

IMPACTS OF THE PROPOSED WAITAHA RIVER WESTPOWER HYDRO SCHEME ON WHITE WATER AND KAYAKING VALUES

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Report prepared for White Water NZ



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Acknowledgements

This report has been contributed to and reviewed by a number of expert kayakers, many of whom have run reaches of the river. Those paddlers have confirmed that it correctly represents in a limited way a number of the key white water and kayaking values of the Waitaha River on the West Coast. The report is not extensive or exhaustive but is intended to provide a flavour of the outstanding values relating to white water kayaking in the catchment. The contributors and reviewers include Mick Hopkinson, Andy England, Graham Charles, Justin Venable, Keith Riley, Dave Kwant, Kevin England, Zak Shaw, Dave Ritchie, Phil Clunies-Ross, Polly Miller, Andrew Yates, Matt Bennett, Tony Ward-Holmes, Josh Neilson, Maree Baker-Galloway and Daan Jimminick.

Disclaimer

While every effort has been made to ensure the accuracy of the material and analysis presented in this report the authors accept no responsibility in contract, tort, or otherwise, for any loss damage or expense (whether direct, indirect, or consequential) arising out of the provision of this information or its use by any party. The authors acknowledge the contributions of the various sources of information that have assisted in the preparation of this report and have taken all reasonable care in reproducing the information provided.

Cover photo: Justin Venable kayaking in the Morgan Gorge, Waitaha River (Photo: Kevin England)

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1. INTRODUCTION

This report has been prepared for Whitewater NZ, the national body that represents the interests of white water kayakers throughout New Zealand on matters of access, safety and protection of white water resources, amongst other matters. The report is not an advocacy document. Rather, it has been prepared to document the white water and kayaking values of the Waitaha River and assess the impacts of a 20MW run-of-river hydro-electricity power scheme that has been proposed by Westpower for installation on the Morgan Gorge.

Westpower has recently applied to the Department of Conservation (DOC) for a concession to construct some parts of the scheme on DOC stewardship land. Westpower is a power reticulation utility based in Greymouth, which has recently embarked on developing power generation capability. Electricity reforms in New Zealand over ten years ago saw the breakup of many of the power generation and distribution (line) companies, such as Westpower, into businesses that were either generation or line companies, but not both¹. Recently, these restrictions have been relaxed and Westpower has successfully completed construction of a small scale 6 MW hydro scheme on the Amethyst Creek, a tributary of the Wanganui River, close to Harihari.

In relation to the scheme, Whitewater NZ has submitted that a recent assessment of the recreation and tourism values (Greenaway, 2014) does not accurately or appropriately document the white water, wilderness and kayaking values of the Waitaha River, and for related reasons does not provide an adequate assessment of impacts (see Rankin, 2014b; Appendix I). For kayaking values this is partly due to the Greenaway (2014) report relying largely on older literature published before the first descents of some of the most difficult runs.

The purpose of this report is to bring together in one document information on the white water and kayaking values of the Waitaha River, including information recently presented to Westpower and DOC in written or verbal form, both prior to and since Westpower applied for a DOC concession. It also summarises the recently updated information on how the proposed scheme might operate, which is relevant to understanding the impacts of the proposed scheme on white water values, should it go ahead, and identifies implications in terms of impacts and their potential to be mitigated.

2. METHODOLOGY

This report has been compiled using data from various published sources, and grey literature, and these are referenced where possible. In addition, we have documented and drawn upon information from interviews and correspondence with:

- expert kayakers who have run the river or inspected the river, and

¹ Westpower, for example, became a power distribution (lines) company only, and the generation capacity that it owned at the time on the Arnold River was passed over to a new business, Trust Power.

- kayakers with knowledge on assessment techniques for evaluating the impacts of flow losses on kayaking values.

Hydrological data from Westpower (Doyle, 2013) has also been used in the analysis of the impacts. This report also draws on information in documents that have been prepared for Westpower and DOC as part of investigation or consultation processes where appropriate, and in some cases these documents are included as Appendices.

3. SUMMARY OF THE PROPOSED SCHEME

The Waitaha River flows west from the main divide through three gorges; the Windhover Gorge, the longer Waitaha Gorge down to the short braided river section at Kiwi Flat, and then the Morgan Gorge. After this the river gradually opens out before meeting the coastal plain and flowing down to the Tasman Sea. To the South is the Wanganui River and to the North are the Whitcombe and Hokitika Rivers.

Westpower proposes to build a run-of-river hydro scheme in the Waitaha River around the Morgan Gorge, which will take up to 23 cumecs of water off at the entrance to the Morgan Gorge at the bottom of Kiwi Flat and return it to the river below the Morgan Gorge. This will result in loss of natural flows down the Morgan Gorge and in the last 1.5 km of the Morgan Gorge white water run, which is normally run by kayakers portaging the Morgan Gorge. Westpower intends to leave only a residual flow of 3.5 cumecs running down the Morgan Gorge.

The scheme also intends to drop sediment settled out at the intake back into the Morgan Gorge by flushing discharges via a separate discharge tunnel from an orifice part way up one of the cliffs in the Morgan Gorge. A low height weir will be built across the entrance to the Morgan Gorge, which will quickly gather gravel behind it. A river off-take structure will feed into intake galleries in the rock wall face on river right beside the entrance to the Morgan Gorge. There will also be a higher flood intake gallery placed above the lower intake gallery in the rock wall face on river right.

The scheme includes a powerhouse generation structure to be built on flats on river right below the Morgan Gorge, about 1.5 km downstream from the point where kayakers portaging the Morgan Gorge normally re-launch back onto the river to complete the middle Waitaha Gorge reach down to the river end.

4. SURVEY OF THE RESOURCE

4.1 Overview

Whitewater NZ's Conservation Strategy (Whitewater NZ, 2014) identifies a number of matters important to white water resource and kayaking amenity values. They include difficulty (or challenge) values for kayaking, scarcity and status value, usage values (being partly a function of location, access and difficulty attributes), wilderness values, multi-day experience values, and the contribution of white water and white water features to other values in the river corridor environment. The latter include wild and scenic qualities, natural character, and natural features

associated with the river. The proposed Westpower scheme and associated loss of flow will have effects on a number of these values in the Waitaha River.

4.2 White water values

White water values relate to several environment policy and planning objectives including, *inter alia*, the status of white water as a natural feature, and as a component of natural character. Both are matters of national importance under RMA sections 6(a) and 6(b) respectively.

Section 6(a) specifically requires preservation of the natural character of rivers and their margins, and the protection of them from inappropriate subdivision, use, and development. Section 6(b) requires the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development. Identification of impacts on these matters is very important to the effective implementation of these policies. In case by case decision making this relies in part on the adequacy and accuracy of information available at the time.

Quantification of white water values requires consideration at a number of relevant scales. These include the landscape scale, river reach scale, and individual feature scale within any particular reach.

Landscape scale

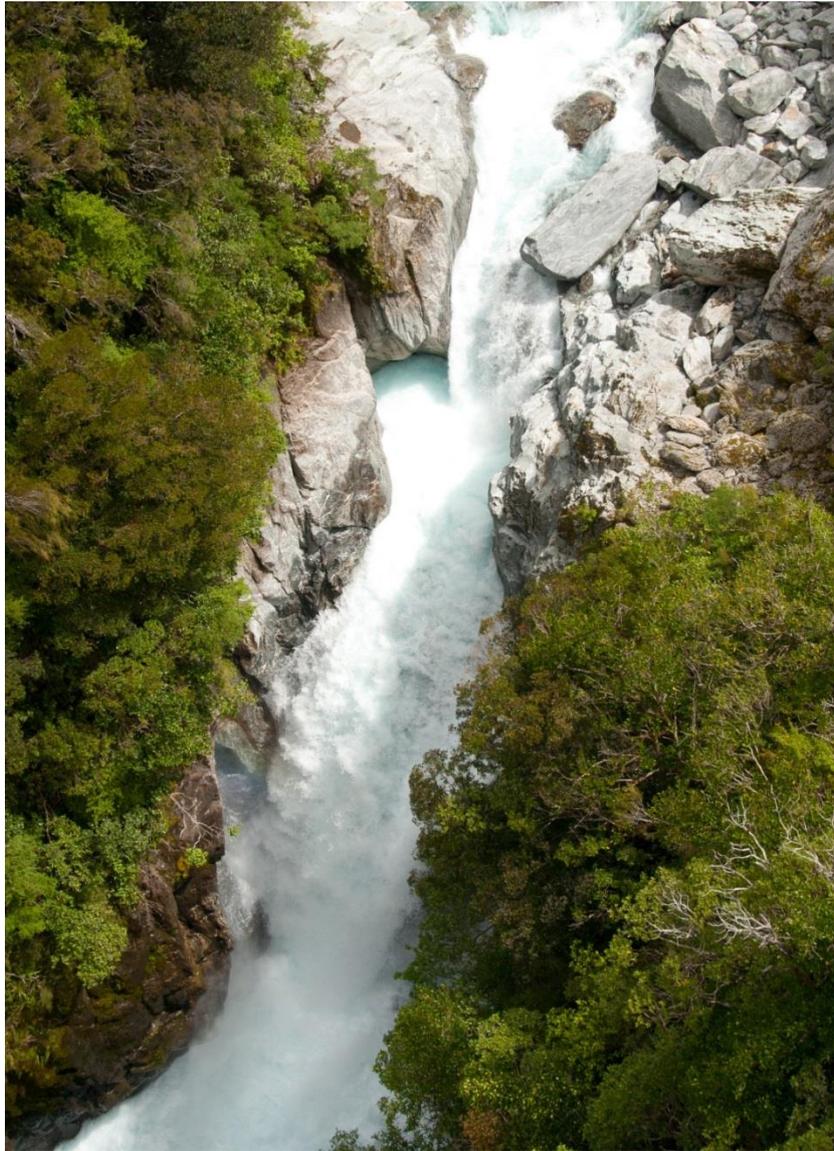
The Waitaha River is an example of a 'wild and scenic' river. Although there is no precise definition for this term (Wright, 2012) it is commonly used to refer to free-flowing rivers in relatively unmodified catchments. The Waitaha River is a spectacular example of a free-flowing river from source to sea, passing through unmodified and largely pristine natural landscapes. Different reaches of the river have different landscape and riverscape settings, varying from the alpine character of the Upper River above the Windhover Gorge, to the very high gradient Windhover Gorge with large waterfalls and steep sided bush clad valley walls, to the enclosed constricted water worn fluted bedrock structures in the Morgan Gorge.

In part due to the history of hydroelectricity development in New Zealand, the need to protect New Zealand's wild and scenic rivers has long been recognised. However a strategic approach has yet to be taken and there are few barriers to development proposals on wild and scenic rivers (Wright, 2012). As a result the recognition of wild and scenic values is crucial for the protection of these rivers in the case by case decision making regime that prevails.

"In a world increasingly losing wilderness, wild and scenic rivers are an important part of the clean green country tourists come here to experience".

Jan Wright, 2012, Parliamentary Commissioner for the Environment

'Wild and scenic' qualities are also relevant to impacts on natural character and natural feature values. For example these qualities are specifically identified as components of both natural character and natural feature assessment in recent policy development (e.g., Department of Conservation, 2010b) and research (e.g., Froude, 2011).



A section of the upper Waitaha showing wild and scenic nature (Photo: Zak Shaw Photography)

River reach scale

Any contemporary test (eg Froude, 2011) identifies the affected reaches as having very high natural character. Although outstanding wilderness and scenery qualities from both the land and river course perspective are a component, many attributes of this environment contribute to its natural character values including the existing degree (ie. absence) of human modification and intactness of hydrological, geomorphological, and ecological attributes. The natural character values present relate to both the river and its margin and thus RMA section 6(a) matters are directly relevant.



Just below the entrance into the Morgan Gorge, Waitaha River. This gorge is considered an outstanding natural feature in its own right, separating the back-country from the front country. (Photo: Zak Shaw Photography)

The Morgan Gorge is also a strong candidate for an outstanding natural feature in its own right, with its captivating, sculpted, water-smoothed, and beautifully coloured schist rock walls towering above the river in places. In other places enormous schist boulders lie scattered in the enclosed gorge. The presence of the pale blue, or crystal clear glacial water, depending on the flow, descending into the gorge, and then churned into noisy powerful white water in the rapids in the deep tight bedrock gorge, produce a strong feeling of an untouched, inaccessible, primal, and remote part of the natural environment. Towering above the rock walls above the river is dense green podocarp rainforest. These attributes appear to meet the test for 'outstanding' status, which for example is defined by both Oxford and Merriam-Webster Dictionaries as "exceptionally good" or "easy to notice/clearly noticeable".

The status applies in this case to the natural feature of a gorge. It could apply to other features such as rapids, bedrock, and white water hydraulics. It is considered likely that specific white water features within the affected reach would also meet 'outstanding' status. As with the gorge as a whole an important aspect of white water features is that each are unique and cannot be re-created.



Fluted sculpted water-smoothed schist rock features in the Morgan Gorge (Photo: Zak Shaw Photography)

White water features scale

White water values are defined by a complex mixture of the number and quality of the white water hydraulic features formed by the interaction of river flow with bed features down a particular reach. Valued hydraulic features include standing and breaking waves, boils, holes or stoppers, eddies and drops or waterfalls. Water quality and appearance, and bed and rock structure and appearance are also relevant.

The white water produced in the Morgan Gorge is very committing and 'pushy' (powerful) because of the very constricted nature and gradient of the river channel in the bedrock down through which the water flows. There are distinct white water rapids with 'calmer' spots in between. Due to both flow properties and bedrock structure the rapids contain a wide variety of hydraulic features, including breaking waves, boils, holes, slides, drops and eddies, some of which are large and characteristic.



A section of white water in the wild and scenic Morgan Gorge, Waitaha River (Photo: Kevin England)

Given the high gradient, high difficulty status for kayaking, and limited anecdotal evidence concerning the white water features in the Morgan Gorge it is considered that an assessment of natural feature values is likely to be relevant for a comprehensive impact assessment in this case. However, within the scope of preparing this report it was not possible to compile an inventory of the

white water resource at individual feature scale to further consider these matters. Further research would be needed to adequately document these features and consider the significance of impacts on them.

4.3 Kayaking values

Kayaking white water features and technical difficulty values

The nature of the geomorphology and surrounding landscape in the kayaking reaches of the Waitaha River, coupled with a glacier fed water source, produces an outstanding array of white water features for kayakers. There are several kayaking reaches or runs, and the white water features differ within each of these, resulting in kayaking runs of different character and degree of difficulty or challenge.

The Upper River contains steep hard Class V (see Appendix II for a definition of Class or technical difficulty or challenge) alpine kayaking below Ivory Lake to the Upper Waitaha Hut, with tight low volume kayaking through a series of continuous drops down through large boulders (Appendix III). It is followed by the super extreme Class V+-VI Windhover Gorge, with large waterfalls and extreme gradient (Appendix III). Both of these runs normally require flows after rain to be navigable.



Matt Coles running the first part of the top drop in the Windhover Gorge (Photo: Zak Shaw Photography)

The classic middle Waitaha Gorge Class IV to V white water reach is from Moonbeam Hut down to Kiwi Flat (England, 2011). Below Kiwi Flat is the gnarly Class V Morgan Gorge, which delineates the back country from the front country (Appendix III). The difficulty of the lower part of the Morgan Gorge run slowly eases after the Class V section, as the river gradient lessens, and progressively produces a Class IV-III-II kayaking run as the river flows down to the river valley floor to emerge onto

the coastal plains. The combination of these varied hard kayaking runs on the one river makes this an outstanding river for kayakers.

The Windhover Gorge run contains a number of large waterfalls of extreme difficulty representing the upper end of technical difficulty available in New Zealand, and indeed worldwide. The middle Waitaha Gorge run contains slightly easier white water again, and with different types of features (such as the 'cave' rapid and other drops and some easier gorge sections), but is still challenging and is regarded as a 'classic run'.



Legendary kayaker Mick Hopkinson (foreground) in an easier small gorge feature on the middle Waitaha Gorge run. (Photo: Zak Shaw Photography)

The Morgan Gorge section includes a unique and confined bedrock gorge containing continuous rapids and drops of a different character than the other sections.



Cooper Lambla, Mikey Abbott, and Kevin England kayaking the entrance to the Morgan Gorge (Photo:Dave Kwant)

The technical difficulty of the white water on the different runs is such that most of the river above and just below the Morgan Gorge is only suitable for expert kayakers (on a scale of beginner, intermediate, advanced and expert (Rankin *et al.*, 2014)). Kayakers need exceptional skills and mental and physical prowess to run most of the sections. Kayaking parties will descend the river, often portaging some sections or individual rapids, depending on their skills and conditions. For example, most parties running the middle Waitaha Gorge run will portage the Morgan Gorge. They will then re-enter the river at a point below the most difficult rapids, where they are comfortable handling the intensity of the white water again, in order to complete the run down to the get out.

Scarcity and status values

The West Coast of the South Island has a number of rivers that provide outstanding kayaking and rafting white water and amenity values over a range of Classes of difficulty (England, 2011). Other than the Waitaha River only one other river offers such a range and variety of extremely challenging white water for the most expert of kayakers, namely the Hokitika River, and some of its tributaries such as the Mungo and Whitcombe Rivers. However, a number of the Waitaha runs are more challenging still, thus resulting in its pinnacle status. There is no other resource offering the same mix and level of extremely challenging white water that can substitute for the Waitaha River. Thus, its loss would be a travesty for the New Zealand and international white water kayaking community.

The New Zealand white water kayaking resource is regarded as being world-class (England, 2011; Charles, 2013) and as the Waitaha River contains some of New Zealand's most technically challenging runs, the river is outstanding both nationally and internationally. At the present time the Morgan and Windhover Gorges are regarded by many as *the* most challenging and technically

difficult pieces of white water in New Zealand; the 'Mount Cook' of all New Zealand white water kayaking runs².

The Upper River, Windhover Gorge, and the Morgan Gorge have only been run by a few parties, such is their extreme technical difficulty. The Morgan Gorge was first fully kayaked by Keith Riley, Paul Currant and Trent Garnham in 2010. The Upper Waitaha was first run by Zak Shaw, Keith Riley, Justin Venable, Paul Currant and Will Martin in January 2013. The Windhover Gorge was first run by Shannon Mast and Justin Venable (and parts of it by Matt Coles) in January 2013 (Appendix IV).

"The Waitaha River – its physical assets - its headwaters, valley sides, flora and fauna, water and geology - and its meta-physical values of wilderness, challenge, beauty, drama and landscape - represents a 'world-class' resource, not only as a top class kayaking destination but as a truly wild and scenic icon for all the world to appreciate. Appreciation can be found not only physically by visiting the place but by simply knowing that places as truly wild and untouched as the Waitaha Valley still exist for future generations".

Comment received from Graham Charles, author of New Zealand Whitewater and New Zealand Whitewater 5, January, 2015 (reproduced with permission)

Usage value

Usage of the kayaking runs on the Waitaha River is low compared to many other valued kayaking runs throughout the West Coast and throughout the country. However, the reason for this is the technical difficulty of the runs, the fact that they are only the domain of expert kayakers and their difficulty to access. Most kayakers cannot and will not ever paddle these difficult runs. Most of the runs also require helicopter access. Thus, usage levels are a poor indicator of value because of the extreme nature of the river. Iconic rivers such as the Waitaha River are a draw card for travelling kayakers and overseas visitors, and have considerable promotional value for New Zealand for that reason, including being featured in films and other media. For example, the first descent of the Waitaha Gorge was by an all women kayaking team in 1999, including international kayakers, and filmed by the well-known kayaking movie makers Driftwood Productions (Charles, 1999).

