokihinui Gorge displays very high – even approaching pristine – levels of naturalness. There does not appear to be any differences in the opinions of the landscape experts on this matter.
- 4 The differences between the approaches outlined in para. 2.1 and 2.2 above are more apparent when considering the effects of the MHP on natural character post-construction.
- 5 The use of the criteria identified by Judge Jackson permits Mr Rough to conclude that the gorge will still retain “generic” natural character, in the sense that the gorge will still generally meet the criteria identified in para. 2.2, above. In particular, the gorge will still display:
 - (a) *Relatively unmodified and legible physical landform and relief*
 - (c) *The presence of water (lake, river, sea);*
 - (d) *The presence of vegetation (especially native vegetation) and other ecological patterns.*
- 6 However, two critical aspects of the definition I have proposed in my evidence (applying a more objective and critical approach to the assessment of naturalness) will result in a fundamentally different assessment of naturalness, given:
 - 6.1 The role of human intervention in diminishing naturalness—the construction of the dam and the flooding of the gorge must be acknowledged as a very significant human intervention in the natural elements, patterns and processes of the gorge; and,
 - 6.2 The operation of natural processes in particular will be affected by human intervention through the construction of the dam. This view is shared by Mr Tom Carter in his evidence on natural character on behalf of the Royal Forest and Bird Society. Mr Carter prioritises natural processes above natural elements and natural patterns, and I endorse this view. Natural patterns and elements are the product of natural processes.

- 7 In summary, if an objective, scientifically-based technique is applied to the assessment of biophysical naturalness, then it must be concluded that the MHP will markedly diminish the naturalness of the gorge. Alternatively, if Judge Jackson's criteria are applied and apparent naturalness is assessed – that which *seems* natural – then the gorge will still appear to be highly natural, post-construction, regardless of the level of human interventions in natural elements, natural patterns, and natural processes.

Preliminary Buller District-wide Landscape Assessment

- 8 The Preliminary Buller District-wide Landscape Assessment (September 2008) undertaken by Andrew Craig and Peter Rough provides a superficial overview of the characteristics and visual qualities of the District's landscapes but it is not, in my opinion, a reliable basis for determining landscape significance. The authors conclude that the Mokihinui Gorge "approaches" outstandingness, but unlike other landscapes within the region, the Mokihinui Gorge is not obviously outstanding.
- 9 The preliminary assessment does not apply any of the Pigeon Bay factors, other than through a general consideration of aesthetic quality. More influential in the report's conclusions is the reference to the lack of distinctiveness, or uniqueness of the Mokihinui Gorge. Whether or not the Mokihinui Gorge is unique in any respect is not a reliable indicator of landscape significance. Unique does not necessarily correlate with outstanding.
- 10 The report makes reference to what I consider is an unfortunate comment of the Court on the identification of outstanding-ness²:

'Usually an outstanding natural landscape should be so obvious (in general terms) that there is no need for expert analysis

- 11 While this may be so in the case of aesthetic values, the same Court found that aesthetic quality or value is but one of several factors that may be used as an indicator of outstandingness. Of equal importance in my opinion, are the natural science values (the geological, topographical, ecological and dynamic components) of the landscape. These

² Environment Court NZ Decision C180/99 Wakatipu Environmental Society Inc. v The Queenstown Lakes District Council, paragraph 99

values are acknowledged as relevant through their inclusion in the Pigeon Bay factors, commonly applied to the assessment of landscape significance for s6(b) purposes.

- 12 The conclusion that because the Mokihinui does not stand out above all other similar landscapes in the district in aesthetic and character terms, it is not obviously outstanding, fails to take into account the natural science values of the District's landscapes.

Peter Rough's evidence on landscape significance

- 13 The applicant's landscape assessment assessed landscape significance through an arithmetical scoring system, whereby each of the Pigeon Bay factors were scored out of a possible 5 points to arrive at an average score for the Mokihinui Gorge of 3.2. The assessment then concluded:

...the ranking of 3.2 would appear to lead to the conclusion that the Mokihinui Gorge approaches, but does not achieve, outstanding status largely based on natural and ecological values.

