

**Julia Mackie: Permissions Advisor DOC Hokitika**



Cc:

*Hon. Eugenie Sage: Minister for Conservation*

*Mark Davies: Director Operations for the Western South Island region*

*Nicole Kunzman: Operations Manager DOC Hokitika*

*Jan Finlayson: FMC President*

*Dr Keith Morfett: West Coast Conservation Board Chair*

Ref: WC-20844-OTH

23 July 2020

## **Re. Concession Variation Application – Opportunity to share your view - Griffin Creek Hydro Ltd concession**

Dear Ms Mackie,

In your letter of 18 May 2020, you invited the NZCA to formally share our views with the Department on “*visitor and wilderness experience in relation to the four proposed changes*” and explained that “*The Department is not seeking the Association’s view on those parts of the proposal already approved which are not part of the variation application as detailed below.*[Water intake site footprint increase, Vegetation clearance, Easement footprint area, Easement location area]”

The detail of the changes provided was insufficient for us to make a fully informed reply, so we requested further information under the OIA. On reading the provided information, it was immediately apparent that the detail of the proposed changes painted a vastly different picture than the summary initially provided.

The NZCA wrote to the Minister of Conservation to express our concern that the recreational values were not properly understood by the Department, and therefore did not fulfil the duty to do so under s17S(c) of the Conservation Act. We were grateful for her reply on 13th July 2020:

*“My understanding is that Griffin Creek’s significance as a waterway for canyoning was not well known or understood at the time of the original application. I have asked the department to review its initial assessment of potential effects to ensure there is a comprehensive and thorough understanding of conservation values, including recreational values as they exist now; and of the variation application’s potential impacts on those values; before any further decisions are made...”*

*DOC has sought information from the canyoning community to better understand the proposal’s effects on canyoning. That information will be incorporated into the decision report to inform the decision on the variation application.”*

The NZCA is pleased to provide the following information, firstly so that the Department can understand the “*variation application’s potential impacts on those [recreational] values*” as you and the Minister have requested, and then the Ministers request to understand the “*proposal’s effects on canyoning*” which must take into account the entire proposal, not just the current variations sought.

The NZCA is a subject matter expert on canyoning in New Zealand and draws on the following experience, qualifications and skills of its expert members in making this reply:

- The authors of NZ’s only [Canyoning Technical Manual](#) and The [Canyoning in NZ Guidebook](#)
- Several commercial canyoning tour company owners,
- Canyoning “Technical Experts” as defined by Worksafe accredited auditors operating under the Health and Safety at Work (Adventure Activities) Regulations 2016.
- Assessors for candidates of the [NZ Outdoor Instructors Association’s highest Canyoning Guide qualification](#).

Furthermore, noting that the New Zealand Canyoning Association (NZCA) is a member organisation of the Federated Mountain Clubs of New Zealand (FMC), we re-affirm FMC’s position as direct representative of NZCA regarding their general submissions and advocacy on this matter. In particular we reference their recent documents as follows.

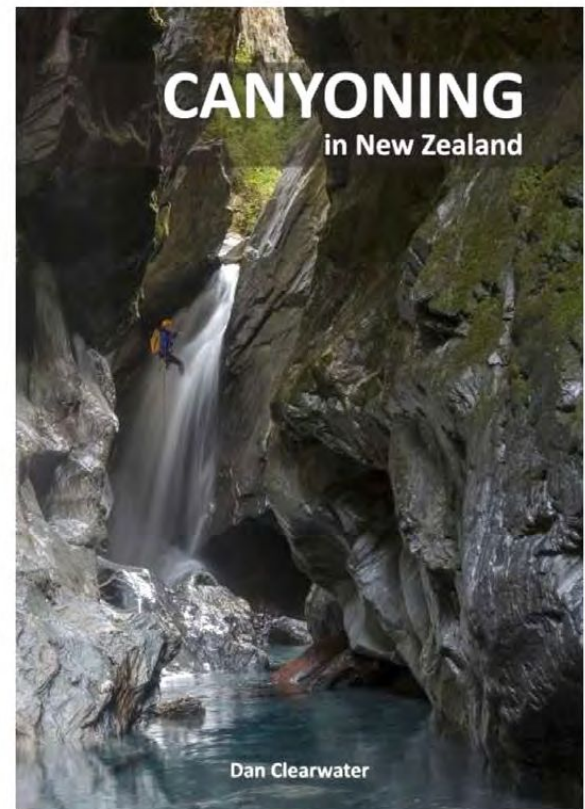
- A. Letter, 22, June 2020 “Deficiencies in an application by Griffin Creek Hydro Ltd”
- B. Paper, June 2020 “Griffin Creek Hydro variation application assessment”

We look forward to your response;

Dan Clearwater

**NZCA President**

[President@nzcanyoningassociation.org](mailto:President@nzcanyoningassociation.org)



Canyoning in New Zealand guidebook

# The variation application's potential impacts specific to canyoning recreational values

For brevity's sake, we will refer to section 3 of the FMC Paper, which concisely describes the differences between the consented scheme and the variation proposed. Below are the direct impacts to canyoning safety, enjoyment and natural amenity and therefore recreational value.