Wilderness and scenic value for kayaking

The combination of varied in river features and pristine surrounding landscape on the one river makes the Waitaha River an outstanding wild and scenic New Zealand river for kayakers. Much of the riverine landscape is dominated by water worn schist rock wall gorges, steep bush clad valley walls and large and in many cases massive schist boulders in the river bed. It is very challenging

² This term was coined in a Press release from the Tai Poutini Polytechnic when announcing the first descent of the Upper Waitaha below Ivory Lake (Greenaway, 2014; also see <http://www.stuff.co.nz/the-press/news/8257254/Where-no-kayak-has-gone-before>). On that occasion the Windhover Gorge was portaged but since then this even more technically difficult section has been run, as has the Morgan Gorge (Charles, 2013). Kayaking these extreme white water sections of the Waitaha River, is the equivalent of expert mountaineers climbing the most challenging routes in the country, such as the Caroline Face of Mount Cook. Using the mountaineering analogy, such routes are iconic features that are without comparison in terms of both current and historical status, and the contribution they make to the overall resource.

country to move through either by kayak or on foot, as is sometimes required when some rapids need to be portaged.

The value of the river has been confirmed by several experts who have all conferred that the Waitaha River is one of the best and most technically difficult white water kayaking rivers and wild and scenic rivers in New Zealand (see Charles, 2013; England, 2011; plus recent expert statements in Appendix III).



Mikey Abbott kayaking through part of the water sculpted and smoothed Morgan Gorge (Photo: Dave Kwant)

4.4 Previous assessments of values

A seminal survey of all of New Zealand's rivers for their recreational potential was published by Egarr and Egarr (1981) and at that time only referred to the Waitaha River being used downstream from the road end at the foot of the Morgan Gorge. Excellent water was referred to in the gorges but access was considered a problem and the Waitaha Gorge was not run until 1999. Booth (2008), and Greenaway (2014) in a report replacing that of Booth, described the kayaking values of the Waitaha River in work commissioned by Westpower. However, although identifying the Waitaha River as being of high value to kayakers Greenaway (2014) considered the values to be of lower importance than we have described, and available in other rivers on the West Coast. However, the Booth (2008) report predated important kayaking developments, including the successful descents of the Upper Waitaha, Windhover Gorge and Morgan Gorge, and the Greenaway (2014) report relied on previous out of date literature and did not include consultation with the kayaking community to establish the relative values of various West Coast kayaking runs.

Greenaway (2014) does refer to a River Values Assessment System (RiVAS) analysis applied to West Coast kayaking rivers (Booth *et al.*, 2010) in which the Waitaha River was assessed as being amongst

the top twelve white water kayaking rivers on the West Coast. England (2011) also reported that the Waitaha River (Waitaha Gorge) was the seventh ranked West Coast river for 'overall importance' in a survey of New Zealand and international kayakers examining the relative values of West Coast rivers.

5. IMPACTS OF THE WESTPOWER SCHEME ON WHITE WATER AND KAYAKING VALUES

5.1 Impacts on flow availability in the Morgan Gorge

Flow availability is a key component for retention of a white water kayaking resource and white water values. Without sufficient flow, together with gradient and bed features, white water does not exist. Conversely, too much flow, in some situations, can create immensely powerful and dangerous and hazardous white water, or see the loss of white water resources as they are 'drowned' under excessively high flows (Rankin *et al.*, 2014). However, for reaches of very hard high-gradient kayaking such as the Morgan Gorge or Windhover Gorge, a key factor in being able to consider descents is the flows at which they can be negotiated safely, where the white water hydraulic features present have feasible 'lines' or passages through them and which are not lethal. At this level of difficulty flow is a critical variable for affording a kayaking resource. Flows required to navigate the Morgan Gorge are discussed in more detail later.

Flow related effects of the Westpower proposal involve the Morgan Gorge and the 1.5 km run from just below the most difficult rapids on the Morgan Gorge to the proposed powerhouse. The latter is where kayakers portaging the Morgan Gorge from the upper river runs currently re-enter the river, to resume travel down to the current exit point, below the proposed powerhouse site.

The loss of the natural flows down the Morgan Gorge, and the 1.5 km reach below the gorge, will result in direct impacts on these important resources for kayakers on the Waitaha River, unless suitable natural flows are made available to kayakers whenever they want them. In addition the scheme will result in impacts on any parties attempting the upper Waitaha runs. In respect of impacts on the upper river runs, the scheme would completely alter the dynamic of a river trip down an 'intact' and currently undeveloped wild and scenic river, and remove the opportunity for kayakers to descend the river free from the encumbrances of dealing with industrial infrastructure.

The flows required by kayakers wanting to run the Morgan Gorge are estimated to be between 17.5 and 22.5 cumecs (Rankin, 2014b; Appendix V). The flows required by kayakers wanting to run the lower 1.5 km run are estimated to be 10-50 cumecs.

Preliminary analysis of the impact of the proposed hydro scheme on the Morgan Gorge and the availability of flows suitable for kayakers has indicated that there would be a significant reduction in the availability of flows suitable for kayakers (Rankin, 2014a; Appendix V; also see Table 1). This analysis was carried out using methods published previously (Rankin *et al.*, 2014) and using hydrology data from the catchment provided by Westpower (Doyle, 2013)³. Available flow days were determined by calculating the number of days flows were in the suitable 17.5 to 22.5 cumec

³ Westpower has confirmed the veracity of the calculations conducted by Whitewater NZ and presented in Appendix V.

kayaking flow band at Kiwi Flat (at the entrance to the Morgan Gorge), both under natural conditions and when the proposed scheme was running.

For example, on average, the number of days where flows (natural flow) were suitable for kayaking the Morgan Gorge over the September to May kayaking season, based on data from the 2006-2012 years, was 51.9. This number would be reduced to 8.8 days, an 83% reduction, if the scheme was installed (modified flow; Table 1). However, until recently it was not certain whether 'suitable' flows would remain on days after Westpower has taken flow for the power scheme, i.e., whether any of the 8.8 days remaining after the scheme was installed, where the residual flows were between 17.5 and 22.5 cumecs, would be suitable for kayakers to use. In the report by Greenaway (2014), it was assumed that this would be the case for residual flows, but this is not necessarily so⁴. Recently it has been concluded that these flow days will not be suitable or essentially available for kayakers at all.

Table 1. Mean and median flows (cumecs) and numbers of suitable days available (with flows in the 17.5 to 22.5 cumec flow band) for kayaking the Morgan Gorge before (natural flow) and after installation (modified flow) of the proposed Westpower power scheme

Data set	Natural flow			Modified flow			Days lost	
	Mean	Median	No. days	Mean	Median	No. days	No.	Percentage (%)
Full year on average, 2006-12 ^a	32.7	19.0	59.1	17.4	3.5	8.9	50.2	85
September – May kayaking season, on average, 2006-12 ^a	37.5	21.9	51.9	20.2	3.5	8.8	43.1	83
December – February peak kayaking season, on average, 2006-12 ^a	46.0	26.7	17.5	26.6	3.7	4.5	13.0	74
September – May kayaking season, wet, 1995-96 ^b	51.8	30.9	50	31.3	7.9	7	43	86
September – May kayaking season, dry, 1976-77 ^b	29.2	18.1	35	14.1	3.5	7	28	80

^a Approximate as full data not available for 2006 or 2012.

^b From synthetic data (Doyle, 2013).

In addition to quantifying the loss of available flows in and below the Morgan Gorge as a result of installing the proposed scheme, the possibility of kayakers getting access to additional flows suitable for kayaking the Morgan Gorge through specific flow management arrangements with Westpower was also investigated. For example, it might be possible for the scheme to be managed by Westpower to take variable amounts of water on high flow days to produce controlled flows suitable for kayakers down the Morgan Gorge whilst still generating some power, (Rankin, 2014a; Appendix V).

⁴ In the report by Greenaway (2014) it is important to note that in the analysis of the impact of flow changes as a result of the proposed scheme the flow requirements for kayakers down the Morgan Gorge (and 1.5km reach below the Gorge) have not been correctly identified.

Figure 1 depicts such a scenario where the take is managed to yield a controlled flow of 20 cumecs on a day where the natural flow (daily mean of about 42 cumecs) is too high for safe kayaking. By varying the flow take for power generation between 23 to 10 cumecs this has the effect of extending the period during which flows in the gorge are within the range required for kayaking; and in this example would create suitable conditions for a period long enough for kayakers to complete the run (from 8am onwards in this example).

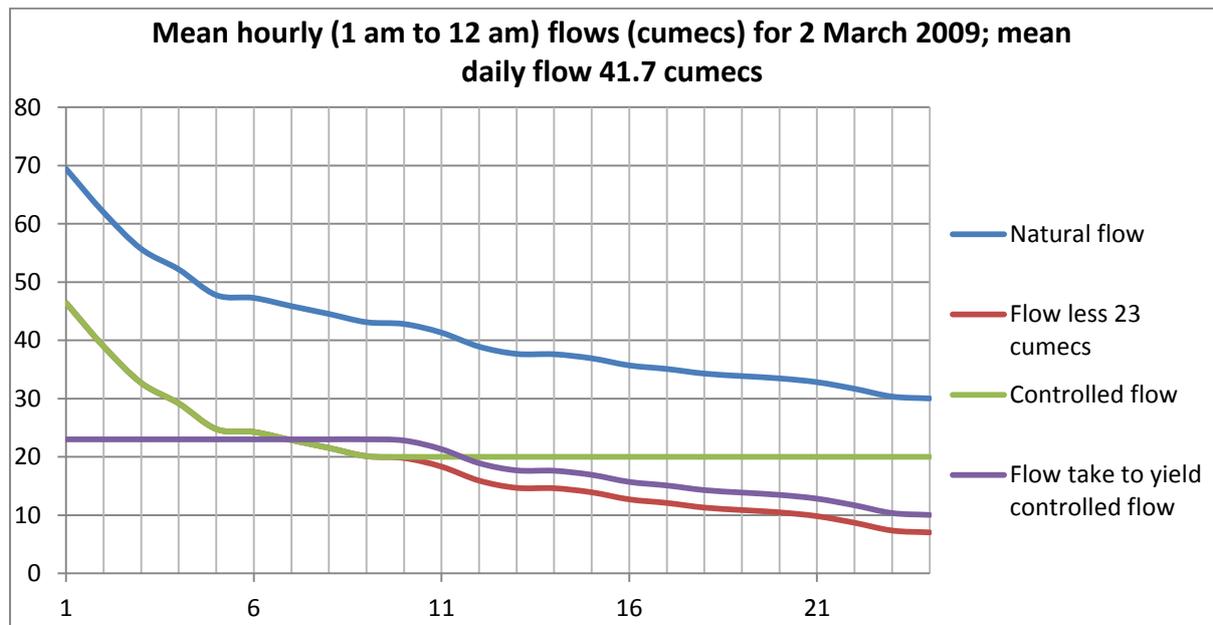


Figure 1. Modelling of possible controlled flows in the Morgan Gorge producing flows suitable for kayaking on days where the natural flows are too high

However, after further analysis of the flow data, consideration of river flow patterns, weather patterns likely during some of the flow options discussed in the preliminary analysis above, and further discussions with Westpower, it is apparent that the days where the residual flows were suggested as being 'suitable' for kayaking in Table 1 will not be useable at all.

In other words, if the proposed Westpower hydro scheme goes ahead, none of the predicted 'suitable' days would be realistically available to kayakers. As a result, the scheme represents a 100% loss of the resource to kayakers.

This arises for several reasons as follows:

Firstly, Westpower have confirmed⁵ that they are not prepared to operate their power scheme in a manner where they could produce controlled flows that kayakers could use. They are concerned about liability should something happen, which meant controlled flows might not be able to be maintained when a kayaking party was in the Morgan Gorge. It is understandable that Westpower would be particularly concerned if this happened and a kayaking party had an incident caused by changing flows.

⁵ Rob Caldwell, CEO Westpower, personal communication, meeting with Westpower at Christchurch, 13th May 2014.

Secondly, the proposed residual flows passing down the Morgan Gorge when Westpower were taking flows of 23 cumecs are unsuitable for supporting safe navigation by kayakers. This is for two reasons. As Westpower have stated, they are not prepared to guarantee a high enough minimum residual flow in the affected reach. The proposed minimum residual flow of 3.5 cumecs effectively excludes kayakers from the resource. In addition, days when the river is flowing high enough for Westpower to take 23 cumecs and leave a residual flow in the right flow range for kayaking, are likely to be in periods close to or during rain events.

In such circumstances the river is likely to be falling or rising relatively quickly. Without Westpower being prepared to manage takes to prevent natural rapid changes in flows (i.e., management to 'smooth' the rate of change in flows in the Gorge) there are unacceptable risks for kayakers attempting a run. This applies to both situations where the flows are rising or falling too steeply to provide a safe flow window.

In practice this means that none of the modified flow days theoretically suitable for kayaking (Table 1) would offer enough certainty over the existence of safe conditions to enable a party to plan and execute a trip. All of the days are characterised by flow conditions of at least 40 -45 cumecs in the river above the planned scheme (i.e., equal to or greater than a 23 cumec water take and 17 – 22 cumec safe kayaking range). Since the median flow at the Morgan Gorge is about 22 cumecs these conditions are only found in periods either during or after rain. In these conditions flow levels are changing quickly and the actual flow at a given time is difficult to predict yet would be critical for safe kayaking.



Inside the daunting Morgan Gorge. Note a kayaker standing on the large rock, dwarfed by the scale of the gorge (Photo: Dave Kwant)

5.2 Impacts on kayaker values

Clearly the scheme, if implemented, will impact negatively on the Class V-V+ white water in the Morgan Gorge and the 1.5 km Class V-IV-III-II white water run below. A residual flow of 3.5 cumecs does not provide or retain the white water kayaking resource. This flow is far too low to permit navigation of either section. The loss of such a resource also impacts on the scarcity and status values of the runs; they are now known as some of the most challenging in the country, and something for younger developing expert kayakers to aspire to as they refine their skills and take on new challenges.

The building of the proposed scheme in a pristine wilderness and outstanding wild and scenic environment, from a kayaker's and likely other users perspective, will irrevocably lessen the overall 'pristine and intact' wilderness value of the whole river valley system, and impact on the values of the other runs.

For kayakers wanting to run the Morgan Gorge, or even portaging around it, many of the scheme features would be very much 'in your face' and detract totally from the free flowing river and wilderness values that exist at present. They would be a reminder of industrial intrusion into another one of New Zealand's magical wild places.

Although the scheme will not directly impact on the flows in and on kayakers doing some of the other runs in the Catchment, it will affect their appreciation of the resource in the strong sense that the river is no longer intact and wild and free and in its completely natural state. All kayakers would have to come past the Morgan Gorge entrance as they made their descent down the river and would be confronted by industrial structures totally out of context with the natural environment. It will also prevent kayakers from making uninterrupted trips down the river, or linking runs down the river, where they might have to get permission or notify a power company that they wanted water for a run should they want to also descend the Morgan Gorge, or run the final 1.5 km of the Morgan Gorge run, should they portage the Morgan Gorge. It would also prevent kayakers from achieving the pinnacle of a full catchment run on the Waitaha River; an achievement which would be lost forever if the river is not sufficiently protected in its natural state.

Those kayakers who will never be able to run the Morgan Gorge or other reaches on the Waitaha River, but who nevertheless appreciate the values of the river for their fellow paddlers who have the ability and desire to attempt the runs, are also impacted in a sense because they will know that a valued outstanding gorge and magical wild place has been lost to human intrusion and power company development. It is important to recognise that the wilderness/wild place values are not only held in high regard by those who "use" the place, they are also held in high regard by those that don't use the resource but who know about them, and appreciate them for knowing they are there.

The value of knowing that there is a wild place like Morgan's Gorge is equally as valid as those that get in there and "use" it. Just because a place is not highly used does not make the impact less or the area of less value. In many ways it is the opposite, the sheer challenge and difficulty of access increases the value of it as a wild place or its wilderness values and normally ensures it will remain less used and can remain more "untouched".

The construction of the weir as proposed at the entrance to the Morgan Gorge will also create a hazardous industrial structure likely to be lethal to kayakers. Industrial weirs that have water flowing

over them and that are safe for kayakers to negotiate are complex and difficult to design. Thus, safe access around the weir and for re-entry into the river for kayakers wanting to run the Morgan Gorge would be needed if the scheme were to go ahead.



Cooper Lambla, Mikey Abbott, and Kevin England kayaking under the swing bridge above the entrance to the Morgan Gorge. The weir for the proposed hydro scheme will be just upriver of this spot and intrude significantly into this natural wild environment (Photo: Dave Kwant)

5.3 Impacts on white water, natural character and natural feature values

The loss of the water flow will have significant adverse effects on values associated with the presence of white water. This affects both natural character and natural feature values at the scales of (all of) landscape, river reach, white water features. Further adverse effects on natural character and natural feature values not directly related to white water would arise from construction of built infrastructure associated with the scheme including the proposed entrance weir, river intake diversion, intake galleries, signage, sediment flushing pipe, and powerhouse structures and power lines into the Waitaha valley and Morgan Gorge environment. Matters of national significance for New Zealand environmental management appear to be directly and severely affected, primarily due to the site chosen for the proposed infrastructure and river engineering, with no effective mitigation proposed (or indeed possible) to address these matters.

The proposed activities will severely reduce the wild and scenic qualities of the river at multiple scales including that of the 'whole river' scale which is a relevant consideration. The New Zealand public, including future generations who are yet to know of the value and beauty of the river, and especially that of the Morgan Gorge, would lose one of their wild and scenic rivers, a topic on which the Parliamentary Commissioner for the Environment has expressed specific concerns (Wright, 2012).



**The wild unmodified character of the Upper Waitaha
(Photo: Zak Shaw Photography)**

5.4 Positive impacts

Part of the justification for the proposed scheme has been to ensure reliability of electricity supply to the West Coast. However, in recent severe wind storms on the West Coast interruption of supply did not occur through generation failure but through local transmission line infrastructure failures. Presumably failure of the national power grid will be very unlikely, and that, together with transmission infrastructure would be the real backstop that can provide reliability of supply to the West Coast, rather than the construction of the Westpower scheme on the Morgan Gorge. Presumably the Westpower scheme may offer an income source to Westpower and other functions to the West Coast power network, but in our opinion would come at an unacceptable cost. Therefore better alternatives should be explored.

Alternative options exist for provision of additional power for the West Coast. Examples might include schemes such as the already consented but as yet undeveloped⁶ 46MW Arnold B hydro scheme on the Arnold River. The river and landscape for that scheme have already been modified by forestry, gold mining, and farming and by a hydro scheme already present on the river. However, it is important that site specific impacts are adequately considered in any future hydroelectricity proposals.

Even smaller schemes have the potential to result in significant impacts, for example on important smaller rivers or sections of rivers of particular value. Alternatives such as further development of

⁶ As we understand it this scheme remains undeveloped because there is not sufficient power demand on the West Coast or throughout the country to justify its construction.

rivers that already have significant hydroelectricity development or modification on them, such as the Clutha River, or micro-hydro power schemes, such as the Amethyst scheme developed by Westpower near Harihari, may offer opportunities for hydroelectricity projects of lower impact.

6. CAN IMPACTS OF THE SCHEME BE AVOIDED, REMEDIED OR MITIGATED?

Should the Westpower hydro scheme be built, there is no effective remedy or mitigation possible for the loss of the white water, wild and scenic values, and kayaking resource values on the Waitaha River. For all of these values a key consideration is that equivalent resources do not exist and cannot be made.

However, these significant impacts can be avoided by not building the proposed scheme in this location.

A review of the DOC West Coast Conservation Management Strategy (CMS; Department of Conservation, 2010a) indicates that the hydro scheme is also incompatible and inconsistent with a number of the key objectives and policies, e.g., Part 3.7.11, policy 3 and Part 3.7.2, policy 1(a) (Rankin, 2014c; Appendix VI). Although not clear cut, because utilities development is permitted under some circumstances, there are a number of points made in the preamble to matters and in the outcomes, objectives and policies in the West Coast CMS that clearly support this notion.

Provision for retention of natural features and recreation, and recognition particularly of the kayaking values on many of the rivers throughout the region is a clear aim of the CMS, as is enunciated by the overall outcomes and Hokitika Place outcomes (of which the Waitaha River is a part) in Part 4 Desired Outcomes of the strategy. Some key objectives and policies of relevance, and whether or not the scheme is consistent with them, are listed in Table 2.