- 14 Mr Rough's method for evaluating was criticised in the evidence of Mr James Bentley for the Department of Conservation, and I agree with the basis for Mr Bentley's criticism in considering the original assessment to be flawed.
- 15 In his evidence, at para 8.10, Mr Rough reiterates his view that the Mokihinui Gorge is not obviously outstanding [emphasis added]:

*...in terms of the Buller District it is not obviously outstanding, and I confirmed this on 5 September 2008 when, in the company of others involved in this hearing I made an aerial inspection of most of the significant gorges in the Buller District. I formed the view that while some gorges are obviously outstanding the Mokihinui River gorge, although impressive, is **not obviously outstanding**. I favour its status being determined (as I consider the status of mostly all outstanding natural features and landscapes should be determined) by undertaking, in consultation with the community, a district-wide landscape assessment.*

- 16 I accompanied Mr Rough on this aerial inspection and I agree that in terms of aesthetic appeal (and to the extent that this can reasonably be determined from an aerial inspection), there are other river systems and landscapes that might rate more highly than the Mokihinui Gorge. However, my impressions of the upper catchment, particularly the North Branch of the Mokihinui River placed it on a par with other Buller landscapes.

- 17 I take Mr Rough's comments, quoted above, to indicate that he is open to the possibility that the Mokihinui Gorge may be found to be outstanding, but this should be determined through a rigorous district wide study. Mr Rough concludes at para. 12.6:

...that a comprehensive District-wide landscape assessment undertaken, in consultation with the community, may find the gorge to be an outstanding natural feature or landscape.

James Bentley's evidence on landscape significance

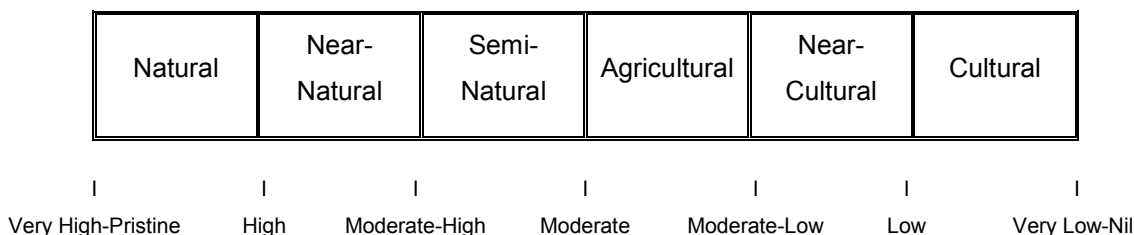
- 18 Mr Bentley has undertaken a reasonably rigorous assessment of the Mokihinui Gorge and River generally, and concludes that the Mokihinui River is an outstanding natural feature within an outstanding natural landscape (the Mokihinui catchment as a whole). His evidence applies the Pigeon Bay factors, but does not use an arithmetic approach to scoring, as does Mr Rough. I consider Mr Bentley's approach to be technically rigorous insofar as it deals with the Mokihinui catchment, but it is not a comparative assessment.
- 19 The key differences between Mr Bentley and Mr Rough's AEE assessments are:
- 19.1 Within the natural science factors, geology is rated 3 by Bentley but only 1 in the AEE;
 - 19.2 Within the natural science factors, the dynamic components of the landscape are rated 5 by Bentley but only 3 in the AEE;
 - 19.3 Within the Aesthetic factors, memorability is rated 4 by Bentley, but only 2 by the AEE;
 - 19.4 Expressiveness is rated 5 by Bentley, but only 3 by the AEE;
 - 19.5 Transient values are rated 4 by Bentley but only 3 by the AEE
 - 19.6 Shared and recognised values are rated 3-4 by Bentley, but are not rated at all by the AEE
- 20 Of the criteria used, it is my opinion that expressiveness and transient values are somewhat spurious and duplicate aspects that have already been assessed within other criteria.

However, removing these from consideration still results in a higher assessment of landscape significance by Bentley than by the AEE.

- 21 Mr Bentley concludes that the Mokihinui Gorge is an outstanding natural feature or landscape within a wider outstanding natural landscape, being the entire upper Mokihinui catchment together with the gorge.
- 22 While Mr Bentley’s assessment is reasonably thorough, I consider it falls short of the level of data collection and analysis necessary for district planning purposes. However, it has value as an indicative assessment and I consider it a more reliable assessment of landscape significance than the assessment conducted as part of the AEE.

What is the test for outstanding natural features and landscapes?

- 23 It is generally accepted that to be considered ONFL, a landscape must be both *natural* and *outstanding*, i.e., there are two ‘bars’ to cross. Regrettably, neither bar is well defined and interpretations vary considerably between local authority jurisdictions.
- 24 In terms of what is considered natural enough, with reference to the scale reproduced below, landscapes have been found by professional assessment and the Environment Court to be outstanding within the semi-natural range (Moderate-Moderate-High) and even within the Agricultural range (Moderately Low-Moderate).



