ADDITIONAL INFORMATION FROM WHITEWATER NZ ON THE PROPOSED WESTPOWER WAITAHA HYDRO SCHEME

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1. Introduction

Westpower's concession application identifies two key areas where the proposed hydro scheme will have a significant impact on values within the Waitaha River Catchment. This is particularly so within the Morgan Gorge, which the hydro scheme proposes to dewater. These are recreation values, and especially high Class kayaking values[1], and wilderness and natural feature values[2]. The proposed scheme will impact on many of the conservation values enunciated in the DOC West Coast Conservation Management Strategy[3] (CMS) (including natural feature and recreation values) and appears to be at odds with many of the objectives and policies in the CMS, although Westpower claims otherwise throughout its application.

This report provides a critique of aspects of key documents and material, which the application relies heavily on, but which by reason of omission or error fail to correctly represent some of the important key values of the Catchment. Thus the conclusions drawn on the true impacts of the proposed scheme are severely underestimated. The key documents and areas discussed in this report are:

- the Recreation Report prepared by Greenaway and Associates (footnote 1) and particularly in its analysis of and impacts of the scheme on kayaking values, including wilderness values;
- reference to the success of a recently completed Westpower micro-hydro power scheme on the Amethyst River as a possible justification for the proposed Waitaha hydro scheme; and
- reference to the appropriateness of the various policies and objectives of the CMS to the development of the proposed scheme on DOC land.

This critique is not extensive as time has not permitted a full detailed analysis of all the issues or the material provided. Rather, it highlights some key inaccuracies and misconceptions that are

[1] R Greenaway and Associates, 2014. *Westpower Waitaha Hydro Investigations: Recreation and Tourism Assessment of Effects.* Report prepared by R Greenaway and Associates for Westpower Ltd.
[2] Boffa Miskell Limited, 2014. *Waitaha Hydro Scheme: Natural Character, Landscape and Visual Amenity Effects.* Report prepared by Boffa Miskell Limited for Westpower Ltd.
[3] Department of Conservation, 2010. *West Coast Conservation Management Strategy Volume 1: 2010-2020.* Department of Conservation *Te Papa Atawhai* West Coast *Tai Poutini* Conservancy, Hokitika.

significant enough to raise concerns about the veracity of aspects of the application as it stands and whether the concession should be permitted.

2. Concerns with the Greenaway & Associates Recreation Report

The Recreation Report (footnote 1) provided to support the Concession Application is a document that attempts to provide an analysis of recreation values in the Waitaha River. Conclusions from this report are drawn on to support various aspects of the concession application, and particularly those pertaining to the overall impact of the scheme on the kayaking values of the river in the West Coast and New Zealand context. The report is drawn on extensively to justify the scheme on the basis that the resource will still be available for kayaking once installed [which is false] and that the Waitaha River is only one of many rivers of the same nature on the West Coast, and so the loss of one reach will be of little consequence, which is also false.

2.1. Value of the Waitaha River to kayakers based on the literature assessment

2.1.1. General

In a number of places the Recreation Report implies that based on an assessment of some literature the Waitaha River, and especially the Morgan Gorge, is not of value to kayakers. In other parts of the report the clear value of the resource to kayakers is enunciated. This contradiction creates confusion as to what is the true situation and what is the true value of the white water resources in the Waitaha River.

Assessment of any literature has to be kept in context, should be qualified where necessary and not be used inappropriately. Assessment of kayaking literature needs to be done by qualified kayaking experts otherwise incorrect analyses or conclusions may be drawn. There is interpretation applied to some of the literature in the Recreation Report that is questionable given issues with some of the reported data and analysis applied.

Much of the Recreation Report contains sections that are exactly the same as the earlier report of Booth (2008) that was prepared for Westpower[4], but there are some significant changes, omissions and additions. The important wilderness values of the Waitaha River, which are a key component of the kayaking value of the resource, are not mentioned in the Recreation Report in the same way as in the report by Booth (2008), and nor is the status of the Waitaha River, representing 'the pinnacle' of the West Coast kayaking rivers. Issues around these changes are addressed below.

2.1.2. Relevance of some older literature

[4] Booth, K (2008), *Waitaha River Recreation Assessment*, report prepared for Westpower by Lindis Consulting, 15 September 2008.

In the Recreation Report some of the earlier kayaking literature referred to is out of date[5] and prior to when different reaches of the Waitaha River were first run. Therefore the kayaking value placed on such resources at that earlier time is quite different to the values held for these resources today (e.g., section 4.6, page 34 where recreational values on the Waitaha River were not considered to warrant protection compared with other rivers in New Zealand). This issue is in part recognised in the Recreation Report. In section 4.9.2 (page 35) of the Recreation Report the national status and importance of the runs in the Waitaha River are identified and discussed based on the kayaking guide books of Graham Charles[6]. However, on page 68 it is finally concluded the changes to recreation opportunities and setting characteristics by the scheme in the Waitaha valley are regionally low across all activities. It is stated that there are numerous alternative back country-remote and white water settings.

There are now recognised national and international kayaking values of a number of runs in the Waitaha River, including the Morgan Gorge. As the descents of some of these runs are recent (including the Windhover Gorge, which has now also been run), it is necessary to reassess earlier literature in the light of these developments. It is certain that the relative values of rivers will have changed given the status and high values in and placed on these runs. This is properly reflected in the conclusions around the relative values of the Waitaha Gorge run compared with some other key West coast runs in some other literature[7]. This is not the impression left by the Recreation Report, where such status and importance are finally ignored. The final conclusions reached in the Recreation Report on page 68 are made with no supporting evidence or analysis.

Certainly as far as kayakers are concerned, the kayaking values of the hard white water runs on the Waitaha River place that river along with the Hokitika River (and her tributaries) as the top two outstanding hard white water kayaking and wild and scenic rivers on the West Coast[8]. This places both rivers in the category of contenders for Water Conservation Orders for their nationally

[5] Such as: Egarr, G D, and Egarr, J H (1981), *New Zealand Recreational River Survey. Part I. Methods and Conclusions.* Water and Soil Miscellaneous Publication 13, 1981; *New Zealand Recreational River Survey. Part II. North Island Rivers.* Water and Soil Miscellaneous Publication 14, 1981; *New Zealand Recreational River Survey. Part III. South Island Rivers.* Water and Soil Miscellaneous Publication 15, 1981; and Egarr, G (1995), *New Zealand's South Island Rivers: A Guide for Canoeists, Kayakers and Rafters.* Nikau Press, Nelson. At the time of writing the seminal 1981 New Zealand wide river survey, reaches in the Waitaha River such as the Morgan Gorge and above were considered unkayakable. The same was equally true of many other river reaches around New Zealand, especially those of a more technically difficult nature. As kayaking as a sport and the technical skills of kayakers have advanced so too has the range of rivers that are run, and many river reaches that were considered unkayakable in 1981 and in 1995 are now routinely run by expert kayakers.