Table 2. Key objectives and policies of the West Coast Te Tai O Poutini CMS and their consistency with the proposed Westpower power scheme

Objective/policy	Relevant values/issues	Scheme consistent with objective/policy; yes (y)/no (n)
Objective 1. To protect geodiversity and landscapes from adverse effects of human use or management. (Part 3.3.4.3)	Outstanding wilderness and landscape values (wild and scenic values) of the Waitaha River and particularly the Morgan Gorge would not be retained	n
Objective 3. To protect recreational opportunities from adverse effects of authorised uses of public conservation lands. (Part 3.5)	Kayaking values, particularly outstanding values of the Morgan Gorge and just below, and also the rest of the Waitaha River above the Morgan Gorge would not be protected	n
Objective 1. To provide a comprehensive range of recreational opportunities that enable people with different capabilities and interests to enjoy and appreciate West Coast <i>Te Tai o Poutini</i> public conservation lands, whilst protecting	The loss of the Morgan Gorge and other kayaking runs in the Waitaha River catchment, including some of the most difficult in the country (the 'Mount Cook' of New Zealand rivers), would not provide for a	n

Objective/policy	Relevant values/issues	Scheme consistent with objective/policy; yes (y)/no (n)
natural, historical and cultural heritage from adverse impacts of recreational use. (Part 3.6.1.1)	comprehensive range of kayaking runs (including such extremely difficult runs) throughout the country	
Objective 1. To provide access to a range of recreational opportunities via facilities that enable people to enjoy challenging natural settings in the backcountry. (Part 3.6.1.4)	The extreme kayaking opportunity down the Morgan Gorge would be lost, and this would negatively impact on the other highly valued hard kayaking runs in the Waitaha River	n
Objective 1. To provide opportunities for people to undertake a wide range of recreation and tourism activities at places and in ways that optimise the quality of the experiences available, whilst avoiding or otherwise minimising adverse effects on conservation values and conflicts with other users. (Part 3.6.4)	The extreme kayaking opportunity and technical challenge provided by the Morgan Gorge would be lost to New Zealand as well as international kayakers, negatively impacting on the other highly valued hard kayaking runs in the Waitaha River and reducing the quality of experiences available	n
Policy 2. Landscape assessments should be conducted on an as-needed basis, e.g. when considering proposals to develop utilities on public conservation land. (Part 3.3.4.3)	Little recognition of the outstanding natural feature that is the Morgan Gorge and loss that will occur when it is dewatered	n
Policy 1. The cumulative effects of other authorities for use, issued in respect of a particular area or opportunity, should be taken into account when considering new applications for those areas or opportunities. 2. When approving concessions or other authorisations, specific conditions may be applied as deemed appropriate. (Part 3.5)	The outstanding nature of the natural feature of the Morgan Gorge has not been evaluated relative to other landscapes on other rivers on the West Coast. This requires consideration in order not to underestimate the significance of its values	n
Policy 1. When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines: a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;..... e) The natural character within the setting of the activity should be maintained. (Part 3.7.2)	The loss of the Morgan Gorge kayaking run will be a significant adverse effect that cannot be avoided or minimised. With dewatering the natural character of the Morgan Gorge (noise, white water, hydraulic features, water flow) would not be maintained	n
Policy 3. The development, installation, maintenance and management of utilities on public conservation lands should be consistent with the desired outcome for the relevant place/s (see Chapter 4.2). (Part 3.7.11)	Dewatering the Morgan Gorge would not provide for retention of the kayaking and natural feature values on the Morgan Gorge and the river immediately below the Morgan Gorge	n
Objective 1. To provide for public access to conservation areas in ways that meet people's reasonable aspirations but do not compromise public safety or the protection of conservation values. Policy 3. Activities and access to public conservation lands may be restricted in accordance with legislation:	Loss of the values in the Morgan Gorge via dewatering and construction of industrial structures will impinge on kayakers and other users of the Waitaha River with respect to the wilderness and scenic (wild and scenic) values within the catchment, and would not preserve conservation values, natural values, or the outstanding kayaking values on the	n

Objective/policy	Relevant values/issues	Scheme consistent with objective/policy; yes (y)/no (n)
a) where necessary to protect natural, historical or cultural heritage values; or b) where a particular activity will adversely affect the enjoyment of the area by other people, including the qualities of solitude, remoteness, wilderness, peace and natural quiet, where these qualities are present; or c) where a particular activity will prevent the desired outcome for a Place from being achieved (see Part 4); or d) for public health and safety reasons. (Part 3.8.4)	Morgan Gorge and just below, or for the river as a whole in its current untouched state	

As discussed by Wright (2012), for a concession to be granted the activity should be consistent with the Department of Conservation’s management strategies and plans. The Minister of Conservation can only give permission to build and operate a hydroelectricity scheme on the conservation estate if it:

- Would not compromise the purposes for which the land is held
- Could not reasonably be done elsewhere, including in another conservation area where the effects would be less significant (Conservation Act 1987, sections 17U (3) and (4)).

In addition, the Minister must also consider the impact of any structure, along with what might be done to reduce its impact (Conservation Act 1987, section 17U (1)).

The incompatibility between the proposal and the Department of Conservation’s management strategies and plans was also recognised in the Greenaway (2014) report (pages 6 and 89) where it is stated that the hydro development is not compatible with the back-country remote setting and recreation management category.

7. MITIGATION

In consideration of the type and magnitude of the impacts, mitigation options for the proposed scheme are considered to be limited and challenging.

For a mitigation plan to be effective it would need to account for impacts on (and not be limited to):

- natural character at river reach and catchment scales;
- natural features at multiple scales,
- wild and scenic quality matters at catchment scale,
- loss of kayaking amenity including

- total loss of the Morgan Gorge kayaking resource and the 1.5 km reach at the end of the Morgan Gorge run, and
- impacts on parties completing upper catchment runs, and full catchment runs.

Impacts on all of above elements have been assessed as being significant or highly significant should the proposal go ahead in terms of their magnitude in relation to the purposes of the RMA. Opportunities for environmental offsetting or compensation do not appear to exist to the extent required to provide for effective mitigation (or a sufficient level of positive impacts⁷) due to the non-substitutable nature of many of the values that would be lost.

8. CONCLUDING COMMENTS

Our conclusions are that should the proposed scheme go ahead it will have significant negative impacts on this wild and scenic New Zealand river.

The scheme is assessed as having severe impacts on outstanding and highly significant kayaking values of a unique nature. It would also have highly significant effects on natural character and natural feature values of this wilderness river, and we contend that these must be considered at multiple scales. Significant impacts would occur on natural character and natural features at all of catchment, reach, and sub-reach scale for both of these values classes. This will impact significantly on the New Zealand and international kayaking community and the stock of a representative range of wild and scenic rivers in New Zealand.

The proposal also appears to be inconsistent with the relevant Department of Conservation objectives and strategies in a number of critical aspects. In particular the scheme is incompatible with the desired recreation and natural feature outcomes for the Hokitika place as detailed in the West Coast Te Tai O Poutini CMS. With regard to concessions, the Conservation Act 1987 sets out certain tests that the concession application must meet before it may be granted. In particular, the Minister must decline an application if he or she considers that it does not comply with, or is inconsistent with, the provisions of the Conservation Act or any relevant conservation management planning document.

At this stage of the proposal development and application process it is critical that a robust approach to establishing the values of the affected resources is taken, and that impact assessments being relied upon are comprehensive and well considered. Presumably this includes establishing the values of the intact catchment as it is at present and should it be modified, confirming consistency of the proposal with conservation policy, as well as a thorough energy needs and economic analysis and justification for the proposed scheme. These assessments will undoubtedly inform the decision making process to come.

⁷ See recent findings of the High Court in *Royal Forest & Bird Protection Society of NZ v Buller District Council & Ors* [2013]. NZRMA 293 determined that biodiversity offsets should be considered as positive effects, and not mitigation. Refer to case law for further interpretation.

It is our conclusion that the values of the affected resource are significant, and the adverse effects of the proposed development would be highly significant. We believe that the impacts of the proposal, if allowed, would not represent sound or appropriate resource management when there are lower impact options for power generation available. We consider that the Waitaha proposal is also an important think-piece to illustrate reasons why proposals of this nature should not be advanced in terms of costs and benefits and achieving the purposes of relevant policy. It suggests that the development of less impactful concepts and proposals for delivering 'clean' energy are needed. It is considered that these do exist and might include strategies such as micro hydro or the development of bigger schemes on rivers that are already modified in addition to the full range of other renewable energy sources and technologies.

We believe there is little or no opportunity for significant adverse effects to be effectively remedied or mitigated. These findings suggest that avoidance of adverse impacts is required. In practical terms it does not make sense to sacrifice a nationally important wild and scenic river for the sake of a limited amount of power generation. From this perspective the Waitaha proposal provides an important case study opportunity of sorts, by casting light on a number of important concepts for environmental management in New Zealand with regard to the relationship between waterways management and the energy sector.

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APPENDIX I: LETTER TO DOC FROM WHITEWATER NZ, MARCH 2014



28 Waipara Street
Cracroft
Christchurch 8025

17 March 2014

Ms Di Clendon
Department of Conservation
Hokitika Area Office
Private Bag 701
Hokitika 7842

Dear Di

Potential Application by Westpower for a DoC Concession for a Proposed Hydroelectric Power Development on the Waitaha River.

Further to the letter from Julia Mackie from your office dated 9 October 2012 to ourselves, and our recent conversation concerning the process around DoC considering a Concession for a Proposed Hydroelectric Power Development on the Waitaha River by Westpower, I wish to register a concern with you that we discussed around the material that DoC considers as part of this process.

Whitewater NZ is very concerned that only material provided by the applicant or by other DoC recreation personnel on the kayaking values of the Waitaha (the kayaking values along with the wilderness values will be seriously impacted upon by the proposed Scheme) will be used in making a decision in principle⁸ on the application that then will be announced to the public for submissions.

The reasons for these concerns are primarily that documentation provided by the applicant around our values is not accurate nor properly reflects our values and so a decision based on such data may be flawed. In addition, other expert advice sought needs to be from suitably qualified kayakers that

⁸ We understand that a process of making a decision in principle – where data provided with the concession application and any other relevant information from other parties is gathered and assessed and a preliminary decision made on the concession – before publically announcing the concession application and decision in principle, and then requesting submissions from interested parties, may be used in the DoC Concession Assessment process in this case.

know the resources in question and those elsewhere on the West Coast, and other kayakers that understand how the impacts of the Scheme on kayaking values can be evaluated. We know who such kayakers are but do not know what level of expertise will be available to DoC from the parties they might consult.

Like you, we have also received a copy of a draft report for consultation prepared by Westpower and dated Feb 2014 entitled Westpower Waitaha Hydro Investigations Recreation and Tourism Assessment of Effects by Rob Greenaway and Associates. This has been given to us as part of consultation we are currently engaged in with Westpower. We recently sent Westpower a detailed hydrological analysis of the impact of their Scheme on our values in the Morgan Gorge and await their confirmation of our analysis. We have yet to complete our discussions and consultation with Westpower.

The Greenaway and Associates report does not properly present the value of the Waitaha River to kayakers. The author(s) has omitted very salient points. The author is not an expert kayaker and has prepared the report for Westpower. The author has not consulted with kayakers in the preparation of this report.

Some areas of the report are in error, particularly those referring to:

- The reliance on some literature for forming a view on the value of the Waitaha River to kayakers, and especially the Morgan Gorge, is not appropriate, as the assessments carried out or referred to in the literature were for unnamed or other reaches of the Waitaha River, or are out of date.
- The flows needed and kayaking opportunity remaining in the Morgan Gorge. Our analysis of flow data and flow needs of kayakers using the Morgan Gorge shows that flows suitable for running the Morgan Gorge will all be lost if the scheme proceeds, unless controlled ceases to abstraction (no-take flow days) are provided as part of the Scheme.
- The summary of Scheme effects and mitigation recommended in Table 1 (and Table 7) is incomplete, contains an error and is confusing; not all effects on kayakers are properly listed; it is not clear if the effects listed are based on the assumption that recommended mitigation will be provided or not; and it is not clear what level of mitigation would be provided.
- Little reference is made 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 features this river offers.
- There are references to the 'removable' nature of the control and generation structures planned for the Scheme, matters that are irrelevant to the assessment of impacts of the scheme on kayakers and most other parties if the scheme proceeds.
- The final conclusion that the loss of the Morgan Gorge through installation of the Scheme will only constitute a low effect on the kayaking setting on the West Coast is also in error. This river is one of the 'jewels in the crown' of outstanding West Coast Rivers and of national and international importance to kayakers. As mentioned in the DoC Conservation Management Strategy for the region a development such as the proposed hydro Scheme is incompatible with the current values of the river.

I am writing to ask that DoC consult our experts on the kayaking values of the Waitaha when considering the Westpower concession to ensure that they receive an appropriate appraisal of the value of the river to us and the analysis of the impacts of the Scheme on our values. This would be essential in our view, especially if a decision in principle were to be arrived at before any public notification or consultation on the Scheme concession, for the reasons given above.

Whitewater NZ would also request that given the importance of the river to the national and international kayaking community, that the concession application be advertised nationally so that kayakers from around the country and internationally hear about the scheme and can submit if they wish.

Whitewater NZ would also request notification from DoC as soon as the Application for a Concession has been lodged.

We look forward to hearing from you further on this matter and especially your views on our requests. We hope our requests make sense and will add value to the deliberations.

Yours sincerely

Dr Douglas A Rankin

Conservation Officer
Whitewater NZ

Cc Mr Michael Hopkinson, Director, New Zealand Kayak School, Murchison

APPENDIX II: INTERNATIONAL SCALE OF RIVER DIFFICULTY (ALSO REFERRED TO AS GRADE, ESPECIALLY OUTSIDE THE USA)

- Class I Fast moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.
- Class II Novice: Straightforward rapids with wide, clear channels which are evident without scouting. Occasional manoeuvring may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured and group assistance, while helpful, is seldom needed. Rapids that are at the upper end of this difficulty range are designated "Class II+".
- Class III Intermediate: Rapids with moderate, irregular waves which may be difficult to avoid and which can swamp an open canoe. Complex manoeuvres in fast current and good boat control in tight passages or around ledges are often required; large waves or strainers may be present but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-volume rivers. Scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy but group assistance may be required to avoid long swims. Rapids that are at the lower or upper end of this difficulty range are designated "Class III-" or "Class III+" respectively.
- Class IV Advanced: Intense, powerful but predictable rapids requiring precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast manoeuvres under pressure. A fast, reliable eddy turn may be needed to initiate manoeuvres, scout rapids, or rest. Rapids may require "must" moves above dangerous hazards. Scouting may be necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong Eskimo roll is highly recommended. Rapids that are at the lower or upper end of this difficulty range are designated "Class IV-" or "Class IV+" respectively.
- Class V Expert: Extremely long, obstructed, or very violent rapids which expose a paddler to added risk. Drops may contain large, unavoidable waves and holes or steep, congested chutes with complex, demanding routes. Rapids may continue for long distances between pools, demanding a high level of fitness. What eddies exist may be small, turbulent, or difficult to reach. At the high end of the scale, several of these factors may be combined. Scouting is recommended but may be difficult. Swims are dangerous, and rescue is often difficult even for experts. A very reliable Eskimo roll, proper equipment, extensive experience, and practiced rescue skills are essential. Because of the large range of difficulty that exists beyond Class IV, Class 5 is an open-ended, multiple-level scale designated by class 5.0, 5.1, 5.2, etc... each of these levels is an order of magnitude more difficult than the last. Example: increasing difficulty from Class 5.0 to Class 5.1 is a similar order of magnitude as increasing from Class IV to Class 5.0.
- Class VI Extreme and Exploratory Rapids: These runs have almost never been attempted and often exemplify the extremes of difficulty, unpredictability and danger. The consequences of errors are very severe and rescue may be impossible. For teams of experts only, at favourable water levels, after close personal inspection and taking all precautions. After a Class VI rapid has been run many times, its rating may be changed to an appropriate Class 5.x rating.

(From American Whitewater: http://www.americanwhitewater.org/content/Wiki/doi/id/safety%3Astart/#vi._international_scale_of_river_difficulty; accessed 21 October 2013)

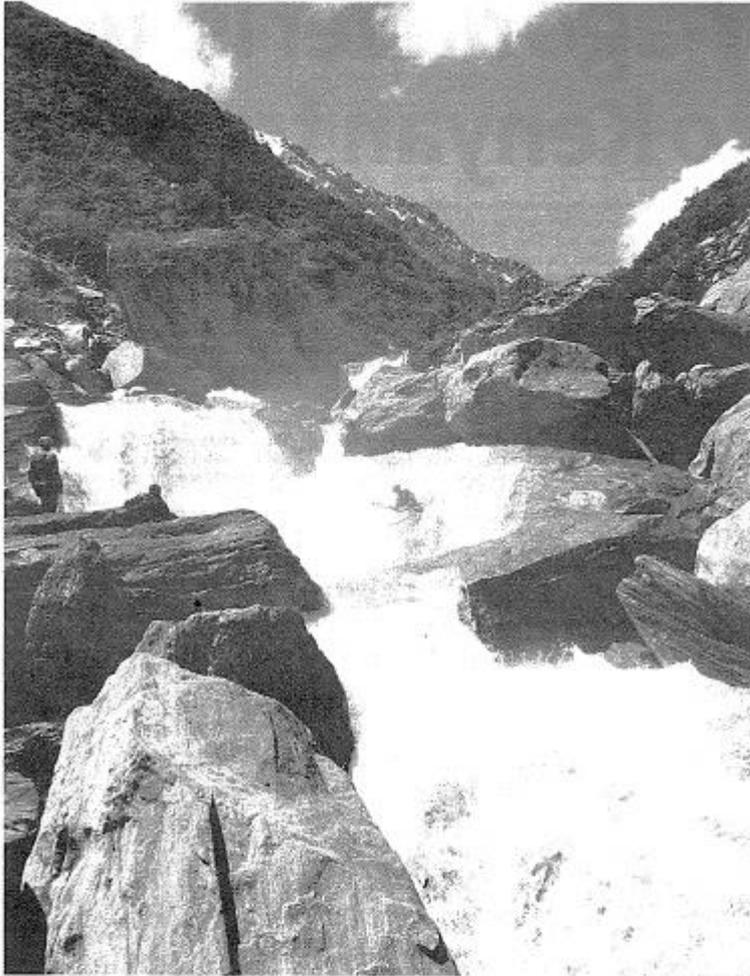
APPENDIX III: DESCRIPTION OF WAITAHA RIVER KAYAK SECTIONS NOT COVERED IN ENGLAND (2011)

River (section)	Waitaha River – Ivory Lake to Upper Waitaha Hut	
Locations (latitude and longitude of put in and take out)	Put in	Take out
	River at base of cliffs at Ivory Lake	Upper Waitaha Hut
Access description	Helicopter	
Land status (banks)	Waitaha Catchment – Conservation Area – Waitaha Forest	
Date kayaked (for this report)	(Reported by Keith Riley)	
Group members (on this trip)	Keith Riley, Zak Shaw, William Martin, Paul Currant, Justin Venable	
Description of whitewater kayaking technicality (inc. grade and style of kayaking, volume on day, flow requirements and estimate of reliability)	Tight low volume kayaking Class V kayaking with numerous waterfalls up to 10 metres Some difficult scouting One long portage around 70 metre waterfall Flow requires extra water for ideal conditions, preferably day after rain Could be paddled in high flows Half day trip	
Description of water landscape (inc. water quality and clarity, river bed features)	Pristine water quality Snow melt and lake fed Bedrock gorge river bed	
Description of valley landscape from River (inc. gorges and views from river, types of vegetation)	Alpine kayaking Trip starts at 1200m, one of highest kayaking trips in New Zealand Alpine tussock scene – all above bush line Portaging over avalanche debris	
Description of degree of wilderness feel (inc. presence or absence of human influence, remoteness)	Pristine wilderness – only indication of human influence is Top Waitaha Hut at take off Rugged/harsh alpine environment	
Notable flora and fauna (eg, blue duck)	Alpine vegetation	
Description of overall character of section of river	Tight and technical alpine kayaking	
Distinctive features of river trip (key words)	Alpine, slot gorge, tight	