## Safety impacts:

### Overhead Hazard

The granted scheme uses a 0.3m diameter penstock pipe laid around trees beneath the canopy. The varied scheme would entail the construction within a 6m wide corridor, with bedrock bluffs blasted and trees felled to bury a 1.2m pipe. This construction would create a significant amount of spoil, fallen trees and blasting debris which could fall down, creating a direct and unacceptable hazard to any person below. It would be unsafe for anyone to recreate in the lower gorge during construction, which means the applicant would need to have exclusive use of the land during that process, which is estimated at 2 years.

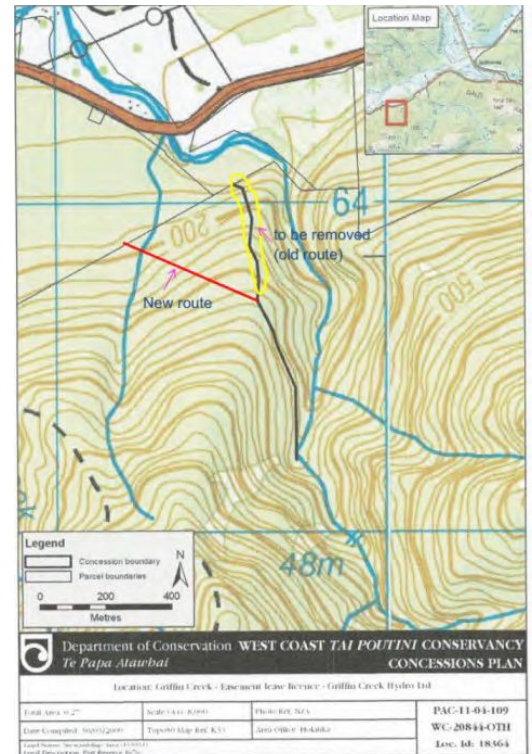
Referring to the Conservation Act, exclusive use of the land would require a lease, and a lease would require public notification:

*17U 6a: No lease may be granted unless the applicant satisfies the Minister that exclusive possession is necessary for—the protection of public safety.*

*17SC 1a: The Minister must publicly notify every application for - a lease.*

At first look, you could say that canyoning could still access the upper gorge during construction. In isolation this is true, but the nature of a canyoning trip is that due to the terrain, it is one-way only: once you begin descending waterfalls, it is virtually impossible to reverse your progress.

The proposed intake location is at a significant bend in the creek, which marks a transition between steep slopes and very steep slopes. (see in particular the terrain to the north of the '48m' label).



Although in theory it may be humanly possible, given the very steep slopes, it would be entirely impractical for canyoneers to try to exit the gorge upstream of the construction zone. This would mean that canyoneers would almost certainly avoid the upper canyon at any stage where it was unsafe or prohibited to continue below the proposed intake site location.

Regardless of the legal requirement for leases and notification, not having practical access to the canyon for 2 years is a significant impact to the canyoning value of the place, which would surely trigger the requirement for a public notification of the application.

Furthermore, no proper geotechnical assessment has been made of the land around the proposed penstock. Without such an assessment, it is impossible to rule out that the process of blasting, side-casting of spoil and mature trees would de-stabilise the slopes, creating an increased long-term overhead fall hazard.

Aerial imagery and assessment provided in the FMC report clearly show the presence of past and currently active slips in the area. The technicality of Griffin Creek means there are a number of natural hazards and risk to manage for any canyoneer. The sum of these risks is considerable, but is deemed acceptable by canyoneers, when weighed against the excellent rewards of descending the canyon in its natural state.

However, potential slope destabilization, because of the construction process, would likely tip the balance of a justifiable risk to reward: The degradation of the experience (as a sum of all the impacts to be discussed) with the increase in hazard would almost certainly cause a drop in the number of canyoneers visiting Griffin, as a result of the degraded recreational value of the place.