[6] Charles, G (2006), *New Zealand Whitewater, 125 Great Kayaking Runs*. 4th edition, Craig Potton Publishing, Nelson.; Charles, G (2013), *New Zealand Whitewater 5, 180 Great Kayaking Runs*. 5th edition, published by Graham Charles, Hokitika.

[7] England, A (2011), *An assessment of the whitewater recreational values of West Coast rivers - whitewater kayaking*. **Land Environment and People Research Paper No. 2**, Lincoln University, Canterbury, 252 pages, January 2011. In this extensive assessment of the kayaking values of various West Coast river reaches and a survey of users, the Waitaha Gorge run was ranked 8th for overall importance out of 60 runs and was in the group of 16 rivers with runs of the highest overall importance (with a ranking of 4.5 to 5.0) including runs on the Karamea, Arahura, Styx, Kokatahi, Hokitika, Whitcombe, Kakapotahi, Perth, Waipara and Cascade Rivers.

[8] Mick Hopkinson, personal communication (2014). This view has been expressed in the past by Mick Hopkinson to Rob Greenaway, one of the authors (or the author) of the Recreation report, in Mick Hopkinson's capacity as an expert kayaker, kayaking teacher and mentor, who has kayaked around the world and many of the outstanding Class IV and V kayaking runs on the West Coast, and who is expressing the views of many other kayakers from throughout New Zealand. However, this is not mentioned in the Recreation report.

outstanding values. In addition, there are more challenging runs on the Waitaha River than there are on the Hokitika River. This elevates the status of this component on the Waitaha and these runs are not substitutable by other high Class runs.

The analysis of most kayaking literature on the Waitaha River in the Recreation Report, where it refers to the river other than in the front country, is largely speaking about the Waitaha Gorge run. This analysis needs to be updated so that the full spectrum of kayaking runs on the Waitaha River and their full value can be properly considered and appreciated when deciding whether development in the Waitaha river system should be permitted or not. To rely on literature that is only referring to the values of just one run gives a misleading impression of the full values of the resource. The implication that there are other Class V runs available on the West Coast that are a suitable substitute for the loss of the Morgan Gorge and the impacts on the other runs in the river, is incorrect. As is expanded on later, this notion ignores the fact that the Waitaha River has a number of high Class quality runs on it in pristine wilderness, and that all the runs will be affected in some way by the proposed hydro scheme. Thus, in Whitewater NZ's view, the Recreation Report understates the changes to the regional recreation opportunities in the Waitaha Valley by the Scheme as it ignores the national and international importance of all the runs in the Waitaha River and it assumes that other Class V runs elsewhere on the West Coast offer suitable substitutes for the Morgan Gorge and other runs.

2.1.3. Relevance of Tourism Consultants Report

In section 4.8, page 34, where reference is made to a Tourism Consultants Report[9], the kayaking and trout fishing values of the Waitaha River are noted in a general sense. However, the international reputation and scarcity of high Class kayaking resources such as those offered by the Waitaha appear to have not been considered in possible tourism development opportunities at that time.

The literature referred to in the Recreation Report, would not necessarily recognise the value of kayaking resources because such recognition depends on the knowledge, scope and thoroughness of the assessments conducted by the authors. This does not mean highly significant kayaking values do not exist; it simply means that within the normal scope of tourism activities, such values and opportunities may be not considered as they are not mainstream and carried out by the majority of tourists. However, for specialist tourists, visiting overseas kayakers and outdoors people, such resources are often of extreme importance and are highly sought after, especially in the international context of dwindling outstanding natural resources of this type. Such river resources constitute a valuable resource for the future.

2.1.4. Other literature

Other literature (Galloway[10]) analysed and referred to in the Recreation Report (section 4.2, pages 26-29) should not be used and analysed to the extent it has been.

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[9] Tourism Resource Consultants (2007), *Tourism development and Enterprise Opportunities on the West Coast associated with Track and Water Resources.* Prepared for Development West Coast by Tourism Resource Consultants, Wellington.

[10] Galloway, S P (2008), *New Zealand Recreational River Use Study: Specialization, Motivation and Site Preference.* School of Physical Education, University of Otago, Dunedin, New Zealand.

The river use study does not identify the reaches of any of the rivers being referred to (this matter is not recognised or stated by the Recreation report author(s)). Thus the conclusions reached about the relative values of the Waitaha River (at that time presumably the Morgan Gorge run) compared with other rivers throughout New Zealand are questionable, even though it was ranked in the top 10 rivers in the country in that study.

2.1.5. Results from the Rivers Values Assessment System (RiVAS) study

In section 4.4 (pages 30-33) of the Recreation Report the results of the River Values Assessment System (RiVAS) study applied to the West Coast rivers are reported. The reach of the Waitaha River that was included in this assessment was the Waitaha Gorge run (assuming a portage around the Morgan Gorge and re-entry below). It ranked very highly. The Recreation Report then analyses various river grade (Class) and use parameters for the West Coast rivers and draws final conclusions about the utility of RiVAS, including it being 'a significant resource for identifying the scale of alternative kayaking options on the West Coast and the level of resource substitutability'.

The RiVAS methodology has evolved over time as the method is used and applied and is essentially a methodology in development[11]. It has received some criticism for its utility and integrity[12]. The multi-criteria method produces total scores for rivers by summing up scores for a number of individual parameters or attributes determined by an expert panel (of kayakers in the case of a kayaking study) and assumes that the total scores will represent the relative value of a river. The method has not been validated and checked to confirm that total scores do reflect and represent overall river values. Some RiVAS assessment criteria have changed with time and the method does not say how the scores are to be classified into high, medium or low values (see footnote 13) or as of national, regional or local significance or importance. One of the lead authors of the methodology has since arbitrarily assigned national, regional and local significance to kayaking data from the three RiVAS

[11] R Greenaway, personal communication (when discussing methods for evaluating kayaking values during expert witness caucusing for the Hurunui Water Project Waitohi Irrigation and Hydro Scheme resource consents Hearing, Christchurch, 2014).