River (section)	Waitaha River – Top Waitaha Hut to Moonbeam Hut	
Locations (latitude and longitude of put in and take out)	Put in	Take out
	Top Waitaha Hut (alternatively Stag Creek below trib from Ivory Lake) Top Waitaha Hut Lat: -43.131182 Long: 170.876541 Stag Creek Lat: -43.137821 Long: 170.909157	Moon beam Hut Lat: -43.140139 Long: 170.807705
Access description	Helicopter access; very difficult tramping access from Moonbeam Hut on true right of Windhover Gorge	
Land status (banks)	Waitaha Catchment – Conservation Area – Waitaha Forest	
Date kayaked (for this report)	(Reported by Justin Venable) January 2012	
Group members (on this trip)	Zak Shaw, Paul Currant, Keith Riley, William Martin, Justin Venable; helicopter access by Patrick Amberger, Precision Helicopters Ltd	
Description of whitewater kayaking technicality (inc. grade and style of kayaking, volume on day, flow requirements and estimate of reliability)	Stag Creek to Top Waitaha: Shingle/slides, high alpine environment, Class II-IV+ Small volume, need snowmelt and recent rain of moderate volume <u>or</u> recent significant rainfall with good forecast for dropping flow to allow navigation of lower stretches Top Waitaha to Moonbeam: Large schist/greywache boulders Class V-VI if including Windhover Gorge; either a very strenuous <u>portage</u> from Chairman’s Creek on route through bush up and around gorge on true right, down spur to river level below gorge exit and swingbridge; or <u>kayaking</u> : six major waterfalls of Class V+-VI (one potentially marginal, remainder have been kayaked in January 2013 by Matt Coles, Shannon Mast and Justin Venable) Section between bottom of Windhover Gorge Moonbeam Hut is Class IV-V+ Flow for upper section between Top Waitaha to start of Windhover requires medium flow, similar flow in Windhover Gorge	
Description of water landscape (inc. water quality and clarity, river bed features)	Pristine water quality, drinkable, gin clear Huge beautiful schist boulders, vertical dramatic gorge walls, overhanging in places	
Description of valley landscape from River (inc. gorges and views from river, types of vegetation)	Typical alpine vegetation of high country West Coast to bush line with development of kamahi/podocarp/broadleaf mixed forest at Moonbeam Hut Amazing transition from alpine to bush	
Description of degree of wilderness feel (inc. presence or absence of human influence, remoteness)	Zero human influence visible except at three huts (Ivory Lake, Top Waitaha, Moonbeam) and swingbridges Route (rough) for difficult tramping linking huts World class wilderness experience; uber remote	
Notable flora and fauna (eg, blue duck)	Whio in lower reaches, birds galore, kea at Stag Creek	
Description of overall	Remote, pristine wilderness, very committing, nearly untouched,	

character of section of river	<p>stunning scenery</p> <p>Dramatic cascading complex rapids of exceptional international quality</p> <p>One of the most dramatic landscapes in the entire world</p> <p>Pinnacle of hard whitewater kayaking experiences available on Earth when taken as a complete river ecosystem</p> <p>Wilderness challenge for fit, determined, experienced and intrepid parties of backcountry adventurers</p>
Distinctive features of river trip (key words)	

River (section)	Waitaha River – Morgan Gorge	
Locations (latitude and longitude of put in and take out)	Put in	Take out
	Kiwi Flat	DOC carpark at trail head
Access description	Helicopter or three plus hour walk in	
Land status (banks)	Waitaha Catchment – Conservation Area – Waitaha Forest	
Date kayaked (for this report)	(Reported by Keith Riley)	
Group members (on this trip)	Keith Riley, Paul Currant, Trent Garnham	
Description of whitewater kayaking technicality (inc. grade and style of kayaking, volume on day, flow requirements and estimate of reliability)	<p>Class V kayaking</p> <p>Committing and pushy whitewater in super tight bedrock gorge</p> <p>Distinct rapids with ‘calm’ between</p> <p>15-20 cumecs flow</p> <p>Feels isolated and remote slot in the Earth</p>	
Description of water landscape (inc. water quality and clarity, river bed features)	<p>Pristine water</p> <p>Bedrock gorge river features</p>	
Description of valley landscape from River (inc. gorges and views from river, types of vegetation)	<p>Densely forested podocarp rainforest</p> <p>Views are upwards</p>	
Description of degree of wilderness feel (inc. presence or absence of human influence, remoteness)	<p>Wilderness feel only interrupted by swingbridge at the start</p> <p>Feels like a place no one has been before – untouched and inaccessible</p>	
Notable flora and fauna (eg, blue duck)		
Description of overall character of section of river	Spectacular tight and deep whitewater gorge	
Distinctive features of river trip (key words)	Committing, spectacular, deep	



PICTURE: Supplied

Kayakers knock off Mt Cook of rivers

Five South Island white-water kayakers have "knocked off" the kayaking equivalent of Mt Cook, completing the first ever descent of the Upper Waitaha River. The Waitaha, south of Hokitika, is known as one of New Zealand's top class five rivers, but until now no-one has kayaked the length of the river from the Southern Alps to sea level. Kayakers Keith Riley and Zak Shaw who are both outdoor education tutors at Tai Poutini Polytechnic, Nelson doctor Justin Venable, Christchurch doctor Paul Curren and Christchurch engineer Will Martin took three days to complete the epic journey. The group used a helicopter to access the top of the Waitaha, starting their kayak from an elevation of 1220m near Ivory Lake. "It was most remote rugged wilderness I have ever kayaked, literally you can't go any further into the Alps," Shaw said. "We started paddling through alpine tussock with old avalanche debris scarring the hillsides, and then entered the upper gorge which was like a water-worn sculpted gutter through bedrock." Known in kayaking circles as one of the hardest adventure kayak trips around, the lower part of the Waitaha was first kayaked in 2001. However it was not paddled further up because at the time it was thought the river was too steep. Two years ago Keith Riley and Paul Curren were part of a group that made the first descent of Morgan Gorge, both of them also taking part in this latest expedition.

Where no kayak has gone before

ANNA TURNER
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LUGGING HIS 30 kilogram kayak up a rugged stretch of West Coast bush, Greymouth man Zak Shaw felt a buzz "like no other".

The 32-year-old outdoor education tutor at Greymouth Tai Poutini Polytechnic, was one of five white-water kayakers who last weekend completed the first ever descent of the Upper Waitaha River from the heart of the Southern Alps.

The team - made up of Shaw, fellow polytechnic tutor Keith Riley, Nelson doctor Justin Venable, Christchurch doctor Paul Currant and Christchurch engineer Will Martin - took three days to complete the epic journey. The group used a helicopter to access the top of the Waitaha, starting their kayaks from an elevation of 1220 metres.

Shaw, who has been kayaking for more than 13 years, described it as the most remote and rugged wilderness he has ever experienced.

"It was terrain that hasn't been travelled through with a kayak before. Parts of it have been deemed unpaddleable. It was savage." The physically exerting trip took its toll on the adventurers.

"We had some pretty big meals to keep our energy going. You want to arrive at the hut and pretty much eat continuously before you went to bed," he said. "It's a good drained feeling. You've accomplished something."

One of the most challenging parts of the 28km paddle was the Windhover Gorge where the river drops 200m in just 1km. The group arrived at the gorge after six hours of exhausting paddling and were forced to carry their kayaks up through the bush on a steep rough track.

"Moving uphill with kayaks through the rugged West Coast bush has to be one of the hardest physical things you can do. You



Pioneering thrills: Clockwise from left, Paul Currant on the first rapid after being dropped off at the top of the Upper Waitaha River; Justin Venable on the Waitaha just above Kwi flat; and Patrick Amberger, pilot for Precision Helicopters, Hokitika.

Photos: Zak Shaw



have to be a pretty hardy soul to be tramping up there.

"That was 11 hours of back-breaking exertion, but it's a feeling like no other. It was really, really, hard work to get through day two."

Co-incidentally, day two of the trip was also Shaw's birthday.

"We celebrated with a few bottles of beer which were dropped at the hut by the pilot and had a good night that night," he said.

"The highlight of the trip was that I was on a big genuine adventure on a beautiful New Zealand river on my birthday. It's a pretty memorable birthday. I'll hold the memory pretty close for a while."



PICTURE: Zak Shaw Photography

Matt Cole paddles the rapid at the entrance to the Windhover Gorge.

Coaster completes first Waitaha kayak descent

by **Brendon McMahon**

A West Coast man and an Australian have just completed the first kayak descent of the wild Windhover Gorge in the Waitaha River.

Justin Venable, of Hokitika, and Australian Shannon Mast completed 15m to 19m drops in the gorge, about 25km upriver of the bridge on State highway 6. Matt Cole, of Westport, was unable to complete the descent due to injury.

They were supported and filmed by a crew of Dave Kwart and Zak Shaw of Hokitika, and Jason Blair of Greymouth.

The Westland river had previously been rafted from its source in the Southern Alps, and in the lower reaches, but not over its entire length including the rugged gorge — “the last piece of the puzzle,” support crew member Shaw said.

Just getting to the upper gorge on Saturday proved an extreme challenge, with

a rudimentary rocky landing pad cleared to bring in the support helicopter, piloted by Patrick Amberger.

Venable was first winched into the gorge past the first waterfall so he could provide support for Mr Mast — who after an hour of deliberation was first to “drop” his kayak 12m into a cauldron at the gorge entrance.

Mast capsized but “emerged unscathed” in the pool below.

Cole was up next, and immediately capsized and lost a paddle. “Matt had to let go of his kayak but managed to swim.”

He was pulled from the torrent by Venable, but the adventure was at an end for Cole — he had sprained an ankle and he was airlifted out.

Venable and Mast were able to continue and paddled the remainder of the gorge.

Shaw said he passed up the opportunity to make the attempt, choosing to wait at the gorge mouth to provide radio support.

He said the two had to abseil the final descent, before continuing down river.

“They had to complete three abseils of about 20m each to travel past the last 80ft waterfall and jump back into the gorge.”

Shaw said comparison with adventures seen on the ‘First Crossings’ programme on television would be “an understatement” and the magnitude of what had been achieved would be hard to grasp except for those who pushed through and succeeded.

“Those guys will be on cloud nine. It’s an amazing feat — firstly to go in there — and then to paddle it and make it through,” Shaw said.

Out of the river, they were then faced with a 300m climb with their equipment to a track which would eventually lead them to the Moonbeam Hut where they arrived at midnight, followed by a 7.5 hour tramp out on Sunday.

APPENDIX V: IMPACT OF WESTPOWER WAITAHA HYDRO SCHEME PROPOSAL ON RIVER FLOW AVAILABILITY DOWN MORGAN GORGE:

A DOCUMENT PREPARED BY WHITEWATER NZ FOR DISCUSSIONS WITH WESTPOWER RE THE IMPACTS OF THEIR PROPOSED HYDRO SCHEME

Preliminary analysis

1. Unless provisions are made for flows down the Gorge, a simple analysis shows that the number of days available for running the Morgan Gorge at flows between 17.5 to 22.5 cumecs, which is considered to be the narrow flow window suitable for kayaking, would fall from on average an estimated 59 days per year to 9 days per year or an 85% reduction (this is based on all flows throughout the year possibly being used by kayakers (e.g., even in winter), a take of 23 cumecs wherever possible, and based on flow data from 25/03/06 to 19/04/12). However, this impact assessment data needs to be recalculated using a more pragmatic and appropriate kayaking season, as kayaking is very unlikely to occur in winter because of lower flows on average and the prevailing cold conditions.
2. In addition, the flows used in these calculations are for daily mean flows, and the flows during the day may vary to such an extent that the residual flow windows are not appropriate or sufficient for kayakers to descend the gorge.

Flows when Morgan Gorge kayaked

3. The Morgan Gorge has been successfully kayaked three times and three separate unsuccessful attempts have been made. Known dates when the river has been descended successfully include 14/02/2010 and 26/02/2010. On 21/02/2012 an attempt had to be abandoned as the flows were too low.
4. The mean hourly flows have been plotted for these dates (see Figures 1 to 3) to see how much the flows changed during these days. Descents would have been made during daylight hours, but when exactly is not clear.

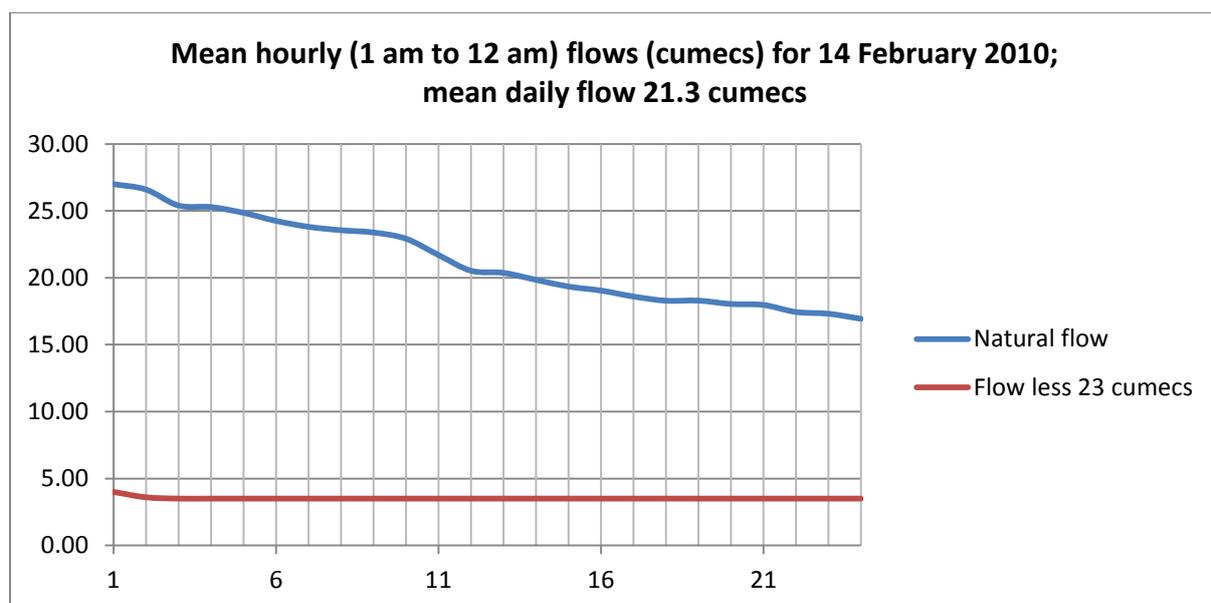


Figure 1.

5. On the descent made on 14 February 2010 (Figure 1) where the mean daily flow was 21.3 cumecs, flows down the Morgan Gorge fell steadily throughout the day and varied from 23.6 cumecs at 8 am, 21.7 cumecs at 11 am through to 18.3 cumecs at 6 pm. The mean daily flows on the preceding and following days were 75.1 and 15.4 cumecs, respectively.

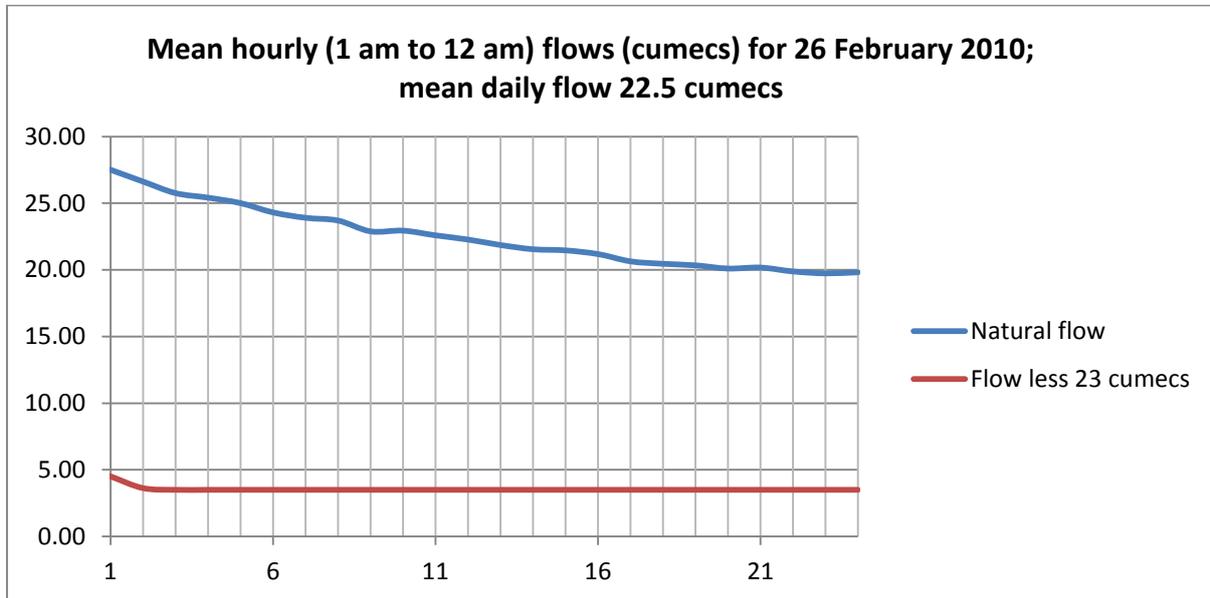


Figure 2.

6. On the descent made on 26 February 2010 (Figure 2) where the mean daily flow was 22.5 cumecs, flows down the Morgan Gorge fell steadily throughout the day and varied from 23.7 cumecs at 8 am, 22.6 cumecs at 11 am through to 20.5 cumecs at 6 pm. The mean daily flows on the preceding and following days were 43.8 and 18.4 cumecs, respectively.

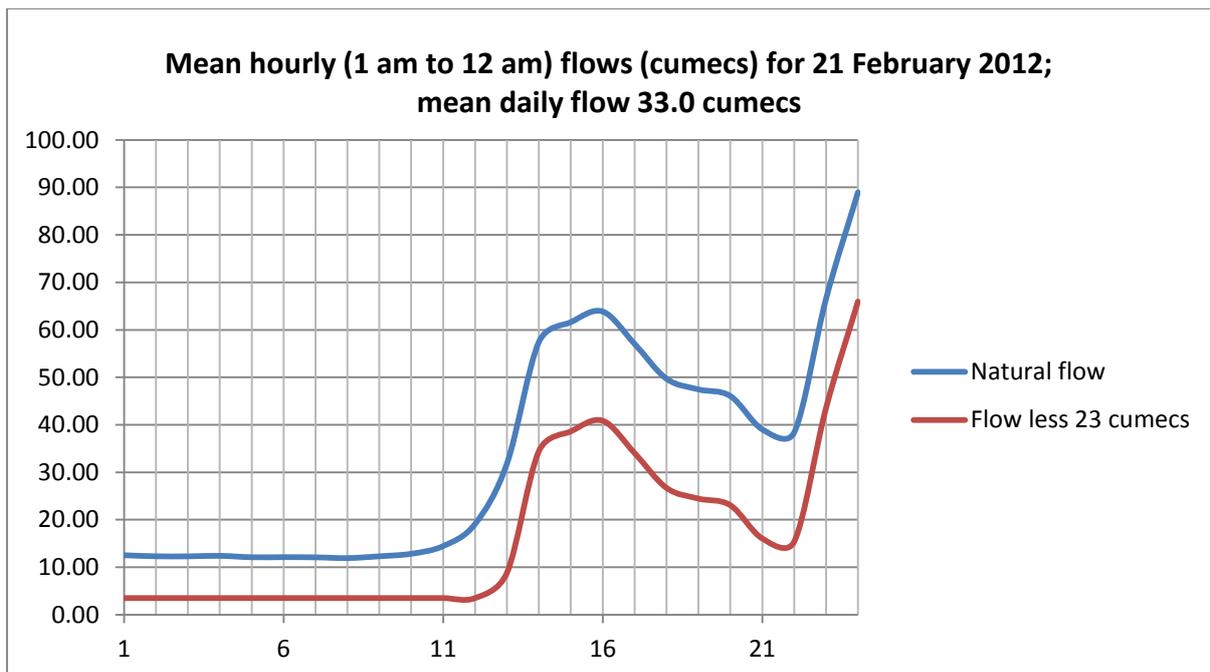


Figure 3.

