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Justice for the Westslope Cutthroat Trout at Grassy Mountain

By: Shaun Fluker

Decision Commented On: *Report of the Joint Review Panel: Benga Mining Limited Grassy Mountain Coal Project*, 2021 ABAER 010

On June 17, 2021, the Alberta Energy Regulator (AER) denied an application by Benga Mining Limited under the *Coal Conservation Act*, RSA 2000, c C-17, for approvals to construct, operate and reclaim an open-pit metallurgical coal mine (along with associated processing, transportation and related infrastructure) on the montane and subalpine lands of Grassy Mountain in the Crowsnest Pass region of southwestern Alberta. The application was considered by a federal-provincial joint review panel governed by terms of reference established under the *Responsible Energy Development Act*, SA 2012, c R-17.3, and the *Canadian Environmental Assessment Act, 2012*, SC 2012, c 19, s 52 (*CEAA 2012*), terms which instructed the panel to exercise AER decision-making authority under the *Coal Conservation Act* and assess the environmental, economic, and social impacts of the project under various provincial statutes and *CEAA 2012* (the federal registry for the environmental impact assessment is here). The panel's decision consists of a whopping 3072 paragraphs (631 pages not including appendices). This comment focuses on the AER portion of this decision, and in particular just one aspect of this decision: the confrontation between coal development and preservation of the threatened Alberta population of westslope cutthroat trout (WSCT) along the eastern slopes of the Rocky Mountains. This comment is not reviewing the *CEAA 2012* findings and recommendations because, as the panel indicates at paragraph 3066, without the provincial authorizations the project cannot proceed.

The Mine is Not in the Public Interest

An overview of the AER's public interest determination is set out at paragraphs 3005 to 3051, very near the end of the panel's decision. Readers looking for a summary of highlights in the panel's findings should go here. These paragraphs summarily describe the concerns with the project raised by many of the hearing participants and Benga's response to these concerns. Benga's overall position was that the mine project would be in the public interest because of its positive economic impacts and that the adverse environmental impacts would not be significant after taking into account their mitigation measures (at para 3014). Generally speaking, the panel found that Benga had overstated the positive contributions of the mine and had made overly optimistic assumptions in relation to the effectiveness of its proposed mitigation measures to ameliorate adverse environmental impacts. In several parts of the decision, the panel observes that Benga failed to implement a precautionary approach to assessing environmental impacts and developing its mitigation plans. However, the panel gives particular attention to the impacts of the mine project on WSCT:

> Overall, we conclude that the project is likely to result in significant adverse environmental effects on westslope cutthroat trout and surface water quality, and these negative impacts outweigh the low to moderate positive economic impacts of the project. Accordingly, we find that the project is not in the public interest. In making this determination, we understand that this means that the expected employment, related spending, and economic benefits for the region will not be realized. However, even if the positive economic impacts are as great as predicted by Benga, the character and severity of the environmental impacts are such that we must reach the conclusion that approval of the Coal Conservation Act applications are not in the public interest.
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> While we found the project is likely to result in additional significant adverse effects beyond those on surface water quality and westslope cutthroat trout and their habitat, we find that these effects, in and of themselves, would not have been sufficient to determine that the project is not in the public interest. It is the nature and magnitude of effects on surface water quality and westslope cutthroat trout and their habitat that drive our public interest determination. (at paras 3048—3049, emphasis added)

These paragraphs reveal to me that the AER denied this application because the coal mine would destroy critical habitat for WSCT. A truly exceptional regulatory outcome which shows that, contrary to what I wrote in the Conversation a couple years ago, energy development does not always win when pitted against protecting threatened species. One might even suggest this is Alberta's snail darter moment, a rare instance where a threatened species prevails over a major resource development project.