[12] Rankin, D A, Earnshaw, N, Fox, I M G, and Botterill, T, *Kayaking on Canterbury Rivers: reaches, values, and flow requirements.* Report No. R14/31, Environment Canterbury, February 2014; The method uses an expert kayaker panel assessment and a multi-criteria analysis approach to determine an overall score for river reaches by summing scores for a range of attributes and then ranking scores from highest to lowest and ascribing high, medium or low values. Some reservations have been expressed about its utility (Booth, K, Bellamy, S, England, A, Hales, W, Kelly, B, Mahoney, M, Reed, C and Sevicke-Jones, G (2012), *Whitewater Kayaking in Hawke's Bay: An Application of the River Values Assessment System (RiVAS)*. **Land Environment and People Research Paper No. 12 HBRC Plan No**: 4373, Lincoln University, Canterbury.; Hughey, K F D (2012), *RiVAS and RiVAS+: Insights and lessons from 5 years' experience with the River Values Assessment System*. Paper presented at the 2012 New Zealand Agricultural & Resource Economics Society (Inc.) Conference, Nelson.), as the method does not define how rivers are to be categorised as having high, medium or low scores or kayaking values, or as having national, regional or local kayaking values (Hughey, K F D (2012)) or how to compare results between regional councils. Nevertheless, the method provides an indication of white water kayaking values on rivers within regional council jurisdictions, and may have some utility for monitoring and reporting purposes (Hughey, K F D and Booth, K L (2012), Monitoring the state of New Zealand rivers: How the River Values Assessment System can help. *New Zealand Journal of Marine and Freshwater Research*, 46, 545-556).

kayaking surveys completed to date without consultation with kayakers[13], in spite of kayakers involved in the RiVAS studies warning that this would be inappropriate for a variety of reasons (for example, RiVAS provides no mechanism for comparing scores or results from one region to another).

Notwithstanding these issues the data generated by such a study does give a considered estimate of a number of parameters associated with determining river kayaking values within regions, based on the expert knowledge of the expert panel. It also appears that there is often a reasonable correlation between the values ascribed to many rivers by kayakers and those determined by RiVAS, but there are some incorrect assessments made by RiVAS. Some lower Class rivers are not valued as highly by RiVAS, and therefore might be considered to be only of lower significance, when they are widely used by kayakers from different regions and have significantly higher values[14].

The Waitaha Gorge run was given a high rating under RiVAS, and a total score of 19 which ranked it a 2nd equal along with eight other reaches of valued West Coast rivers, out of 28 runs arbitrarily assessed as having a high value. This data is not presented in the Recreation Report but can be gleaned from the data presented in Appendix 4. The reason the river did not receive the highest score of 20, and join the top 6 highest scoring and ranked rivers, was that the estimated user numbers at the time of the survey (50) were less than 100 and therefore attracted a score of 2, whereas the scores for the other six top first equal rivers were all 3 (>100 users/year).

The Recreation Reports states 'RiVAS provides the most completed description and analysis of white water settings on the West Coast'. Whitewater NZ would contend that RiVAS lacks the richness of the subjective assessments and physical descriptions on West Coast river runs provided by England's (2011) West Coast rivers report[15], the knowledge of kayakers that use these resources, and the kayaking guidebooks of Graham Charles. Also the RiVAS study lacks the richness of the data produced by the West Coast kayakers' survey (including international participants) carried out by England (2011; 265 river user respondents versus the six or so expert kayakers on the expert panel in the West Coast RiVAS study). England's kayaking survey ranked the Waitaha Gorge run (as for the RiVAS study this was the run being referred to in the survey although the Recreation report is not clear on this matter (page 30)) as 8th for overall importance out of 60 West Coast rivers, 5th for both white water challenge and wilderness feeling, and 10th for scenery from the river, all high ratings.

RiVAS only provides a snapshot of kayakers' use of different river runs in time, at the time the survey was done. For example, Booth (2008) earlier reported a higher annual usage number of about 100

[13] Hughey, K F D (2012), *RiVAS and RiVAS+: Insights and lessons from 5 years' experience with the River Values Assessment System*. Paper presented at the 2012 New Zealand Agricultural & Resource Economics Society (Inc.) Conference, Nelson.

[14] The reason for this is that lower Class rivers are often in areas where the scenic and wilderness attributes do not score as highly as many higher Class rivers in more remote locations. In addition, the white water features do not score as highly. RiVAS also does not score rivers for some other key attributes, such as offering multi-day journeys. Consequently, some rivers will score much lower or be identified as less valuable when using the RiVAS methodology.

[15] England, A (2011), *An assessment of the whitewater recreational values of West Coast rivers - whitewater kayaking***.** Land Environment and People Research Paper No. 2, Lincoln University, Canterbury, January 2011.

kayaker visits/annum[16]) and is also only referring to the Waitaha Gorge run, and not the values associated with the Morgan Gorge run or any other runs on the Waitaha Catchment.

Whitewater NZ does not agree that RiVAS provides any information about the level of resource substitutability other than indicating at a superficial level possible runs of a similar Class that might provide an alternative resource. The high kayaking values already identified for the Waitaha River in the report for Whitewater NZ (see footnote 18), mean that most of the other river runs of Class V are not suitable alternatives for the Waitaha River runs, including the run down the Morgan Gorge. (Hence the views expressed by the kayaking community on the value of the Waitaha River – see footnote 9).

2.2.Kayaking flow needs in the Morgan Gorge

The flows needed for kayaking the Morgan Gorge are not correctly identified in the Recreation Report (pages 62 and 70) and so the analysis provided in the report on such matters is incorrect. The conclusion that with the run-of-the-river hydro scheme installed, '*the Morgan Gorge will still be available for kayakers to use, albeit for a reduced time as a result of the proposed takes by the scheme*', is also totally incorrect.

Analysis of flow data and flow needs of kayakers who use the Morgan Gorge as it is outlined in a report prepared for Whitewater NZ[17], and subsequently checked and agreed to by Westpower at a meeting in Christchurch in 2014, show that flows suitable for running the Morgan Gorge will all be totally lost if the scheme proceeds, unless controlled ceases to abstraction (no-take flow days) are provided as part of the Scheme. In other words, although there will be a reduced number of days when the mean residual daily flow down the Morgan Gorge when the scheme is operating would suggest that there will be flows suitable for kayakers to use, none of the flows on those days will in fact be suitable for kayakers for a variety of reasons. This matter is not recognised nor understood in the Recreation Report.