7. On the attempted descent made on 21 February 2012 (Figure 3) where the mean daily flow was 33.5 cumecs, flows down the Morgan Gorge were small and reasonably steady for the first half of the day and varied from 11.9 cumecs at 8 am, 14.4 cumecs at 11 am, 19.1 cumecs at 12 pm, 31.8 cumecs at 1 pm, peaking around 64 cumecs at 4 pm through to 49.7 cumecs at 6 pm. The mean daily flows on the preceding and following days were 11.9 and 33.0 cumecs, respectively. It is not clear when the kayakers were at the Morgan Gorge but assuming they were there early in the morning, the flows set lower limits on flows needed to run the Gorge. For example, at 9 am and 10 am the flows were 12.3 and 12.8 cumecs before starting to rise.
8. These natural flow variations during the day are presumably as a result of rain and snow/glacier melt within the catchment and would mean the nature of the hydraulic features in the Morgan Gorge that kayakers might run could change throughout the day. Kayakers would have to be able to cope with these changes in flow if they wished to run the whole gorge.
9. This flow data show that the natural flows that the Morgan Gorge has been run at match well with the 17.5 to 22.5 cumec flow window that has been estimated as being required.

Potential losses of flow days suitable for kayaking

10. Assuming the kayaking season is over the September to May months of the year, with peak use likely to be in December to February, more appropriate impacts have been calculated.
11. As before, the narrow flow window of 17.5 to 22.5 cumecs has been selected for flows thought to be suitable for kayaking the Morgan Gorge, and a take of up to 23 cumecs has been assumed.
12. Using the flow data from 25/03/06 to 19/04/12 in the Waitaha at the bottom of Kiwi Flat just above the Morgan Gorge, and a set of synthetic data for 1973 to 2005, the following flow availability and losses have been determined (Table 1).

Table 1. Mean and median flows (cumecs) and numbers of suitable days available for kayaking the Morgan Gorge before and after installation of the proposed Westpower power scheme

Data set	Natural flow			Modified flow			Days lost	
	Mean	Median	No. days	Mean	Median	No. days	No.	Percentage (%)
Full year on average, 2006-12 ^a	32.7	19.0	59.1	17.4	3.5	8.9	50.2	85
September – May kayaking season, on average, 2006-12 ^a	37.5	21.9	51.9	20.2	3.5	8.8	43.1	83
December – February peak kayaking season, on average, 2006-12 ^a	46.0	26.7	17.5	26.6	3.7	4.5	13.0	74
September – May kayaking season, wet, 1995-96 ^b	51.8	30.9	50	31.3	7.9	7	43	86

September – May kayaking season, dry, 1976-77 ^b	29.2	18.1	35	14.1	3.5	7	28	80
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^a Approximate as full data not available for 2006 or 2012.

^b From synthetic data.

13. Losses of suitable flows available for kayakers in the Morgan Gorge are all very high irrespective of how they are calculated.
14. For the full kayaking season (September to May) mean annual losses or annual losses in available days range from 28 to 43.1 (or losses of 80 to 86% of days available) out of 35 to 51.9 days that were available over different wet or dry seasons or a set of recent seasons (2006-2012).
15. For the shorter 'peak' season (December to February), the mean annual loss in available days was 13.0 (or a 74% loss), out of 17.5 days that were available over the 2006-2012 set of recent seasons.
16. Thus, unless a number of flow release or no-take days are provided for kayakers, there are major reductions in the availability of flows suitable for running the Morgan Gorge, as a result of the scheme. The impacts of the scheme may be worse still, especially if the residual flow days do not provide access to the resource, as discussed further below.
17. It would be essential that such no-take days would be available on request at very short notice so that kayakers wanting to descend the gorge could watch weather and flow patterns to determine when they could make a descent and then calling up at short notice to do so when conditions were right.

Availability of river once scheme installed – are excess higher flows overflowing the weir able to be used by kayakers whilst the scheme is running?

18. It has been suggested that the ability to catch flows suitable for kayaking down the Morgan Gorge still exists once the scheme is installed. Such a situation might arise when the scheme operation means that residual mean daily flows in the kayakable range of 17.5 to 22.5 cumecs will be left flowing down the Morgan Gorge.
19. The number of days falling into this category where 23 cumecs of flow have been taken from the river are essentially those indicated in column seven of Table 1 but do not actually amount to a great number. For example, on average 8.8 days would fall into this category for the September to May kayaking season for data from the 2006-2012 years, compared with a total of 51.9 if the scheme was not present (line 2, Table 1).
20. However, it is not clear that when the power scheme produces a mean residual daily flow in the river of say 20 cumecs that this flow would provide a suitable kayaking flow. The reason for this is that the fluctuations in residual flow may be too high to provide the safe and reliable narrow flow window needed for kayakers to run the Gorge. This is illustrated by data in Figures 4 to 7 following, where different flow scenarios have been considered.
21. In Figure 4 a situation where a mean daily flow was 41.7 cumecs is shown, and the preceding and following mean daily flows were 77.1 and 26.8 cumecs, respectively. In such a case the mean daily residual flow, assuming the hydro scheme was taking 23 cumecs, would be 18.7 cumecs.

22. It can be seen that natural flows at two-hourly intervals between 8 am and 6 pm were 44.5, 42.8, 38.9, 37.6, 35.7 and 34.3 cumecs (blue line), and that if the scheme was taking 23 cumecs, the residual flows (red line, in part underneath the green line) down the Morgan Gorge would correspond to 21.5, 19.8, 15.9, 14.6, 12.7 and 11.3 cumecs, respectively. These residual flows would not be suitable for a descent of the Morgan Gorge, they are too variable and too much outside the narrow flow range suitable for running the gorge.

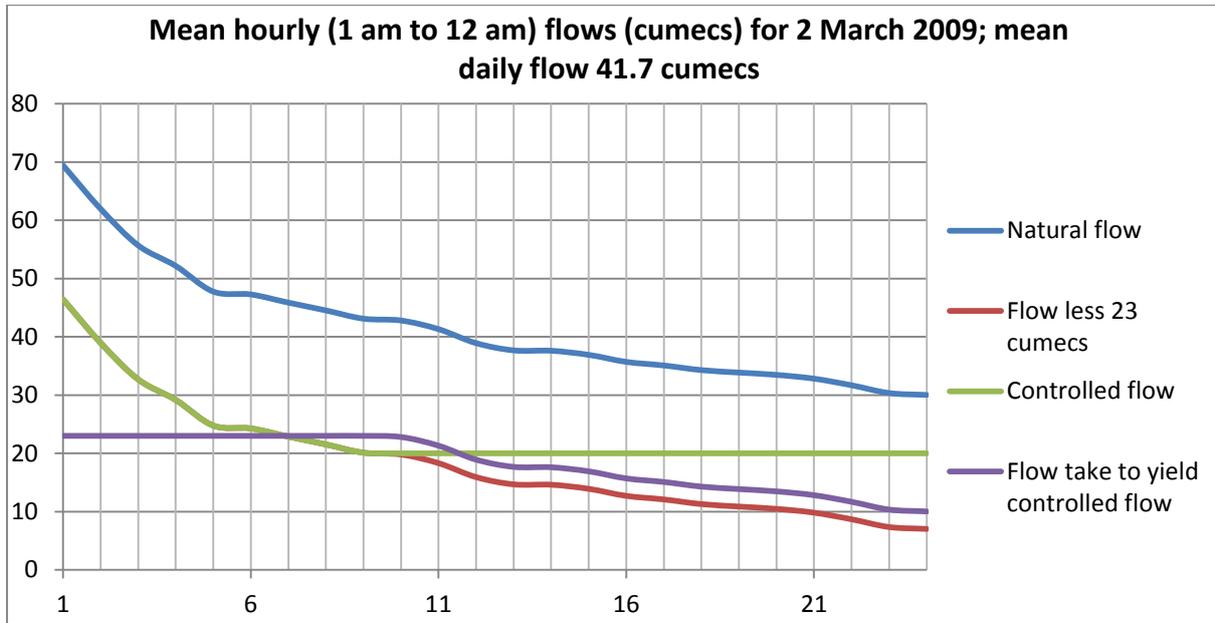


Figure 4.

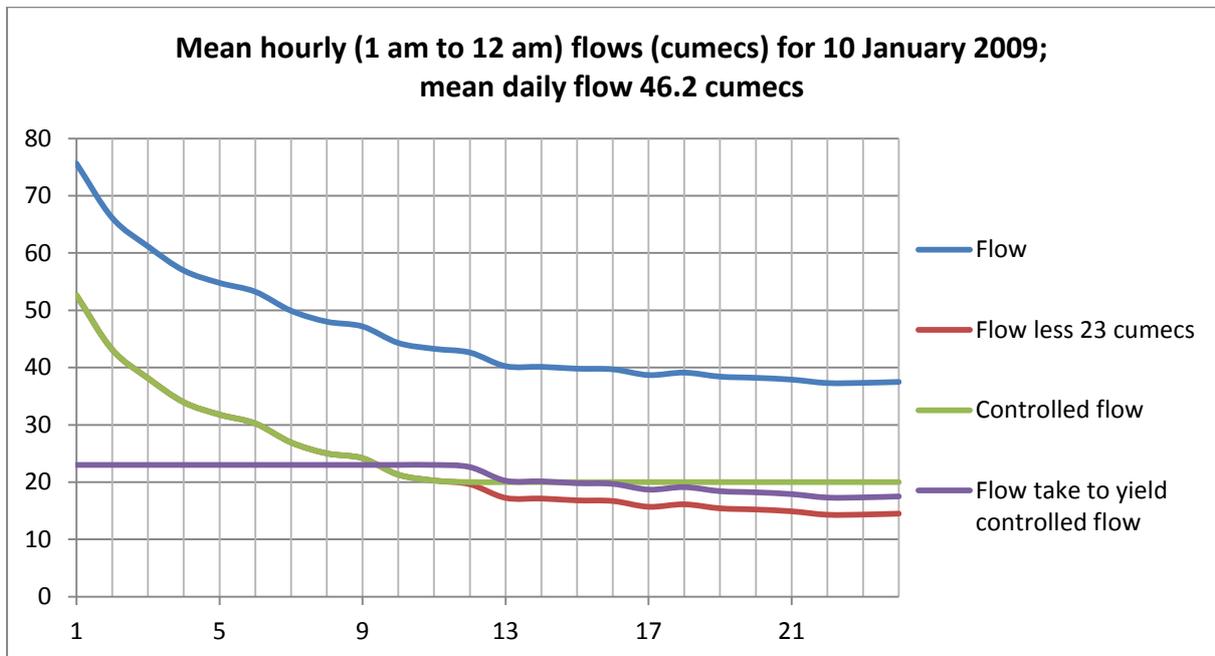


Figure 5.

23. In Figure 5 a situation where a mean daily flow was 46.2 cumecs is shown, and the preceding and following mean daily flows were 62.4 and 33.1 cumecs, respectively. In such a case the mean daily residual flow, assuming the hydro scheme was taking 23 cumecs, would be 23.2 cumecs.
24. Natural flows at two-hourly intervals between 8 am and 6 pm were 48, 44.3, 42.6, 40.1, 39.7, and 39.1 cumecs (blue line), and that if the scheme was taking 23 cumecs, the residual flows (red line, in part underneath the green line) down the Morgan Gorge would correspond to 25, 21.3, 19.6, 17.1, 16.7, and 16.1 cumecs, respectively. These residual flows would not be suitable for a descent of the Morgan Gorge, they are too variable and too much outside the narrow flow range suitable for running the gorge.
25. In Figure 6 a situation where a mean daily flow was 41.5 cumecs is shown, and the preceding and following mean daily flows were 79.2 and 62.4 cumecs, respectively. In such a case the mean daily residual flow, assuming the hydro scheme was taking 23 cumecs, would be 18.5 cumecs.

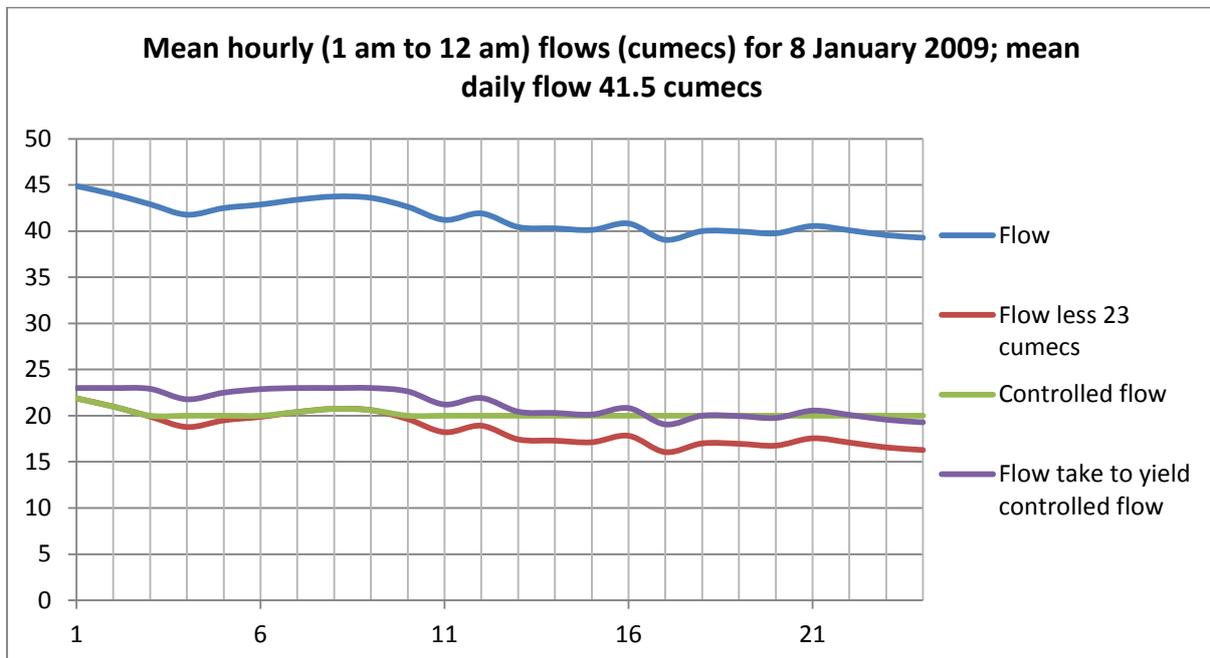


Figure 6.

26. Natural flows at two-hourly intervals between 8 am and 6 pm were 43.7, 42.6, 41.9, 40.3, 40.8, and 40 cumecs (blue line), and that if the scheme was taking 23 cumecs, the residual flows (red line, in part underneath the green line) down the Morgan Gorge would correspond to 20.7, 19.6, 18.9, 17.3, 17.8, and 17 cumecs, respectively, but would drop to 16 cumecs at one point in between (5 pm). These residual flows might be suitable for a descent of the Morgan Gorge, but they might be too variable and too much outside the narrow flow range suitable for running the gorge.
27. In Figure 7 a situation where a mean daily flow was 46.5 cumecs is shown, and the preceding and following mean daily flows were 11.2 and 149 cumecs, respectively. In such a case the mean daily residual flow, assuming the hydro scheme was taking 23 cumecs, would be 23.5 cumecs, a flow a little higher than the 17.5 to 22.5 cumec flow band though to be suitable for running the Morgan Gorge.

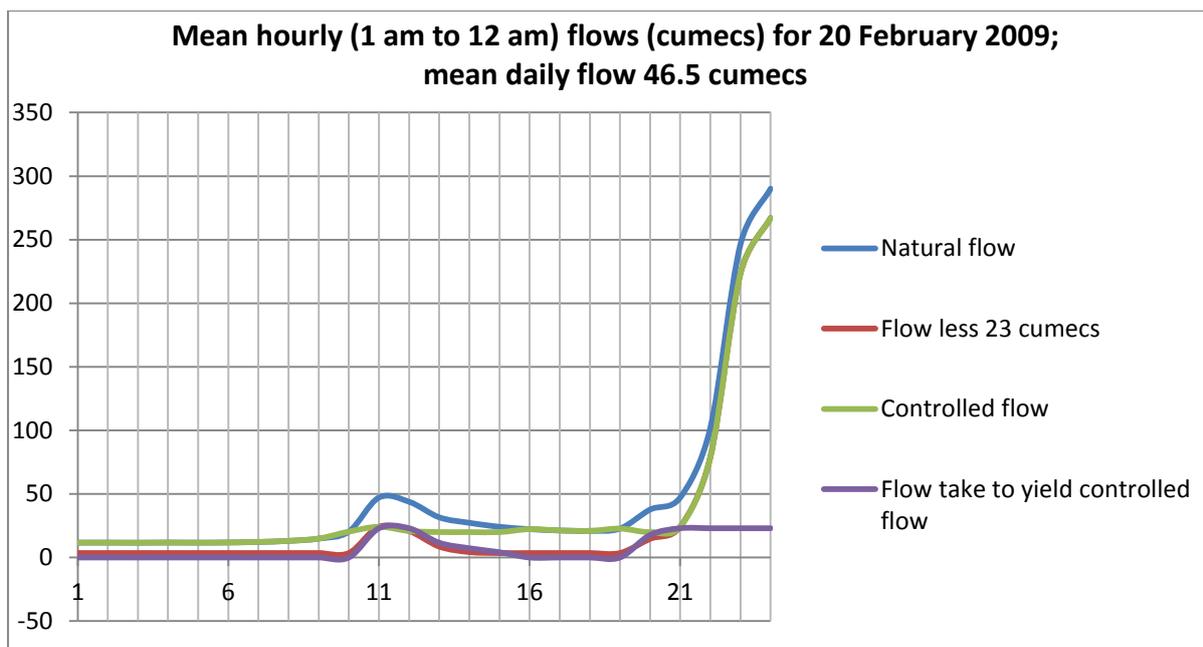


Figure 7.

28. Natural flows at two-hourly intervals between 8 am and 6 pm were 13.1, 20.4, 43.9, 27.3, 22.3 and 20.9 cumecs with a peak of 47 cumecs at 11 am (blue line), and that if the scheme was taking 23 cumecs, the residual flows (red line, in part underneath the purple line) down the Morgan Gorge would correspond to 3.5, 3.5, 20.9, 4.3, 3.5, and 3.5 cumecs, respectively, but would rise to 24.1 cumecs at 11 am. These residual flows would not be suitable for a descent of the Morgan Gorge; they are too variable and outside the narrow flow range suitable for running the gorge.
29. These preceding analyses have shown that although some daily mean flows might suggest that the ability to catch residual flows suitable for kayaking down the Morgan Gorge still exists once the scheme is installed, it is not necessarily guaranteed, and that it depends on the prevailing flow patterns and their stability.
30. Thus, the presence of the scheme does not necessarily still mean that the Morgan Gorge could be run, showing that the scheme has an even bigger impact on loss of kayaking values, unless no-take days are made available where suitable natural flows or controlled flows are allowed to run down through the Morgan Gorge.

Availability of river once scheme installed – are excess higher flows able to be used by kayakers whilst the scheme is running, if the scheme can produce controlled flows?

31. A question that arises for kayakers if the scheme were to go ahead is ‘could the scheme ensure an even controlled flow throughout the kayaking day in Morgan Gorge?’ Proponents for the scheme might suggest that the scheme is of benefit to kayakers if it could produce uniform controlled flows throughout the day.
32. At present it is not known what flexibility the hydro scheme might have in its ability to take variable flows throughout the day, how responsive it might be to real time gauged flow data and changing its flow take, or what minimum flow it might be able to usefully operate at

before having to be shut down because the flow available was too small for the generators to run. These factors would have to be confirmed by Westpower, if in fact it is possible.