## Accumulation of additional debris

Should additional debris accumulate into the canyon, its presence may decrease safety for canyoneers. The confined shape of the canyon means that there are limited options for safe routes to descend. The presence of a large boulder or tree in the normal path of an abseil route through a waterfall could create a new entrapment hazard, which may not be able to be avoided. In some circumstances a vertical obstacle is most safely descended by jumping into the pool below. If critical pools become filled with spoil or large boulders/trees as a result of construction, it may force canyoneers to abseil instead, which would increase the risk.



Additional debris and spoil could also create additional 'strainer' hazards to canyoneers. A strainer is where water can flow through the gaps in the debris, but a person cannot, and is trapped by the force of the water. Although it is a picture of Kayakers, rather than Canyoneers, it<sup>1</sup> illustrates how a person can be trapped in a strainer.

Again, such additional hazards are possible from natural events. However, the degree of debris likely to fall into the canyon, during construction and from long term slope destabilisation has not been properly assessed. If a moderate amount of human-dislodged debris accumulates, then again that will raise the overall risk, and tip the balance of a canyoneer's risk-to-reward assessment, resulting in fewer visits and reduced recreational value.



## The intake structure

The intake is situated immediately downstream of a particularly narrow (approximately 1.5-2.5m) wide bedrock section of the gorge. This is the perfect spot from an engineering perspective; a narrow gape to build across and solid rock to anchor to.

However, the narrowness of this section of gorge means that canyoneers have an even tighter restriction on where they can travel to avoid any hazards. The nature of the intake structure at the exit of the narrows, or immediately below may present a hazard for a canyoneer. Given the inescapable section of gorge immediately above, higher than average flows may cover any horizontal rock surfaces with water, meaning a person would be floating/swimming as they came down the gorge, and at the mercy of the flow.

The specific hazard could be direct impact to the structure, entrapment under or within the structure, or entrapment by a hydrological feature created by the structure.

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<sup>1</sup> Screen shot from Youtube video "Kayaker Caught in the Death Grip of a Sieve | Ultimate Rush"  
<https://youtu.be/D0xgRKB3Vu4?t=165>

Of note, according to the Coroner's report, the presence of a hydro scheme weir (much larger than proposed in Griffin) "may have" contributed to the deaths of seven people on 7 April 2008 in a high water flood event in the Mangatepopo Gorge, Central North Island<sup>2</sup>.

The image<sup>3</sup> shows the Mangatepopo weir at normal flow.



This excerpt is from page 27 of the coroners report<sup>4</sup>. (The bold text is our emphasis)

*One of the difficulties with exiting from the gorge is that the only available exits are at the half way ledge, and at or near the Genesis Intake structure near the dam at the entrance to the gorge. The dam/weir itself appears to have posed a considerable but unidentified hazard, **Ug'h Y'Yj jXybW'jg'h UhiU`a Ya VYfg'cZH Y9`ja [ fci d'h Uik Ybhcj Yf'h Y' XUa `k YfYU]j YVYZ'fY[ c]b[ `cj Yf'h YXUa** "Only two (Kish Proctor and Sarah Brookes) of the nine who went over the dam survived the ordeal.*

*While I am aware of the issue that **h YXYg][ b`cZH YXUa `jlgYZa Um\ Uj YW'bf]Vi hX' lc'h YXYU h g`cZdYfgcbg[ c]b[ `cj Yf'h YXUa**, the dam and intake were designed for Genesis Energy purposes. If OPC intend to continue using the gorge and the dam as part of its operations, it should consider discussing with Genesis or whoever else is responsible for the dam whether it is appropriate for changes to be made to reduce the likelihood of fatalities.*

The applicant is aware that canyoneers descend the gorge, but has made no attempt to explain any safety mitigations in place around safe passage at any flow of the intake structure.

<sup>2</sup> Brief summary: [https://en.wikipedia.org/wiki/Mangatepopo\\_Canyon\\_disaster](https://en.wikipedia.org/wiki/Mangatepopo_Canyon_disaster)

<sup>3</sup> Mangatepopo Dam: by Neil Silverwood.

<sup>4</sup> Coroners Report, Mangatepopo Tragedy

[https://www.outdoored.com/sites/default/files/documents/files/Coroners\\_Findings\\_re\\_Fatalities\\_at\\_Sir\\_Ed\\_mund\\_Hillary OPC 0.pdf](https://www.outdoored.com/sites/default/files/documents/files/Coroners_Findings_re_Fatalities_at_Sir_Ed_mund_Hillary OPC 0.pdf)

## Loss of natural amenity impacts

Griffin's recreational value is the unique sum of its high quality attributes: the beauty and natural amenity of the place is one such attribute.