Although this matter has been understood by Westpower, it has not been corrected or properly enunciated in the Recreation Report or concession application, and is totally misleading for anyone analysing the application if taken at face value. This is also a very important point. In addition, this has a flow-on effect into other areas of the Recreation Report which need changing, such as the significance assessment of kayaking values, which is also discussed later, and the final conclusions.

2.3.Significance of setting to recreation

The Recreation Report presents a recreation assessment in section 6 (pages 52-57) based on use values, resource attributes, experiences and substitute resources, and then quantifies the significance of the recreational values at an international, national, regional and local level. The report does not contain important relevant data needed to correctly assess the value of the Waitaha River. It does appear to recognise the internationally and nationally significant white water and

[16] Booth, K (2008), *Waitaha River Recreation Assessment*, report prepared for Westpower by Lindis Consulting, 15 September 2008.
[17] D A Rankin and S Orchard, *Impacts of the proposed Waitaha River Westpower Hydro Scheme on white water and kayaking values*, report prepared for Whitewater NZ, 75 pp, January 2015.

kayaking resources in the Waitaha River but it uses undefined and out of context words such as 'low' use and perhaps seeks to degrade these recognised outstanding values.

Virtually all of the data in the Recreation Report, which examines the significance of the setting to kayaking, refers to that generated around the Waitaha Gorge run. As a result a key element and assessment is omitted from the Recreation Report. A full analysis of the significance of all of the kayaking runs of the Waitaha River is needed, because the proposed development will impinge on them all, in one way or another. In particular, the river is recognised by kayakers as having one of the greatest concentrations of high Class runs in a pristine West Coast wilderness setting in New Zealand, with some outstanding natural features (the Morgan and other gorges). This elevates the status of the importance of the river to above other rivers or runs where perhaps only one high Class kayaking run is present, where the wilderness and wild and scenic values may not be as high, where the white water and water quality may not be as good, where flow reliability may not be a good, and where the natural environment and river features (e.g., gorges, bed, and bank features) may not be as spectacular.

The Waitaha Gorge run by itself represents a 'pinnacle' of white water achievement for many expert kayakers, and the even more difficult and highly valued runs in the upper, Windhover and Morgan Gorges add significantly to this value. Without a thorough and complete evaluation the values of the river may not be properly recognised and placed in context when considering the impacts of the proposed Scheme.

In the Recreation Report the use of the Waitaha River (an estimated 100 users/annum in Booth (2008) and 50 in Booth *et al.* (2010[18]; the RiVAS study) is often referred to as low (e.g., page 55), but this term is never quantified nor qualified. This perhaps gives the reader a misleading impression of the use and therefore the value (use is associated with value but is not necessarily the key determinant of value) of the Waitaha River.

In the Recreation Report some analysis is presented on the use of the 24 Class V runs on the West Coast reported in the RiVAS study. Suggestions are also made that there are many Class V runs on the West Coast that will offer a substitute for the runs on the Waitaha River(section 6.4, pages 54 and 55). However, no analysis of data is provided in the Recreation report to support this hypothesis. The hypothesis is wrong for a variety of reasons. In order to assess the use data, information about the relative values of these runs/rivers also needs to be considered. This can be done if we accept that the RiVAS scores do represent the relative values of the runs. When this is considered a different picture emerges from that perhaps suggested by the 'low' use in the Recreation report.

The key reason for the lower use of the Class V runs on the West Coast (2-150 users/year) compared to other Class II to Class IV runs with greater usage (100 to 800 users/annum) is due to the constraint that the high Class runs can only be attempted and safely run by expert paddlers, and that they make up a smaller number of the kayaking population.

[18] Booth, K, England, A, Rankin, D, Unwin, M, Charles, G, England, K, Riley, K and Ritchie, D (2010a), Part A: Whitewater kayaking in the West Coast Region: Application of the River Values Assessment System (RiVAS). In: Hughey, K F D, Baker, M-A (eds) (2010). The River Values Assessment System: Volume 1: Overview of the method, guidelines for use and application to recreational values. LEaP Report No. 24A, Lincoln University, Pp. 95-117.

Value and use data for the most used Class V West Coast runs are summarised in Appendix I. The Perth run from Scone Hut has the second equal highest river value or score of 19 as the Waitaha Gorge; the rest all have lower overall values ranging between 15 and 18 (other runs have similar or lower overall values still). The Perth run also has the second highest number of estimated user days (80) compared with the Waitaha Gorge (50). In contrast, the lesser valued Upper Kakapotahi (river value of 17) has an estimated 150 users/annum. The remainder of the runs have less use; 15 out of the 24 runs have an estimated 20 users/annum or less. It is instructive to look at the reasons for these differences in river values and user numbers as they provide insight into the suggestion in the Recreation report that there are many Class V runs on the West Coast that offer a substitute for the Waitaha.

The Upper Kakapotahi River is the most widely used Class V run because it is readily accessible from the road. Most of the other high use Class V runs can only be accessed by helicopter and in some cases by foot, with consequently greater expense in terms of money or time. The Upper Kakapotahi can normally only be run after rain and in a tight flow window, which means that it is not always accessible because of flow constraints. Thus, the run has a lower overall value than any of the other high use runs as it suffers from poor flow reliability and is not as scenic and wild as the other runs. In contrast the Perth and Waitaha Gorge runs have high flow reliability and high wild and scenic values and therefore higher overall values.

All the runs in Appendix I, with the exception of Falls Creek, are used by national and international paddlers when they are accessible, which means they rate highly in terms of their value. The Falls Creek run, although it has the same number of users/annum as the Waitaha Gorge, has an overall lower value (15) due to the much less reliable flow (it can only be run soon after rain) which means it can only essentially be utilised by local paddlers in the right spot at the right time.

The preceding data clearly illustrate the point that many of the Class V runs on the West Coast will not necessarily offer a substitute for the Waitaha Gorge run as they are more often compromised by flow availability (such restrictions are alluded to in the Recreation report, and which also include other restrictions such as narrow flow windows) and do not offer the same wilderness or wild and scenic kayaking experience. The only potential equivalent substitute would be the Perth from Scone Hut, but that reach does not have an equivalent to the Morgan Gorge part way through the run, and the Perth does not have other outstanding harder runs in the Catchment. The Waitaha does.