- 25 My opinion is that the bar should be set rather higher, and that landscapes should first be considered to be within the High—Very High-Pristine range. The Mokihinui River and much of the Buller District clearly falls within this range.
- 26 Regarding the bar for outstanding, the test is even less precise.

- 27 Mr Rough refers to outstanding natural landscapes in terms of the dictionary definition as being those that are “conspicuous, eminent, especially because of excellence”. Mr Rough also notes that the accepted frame of reference is the range of landscapes within the jurisdiction of the local authority undertaking the assessments. Thus, landscapes are generally found to be outstanding at either a regional or district level. Occasionally however, landscapes are referred to as being outstanding at a national level, although no comparative national assessment has ever been undertaken. In my opinion, many of the flaws and problems within the system of assessing ONFLs stem from the failure to adopt a national frame of reference.
- 28 I regard the local authority frame of reference as having inherent flaws. Landscapes that are found to be outstanding at a regional level may not be outstanding at a district level, and I consider there is an inherent inconsistency in this approach. Banks Peninsula is an example of a landscape that merits different levels of recognition: at the regional level the entire peninsula has been identified as outstanding, whereas at a local, district scale, only a small proportion of the Banks Peninsula landscape was found by the Court to be outstanding. I consider there are some problematic aspects of the contextual approach to assessing landscape significance that have not been adequately resolved—outstanding has become relative in terms of its relativity to other levels of value, and to context. I consider this devalues the concept.
- 29 The implications of the local authority contextual approach when applied to the Buller District suggest that in a district that may prove to contain extensive outstanding natural landscapes, only the most outstanding among them may be deemed to be sufficiently outstanding to be recognised at the District level. Other landscapes that are considered less outstanding (but that nevertheless are still outstanding by any reasonable assessment) will not be recognised and protected. This appears to be the approach taken by Mr Rough in his assessment—potentially, many Buller landscapes may prove to be outstanding, but some are likely to be more outstanding than others, and the Mokihinui is not one of them, in Mr Rough’s view (although in his evidence Mr Rough appears open to the possibility that the Gorge is an ONFL).

- 30 I do not agree with this approach, in that a district frame of reference may serve to deny protection to many landscapes that may in fact be outstanding at a regional or even national level. If assessment criteria (first, for naturalness, second for significance) are applied rigorously and consistently, then it seems rational that landscapes that are deemed to be outstanding will be outstanding in *any* context. The current practice is based upon relative and sometimes idiosyncratic interpretations of what is natural, and what is outstanding.
- 31 The local authority frame of reference also serves to protect landscapes that in my view fall well short of the level of naturalness required to be considered ONFL. Local authorities may find 'outstanding-ness' in landscapes that on the basis of a critical application of the criteria for naturalness and significance, may fall well short of both bars. I consider this is the reason why the Canterbury Regional Landscape Study (1993) was able to identify the entire Banks Peninsula as outstanding.
- 32 While not consistent with decisions of the Court, I consider that a national frame of reference is appropriate for considerations of landscape significance in terms of s6(b). Could the Mokihinui River landscape be assessed as outstanding if considered on a national scale?

Where does this leave the Mokihinui Gorge and Mokihinui River in terms of s6(b) significance?

- 33 On the basis of my knowledge of the landscapes of the Buller District, I have no doubt that a very substantial proportion of the district passes the test for naturalness, in that the district contains extensive areas of landscape that rate high to very high—even pristine—on the scale of naturalness included in my evidence. I include the Mokihinui River above the Seddonville Flats among these landscapes. The gorge and entire upper catchment is clearly natural enough to be considered for outstanding status.
- 34 In terms of aesthetic quality, if one had to identify a single river catchment at the district scale for its outstanding aesthetic qualities (i.e., the *most* outstanding among outstanding landscapes), one might not chose the Mokihinui River. However, considered at a district or even regional scale, I would consider much of the high-naturalness landscape of the Buller District to rate as aesthetically outstanding, the Mokihinui River included.