Griffin has interlinked wide and deep pools, with crystal clear water; high water flows with powerful currents; and multiple thundering waterfalls beside unmodified West Coast forest that grows down to the water's edge or overhangs the gorge in places. It has a remote feel, with no visual sign of the outside world.

The proposed variation could degrade this natural amenity through:

- Visual impact of fallen spoil, trees, debris.
- Possible discoloration of crystal clear waters by seepage from de-stabilised slopes.
- Presence of man-made structures (the intake and penstock corridor) in an otherwise unmodified environment.
- Noise of construction and blasting, then vehicles accessing the scheme for maintenance.
- Decreased natural power of the water beneath the intake.
- Increased potential for didymo or other aquatic pests to flourish with the reduced water flows.
- Impacts to natural fauna (as described more fully in the FMC paper). Lowered opportunity to observe the creatures that normally inhabit the gorge detracts from the enjoyment of the area as a natural and unmodified place.

The sum of these individual losses in natural amenity add up to a significant loss of recreational value.



## Impact on the enjoyment of canyoning

I return to the theme that the overall recreational value of Griffin Creek is the **unique combination** of high quality values. The NZ Canyoning Association made a detailed description of the specific qualities of Griffin in our letter to DOC Hokitika, % Tim Shaw dated 29 February 2019 as we opposed the first variation to the concession.

An excerpt of the letter is reproduced at the end in Annex A, but in very brief summary:

- Achievable in a long day, with relative ease of access
- Sustained technical canyoning challenges, due to the quantity of steep, back-to-back waterfalls and high water flow obstacles.
- Unmodified landscape, with high levels of natural beauty.

The whole is greater than the sum of the parts; degradation of any of these factors will have a significant overall impact on the recreational value of the place. So far, canyoningers have not yet discovered any other canyon in NZ which has Griffin's combination of length, accessibility, sustained challenge, beauty and fun.



*U Y. Canyoners in Griffin Creek / Ben Sarten*



# The scheme's overall effects on canyoning values

As the Minister has noted, the original scheme was granted a concession before the canyoning recreational values were first understood. She has asked the Department to seek *"information from the canyoning community to better understand the proposal's effects on canyoning."*

Beyond the potential impacts of the variation alone, the remaining issue of the scheme in any form is the impact of a reduction of waterflow.

## The reduction of water flow

The single most prominent characteristic of Griffin as a canyoning site is its flow. It is right at the top end of flows which can be reasonably negotiated by canyoners. Much more flow would make it nearly impossible to descend, and any less would reduce the challenge significantly. This puts it in the sweet spot of a 'peak experience', which helps to make it one of the most valued canyoning sites in the country by those who have descended it, and those who aspire to alike.

Members of the NZCA have visited many canyons in Europe which feature hydro schemes of a similar nature to this proposal. The canyoning community there now regards such canyoning trips as 'ending' at the intake. Below the intake, even moderately reduced flows mean more algae (didymo likely in NZ) which made the rock surface extremely slippery and allow an unpleasant smell to linger. The slippery surface is not only unpleasant to walk on, but becomes dangerous when exposed to heights.

Pools become shallower, meaning jumping is no longer possible. Interesting hydrological obstacles become un-challenging trickles. The reduction of canyoning value at those European locations such that the locals would rather walk out at the intake rather than continue down the de-watered canyon.

The granted proposal would certainly reduce the flow from a high-end challenge to very little challenge at all. We understand that the granted abstraction rate was 1200L/s with a residual acceptable flow of 800L/s which corresponds with the granted pipe diameter of 0.3m.

In 2019, the applicant applied for a variation which included significantly increasing the abstraction rate. The applicant was informed that this would require public notification. The variation application was withdrawn and then resubmitted with the variation for the abstraction rate omitted.

Why then, does the applicant request a variation to use a 1.2m diameter pipe, which by simple geometry could allow 16x the water flow for a given velocity? There has been no explanation of

the reasoning for the pipe diameter change, but any reasonable person would infer that a bigger pipe signals the intention to transfer more water.

Given the applicant's willingness in the past to ignore the conditions of its permission (ie building a vehicle track to the intake site, rather than the permitted foot track) and, we are concerned that they may either take more than they are allowed, or may seek yet another variation in the near future to take the extra water.

DOC concessions staff need to ensure the provisions in the Conservation Act (which allow for minor and reasonable changes) are not used to facilitate variations whose sum, if applied for as a whole, would trigger public notification.