Thus, as summarised in Booth (2008) ‘the Waitaha’s contribution extends beyond the region – the opportunity is valued internationally, representing “the pinnacle” of the West Coast kayaking opportunity, which represents the best collection of whitewater rivers in New Zealand’. In other words, the Waitaha River stands out in this set. The possible implication in the Recreation Report that the Waitaha River has ‘low’ use (section 6.5.1, page 55) is misleading, as relative to many other Class V runs it actually has high use. This reflects its value and the opportunities it offers expert kayakers.

The Recreation Report (section 6.5) also suggests that the Waitaha is but ‘one part of a ‘whole’ or region wide set of destinations.’. This perhaps implies there are many substitutes when there are not and in the final analysis suggests that there are plenty of other options should the Waitaha River be developed (Table 7, section 7.5). The preceding analysis suggests that these overall conclusions of the Recreation report are not valid. Certainly it is Whitewater NZ’s view that the Waitaha River, with

its quality wilderness settings, natural features and quality high Class kayaking runs, is one of the most valued jewels in the crown of the outstanding West Coast rivers; the other is the Hokitika and its tributaries.

There are other omissions of relevant matters in the analysis in this section. One of the key elements missing in the assessment of the recreation setting for users is that of the outstanding wilderness values, which are key to all users in the Waitaha, and one of the primary reasons they visit the river. This is discussed further below.

2.4.Errors in fact and assessment of impacts

In section 7.3.3 the Recreation Report states (page 62) that 'the river below the Morgan Gorge is largely Grade 2 experience through a boulder garden in the upper reaches…'. It is implied that impacts through loss of flow on this run (which is part of the Waitaha Gorge run after portaging or running the Morgan Gorge, or is a separate run accessed by walking up river from the road end) would be ameliorated by small contributions from side streams bolstering flow and/or ceases to abstraction by the hydro scheme.

The reach below the Morgan Gorge can be Class (Grade) V depending on where the river is accessed, and then reduces to Class IV, III and finally II as the gradient lessens as the river is descended. It is not Class II (or Grade 2). This reach is part of the Waitaha Gorge run and is highly valued in its own right, and will be affected by the hydro scheme. The flow contributions from side streams when running the Waitaha River below the Morgan Gorge will not provide sufficient increased flow to make the dewatered section below the Morgan Gorge kayakable; it is misleading to suggest that it will.

The gradation in Class and difficulty in the white water and rapids as the river is descended is one reason why the river is accessed even by experienced kayakers on foot from the road end to make this short run. It offers the opportunity for kayakers to access the river at different points commensurate with their ability and the degree of challenge they would like to experience and run. It also offers them a chance to test themselves on more difficult white water piece by piece - a classic technique where 'creek' boaters learn the art of making steep creek descents by running one rapid, then another above it, and so on, until the whole difficult and steep run can be linked together.

There are no ceases to abstraction recommended as compulsory mitigation in the Recreation Report so it is misleading to mention them as a means to mitigate the loss of flow from the run from the bottom of the Morgan Gorge to the power house.

2.5.Assessment of recreational effects

In section 7 the potential effects of the Scheme are discussed. Statutory planning provisions, avoiding and minimising effects, recreational effects assessment, mitigation and a summary are presented.

In the Recreation Report the recreational assessment concludes that the impact of the Scheme on the recreational setting of the Morgan Gorge for kayaking will be high on a scale of nil, to low, moderate, high, or significant.

However, in the light of the total loss of flow accessibility to the Morgan Gorge and with no guaranteed access to natural flows with the Scheme installed, the effect of the Scheme will be 'significant' (the highest impacted category) and not 'high' as stated in the Recreation Report, according to the criteria outlined in section 7.3. The 'significant' category would possibly also apply with regards to the residual effect, even if ceases to abstraction were provided as mitigation. Access to the resource would be severely constrained, unless kayakers could access flows whenever they wanted to use the resource. A similar assessment would also be applicable to the run below the Morgan Gorge, which is a part of the Waitaha Gorge run.

In addition, using the definitions in 7.3, the levels of effects presented in section 7.5 in Table 7 for different river sections also need to be increased (also see further discussion below). For example, when kayaking the Waitaha Gorge run, the river journey is normally completed by rejoining the river as soon as one is comfortable after portaging the Morgan Gorge. With flow being constrained below the Morgan Gorge down to the powerhouse, this means that the effect will be 'significant' on the Waitaha Gorge run, because normally an additional 1.5 km of previously runnable good white water will have to be portaged. The ability to kayak this reach of river will be severely constrained. Kayakers want to kayak white water, not walk down beside dewatered river beds.

2.6.The summary of Scheme effects and mitigation recommended

The summary of Scheme effects and mitigation recommended are presented in Table 1 (and Table 7 (section 7); it is the same as Table 1). However, it is not clear what mitigation is to be provided and whether residual effects assume the recommended mitigation is undertaken and at what level. While the Recreation Report asserts that the only essential kayaking mitigation required is the construction of a safe weir and re-entry point back into the river to run the Morgan Gorge, this claimed mitigation is not listed in the Tables.

The summary of Scheme effects and mitigation recommended in Table 1 (and Table 7) is confusing because of the absence of key data and clarity over what mitigation, if any, is to be provided if the scheme were to go ahead. The effects on kayakers are not fully listed and the levels of effects, as discussed above, are also underestimated.

For example, the effects on trampers and hunters at Kiwi Flat and in the Upper Valley (on the remote natural characteristics and the perception of control of the river), and on visitors to the hot springs (on the soundscape and natural character with low flows) also apply to kayakers, but to significantly higher degrees. This occurs as a result of kayakers being in-stream users who are more attuned to natural river environments than those that do not use rivers for in-stream recreation.

A more complete list of the effects and level of effects of the Scheme on kayakers is provided in Appendix II. Given the uncertainty about the degree (if any) of mitigation proposed for the Scheme the levels of residual effects remain uncertain.

2.7. Outstanding wilderness, scenic and natural feature qualities of the river and the Morgan Gorge

Little reference is made in the Recreation report to the outstanding wilderness and scenic natural feature qualities of the river and the Morgan Gorge itself and the role they play in the outstanding white water and kayaking features this river offers. The Recreation report does not mention the importance of such values and wild and scenic natural river environments to New Zealanders and the world.

In the original recreation report by Booth (2008) reference was made to the importance of wilderness values to all activities (section 6.1.5, page 26 in Booth (2008)) but in the Recreation report this reference is absent and such values appear to be significantly downplayed and expressed in less direct terms such as 'backcountry-remote landscape', 'natural character', or 'visual amenity values'. The Parliamentary Commissioner for the Environment[19] has recently discussed the importance of intact wild and scenic rivers for New Zealanders and New Zealand for tourism and other activities, and the inevitable conflict with hydro development should such special places be developed.