Coal Versus Trout

The seeds for this confrontation between coal and WSCT were initially sown back in the Fall of 2015 when the trajectories of the proposed Grassy Mountain mine and the designation of critical habitat for WSCT were formally put into motion. Benga submitted its environmental impact assessment for the coal mine to the AER and the Canadian Environmental Assessment Agency on November 10, 2015, and a revised version of the assessment was submitted on August 12, 2016 (the decision provides a helpful summary of noteworthy dates in the entire assessment and hearing process in Appendix 1 at pages 633—634). This initial (as revised in 2016) assessment identified the WSCT as the primary assessment component for the impact of the mine on aquatic species, and both the Gold Creek and Blairmore Creek watersheds were identified in the assessment as areas affected by the proposed mine. The initial assessment acknowledged that Gold Creek and its tributaries were then identified as critical habitat for WSCT as a threatened species (at pages E-105— E-118 of the 2016 assessment), and noted " . . . the potential for the direct removal of portions of specific upper headwater tributaries of both Blairmore Creek and Gold Creek." (at page E-114 of the 2016 assessment) A visual map of the mine footprint – showing how the project straddles the Blairmore and Gold Creek watercourses is located at page 19 of the AER decision.

Just weeks after Benga filed its initial environmental impact assessment for the coal mine in November 2015, on December 2, 2015 the federal Minister of Fisheries and Oceans issued a

critical habitat protection order designating Gold Creek and its tributaries at Grassy Mountain as critical habitat for WSCT under the *Species at Risk Act*, SC 2002, c 29 (*SARA*). As I described in Habitat Protection for the Westslope Cutthroat Trout in Alberta, this Order engaged section 58(1) of *SARA* which states no person shall destroy any part of critical habitat for WSCT as a listed threatened aquatic species under *SARA*. While section 73 of *SARA* does provide the federal Minister with authority to permit a person to engage in an activity that destroys critical habitat for a threatened species, the exercise of such authority by the Minister is subject to strict conditions including that (1) the impact on the species is incidental to the activity in question and (2) the impact does not jeopardize the survival or recovery of the species.

Thus, it was inevitable that the impact on Gold Creek and WSCT was going to be a primary issue in the assessment and decision-making process for the Grassy Mountain project. Over the course of several years after Benga's initial submission of its impact assessment in 2015 and leading all the way up to the public hearing itself in the Fall of 2020, the panel and the federal department of Fisheries and Oceans (DFO) directed requests to Benga for further information on impacts to WSCT and Benga's mitigation plans for those impacts – including more specifics on Benga's proposal to offset the unavoidable destruction to portions of Gold Creek. Meanwhile, DFO also continued to update and expand the identification of critical habitat for WSCT, working together with Alberta Environment (a collaboration which David Mayhood and I critically review in Environmental Stewardship of Public Lands? The Decline of Westslope Cutthroat Trout Along the Eastern Slopes of the Rocky Mountains in Alberta), all of which culminated in the publication of a revised Recovery Strategy – Action Plan for WSCT in December 2019 and an expanded description of critical habitat in Gold Creek (AER decision at para 1173).

In its submission to the panel at the public hearing in November 2020, DFO filed a report which stated that the WSCT population in Gold Creek is one of only 10 remaining populations in Alberta considered to be viable in the long term and that any negative impacts to the population would jeopardize the survival or recovery of the species (see here). In its final written submission to the panel, DFO stated that based on information currently available for the mine project that DFO would be unable to issue permits under *SARA* to allow the project to proceed. This submission was long overdue, and one is left to wonder why it took DFO so long to establish what was really the only tenable position of the department given the necessary destruction of critical habitat for WSCT. Nonetheless, better late than never. The same cannot be said for Alberta Environment, which made no submissions to the panel. The absence of Alberta Environment submissions on the significant adverse impacts of the Grassy Mountain mine on WSCT – a species which is also listed as threatened under the *Wildlife Act*, RSA 2000, c W-10 and the subject of a published provincial recovery strategy – makes a complete mockery of any suggestion that Alberta has effective endangered species policy. We already know the province does not have effective legislation – see Endangered species under Alberta's Wildlife Act: Effective legal protection?