- 35 Acknowledging the likelihood that much of the Buller District could be assessed as having at outstanding aesthetic quality, the factors that are likely to prove conclusive in determining the significance of the Mokihinui, and the wider Buller District landscapes, are the natural science factors. These cannot be assessed accurately (if at all) by a helicopter fly-over or even a walk through the landscape. They should be investigated rigorously and with regard to the scientific literature. I have included a typology of natural science values as Appendix 1, as an indication of the factors that should be considered in determining the natural science values of the Mokihinui Gorge, river, and wider District. In terms of this typology of values, uniqueness is not a relevant factor.
- 36 In addition to aesthetic values and natural science values, I consider that community held values should also inform assessments of landscape significance under section 6(b). They currently do, but in a very non-specific sense, under what are sometimes loosely referred to in the Pigeon Bay factors as “shared and recognised values”. However in the interests of clarity I include a typology of community-held landscape values as Appendix 2.
- 37 Community-held values must be determined with direct reference to the community, and cannot be assumed accurately with reference to some of the surrogates that are commonly used, such as the appearance in the landscape in postcards, paintings and literature.
- 38 The significance of the Mokihinui Gorge and Mokihinui River generally as ONFL is subordinate to considerations of appropriateness and the sustainable management of natural and physical resources under Section 5 of the Act. Such matters require an holistic understanding of the evidence before the Commissioners, beyond the limited concerns of landscape evidence alone.

Dr ML Steven

October 24, 2008

APPENDIX 1: A NATURAL SCIENCE (OR NATURAL HERITAGE) VALUES FRAMEWORK FOR THE ASSESSMENT OF LANDSCAPE SIGNIFICANCE³

- 1 **Geo-evolution**
 - 1.1 Geological features – outstanding or representative
 - 1.2 Geomorphological and landform features – outstanding or representative
- 2 **Geodiversity**
 - 2.1 Geological and geomorphological features or processes – outstanding or representative examples
 - 2.2 Geological or geomorphological features or processes – rare or threatened
- 3 **Bio-evolution**
 - 3.1 Paleobotanical and paleozoological (fossil records) – outstanding or representative
 - 3.2 Plant and animal species or communities which are evidence of earth's biological evolutionary history – outstanding or representative
- 4 **Biodiversity**
 - 4.1 Species, populations or ecosystems – representative examples
 - 4.2 Species, populations or ecosystems – rare, threatened or endangered
 - 4.3 Species, populations or ecosystems - endemic
 - 4.4 Species, populations or ecosystems – other outstanding scientific or conservation value
- 5 **Natural integrity** (ecosystems and landscapes relatively unperturbed by modern technological society)
 - 5.1 Terrestrial ecosystems – high degree of natural integrity
 - 5.2 River corridor ecosystems – high degree of natural integrity

³ These factors are taken from: Mackey, Nix and Hitchcock (2001). *The natural heritage significance of Cape York Peninsula*. A report commissioned by the Queensland Environmental protection Agency, published by ANUTech Ltd Canberra, ACT

5.3 Wetland ecosystems – high degree of natural integrity

6 On-going natural processes

6.1 Areas of sufficient size, natural integrity and other essential elements to allow or maintain significant on-going ecological, life support and evolutionary processes

6.2 Areas of sufficient size, natural integrity and other essential elements to allow or maintain significant on-going geophysical evolutionary processes

7 Contributing to knowledge

7.1 Geomorphic or physiographic features, ecosystems, plant and animal communities or natural processes or phenomena – significant contribution to understanding of natural history.

7.2 Geomorphic or physiographic features, ecosystems, plant and animal communities or natural processes or phenomena – significant contribution to direct educational value

APPENDIX 2: A TYPOLOGY OF COMMUNITY HELD LANDSCAPE VALUES⁴

- 1 **Aesthetic:** Areas valued for the scenery—mountains, glaciers, forests, beaches, tidelands, bays and islands
- 2 **Biological:** Areas valued because they provide places for a variety of plants, animals and wildlife
- 3 **Cultural:** Areas valued because people can continue to pass down wisdom, traditions, and a way of life
- 4 **Economic:** Areas valued because they provide economic opportunities such as fisheries, tourism, or processing
- 5 **Future:** Areas valued because they allow future generations to know and experience the areas as they are now
- 6 **Historic:** Areas valued because they are places and things of natural and human history
- 7 **Intrinsic:** Areas valued just because they exist, no matter what humans think about them or how we use them
- 8 **Learning:** Areas valued because we can learn about the environment
- 9 **Life sustaining:** Areas valued because they are places that produce, preserve, clean, and renew air, soil, and water
- 10 **Recreation:** Areas valued because they provide places for outdoor, recreation activities and experiences
- 11 **Spiritual:** Areas valued because they are sacred, religious, spiritually important
- 12 **Subsistence:** Areas valued because they provide necessary food and materials to sustain people's lives
- 13 **Therapeutic:** Areas valued because they make people feel better, physically and/or mentally
- 14 **Wilderness:** Areas valued because they are wild

⁴ Alessa, Kliskey & Brown (2008). Social–ecological hotspots mapping: A spatial approach for identifying coupled social–ecological space. *Landscape and Urban Planning* 85, 27-39