This serious omission supports the Westpower case, but weakens the Recreation report with respect to properly representing kayakers and other catchment users' values and raises questions about the report's impartiality.

2.8. 'Removable' nature of the control and generation structures planned for the Scheme

Throughout the Recreation Report there are references to the 'removable' nature of the control and generation structures planned for the Scheme.

Comments about the 'removable' nature of the control and generation structures planned for the Scheme are totally misleading. They are irrelevant to the assessment of impacts of the scheme on kayakers and most other parties if the scheme proceeds. In reality, removal is highly unlikely if the scheme is built.

2.9. Conclusion that the loss of the Morgan Gorge will constitute a low effect on the kayaking setting on the West Coast

The final conclusion of the Recreation Report is that the loss of the Morgan Gorge through installation of the Scheme will only constitute a low or minor effect on the kayaking setting on the West Coast, considering the number of kayaking alternatives and the ability to retain the kayaking opportunity in the Morgan Gorge.

[19] J Wright, Hydroelectricity or wild rivers: Climate change versus natural heritage, Parliamentary Commissioner for the Environment, May 2012; and a recent update of this report: J Wright, Update Report, Hydroelectricity or wild rivers: Climate change versus natural heritage, Parliamentary Commissioner for the Environment, June 2014.

The report notes that hydro development is not compatible with the DOC CMS backcountry-remote setting and recreation management category but states that the outcomes set out in the CMS for the Hokitika Place will still be achieved with the scheme in place. There is no basis for this conclusion in relation to the proposed development.

The final conclusion of the Recreation Report is that the loss of the Morgan Gorge through installation of the Scheme will only constitute a low effect on the recreation setting on the West Coast. In our view this is incorrect and not consistent with the outstanding natural feature of the Morgan Gorge and internationally recognised kayaking values in the river. This river is one of the 'jewels in the crown' of outstanding West Coast kayaking rivers and of national and international importance to kayakers. As outlined above access to the Morgan Gorge kayaking run would not be retained with the scheme in place because of the loss of flows.

As mentioned in the DoC Conservation Management Strategy for the region, a development such as the proposed hydro Scheme is incompatible with the current setting, and, recreational values of the river. The CMS aims to provide for valued recreation resources in the Hokitika Place. This would not be achieved by removing one of the outstanding recreational resources in the Waitaha River (the Morgan Gorge run) or allowing hydro development in its catchment. The Recreation Report arguments about substitutability of the Waitaha River resources, and in particular the Morgan Gorge and run below, by other Class V West Coast runs, are not supported by evidence and nor is the notion that the outcomes set out in the CMS for the Hokitika Place will still be achieved with the Scheme in place.

The Recreation report asserts that the internationally significant kayaking values in the Waitaha River exist because 'the Waitaha River contributes to a relatively abundant kayaking opportunity setting' (section 8, page 70) on the West Coast or is 'a component of the West Coast kayaking opportunity' (pages 55 and 56). This not so. The values exist because of the outstanding wilderness settings, scenery, white water, kayaking opportunities for expert paddlers, water quality and natural features (including the Morgan Gorge) found in the Waitaha River *per se*, i.e., they exist in their own right.

The wild and scenic values and outstanding natural gorges and landscape features in the Catchment place it in the category of valued wild and scenic rivers, the development of which the Parliamentary Commissioner for the Environment has recently signalled should only occur in exceptional circumstances (Wright (2012, 2014); see references in footnote 25).

3. Summary of differences between the Waitaha Hydro and Amethyst Hydro Schemes

Westpower asserts that the Waitaha scheme that "would be another small scale run of the river scheme, similar in construction to the Amethyst one"[20]. References to Waitaha's claimed likeness to the Amethyst scheme are made in various parts of Westpower's Waitaha application.

However, the scale and impacts of the Waitaha Hydro proposal are significantly greater than those of the Amethyst Hydro Scheme. Key elements of differences between the schemes and river recreation values are summarised in Table I. A fundamental difference is that the Amethyst catchment has long history of use for hydro generation, recognising that the original scheme was relatively small and low down in the catchment. There are also fundamental differences in the wilderness and recreation values of the two rivers.

Table I. Key elements and points of difference between the Amethyst and proposed Waitaha Hydro schemes and values and impacts on values in their respective rivers

Feature or issue	Amethyst	Waitaha
Scheme layout	High head and partial run-of-river diverting flow from the Amethyst Ravine with flow return to Wanganui River; weir in river diverting flow into penstocks initially in tunnel and then on hill face down to powerhouse adjacent to Wanganui River	Run-of-river diverting flow around the Morgan Gorge; weir in river diverting flow into penstocks initially in tunnel and then over land to powerhouse 1.5 km below Morgan Gorge adjacent to Waitaha River; flow return to Waitaha River adjacent to powerhouse
Installed flow (cumecs)	1.8	23
Head	395 m (nett)	100 m (gross)
Maximum output	7.6 MW	16-20 MW
Mean river flow (intake; cumecs)	3.25	34.6
Median river flow (intake; cumecs)	2.0	19.7
Residual river flow (litres/sec)	100	3500
Scheme location; affected river	Amethyst River, small foothill river in high rainfall area, tributary of the Wanganui River joining the latter near Harihari; no established kayaking runs or walking tracks	Waitaha River, smaller main divide river (but about 10 times the size of the Amethyst River) with glaciated headwaters and flowing to the Tasman Sea; number of outstanding high Class (high difficulty) kayaking runs; established foot access and huts
Scheme location; affected river reach	Amethyst Ravine on Amethyst River, downstream of upper catchment flats. Long history of being used for hydro generation	No history of hydro generation. Only modification to natural landscape from swing bridge, tramping track and hut. Morgan Gorge on Waitaha

[20] Otago Daily Times, 31 May 2012 - http://www.odt.co.nz/news/national/211438/westpower-plans-hydro-scheme-waitaha-river