33. To analyse how this might help kayakers, let's assume the scheme can effectively operate at flows of between 3 and 23 cumecs and where flow takes can be changed throughout the day so that the scheme can produce controlled flows of the right value for kayakers down the Morgan Gorge. Some illustrations of how this might work are shown in Figures 4 to 9.
34. For the flows on 2 March 2009 shown in Figure 4, if the scheme could be run in real time to try to produce a controlled flow of 20 cumecs (green line), where variable flows were taken throughout the day (purple line), then the Morgan Gorge would be accessible to kayakers from 9 am (20.1 cumecs) to 6 pm and beyond at stable flows of 20 cumecs. Other suitable uniform flows, e.g., 22 or 19 or 18 cumecs could be possibly 'dialed' up in a similar fashion, although the times when they would be available would be different.
35. For the flows on 10 January 2009 in Figure 5, if the scheme could be controlled in real time to try to produce a controlled flow of 20 cumecs (green line) then the Morgan Gorge would be accessible to kayakers from 10 am (21.3 cumecs) to 6 pm and beyond at stable flows of 20 cumecs.
36. For the flows on 8 January 2009 in Figure 6, if the scheme could be controlled in real time Morgan Gorge could be accessible to kayakers from 8 am (20.7 cumecs) to 6 pm and beyond at stable flows of 20 cumecs. Other suitable flows, e.g., 19 or 18 cumecs could be possibly 'dialed' up in a similar fashion by reducing the variable flow takes throughout the day.
37. For the flows on 20 February 2009 in Figure 7, if the scheme could be run in real time to try to produce a controlled flow of 20 cumecs (green line), where variable flows were taken throughout the day such as shown by the purple line, then the Morgan Gorge would be accessible to kayakers from 12 pm (20.9 cumecs), rising from 20 cumecs at 3 pm to 22.3 cumecs at 3 pm and dropping back to 20.9 cumecs at 6 pm. The flows would not be as stable as on other occasions and if paddlers were in the area and had consulted weather maps before their attempted descent they likely would not have ventured into the area recognising that rainfall was predicted (recognised by the rapidly rising flows later in the day). In addition, paddlers would likely not have ventured in to use the river on such a day as they would have no real way of knowing just when and how the predicted rain would fall and whether it would give suitable river flows, especially because on preceding days the natural flows were all too low anyway to run the Morgan Gorge. In other words the flows could have been suitable in hindsight but could not have been used based on foresight.
38. Thus, if the scheme can be operated in such a manner as outlined in 31. to 33. and produce controlled flows, some higher flow days thought to be suitable based on mean daily flows, but shown to be unsuitable when mean hourly flows were analysed (Figures 4, 5, and 7), could be rendered suitable for kayakers running Morgan Gorge.

Availability of river once scheme installed – can the scheme likewise produce controlled flows suitable for kayaking on other days?

39. If flow days were to be made available to kayakers, extra flow days over and above the number indicated in Table 1 (data not shown) could be made accessible to kayakers on the Morgan Gorge if the hydro scheme could be operated in a manner where flows between 3

and 23 cumecs could be taken from the river on a continuously changing basis. This is illustrated by considering another example.

40. Data in Figure 8 show flows for 25 February 2012 where the daily mean flow was 28.1 cumecs, and where on the preceding and following days the mean daily flows were 52.9 and 22.1 cumecs, respectively. If the flows could be controlled by the scheme, then it is clear from Figure 8 that a controlled flow of 20 cumecs (or other suitable flows) could be produced throughout the whole day in Morgan Gorge.

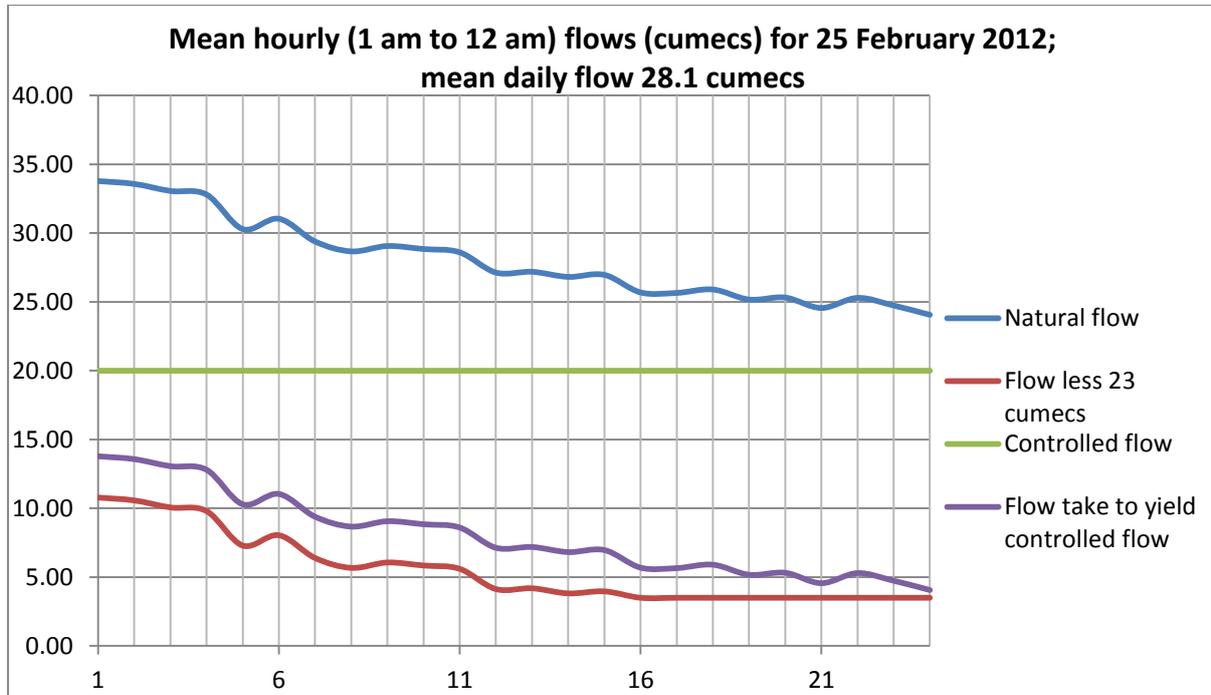


Figure 8.

41. In one final example (Figure 9), in addition to previous examples, it is apparent that the scheme will not always be able to produce a smooth controlled flow. This could happen, for example, when the mean daily flow is similar to that wanted by kayakers.

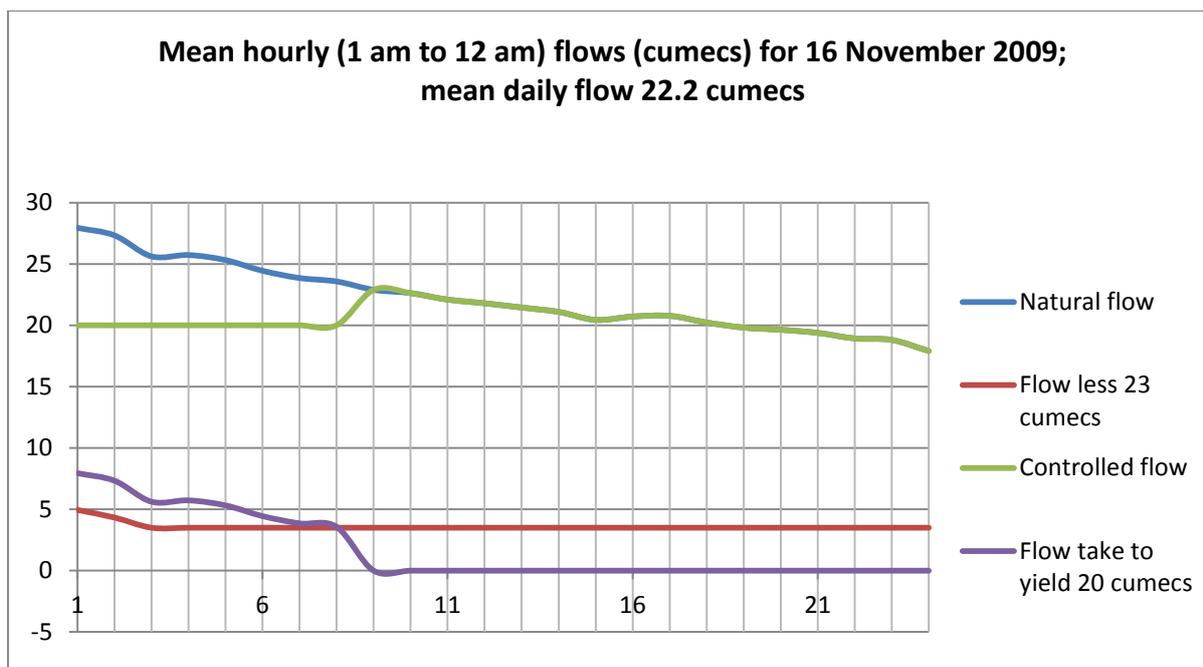


Figure 9.

42. Data in Figure 9 show flows for 16 November 2009 where the daily mean flow was 22.2 cumecs, and where on the preceding and following days the mean daily flows were 57.1 and 16.4 cumecs, respectively. If the flows could be controlled by the scheme, then it is clear from Figure 9 that a uniform controlled flow of 20 cumecs (or other suitable flows) could not be produced throughout the whole day in Morgan Gorge. If the scheme could be run in real time to try to produce a controlled flow of 20 cumecs (green line), where variable flows were taken throughout the day such as shown by the purple line, between 8 and 9 am taking of water by the scheme would have to cease as the minimum take by the scheme (3 cumecs) had been reached. Then the flows that would result would return to the natural flows (blue line partly underneath the green line) meaning that the Morgan Gorge would be accessible to kayakers from between 10 and 11 am (flows were 22.6 and 22.1 cumecs, respectively) and slowly falling to 20.2 cumecs at 6 pm.

Possible flow releases or no-take or controlled flow days for kayakers – need for further information from Westpower

- 43. It is clear from the analyses presented, that depending on how the proposed Waitaha Hydro scheme can be or is to be operated, that the loss of kayaking resource in the Morgan Gorge on the Waitaha River may be all but complete, i.e., possibly a total loss.
- 44. Thus, it is important to gain a clear understanding from Westpower how the proposed scheme will be able to operate, what range of flows takes will occur over (specifically what the minimum flow take will be), and particularly whether the scheme will be responsive enough in real time to produce smoothed controlled flows in the Morgan Gorge should flow releases be considered as part of mitigation.
- 45. It is also very clear that Westpower need to indicate how many no-take or controlled flow days they may be prepared to offer in mitigation for the development of the scheme, should

it go ahead. Further information on these matters is needed so that Whitewater NZ can truly confirm the impacts of the scheme on kayaking values.

Version 1 (28/2/14)

D A Rankin, 28 February 2014

APPENDIX VI: THE DOC WEST COAST TE TAI O POUTINI CONSERVATION MANAGEMENT STRATEGY AND ITS RELEVANCE TO THE CONSIDERATION BY DOC AND THE MINISTER OF CONSERVATION OF THE POSSIBLE GRANTING OF A CONCESSION FOR WESTPOWER TO DEVELOP A RUN-OF-THE-RIVER HYDRO SCHEME ON THE MORGAN GORGE ON THE WAITAHA RIVER

A DOCUMENT PREPARED FOR WHITEWATER NZ BY THE CONSERVATION OFFICER FOR WHITEWATER NZ

BACKGROUND

On pages 8 and 69 of the Draft Report prepared by R Greenaway and Associates, on the Westpower Waitaha Hydro Investigations Recreation and Tourism Assessment of Effects⁹, the authors state

'The DOC CMS (Conservation Management Strategy¹⁰) defines the setting as back-country remote, and a hydro-development is not compatible with this recreation management category. However, the outcomes set out in the CMS for the Hokitika Place will still be achieved with the Scheme in place.'

This statement is made in the executive summary and in section 7.5.1 when addressing the Planning Framework in the Effects and Mitigation summary (section 7.5) in the report.

On page 58 of the Draft Report in section 7.1 when starting discussion on the potential effects of the scheme (section 7) the following is stated.

'7.1 Statutory Planning Provisions

The assessment responds to evaluation and resource management issues – from a recreation perspective – identified in the West Coast Te Tai Poutini Conservation Management Strategy (CMS), the RMA and regional and district plans prepared under the RMA.

The CMS defines several issues requiring assessment in the DOC concession application process:

***DOC CMS (2010) 3.7.2 (1)** When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:*

a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;...

e) The natural character within the setting of the activity should be maintained.

The Scheme falls largely within the Waitaha Forest, which is held as Stewardship Area and is subject to the Conservation Act 1987, including section 25 which provides that *"Every stewardship area shall*

⁹ R Greenaway and Associates, Westpower Waitaha Hydro Investigations Recreation and Tourism Assessment of Effects, Prepared for Westpower Ltd, Draft for consultation only, Feb 2014.

¹⁰ Department of Conservation (2010). *West Coast Te Tai O Poutini Conservation Management Strategy 2010-2020* (2 vols). Department of Conservation West Coast Tai Poutini Conservancy, Hokitika.

so be managed that its natural and historic resources are protected”

The “*maintenance and enhancement of amenity values*” is a Section 7 matter under the RMA. ‘Amenity values’ are defined in the RMA as, “those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes”. Natural character values of rivers and their margins is a Section 6 matter, and these values are of relevance to recreation values..”

However, no mention is made in the report of the section and Policies addressing utilities later on in the CMS (Part 3.7.11), which are also relevant to the discussion.

The report then goes on to provide more details about what objectives and policies the West Coast Regional Policy Statement (2000) and Westland District Plan have that are relevant to the effects of the proposed hydro scheme.

Whether the first part of the statement on pages 8 and 69 of the Draft report (footnote 1) mentioned earlier is sufficient therefore to preclude DOC from considering an application for a concession for Westpower to develop the Waitaha Scheme will depend on what the DOC CMS states.

I can find no part of the CMS that explicitly states what Greenaway and Associates have stated in the first sentence of their quote on pages 8 and 69. Therefore an analysis of the DOC CMS has been undertaken to see if this might be the case.

The analysis has not been undertaken by an expert in such matters, so important points may have been missed, but the analysis may still be helpful to gain a flavour of what is stated in the CMS. What I have done is largely excise relevant pieces of the strategy to inform what the case might be. I have then tried to draw some conclusions from the analysis.

One can skip the following analysis section if you wish and move to the discussion section on Page 19. Key phrases excised from the CMS and presented in the analysis section below are repeated in this discussion section.

ANALYSIS OF THE CMS

General Comments on the CMS

The DOC CMS (2010) is a large document. Quotations from the document are in red text. Please note that key relevant points or statements are underlined but that they are not underlined in the CMS.

On page 5 guidelines outline how to find information about activities state:

1.3.1 Information about Activities

To find information about the management of a particular activity, refer to the contents page and check for references in the CMs in each of the following ways:

- refer to Map 5 (Part 4) to find out in which CMs Place/s the proposed activity • will be undertaken.
- read Part 4, Chapter 4.1 to check that the proposed activity is consistent with the • Conservancy-wide vision.
- read the information on the relevant Place/s in Part 4, Chapter 4.2 to check that •

the proposed activity is consistent with the desired outcomes for that location.

- refer to the type of activity in Part 3. Check any cross-references provided in those sections.
- if the activity is a recreation or tourism activity, refer to the relevant recreation outcome maps in Part 4 to determine the appropriate recreational zone where the proposed activity will take place and then refer back to Chapter 3.5 and any other relevant provisions in Part 3.

It is important to remember that this CMS provides for the integrated management of the West Coast *Tai Poutini* Conservancy, so for any particular location or activity several different sections of the CMS will be relevant. Outcomes, objectives and policies in any particular section may be influenced by outcomes, objectives and policies in other sections. In some cases it may be necessary to read and consider the strategy and its provisions as a whole.

In part 1.4 Interpretation on page 5 some relevant policies applying to all parts of the CMS are given:

1. Only the operative parts of this CMS will have statutory effect. The operative parts are limited to objectives and policies (see Volume I, Parts 1, 3 and 5), Conservancy-wide outcomes (see Volume I, Part 4, Chapter 4.1), Place outcomes (see Volume I, Part 4, Chapter 4.2), key performance indicators and milestones (see Volume I, Part 5, Chapters 5.2 and 5.3), and the glossary. The operative parts of this CMS recognise the need to ensure that decisions are not predetermined by restricting the possibilities provided for in the legislation, and recognise the constitutional role of the Minister of Conservation and other decision-makers.

.....

4. In the event of doubt, the operative parts of the CMS will be interpreted in favour of the intrinsic values identified at specific Places (see Volume I, Part 4, Chapter 4.2).

5. The words 'will', 'should' and 'may' have the following meanings:

- a) Policies where legislation provides no discretion for decision-making or a deliberate decision has been made by the Minister to direct decision-makers, state that a particular action or actions 'will' be undertaken.
- b) Policies that carry with them a strong expectation of outcome, without diminishing the constitutional role of the Minister and other decision-makers, state that a particular action or actions 'should' be undertaken.
- c) Policies intended to allow flexibility in decision-making, state that a particular action or actions 'may' be undertaken.

Thus the various parts of the document relevant to the possible development of the proposed hydro scheme and pertaining to recreation in the 'Hokitika Place' (that part of the conservancy where the Waitaha River is located) have been examined. The structure recommended in Part 1.3.1 of the CMS has been used to evaluate the compatibility of the proposed hydro development within the CMS framework.

Desired Outcomes for the Hokitika Place

The proposed hydro scheme will be located in the 'Hokitika Place'.

Under Part 4.0 Desired Outcomes page 177 general guidance as to what the conservancy will be like in 2020 is provided including the words:

.....

The objectives and policies presented in Part 3 apply to the whole Conservancy and should be referred to in conjunction with Part 4. A range of these policies will be required in order to attain each of the particular desired outcomes and to achieve integrated solutions to complex issues and problems that arise in each Place. In addition to advocacy or management by the Department, implementation may involve working with Poutini ngāi tahu/ngāi tahu, local communities, private land owners, volunteers and other people and organisations.

Applications for all activities requiring authorisation from the Department or Minister of Conservation will be assessed against the outcomes described in chapters 4.1 and 4.2. Consideration will be given to whether a proposed activity is consistent with the desired outcomes and whether conditions should be applied in order to ensure the proposed activity does not detract from the values of the Place.

Under 4.1.1 page 177, still under general guidelines, the following is stated:

4.1.1 The West Coast Tai Poutini Conservancy in 2020

Throughout the Conservancy, management undertaken by the Department focuses on:

- identification, conservation, protection and restoration of natural, historical and cultural heritage values; and
- provision for appropriate recreation, use and enjoyment of public conservation lands.

Within public conservation lands, natural, historical and cultural heritage is protected, maintained and enhanced. People highly value this heritage, understand the need for its protection and are able to enjoy and appreciate this heritage in appropriate ways.

.....

Conservation management reflects the importance of particular public conservation lands for Poutini ngāi tahu, local communities and recreational users.

.....

Business opportunities and provision of public goods or services that are consistent with conservation outcomes are enabled.

On page 180 under 4.1.1.3:

4.1.1.3 Identification and assessment of conservation values in 2020

The Department has a more complete understanding of the Conservancy's natural, historical and cultural heritage values, their significance and their management requirements. Many of these values are defined, identified and their relative significance assessed. the information available on natural, historical and cultural

heritage values is updated as necessary.

On page 181/182:

4.1.1.4 Proactive management of conservation values in 2020

The Conservancy's natural, historical and cultural heritage values are proactively managed, rehabilitated, restored or enhanced.

.....

Where practicable, natural heritage is improved to a more natural state.

.....

Historical and cultural heritage located within public conservation land is protected from unauthorised human uses. Actively managed historic places are maintained in a stable or improved condition. Research and inventory work significantly increase the Department's knowledge of historical and cultural heritage values within the Conservancy, facilitating selection of the best possible representative range of assets for active management. This representative range of historical and cultural heritage is conserved and interpreted.

.....

4.1.1.5 Protection of conservation values from adverse effects of authorised uses in 2020

The Department safeguards the Conservancy's natural, historical and cultural heritage values by identifying and taking appropriate action to avoid or otherwise minimise adverse effects of human use or management. Threats to, or adverse effects on, natural, historical and cultural heritage values are identified and assessed accurately and in a timely manner. Potential threats and risks to natural, historical and cultural heritage values are avoided or are managed in ways that are consistent with the desired outcomes for Places described in Chapter 4.2 of this CMs.

See also Chapter 3.5 authorised uses of Public Conservation land
Chapter 3.6 People's Benefit and enjoyment, Chapter 3.7 other uses of Public Conservation land

4.1.1.6 Recreational use and enjoyment of public conservation lands in 2020

.....

A wide range of quality recreation opportunities are available within the Conservancy. low-impact recreation is permitted in most places. User numbers, activities and associated infrastructure are managed to limit adverse effects on indigenous ecosystems and wildlife, to protect the natural, historical and cultural integrity of public conservation lands, and to protect people's recreational experiences.