If those future possibilities became reality, we would be left with a European-esque smelly and slimy gorge avoided by canyoners. This would be a severe impact on the recreation and conservation values of the place.

## Beyond canyoning; FMC's Effects Assessment

The NZCA places value on the wise and proper management of our public conservation lands, so we echo the concerns and assessments that FMC has made in its paper.

# Conclusion:

The variation's potential impacts which are specific to canyoning include:

## **Safety impacts:**

- Increased short and long term risk from overhead hazards, requiring exclusive use during construction.
- Accumulation of additional debris altering the way the canyon is descended
- Unmitigated potential hazard to canyoners from the intake structure.

## **Loss of natural amenity impacts**

- Visual impact of spoil, fallen trees, debris, discoloured water and presence of structures
- Noise impact during construction and maintenance.
- Reduced opportunity to enjoy observing nature
- Increased risks of didymo infestation due to lowered flows.

## **Potential reduction of waterflow**

- Due to the unexplained 16 fold increase in pipe area.

The impacts to recreational values have not been properly assessed by the applicant or the Department. In our view, the potential impacts we have discussed could combine to a severe degradation of the recreational value of Griffin Creek. Although we have provided a starting point for the values assessment, the degree of impact depends in many cases on the geo-technical stability of the land, which has not been assessed properly either.

Due to the lack of sufficient assessments, we ask the Department to decline the variation outright, as Section 17U 2a of the Conservation Act says

*The Minister may decline any application if the Minister considers that- the information available is insufficient or inadequate to enable him or her to assess the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility;*

If the Department does not decline the variation outright, it must request:

- A peer-reviewed geotechnical assessment
- The applicant gain an exclusive lease for the construction period, (which requires any such application to be publicly notified)
- An explanation for the change in pipe-size.
- A detailed plan of how risks to canyoners from the intake structure will be mitigated.

# Annex A: Reproduction of Letter to DOC Hokitika, % Tim Shaw, 28 Feb 2019

*H Y'g][ b]ZVUbW'cZ; f]Z]b'7fYY\_ 'lc 'H YWUbncb]b[ 'W'a a i b]lmi*

*Griffin Creek is one of the most important, high-volume canyoning opportunities in New Zealand.*

*; f]Z]b'7fYY\_ 'g'7 Ubncb]b[ '<]glc'fmi*

*The first canyoning exploration was on 6th March, 2013, by Nic Barth and Neil Silverwood, who instantly recognised the exceptional quality of the descent.*

*I [Daniel Clearwater - NZCA President] had the good fortune to descend Griffin Creek just over 2 years later and found it to be one of the longest, most beautiful, varied and challenging canyons I have ever been lucky enough to visit.*

*I've been canyoning since 2004, have canyoned in 9 different countries around the world, and made over 40 first descents here in New Zealand. I lead the establishment of the NZCA and in 2015 authored and published the first and only guidebook to Canyoning in NZ. I hold the highest NZ canyoning guide qualification (NZOIA Canyon Level 2) and have co-authored the New Zealand "Canyoning Technical Manual". In short, I am suitably experienced and qualified to say that Griffin Creek would be in the top 3 canyons in New Zealand, and would easily feature in the top 10 of canyons which I have visited around the world.*

*For advanced Canyoners, Griffin is very high on the list of places to visit, and now that the quality of canyons in NZ is well known world-wide, many international canyoners are coming to Griffin. We received a letter of support from Sonny Lawrence, President of the Federation Internationale de Canyonisme, endorsing the significance of Griffin and the popularity of NZ Canyons with international canyoners.*

*Griffin is unique among canyons we have discovered, for its combination of qualities; Together, the whole character of Griffin is far greater than the sum of its parts. To have any of these characteristics altered would hugely diminish the overall experience and destroy a recreational treasure of New Zealand. Griffin was awarded 3 stars in the Canyoning guidebook; to show it is a "Canyon of National Significance".*

*#i]g'`cb[ 'Vi hfYU]j YmUWVgg]V'Y'*

*The actual canyon itself takes around 7 hrs for a highly competent team to descend. The fact that it can be reached in 2.5hrs via a challenging track from a main highway makes it a feasible proposition. There are probably a number of other canyons yet to be discovered that are similar to Griffin, but highly isolated, and therefore even if they are discovered, they will never become highly visited.*

*#i]g'j U]YX'*

*36 waterfalls of significance, with 15 abseils up to 29 meters high, 7 or more jumps up to 12 meters high and 3 slides to 5 meters. Huge bedrock pools more than 30 meters wide with 1 meter high waves. There*