Feature or issue	Amethyst	Waitaha
	lower down in the catchment. Steep sided ravine where river falls steeply down a series of waterfalls and chutes with extremely large boulders in the river. Extremely difficult access, shrubby vegetation not unique to the Central Westland area, possible use by Whio, freshwater habitat for aquatic species[21]	River; outstanding natural feature and landscape[22] separating the back country from the front country featuring a water smoothed steep sided coloured schist rock constrained gorge with massive boulders; river falls through a series of tight drops with severe turbulent powerful white water; podocarp forest above the gorge and on the skyline[23]; remote area with difficult access on foot; wild and scenic pristine wilderness environment; freshwater habitat for aquatic species; high value, high Class kayaking run (described in reference in footnote 23); walking track around but near the Morgan Gorge to provide access upriver
Kayaking values	None established[24] – high gradient of run would mean in certain flows could be a good creek run but difficulty of access to get to the run would remain an issue as would access to suitable flows	Established high Class kayaking runs in the Upper Waitaha, Windhover Gorge, the Waitaha Gorge, the Morgan Gorge and below the Morgan Gorge with outstanding white water; flows are currently available; pristine wilderness and wild and scenic river environment[25]
Effect on kayaking values	None, as no established values[26]	Highly significant negative impact on wilderness and wild and scenic values and kayaking values of all runs, and especially the Waitaha Gorge and Morgan Gorge Run, by virtue of intrusion of industrial structures

[21] M Doyle and R Smith, *Amethyst Hydro Limited Concession Application to Department of Conservation*, undated.

[22] Boffa Miskell Limited 2014. *Waitaha Hydro Scheme: Natural Character, Landscape and Visual Amenity Effects*. Report prepared by Boffa Miskell Limited for Westpower Ltd.

[23] D A Rankin and S Orchard, *Impacts of the proposed Waitaha River Westpower Hydro Scheme on white water and kayaking values*, report prepared for Whitewater NZ, 75 pp, January 2015.

[24] In the last year kayakers have started to explore and use the lower Amethyst River as a creek run. This has included walking up from the road bridge about 1 km and running the river in high water. There are some good waterfalls in this section but above those the river is very tight and committing (Barney Young, personal communication, May 2015).

[25] D A Rankin and S Orchard, *Impacts of the proposed Waitaha River Westpower Hydro Scheme on white water and kayaking values*, report prepared for Whitewater NZ, 75 pp, January 2015.

[26] Typical flows used by kayakers on the Amethyst River are reported as 8+ cumecs (Barney Young, personal communication, May 2015). The offtake of a maximum of a relatively small 1.8 cumecs by the Amethyst hydro scheme in the upper catchment therefore will have little impact on the high flows used by kayakers on the Amethyst River run when compared with the proposed takes from the Waitaha River on the Morgan Gorge. In the latter case, where up to 23 cumecs are proposed to be taken, the kayaking resource will be completely absent and will not be usable by kayakers.

Feature or issue	Amethyst	Waitaha
		above and below Morgan Gorge into the currently essentially pristine natural untouched and undeveloped Catchment[27]; loss of Catchment wide wild and scenic values Significant (if not complete) loss of water flow for the last part of the Waitaha Gorge run (where kayakers portaging the Morgan Gorge rejoin the river below the Morgan Gorge); if too low the last 1.5 km of the run will have to be portaged – the residual flow of 3.5 cumecs is far too low to kayak this reach Complete loss (highly significant) of the kayaking resource in the Morgan Gorge down to the powerhouse (see the reference in footnote 23 for reasons why) contrary to what is claimed in a peer reviewed[28] Westpower recreation report[29], as a

[27] The importance of intact wild and scenic rivers for New Zealanders and New Zealand for tourism and other activities has recently been highlighted in a recent report by the Parliamentary Commissioner for the Environment; J Wright, *Hydroelectricity or wild rivers: Climate change versus natural heritage*, Parliamentary Commissioner for the Environment, May 2012; and a recent update of this report: J Wright, *Update Report, Hydroelectricity or wild rivers: Climate change versus natural heritage*, Parliamentary Commissioner for the Environment, June 2014.

[28] D Bamford, Peer review of Waitaha Recreation and Tourism Effects Report – version 5 February 2014 for Westpower Ltd, 11 February 2014.

[29] Rob Greenaway and Associates, *Westpower Waitaha Hydro Scheme Investigations: Recreation and Tourism Assessment of Effects*, Prepared for Westpower Ltd, February 2014; data in the report concerning flow requirements of kayakers in the Morgan Gorge is incorrect (see reference in footnote 23), even though the report has been peer reviewed. The peer review states the Recreation report is thorough, includes extensive use of secondary research and consultation since 2008, and requires no alterations. No consultation has been had with kayakers over kayaker flow requirements since 2008 in constructing the report; very recently Whitewater NZ and Westpower have, however, discussed the matter.
The Recreation report has not correctly assessed or expressed kayaker flow requirements. The Recreation report author(s) or peer reviewer are not experienced kayakers. The Recreation report does not identify the total loss of the Morgan Gorge if the scheme goes ahead, a matter which has been identified by Whitewater NZ and communicated to and understood and agreed to by Westpower (see reference in footnote 23) but this has not been altered or addressed in the Recreation report. The Recreation report assumes the resource will still be available once the scheme is installed; in fact this would only be possible if flow takes were ceased on suitable flow days whenever kayakers wanted to use the resource but no such mechanism is provided for or is suggested as being essential in the proposal.
The Recreation report also concludes the net effect of the development on the West Coast kayaking scene is likely to be minor but provides no evidence for reaching this conclusion. For example, given the combination of extremely challenging kayaking runs on the Waitaha River, this makes the Waitaha River the outstanding river of this character on the West Coast, not just for West Coast kayakers but for New Zealand and international paddlers. Coupled with other values, such as wilderness, outstanding natural features and wild and scenic values, intrusion of industrial infrastructure and a hydro scheme into such a pristine river environment seems

Feature or issue	Amethyst	Waitaha
		result of the relatively large water offtake for the hydro scheme Highly significant negative impact on the kayaking values of the 'whole' river system, in changing the Catchment from one of an undeveloped natural pristine environment to one in which industrial structures are present and reaches dewatered and rendered unusable and 'unnatural'
Tramping/walking values	None established	Established challenging walking tracks into remote back country with outstanding wilderness and natural features such as the Morgan Gorge, Waitaha and Windhover Gorges and the Ivory Glacier and Lake Ivory
Effects on tramping/walking values	None, as no established values	Highly significant negative impact on wilderness and wild and scenic values, especially below, in and above the Morgan Gorge, by virtue of the intrusion of industrial structures above and below the Morgan Gorge into the essentially pristine natural wild and scenic undeveloped catchment; dewatering of the river reaches will render the environment 'unnatural'

The Amethyst Hydro Scheme is a run-of-the-river micro-hydro scheme, producing a significant amount of energy (a maximum of 7.6 MW; 38-48% of that from the Proposed Waitaha hydro scheme) from a relatively small volume of water (a maximum of 1.8 cumecs compared with a maximum of 23 cumecs) by virtue of a much higher head of 395 m (nett) compared with 100 m (gross) of the proposed Waitaha Hydro scheme.