.....

Under 4.2 on page 183:

4.2 DESIRED OUTCOMES FOR PLACES WITHIN THE CONSERVANCY

For the purposes of this CMs, the entire West Coast *Tai Poutini* Conservancy has been divided into seven land-based Places (Karamea, Kawatiri, Paparoa, inangahua, Māwhera, Hokitika and te Wāhi Pounamu) and one marine Place. the land based division of the West Coast *Te Tai o Poutini* (including both public and private land) into adjacent geographic areas (Places) has been chosen for practical management

reasons. There are many conservation management issues that are common to the whole Conservancy, although these issues may have different emphases in the successive Places. For an overview of the location of the eight Places, see Map 5.

Chapter 4.2 identifies desired outcomes for each Place in the West Coast *Tai Poutini* Conservancy. While most of these outcomes relate directly to public conservation lands, some also relate to the Department's responsibilities for conservation advocacy and the protection of wildlife and freshwater fisheries on lands and waters of all tenures. Sections 4.2.1 to 4.2.7 describe the desired outcomes for each of the seven land-based Places, examining their indigenous biodiversity, geological features and natural landscapes, human history, cultural values of significance to Poutini ngäi/ngäi tahu and recreational opportunities. Individual maps (Maps 6-19) of each landbased Place show the locations of public conservation lands, sites that are actively managed historic places or priority sites for biodiversity management as at 2010, and recreational zones. The desired outcomes relating to the marine Place (see Map 20) are presented in section 4.2.8. the Conservancy-wide outcomes presented in Chapter 4.1 apply to each CMs Place.

.....

Under 4.2.6 the desired outcomes for the Hokitika Place are described. Key relevant features include the following:

4.2.6.1 Place description

.....

Hokitika is split in two both geologically and ecologically by the alpine Fault, which lies about 20 km west of the crest of the Main Divide. east of the fault, the schist mountains and valleys are rugged and broken, and a large portion is protected as public conservation land.

.....

4.2.6.3 Geodiversity, landforms and landscapes in 2020

The overall character of geodiversity, landforms and landscapes in Hokitika Place is maintained in its 2010 condition, a summary of which is presented below.

.....

4.2.6.4 Indigenous biodiversity

.....

Indigenous biodiversity in 2020

.....

In areas of high ecological and recreational values (such as the river flats of the upper taramakau and upper styx valleys), shrublands and forest stands are recovering from a history of grazing.

All geothermal sites and surrounding landscapes retain their natural character and are not irreversibly altered in any way (see section 3.6.4.8).

.....
Large and relatively undisturbed river systems, including the Hokitika river, have retained connectivity to their floodplains. Headwater catchments continue to provide important habitat for blue duck *whio*.

4.2.6.7 People’s benefit and enjoyment in 2020

Categories⁵⁹ of recreational opportunities available in the Hokitika Place (Map 17) include:

- frontcountry sites located adjacent to formed and maintained • roads;
- backcountry- remote zones;
- remote zones; and
- the gazetted Mt Adams • Wilderness area (see Maps 17 and 19a – note that the majority of this area is located within the Wāhi Pounamu Place).

Hokitika Place provides a number of scenic and historic walks, a range of opportunities associated with its rivers and larger lakes (especially lakes Kaniere and Mahināpua), and a comprehensive network of backcountry facilities (almost all the valleys of the backcountry contain tracks, huts and bridges).

Concessionaires provide recreational opportunities that complement those provided by the Department and/or enhance people’s enjoyment, understanding and appreciation of natural, historical or cultural values. Concession activities are generally of low impact and are sympathetic to, and in keeping with, the conservation values of the particular site.

Footnotes⁵⁸ this is not a comprehensive list of all values of cultural significance to Poutini ngāi tahu/ngāi tahu in this Place; such information is held by the relevant Papatipu rūnanga. In addition to appendix 1 of this CMs, two documents (which were in draft form as at 2010) provide further details about the cultural values of the Hokitika place: the rūnanga o ngāti Waewae natural resource Management Plan and the rūnanga o Makaawhio natural resource Management Plan.
⁵⁹ section 3.6.2 includes a description of each ‘recreation outcome zone’ category.

.....

Backcountry-remote zone, remote zone and gazetted wilderness areas

New Zealanders continue to regard the extensive Hokitika backcountry as the country’s backcountry adventurer ‘capital’, because of the comprehensive network of backcountry tracks, routes and huts. Opportunities range from multi-day valley and trans-alpine tramping via remote and challenging terrain, to day tramps and weekend trips to accessible huts or natural hot pools (the latter are found in several valleys, including at Cedar Flats and in the taipo valley; see section 3.6.4.8). A number of tramping tracks and historic huts are associated with historic routes across the

.....
Hokitika is a world-renowned rafting and whitewater kayaking destination. The Styx, Toaroha and Kakapotahi rivers and Totara lagoon are maintained as key places for kayaking that are free from high numbers of other users during kayaking trips (see section 3.6.4.10).

Irregular or occasional aircraft landing concessions may be granted throughout the backcountry-remote zone and the remote zone (see Map 17). Concessions may be granted for regular aircraft landings within the backcountry-remote zone where adverse effects on conservation values, recreational users, remote or wilderness values can be avoided or otherwise minimised. regular landings may occur for the purpose of positioning backcountry recreationists (including hunters, rafters and kayakers) or for scenic landings (including scenic snow landings). regular landing concession conditions specify restrictions on landing sites and frequency of landings. (see section 3.6.4.2).

In summary, general statements in the Hokitika Place recognise recreation values including kayaking on rivers in the area, including in the backcountry-remote zones that encompass the Waitaha River, where the proposed hydro scheme will be located.

Management Objectives and Policies

As stated on page 27:

3.0 MANAGEMENT OBJECTIVES AND POLICIES

Public conservation lands on the West Coast *Te Tai o Poutini* are valued for the intrinsic qualities of their natural heritage (such as natural landscapes, landforms, geology, waterbodies and indigenous biodiversity) and historical and cultural heritage and the wide range of recreational opportunities they provide. Under the Conservation act 1987 and other legislation administered by the Department, management of all public conservation lands should protect and preserve these values. The desired future condition of these conservation values is described in Part 4 of this CMs. Part 3 outlines how the Department intends to achieve the outcomes presented within Part 4. The objectives and policies presented within Part 3 apply across the whole Conservancy (see Part 1, Chapter 1.4).

Part 3 is divided into eight management themes that apply across the entire Conservancy, as summarised below:

Working in Partnership with Tangata Whenua
Relationships with People and Organisations
Natural Heritage Conservation
Historical and Cultural Heritage Conservation
Authorised Uses of Public Conservation Land
People's Benefit and Enjoyment
Other Use of Public Conservation Lands
Other Management Responsibilities

Objectives and Policies under these management themes define guidelines for managers and users alike. Objectives and Policies relevant to the proposed Waitaha Scheme and kayakers use of the resource are to be found under the management themes of Natural Heritage Conservation (Geodiversity and Landscapes), Authorised Uses of Public Conservation Land, People's Benefit and Enjoyment, Other Use of Public Conservation Lands, and Other Management Responsibilities.

Under the theme of Natural Heritage Conservation, Geodiversity and Landscapes are relevant to kayakers interests. Discussion from page 91 onwards is relevant, some key comments are underlined:

3.3.4 Geodiversity and Landscapes

3.3.4.1 Geodiversity and landscape values

Geodiversity values

Geodiversity encompasses minerals, rocks, soils, geothermal resources and landforms and all of the processes which have formed these geological features. geodiversity is thus an inherent component of natural landscapes, which are the visual expression of the cultural, physical and biological processes operating in the environment.

.....

Landform and Landscape Values

Landforms are the product of geological and physical forces, such as continental uplift, water movement and erosion. Landscapes are the visual expression of the cultural, physical and biological processes operating in the environment. Many places have historical, cultural or aesthetic values that may be difficult to quantify. There is therefore a need to recognise that some landforms or landscapes may be special for particular groups of people, but not for others.

.....

... lowland karst in new Zealand; some are also of international significance. Many landforms also have cultural, aesthetic and recreational significance. Deeply incised river gorges, lakes, caves and glacier valleys are just some examples of typical West Coast Te Tai o Poutini landforms valued highly by new Zealanders and international tourists for their scenic value and recreational opportunities.

.....

3.3.4.2 Threats to geodiversity and landscapes

The West Coast Te Tai o Poutini is one of the few places in new Zealand where a range of relatively unmodified natural landscapes still exists. landforms, landscapes and geologically significant sites are vulnerable to the effects of change from a variety of human activities. Examples of activities that potentially may adversely affect these values include, but are not limited to: excavation and mining; earthworks and roading; development of utilities, infrastructure or other buildings in natural settings/ on skylines; subdivision; wetland drainage; native vegetation clearance; trampling by livestock or humans; permanent moorings/anchorages on natural lakes; and excavation, diversion or other modification of geothermal resources (e.g. springs or hot pools). Natural processes, such as erosion, flooding, slumping may also threaten landforms, landscapes and geologically significant sites.

.....

3.3.4.3 Management of geodiversity and landscapes

Geopreservation is the conservation of geodiversity (landform, geological and soil features) and the protection of processes which give rise to these features. landscape conservation aims to maintain or enhance an area's specific indigenous characteristic, ecological, historical and cultural values. Where change is proposed, landscape conservation seeks to ensure that the proposed change is integrated with appropriate regard to the effects the change will have on the landscape's broader character.

.....

Objective

1. To protect geodiversity and landscapes from adverse effects of human use or management.

Policies

1. The Department should seek to protect and preserve the natural character, integrity and values of landscapes, landforms, geological and soil features and processes in all aspects of conservation management.

2. Landscape assessments should be conducted on an as-needed basis, e.g. when considering proposals to develop utilities on public conservation land.

.....

Under the theme of Authorised Uses of Public Conservation Land, pages 111-112:

3.5 AUTHORISED USES OF PUBLIC CONSERVATION LANDS

Conservation legislation provides for people to use public conservation lands in a manner compatible with the protection of conservation values and enjoyment by other people. The appropriateness of different uses of public conservation lands is governed by legislation, general policies and relevant conservation management strategies and management plans. Most non-commercial use by the public, accessing public conservation lands on foot, does not require authorisation. Public access to public conservation lands is also free of charge; however charges may be made for the use of accommodation, facilities and services (Policy 9.1(g) Conservation general Policy 2005).

.....

Part 3B of the Conservation act came into force in 1996, creating a single set of provisions that apply to concessions under the Conservation act 1987, national Parks act 1980, reserves act 1971 and Wildlife act 1953. These provisions affect all types of uses of public conservation lands except mineral exploration, prospecting and mining, which are authorised under the Crown Minerals act 1991. The effects of different uses can vary widely, as can their commercial nature. This means that each application must be assessed on its merits. although the primary consideration when assessing a proposal is its effect on the natural, historical and cultural heritage values being protected in that area, its effect on other uses, including recreational opportunities, must also be considered.

The relative significance of all conservation values in West Coast *Te Tai o Poutini* public conservation lands has not been fully assessed. Ongoing assessment is likely to result in the discovery that some sites and resources have highly significant values and, conversely, that other sites and resources are less significant (e.g. less rare or endangered) than previously thought. Assessing each individual application on its particular merits may risk overlooking the cumulative effects of a number of authorities for use issued in respect of a particular area or opportunity, therefore cumulative effects need to be taken into account when considering each application. Improved methods for assessing effects are likely to emerge over time.

.....

The objectives and policies in Chapter 3.5 apply to all applications for authorisations to carry out private or commercial activities within public conservation lands located in the West Coast *Tai Poutini* Conservancy. Additional policies that apply to specific recreation and tourism activities, facilities or services are presented in Chapter 3.6, while Chapter 3.7 outlines additional policies for other types of activities.

Objectives

.....

3. To protect recreational opportunities from adverse effects of authorised uses of public conservation lands.

.....

Policies

1. The cumulative effects of other authorities for use, issued in respect of a particular area or opportunity, should be taken into account when considering new applications for those areas or opportunities.

2. When approving concessions or other authorisations, specific conditions may be applied as deemed appropriate.

.....

Under the theme People’s Benefit and Enjoyment, pages 113-147, various aspects of recreation and Objectives and Policies are discussed and presented.

3.6 PEOPLE’S BENEFIT AND ENJOYMENT

People of all ages, cultures and backgrounds enjoy public conservation lands. Recreation on public conservation land increases peoples’ appreciation of the conservation values and contributes to mental, spiritual and physical wellbeing.

.....

3.6.1 Recreational Opportunities

3.6.1.1 Provision and management of recreational opportunities

.....

All public conservation lands on the West Coast *Te Tai o Poutini*, including national parks, have been zoned for different types and levels of recreational use (see Maps 7, 9, 11, 13, 15, 17 and 19a-c). The Department’s recreational opportunities spectrum (ros) framework was used as a basis for creating these ‘recreation outcome’ maps, where public conservation lands are divided into five different zones: (1) gazetted wilderness areas [pink]; (2) remote [purple]; (3) backcountry-remote [yellow]; (4) frontcountry [green dots]; and (5) intense interest sites [red dots]. These zones cover the full spectrum of recreational settings and associated opportunities, as described in sections 3.6.1.2 to 3.6.1.6. Detailed descriptions of recreation outcomes for specific locations within each Place are provided in Part 4, Chapter 4.2, under the subheading ‘recreation and tourism in 2020’.

.....

Objectives

1. To provide a comprehensive range of recreational opportunities that enable people with different capabilities and interests 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.

.....

Policies

- 1. The Department’s recreational zoning framework should be used to identify and manage an appropriate range of recreational opportunities within the Conservancy’s public conservation lands and to minimise conflicts between different types of recreational uses.
- 2. The Department’s recreational zoning framework and appropriate restrictions on mechanised access and use should be implemented in order to safeguard natural, historical and cultural heritage and the ability of the public to experience solitude, peace and natural quiet in public conservation lands.
- 3. Recreation opportunities that are based on the special character and features of West Coast *Te Tai o Poutini* public conservation lands should be provided, taking into account existing opportunities available elsewhere in the country, both within and outside of public conservation lands.**

.....

11. The Department should proactively engage with local communities, conservation, recreation and tourism industry associates to identify their expectations for recreational facilities and services on or adjacent to public conservation land.

.....

3.6.1.4 Backcountry-remote zone

The 'backcountry-remote' zone provides opportunities to access extensive natural settings where facilities are provided but a considerable degree of physical challenge, self-reliance and isolation is involved. although users of these areas usually travel in groups for company and safety, the expectation is that groups will generally be small and that encounters with other groups will be infrequent, except on a limited number of high-use tracks (see appendix 7) and rivers (see section 3.6.4.10). Huts

.....

Objectives

1. To provide access to a range of recreational opportunities via facilities that enable people to enjoy challenging natural settings in the backcountry.

2. 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;**
- b) groups of recreational users are generally small and encounters with other groups are infrequent (except on a limited number of high-use tracks and rivers);**
- c) huts and tracks provide the opportunity for solitude for those who seek a greater sense of isolation and challenge, but still need the security of some facilities; and**
- d) overnight use is more intensive at some sites and at certain times of the year.**

Policies

1. The backcountry-remote zone should be managed to meet the desired outcomes described in Part 4 of this CMS and in any relevant management plans, providing facilities and services that cater principally for the needs, interests and abilities of most backcountry comfort seekers and backcountry adventurers.

.....

3.6.4 Recreation and Tourism Activities

3.6.4.1 Overview

People are attracted to public conservation lands by the relatively unspoilt, unpolluted and uncrowded environment, impressive natural scenery and accessible outdoor recreation opportunities. Positive aspects of recreational use of public conservation lands include enjoyment, inspiration, increased understanding of conservation and other benefits people gain from their experiences. Various actual or potential physical and social effects may be associated with these visits.

The objective presented below applies to all recreation and tourism activities undertaken within the Conservancy's public conservation lands. Sections 3.6.4.2 to 3.6.4.18 set out policies for a number of common recreation and tourism activities, including activities for which a concession is required.

Objective

1. To provide opportunities for people to undertake a wide range of recreation and tourism activities at places and in ways that optimise the quality of the experiences available, whilst avoiding or otherwise minimising adverse effects on conservation values and conflicts with other users.

.....

3.6.4.10 Non-powered water craft use on rivers, lakes and lagoons

Rivers on the West Coast Te Tai o Poutini provide for a wide range of rafting and kayaking opportunities. Canoeing and sailing activities are popular on some lakes and lagoons. Concessions are required to undertake guided trips using nonpowered water craft and for aircraft landings to drop off people and gear on public conservation land.

Policies

1. Group sizes for concessionaire-guided rafting/kayaking activities (including clients, guides and the required safety kayaker/s) should not exceed:

- i.) 15 people per group for overnight trips (with the exception of overnight trips on the Landsborough River from Kea Flat and downstream, where group size should not exceed 20 people); or**
- ii) 20 people per group for day trips.**

Where air access is required for these activities, a maximum of five aircraft landings per trip may be authorised to drop off people and gear. For rafting, a maximum of three rafts per trip may be authorised.

2. If demand for guided rafting/kayaking trips increases, a booking system may be implemented to manage levels of use on a river.

3. Commercial use of rivers should not exceed one trip per river per day.

The development of hydro facilities would come under section 3.7 page 147:

3.7 OTHER USE OF PUBLIC CONSERVATION LANDS

People use public conservation lands for a wide variety of purposes not associated with the conservation of natural or historical heritage, including commercial use (concession activities); collection of driftwood, stones/gravel etc; infrastructure for utilities; prospecting, exploration and mining; and customary use of indigenous materials.

Chapter 3.7 describes specific management strategies for the main types of private or commercial use (other than recreation or tourism use) that currently occur within the Conservancy. It sets out additional policies that apply to applications for, and management of, authorisations to carry out these types of activities within public conservation lands. The objectives and policies in Chapter 3.5 apply to any activity requiring a concession, access arrangement or other form of authorisation and should be read in conjunction with this chapter. Furthermore, some other uses also

involve activities, facilities or services that are covered in Chapter 3.6 (e.g. they may involve the use of aircraft, water craft or vehicles in public conservation lands); in which case the relevant provisions listed in Chapter 3.6 also apply.

Relevant to this is section 3.7.2 referred to by Rob Greenaway and Associates in their report (footnote 1) and commented on earlier:

3.7.2 Activities on or in Beds of Rivers or Lakes

This section provides guidance for all types of activities that occur on or in beds of rivers or lakes that are managed as public conservation land. Examples of these activities include gravel extraction and the construction of structures, such as hydro-dams, weirs, jetties and mooring buoys. The potential for adverse effects to occur as a consequence of such activities needs to be managed in order to protect the natural character, ecology and recreational values of rivers and lakes.

..... Where the river or lake bed is managed as public conservation land, authorisation in the form of a concession or access arrangement under the relevant act is also required.

A concession is required if the material is to be used for the purposes of reasonable domestic, road making or building purposes (see section 8(2) of the Crown Minerals act 1991).

Policies

1. When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:

a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;

b) Riparian vegetation should be maintained or enhanced;

c) Activities should not damage riverbanks;

d) No pests, weeds or other unwanted organisms (e.g. Didymo) should be likely to be introduced to, or become established within, the area as a result of the activity; and

e) The natural character within the setting of the activity should be maintained.

2. Biological communities, physical habitat, channel profiles and substrate may be monitored, in order to evaluate and manage the long-term impacts of activities occurring on or in the beds of rivers or lakes.

See also section 3.3.1 Biodiversity values and threats
section 3.3.3 ecosystem management
section 3.3.4 geodiversity and landscapes
Chapter 3.4 Historical and Cultural Heritage Conservation
Chapter 3.5 authorised uses of public conservation lands
section 3.6.1 recreational opportunities
section 3.6.4 recreation and tourism activities
section 3.7.5 Crown minerals
section 3.7.11 utilities
Chapter 4.1 Desired outcome for the Conservancy

Chapter 4.2 Desired outcomes for Places within the Conservancy
Conservation general Policy 2005, Policies 11.1(a)-(e), 11.3(a)-(e), 11.4(c)
general Policy for national Parks 2005, Policies 10.1(a)-(f), 10.3(a)-(i), 10.8(e)

Also relevant to this section is one on utilities, which is not referred to in R Greenaway and Associates report, and which is probably where the notion of incompatibility of the proposed hydro scheme and recreation values they refer to comes from. This is likely highly relevant to our case to the Minister for declining a concession request from Westpower, and I have underlined some relevant points:

3.7.11 Utilities

Utilities can be either commercial or non-commercial and include, but are not limited to, structures and infrastructure for telecommunications, energy generation and transmission, oil and gas production and distribution, sewerage provision, water supply and flood control, roads and airstrips, hydrological and weather stations.