As the Amethyst Hydro Scheme is located in a small foothill river that has no tracks into it or other established recreational uses it has no actual or little perceived value to recreational users. The river has a long history of use for hydro generation. As a consequence there was little opposition to the Amethyst Hydro Scheme from New Zealand or international community based environmental and recreation groups.

In contrast, the Waitaha River rises from the main divide and glacier sources, and has established wilderness, scenic and recreational values. The recreational values include tramping, hunting and kayaking. The tramping and hunting values in the Catchment are typified by a relatively untouched

inappropriate unless really necessary (for example, see the Parliamentary Commissioner for the Environment Reports in footnote 25).

wilderness environment that is relatively hard to travel through and hence not often visited. The kayaking values of the river are associated with the relatively untouched wilderness environment and a number of challenging white water runs of extreme difficulty suitable for only the top level of expert kayakers. The effects on kayaking values are outlined and referred to earlier in this paper.

4. Consistency of the application and proposed scheme with Conservation General Policy and the West Coast Conservation Management Strategy

Part 3B of the 1987 Conservation Act requires a proposed activity on a conservation area to be consistent with the Act, the Conservation General Policy 2005 (CGP) and the West Coast Conservation Management Strategy 2010-2020 (CMS). The adverse effects outlined in this paper and the report by Rankin and Orchard of January 2015[30] do not seem to be consistent with several parts of the CGP and CMS, in particular:

- CGP Policy 9.1 – Planning and Management for people's benefit and enjoyment;
- Objective 1 of Section 3.3.4.3 of the CMS aims '*to protect the geodiversity and landscapes from adverse effects of human use or management*' and under Policy 1 '*should seek to protect and preserve the natural character, integrity and values of landscapes, landforms, …*';
- Objective 3 under Section 3.5 of the CMS that the CMS aims '*to protect recreational opportunities from adverse effects of authorised uses of public*;
- Section 3.6.1.1 in the CMS dealing with the provision and management of recreational opportunities is Objective 1, which aims '*to provide a comprehensive range of recreational opportunities that enable people with different capabilities and interest to enjoy and appreciate West Coast Te Tai o Poutini public conservation lands, whilst protecting natural, historical and cultural heritage from adverse impacts of recreational use"*;
- Section 3.6.1.4 in the CMS dealing with the backcountry-remote zone is Objective 1, which aims '*to provide access to a range of recreational opportunities via facilities that enable people to enjoy challenging natural settings in the backcountry*'. Objective 2 aims to '*enable people to access extensive natural settings where a) facilities are provided but a considerable degree of physical challenge, self-reliance and isolation is involved; ….*' and a number of policies elaborate further on these matters;
- Section 3.7.2 in the CMS dealing with activities on or in beds of rivers or lakes and '*assessing applications for any activity …. consideration should be given to (but not limited to) the following guidelines: ….adverse effects on…public access, recreation opportunities and amenity values should be avoided or otherwise minimised;….and the natural character within the setting of the activity should be maintained. …*'

[30] D A Rankin and S Orchard, *Impacts of the proposed Waitaha River Westpower Hydro Scheme on white water and kayaking values*, report prepared for Whitewater NZ, 75 pp, January 2015.

Appendix I: Values and use of most highly used Class V according to the West Coast RiVAS study (Booth *et al.,* 2010) and substitutability

Run	User numbers per annum	River value (score)	Rank (of river value)	Comments
Kakapotahi, Upper	150	17	4=	Less reliable flow, less wilderness value, accessible by car; not a suitable substitute for the Waitaha
Perth, Scone	80	19	2=	Same score and ranking as Waitaha Gorge run; possible substitute for the Waitaha, similar wilderness values but without a spectacular natural feature such as the Morgan Gorge and other high Class challenging runs in the Catchment
Hokitika, Serpentine	60	18	3=	Less reliable flow; not a suitable substitute for the Waitaha
Whitcombe, Prices	60	18	3=	Less reliable flow; not a suitable substitute for the Waitaha
Waitaha Gorge	50	19	2=	Same score and ranking as Perth Scone run
Kokatahi, Crawford	50	18	3=	Less reliable flow; not a suitable substitute for the Waitaha
Falls Creek	50	15	6=	Much less reliable flow, local users largely; not a suitable substitute for the Waitaha

Appendix II: Scheme effects on kayaking (as in Table 1 and Table 7)

Activity	Effect	Level of effect
Kayaking in the Upper Waitaha and Windhover Gorge	Kayaker's experience of the Class V and V+ runs will be tarnished and affected by industrial development lower down the catchment in an otherwise pristine wilderness environment	Moderate – indirect effect that may result in reduced uptake and use of the resource
Kayaking the Waitaha Gorge run	Residual flow removes ability to kayak a significant component of the run, the Class IV-II 1.5 km abstraction reach below the Morgan Gorge	Significant – Opportunity to run 1.5 km of river below Morgan Gorge is lost; would have to be portaged
Kayaking the Morgan Gorge	Residual flow removes the ability to kayak the Class V Morgan Gorge Loss of wilderness and wild and scenic values Loss of natural character Soundscape and white water changes to Morgan Gorge experience (above four effects also relevant to kayakers paddling the other Upper River runs and the Waitaha Gorge, but wanting to run or portaging the Morgan Gorge)	Significant – Opportunity is lost Significant – Industrial features incompatible with CMS, wilderness, and outstanding natural feature setting Significant – Loss of white water and natural appearance Significant – Opportunity is lost in normal settings when kayakers would be accessing and using the river

Activity	Effect	Level of effect
	Hazard from weir	Significant – weirs are exceptionally dangerous structures that kill kayakers
Kayaking below the Morgan Gorge (after accessing from the road end)	Residual flow removes ability to kayak the Class IV-II 1.5 km abstraction reach below the Morgan Gorge Loss of natural character	Significant – Opportunity to run 1.5 km of river below Morgan Gorge is lost most of the time Significant – loss of white water and natural appearance
Kayaking whole river	Loss of intact and undeveloped wild and scenic river system Loss of intact and undeveloped wilderness and natural state of the Morgan Gorge	Significant – Outstanding wild and scenic river despoiled by industrial structures and dewatering on two reaches Significant – Outstanding natural feature despoiled by industrial structures and dewatering and loss of white water