Authorisation is required to site a utility on public conservation land. While utilities are valued for the public goods and services they provide, the provision and maintenance of utilities within public conservation lands may, in some cases, have adverse effects on conservation values. Such effects may include fragmentation of ecosystems; loss of habitat (e.g. permanent inundation of terrestrial ecosystems); degradation of freshwater ecosystems (e.g. barriers to fish passage, changes to hydrological regimes and sediment loads); invasive weed and animal pest infestation; adverse effects on wāhi tapu and other cultural values; alterations to the natural character of the landscape or seascape; control of public access; and changes to recreational opportunities and the type of public use of the area (e.g. loss of remote experiences and enjoyment).

In addition to the policies below, detailed guidance on the management of utilities is provided in Conservation general Policy 2005 (policies 11.3a-e), and general Policy for national Parks 2005 (policies 10.3a-i). For guidance relating to highways and road and rail corridors managed by other agencies see section 3.6.4.7.

Policies

- 1. Allowance for the 'public good' nature of non-commercial utilities (e.g. flood warning systems and remote weather stations) may be made when considering concession applications and setting rentals.**
- 2. The Department should liaise with agencies responsible for network utility operation in regard to routine maintenance and upgrading proposals wherever they occur in or adjacent to public conservation lands.**
- 3. The development, installation, maintenance and management of utilities on public conservation lands should be consistent with the desired outcome for the relevant place/s (see Chapter 4.2).**

See also section 3.1.2.5 Protection of wāhi tapu and wāhi taonga
section 3.3.1 Biodiversity values and threats
section 3.3.3 ecosystem management
section 3.3.4 geodiversity and landscapes

Chapter 3.4 Historical and Cultural Heritage Conservation
Chapter 3.5 authorised uses of public conservation lands
section 3.6.4.17 vehicle use
section 3.6.1 recreational opportunities
section 3.6.4 recreation and tourism activities
section 3.7.2 activities on or in beds of rivers or lakes
section 3.7.5 Crown minerals
Chapter 4.1 Desired outcome for the Conservancy
Chapter 4.2 Desired outcomes for Places within the Conservancy
Conservation general Policy 2005, Policies 11.1(a)-(e), 11.3(a)-(e)
general Policy for national Parks 2005, Policies 10.1(a)-(f), 10.3(a)-(i)

There are also other general management responsibilities that are likely relevant to the situation under section 3.8 starting on page 161:

3.8 OTHER MANAGEMENT RESPONSIBILITIES

The Department has several other management responsibilities in the West Coast *Tai Poutini* Conservancy, including obligations relating to:

- international agreements;
- statutory land management (non-regulatory protection mechanisms, acquisition, transfer, exchange, disposal and classification of land);
- statutory advocacy;
- public access to conservation land;
- national park and conservation management plans;
- compliance and law enforcement; and
- fire prevention and control.

Chapter 3.8 identifies objectives and policies for each of these responsibilities.

Relevant sections are likely, starting on page 166. Policies around Public access and activities may be a bit more of a stretch but may still be relevant:

3.8.3 Statutory Advocacy

The Department's mandate includes advocacy in statutory planning processes, particularly in relation to the resource Management act 1991. Conservation advocacy topics include, but are not limited to: public access; preservation of significant natural, historical and cultural heritage located outside public conservation lands; protection of values of public conservation land that may be adversely affected by any proposal; protection of recreational freshwater fisheries and freshwater fish habitats located within and outside public conservation lands; advocating the conservation of aquatic life and freshwater fisheries generally; identification and protection of significant natural areas; protection of the natural character of the coastal environment and the margins of lakes and rivers; and provision of recreation facilities (see policy 7(d), Conservation general Policy 2005). As explained in Chapter 3.5, the relative significance of all conservation values on the West Coast *Te Tai o Poutini* has not been fully assessed. Detailed value assessments may not have been undertaken for specific areas where activities requiring resource consent are proposed. Further site-specific assessment may increase knowledge of conservation values at a particular site, and the potential impacts of a development proposal on those values, and should be used to inform the Department's statutory advocacy work.

Policies

1. The Department will advocate for the conservation of natural, historical and cultural heritage and protection of recreational opportunities under the Resource Management Act 1991 and other relevant legislation.

2. The Department should liaise with local authorities during preparation of policies and plans developed under the Resource Management Act 1991 or other relevant legislation, and seek that these reflect matters of conservation interest.

3. The Department should advocate to local authorities, through regional and district planning and resource consent processes, that development adjacent to public conservation lands occurs in a manner appropriate to such a location and ensures that the conservation values and recreational opportunities are not compromised.

See also Chapter 3.1 Working in Partnership with tangata Whenua
section 3.2.3 Key people and organisations the Department works with
section 3.3.3 ecosystem management
section 3.3.4 geodiversity and landscapes
section 3.4.2 Protection of historical and cultural heritage within public conservation lands
section 3.4.3 Protection of historical and cultural heritage beyond public conservation lands
Chapter 3.5 authorised uses of Public Conservation land
section 3.6.4 recreation and tourism activities
Chapter 3.7 other use of Public Conservation land
Chapter 4.2 Desired outcomes for Places within the Conservancy
appendix 2, Department of Conservation Protocols
Conservation general Policy 2005, Policies 7(a)-(e)

3.8.4 Public Access

The public have free right of entry to public conservation lands, as long as access is not inconsistent with the fundamental purpose of protecting the conservation values of those lands. There may be special circumstances where public safety or

Objective

1. To provide for public access to conservation areas in ways that meet people's reasonable aspirations but do not compromise public safety or the protection of conservation values.

Policies

.....

3. Activities and access to public conservation lands may be restricted in accordance with legislation:

a) where necessary to protect natural, historical or cultural heritage values; or

- b) where a particular activity will adversely affect the enjoyment of the area by other people, including the qualities of solitude, remoteness, wilderness, peace and natural quiet, where these qualities are present;
or
c) where a particular activity will prevent the desired outcome for a Place from being achieved (see Part 4); or
d) for public health and safety reasons.

DISCUSSION

Is hydro development in the Waitaha River at the Morgan Gorge compatible with the DOC CMS?

There are a number of points made in the preamble to matters and in the outcomes, objectives and policies in the West Coast CMS that clearly suggest that the proposed hydro development is incompatible with the strategy, but there are equally some that suggest utilities development might be possible; and what is permissible is not necessarily clear cut. There is ambiguity in some of the statements around protecting recreation values for instance. However, taken as a whole I think there is a good argument that hydro development in the Waitaha River at the Morgan Gorge is not compatible with the DOC CMS, the conclusion stated at two places in the Greenaway and Associates' report. This may need a legal eye to sort out just what the case or situation may be.

Support for recreation using rivers

It is clear throughout the document that provision for recreation on many of the rivers throughout the region is a clear aim of the strategy. This is supported by the overall outcomes and Hokitika Place outcomes enunciated in Part 4 Desired Outcomes section of the strategy in wording such as:

Throughout the Conservancy, management undertaken by the Department focuses on:

- provision for appropriate recreation, use and enjoyment of public conservation lands. Within public conservation lands, natural, historical and cultural heritage is protected, maintained and enhanced. People highly value this heritage, understand the need for its protection and are able to enjoy and appreciate this heritage in appropriate ways.

Conservation management reflects the importance of particular public conservation lands for Poutini ngāi tahu, local communities and recreational users.

User numbers, activities and associated infrastructure are managed to limit adverse effects on indigenous ecosystems and wildlife, to protect the natural, historical and cultural integrity of public conservation lands, and to protect people's recreational experiences. (Part 4.1.1.6)

Hokitika is a world-renowned rafting and whitewater kayaking destination. the Styx, Toaroha and Kakapotahi rivers and Totara lagoon are maintained as key places for kayaking that are free from high numbers of other users during kayaking trips (see section 3.6.4.10). (Part 4.2.6.7)

Recreation is also supported by various Objectives and Policies:

Public conservation lands on the West Coast *Te Tai o Poutini* are valued for the intrinsic qualities of their natural heritage (such as natural landscapes, landforms, geology, waterbodies and indigenous biodiversity) and historical and cultural heritage and the wide range of recreational opportunities they provide. Under the Conservation act 1987 and other legislation administered by the Department, management of all public conservation lands should protect and preserve these values. The desired future condition of these conservation values is described in Part 4 of this CMs. Part 3 outlines how the Department intends to achieve the outcomes presented within Part 4. The objectives and policies presented within Part 3 apply across the whole Conservancy (see Part 1, Chapter 1.4). (Preamble, Part 3.0)

Deeply incised river gorges, lakes, caves and glacier valleys are just some examples of typical West Coast *Te Tai o Poutini* landforms valued highly by new Zealanders and international tourists for their scenic value and recreational opportunities. (Preamble, Part 3.3.4.1)

Objective

1. To protect geodiversity and landscapes from adverse effects of human use or management.

Policies

1. The Department should seek to protect and preserve the natural character, integrity and values of landscapes, landforms, geological and soil features and processes in all aspects of conservation management. (Part 3.3..4.3)

Objectives

3. To protect recreational opportunities from adverse effects of authorised uses of public conservation lands. (Part 3.5)

Objectives

1. To provide a comprehensive range of recreational opportunities that enable people with different capabilities and interests 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.

Policies.....

3. Recreation opportunities that are based on the special character and features of West Coast *Te Tai o Poutini* public conservation lands should be provided, taking into account existing opportunities available elsewhere in the country, both within and outside of public conservation lands. (Part 3.6.1.1)

Objectives

1. To provide access to a range of recreational opportunities via facilities that

enable people to enjoy challenging natural settings in the backcountry.

Policies

1. The backcountry-remote zone should be managed to meet the desired outcomes described in Part 4 of this CMS and in any relevant management plans, providing facilities and services that cater principally for the needs, interests and abilities of most backcountry comfort seekers and backcountry adventurers. (Part 3.6.1.4)

Objective

1. To provide opportunities for people to undertake a wide range of recreation and tourism activities at places and in ways that optimise the quality of the experiences available, whilst avoiding or otherwise minimising adverse effects on conservation values and conflicts with other users. (Part 3.6.4)

Policies

1. The Department will advocate for the conservation of natural, historical and cultural heritage and protection of recreational opportunities under the Resource Management Act 1991 and other relevant legislation. (Part 3.8.3)

Development of utilities

Utilities development might be permissible and is considered and addressed in the following Outcome, Objective and Policy statements.

Applications for all activities requiring authorisation from the Department or Minister of Conservation will be assessed against the outcomes described in chapters 4.1 and 4.2. Consideration will be given to whether a proposed activity is consistent with the desired outcomes and whether conditions should be applied in order to ensure the proposed activity does not detract from the values of the Place. (Part 4.0)

Business opportunities and provision of public goods or services that are consistent with conservation outcomes are enabled. (Part 4.1.1)

Policies

2. Landscape assessments should be conducted on an as-needed basis, e.g. when considering proposals to develop utilities on public conservation land. (Part 3.3.4.3)

Part 3B of the Conservation act came into force in 1996, creating a single set of provisions that apply to concessions under the Conservation act 1987, national Parks act 1980, reserves act 1971 and Wildlife act 1953. These provisions affect all types of uses of public conservation lands except mineral exploration, prospecting and mining, which are authorised under the Crown Minerals act 1991. The effects

of different uses can vary widely, as can their commercial nature. This means that each application must be assessed on its merits. although the primary consideration when assessing a proposal is its effect on the natural, historical and cultural heritage values being protected in that area, its effect on other uses, including recreational opportunities, must also be considered.

The relative significance of all conservation values in West Coast *Te Tai o Poutini* public conservation lands has not been fully assessed. Ongoing assessment is likely to result in the discovery that some sites and resources have highly significant values and, conversely, that other sites and resources are less significant (e.g. less rare or endangered) than previously thought. Assessing each individual application on its particular merits may risk overlooking the cumulative effects of a number of authorities for use issued in respect of a particular area or opportunity, therefore cumulative effects need to be taken into account when considering each application. Improved methods for assessing effects are likely to emerge over time. (Part 3.5)

Policies

1. The cumulative effects of other authorities for use, issued in respect of a particular area or opportunity, should be taken into account when considering new applications for those areas or opportunities.

2. When approving concessions or other authorisations, specific conditions may be applied as deemed appropriate. (Part 3.5)

Chapter 3.7 describes specific management strategies for the main types of private or commercial use (other than recreation or tourism use) that currently occur within the Conservancy. It sets out additional policies that apply to applications for, and management of, authorisations to carry out these types of activities within public conservation lands. The objectives and policies in Chapter 3.5 apply to any activity requiring a concession, access arrangement or other form of authorisation and should be read in conjunction with this chapter. (Part 3.7)

..... The potential for adverse effects to occur as a consequence of such activities needs to be managed in order to protect the natural character, ecology and recreational values of rivers and lakes.

.....

(Preamble Part 3.7.2)

Policies

1. When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:

a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;

.....

e) The natural character within the setting of the activity should be maintained. (Part 3.7.2)

Authorisation is required to site a utility on public conservation land. While utilities

are valued for the public goods and services they provide, the provision and maintenance of utilities within public conservation lands may, in some cases, have adverse effects on conservation values. Such effects may include fragmentation of ecosystems; loss of; and changes to recreational opportunities and the type of public use of the area (e.g. loss of remote experiences and enjoyment).

In addition to the policies below, detailed guidance on the management of utilities is provided in Conservation general Policy 2005 (policies 11.3a-e), and general Policy for national Parks 2005 (policies 10.3a-i). For guidance relating to highways and road and rail corridors managed by other agencies see section 3.6.4.7.

Policies

.....

3. The development, installation, maintenance and management of utilities on public conservation lands should be consistent with the desired outcome for the relevant place/s (see Chapter 4.2). (Part 3.7.11)

The Department’s mandate includes advocacy in statutory planning processes, particularly in relation to the resource Management act 1991. Conservation advocacy topics include, but are not limited to: public access; preservation of significant natural, historical and cultural heritage located outside public conservation lands; protection of values of public conservation land that may be adversely affected by any proposal; protection of recreational freshwater fisheries and As explained in Chapter 3.5, the relative significance of all conservation values on the West Coast *Te Tai o Poutini* has not been fully assessed. Detailed value assessments may not have been undertaken for specific areas where activities requiring resource consent are proposed. Further site-specific assessment may increase knowledge of conservation values at a particular site, and the potential impacts of a development proposal on those values, and should be used to inform the Department’s statutory advocacy work.

Policies

1. The Department will advocate for the conservation of natural, historical and cultural heritage and protection of recreational opportunities under the Resource Management Act 1991 and other relevant legislation.

2. The Department should liaise with local authorities during preparation of policies and plans developed under the Resource Management Act 1991 or other relevant legislation, and seek that these reflect matters of conservation interest.

3. The Department should advocate to local authorities, through regional and district planning and resource consent processes, that development adjacent to public conservation lands occurs in a manner appropriate to such a location and ensures that the conservation values and recreational opportunities are not compromised. (Part 3.8.3)

The public have free right of entry to public conservation lands, as long as access is not inconsistent with the fundamental purpose of protecting the conservation values of those lands. There may be special circumstances where public safety or

Objective

1. To provide for public access to conservation areas in ways that meet people's reasonable aspirations but do not compromise public safety or the protection of conservation values.

Policies

.....

3. Activities and access to public conservation lands may be restricted in accordance with legislation:

a) where necessary to protect natural, historical or cultural heritage values; or

b) where a particular activity will adversely affect the enjoyment of the area by other people, including the qualities of solitude, remoteness, wilderness, peace and natural quiet, where these qualities are present;

or

c) where a particular activity will prevent the desired outcome for a Place from being achieved (see Part 4); or

d) for public health and safety reasons. (Part 3.8.4)

Argument for permitting or denying hydro development in the Morgan Gorge

There is suggested ambiguity in the requirement in Objective 3 in Part 3.5 **'To protect recreational opportunities from adverse effects of authorised uses of public conservation lands'** and the requirement in the Preamble of Part 3.7.2 **'The potential for adverse effects to occur as a consequence of such activities'** (this is referring to activities in river beds and banks that require concessions) **needs to be managed in order to protect the natural character, ecology and recreational values of rivers and lakes'** and Policy 1(a) in Part 3. 7.2 where **'When assessing applications for any activity on or in the bed of a river or lake, consideration should be given to (but not limited to) the following guidelines:**

a) Adverse effects on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values should be avoided or otherwise minimised;'

Policy 1(a) in Part 3. 7.2 might imply that activities such as installation of utilities is permissible so long as impacts on freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values are avoided or otherwise minimised. However, when considering the section specifically relating to utilities, Part 3.7.11, Policy 3 states **'The development, installation, maintenance and management of utilities on public conservation lands should be consistent with the desired outcome for the relevant place/s (see Chapter 4.2).'** The desired outcomes in the Hokitika Place in Chapter 4.2 are guided by the Objectives and Policies in Part 3 of the CMS and so some of the arguments seem to become a little circular. However, if we accept that recreation values are to be protected as part of the CMS then I think we can rightfully conclude that the utility development of the proposed Waitaha Hydro

Scheme is incompatible with the overarching desire to protect recreational opportunities. The development of such a Scheme would not protect the kayaking opportunities in the Morgan Gorge. This is consistent with the conclusion reached by Greenaway and Associates in their statement 'The DOC CMS defines the setting as back-country remote, and a hydro-development is not compatible with this recreation management category.'

CONCLUDING COMMENTS

Greenaway and Associates following on from their statement 'The DOC CMS defines the setting as back-country remote, and a hydro-development is not compatible with this recreation management category.' go on to say that 'However, the outcomes set out in the CMS for the Hokitika Place will still be achieved with the Scheme in place.'

Greenaway and Associates provide no detailed arguments for reaching the conclusion in the last sentence but loosely refer to the fact that there are plenty of other rivers on the West Coast that provide the same or similar recreational opportunities as those provided by the Waitaha River and the Morgan Gorge. They do not compare the recreational qualities, or other values of these various runs (such as wilderness and scenic values) and so do not determine the relative values of the Waitaha and its runs and other such runs, nor properly identify all the impacts, and especially on kayakers 'wilderness' values. Such comparisons might be required as part of best practise assessment methodology as outlined in a recent Boffa Miskell Report commissioned by Westpower examining the natural character, landscape and visual amenity effects of the Waitaha Hydro Scheme¹¹. Thus, the final pronouncement by Greenaway and Associates may not be correct. For example, if the Waitaha and Hokitika Rivers are two of the outstanding Class V runs of the West Coast, for a variety of kayaking and wilderness values, then it is difficult to see how loss of one of the hardest outstanding hard whitewater runs in the Hokitika Place will see the achievement of the CMS in the Hokitika Place, with the Scheme in the Morgan Gorge in place.

D A Rankin, 6 April 2014

¹¹ J Bentley, Waitaha Hydro Scheme Natural Character, Landscape and Visual Amenity Effects, Report prepared by Boffa Miskell Limited for Westpower Ltd., March 2014.

APPENDIX VII: ADDITIONAL IMAGES



Stretching the legs; stop on the middle Waitaha Gorge run (Photo: Zak Shaw Photography)



Paul Carrant navigating the middle Waitaha Gorge reach (Photo: Zak Shaw Photography)



Paul Curren running a drop on the Upper Waitaha (Photo: Zak Shaw Photography)



Matthew Shearer running a drop in the middle Waitaha Gorge run (Photo: Zak Shaw Photography)



Willz Martin on the Upper Waitaha River above the Windhover Gorge (Photo: Zak Shaw Photography)



Eddy Murphy in the middle Waitaha Gorge run (Photo: Zak Shaw Photography)