Mine Impacts on WSCT

Many of the participants (ENGOs, coalitions, and individuals) gave submissions to the panel on the impacts to WSCT during the hearing. The AER decision describes these submissions in detail, alongside what is set out in Benga's impact assessment, and the panel sets out its conclusions on

the potential impacts of the mine on WSCT between paragraphs 1165 and 1354. What follows is a more specific breakdown of what is set out in these paragraphs.

In paragraphs 1177 to 1194 the panel (1) describes the differing assessments on the quality of Gold Creek habitat and fluctuations in population numbers given by Benga and other hearing participants; (2) finds that Gold Creek is important habitat for the survival and recovery of WSCT in Alberta; and (3) finds there is uncertainty in the population estimates for WSCT, but that the overall trend in numbers is downward.

In paragraphs 1195 to 1203 the panel explains how Benga's environmental impact assessment described the direct and indirect effects of the mine project on WSCT, and the panel also summarizes DFO's response to this assessment including its view " . . . that the significance framework Benga applied to those effect pathways, while appropriate in a more typical setting, fails to reflect the sensitivity of isolated populations of WSCT with unique genetic pools that are critical to the species survival and recovery as a whole." (at para 1202)

In paragraphs 1204 to 1215 the panel (1) describes Benga's assessment of project impacts to WSCT habitat in the Gold and Blairmore Creek watersheds; (2) the panel notes that DFO released an expanded description of WSCT critical habitat in Gold Creek in the 2019 revised Recovery Strategy-Action Plan; and (3) in a key set of paragraphs in the decision the panel set out DFO concerns with the impacts to critical habitat and Benga's methodology in the assessment:

> DFO expressed concern that alteration and destruction of habitat in the Gold Creek and Blairmore Creek watersheds would compromise the survival and recovery of WSCT. DFO stated that authorizing the destruction of the critical habitat in the Gold Creek watershed would require robust scientific evidence that such destruction would not jeopardize the survival or recovery of the species. DFO stated that Benga's riparian quality classification system resulted in residual effects only for some medium- and high-quality habitat, and Benga's methodology for quantifying impacts did not acknowledge the ecological context and sensitivity of an isolated population of a species at risk with poor resiliency.
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> DFO stated that, as of the hearing, Benga had not characterized the full extent of critical habitat losses due to the project to reflect the updated 2019 Recovery Strategy-Action Plan. DFO confirmed that the predicted losses of critical habitat that Benga calculated in 2016 were considerably lower than the impacts that would be calculated using the updated 2019 Recovery Strategy-Action Plan. DFO suggested to Benga that an updated calculation of impacts on critical habitat was required to fully understand the impacts on WSCT habitat, as well as to assess proposed mitigation and offsetting measures. DFO recommended Benga undertake a detailed analysis of the ability of the riparian areas to support the features, functions, and attributes of critical habitat for Gold Creek, as well as Blairmore Creek, given its potential to support recovery objectives in the 2019 Recovery Strategy-Action Plan. Benga confirmed that it had not updated its estimates of project impacts on WSCT critical habitat since the 2019 Recovery Strategy-Action Plan was released. (at paras 1210, 1212)

In paragraphs 1216 to 1226 the panel finds that Benga's impact assessment on the mine's effect to instream flow levels in Gold Creek was inadequate because Benga underestimated the potential

for decrease in flow (other hearing participants specifically noted this was a particular concern during the winter months when the decrease in flow might result in dry sections of the watercourse (see para 1224)) and also that Benga did not adequately take into account uncertainties in its modelling.

In paragraphs 1227 to 1247 the panel (1) describes the potential effects of calcium carbonite in contact water runoff from the mine, and in particular the potential for the development of calcite in Gold Creek which would harden the stream bed and destroy WSCT critical habitat; and (2) references the extensive discussion of the potential for selenium contamination into Gold Creek set out earlier in the decision (described separately below in this comment).

In paragraphs 1248 to 1255 the panel (1) describes Benga's methodology to assessing the impact of the mine on water temperature in Gold Creek; (2) describes the submissions of DFO and other hearing participants which questioned Benga's methodology, and (3) concludes that Benga failed to adequately assess the potential impact of the mine on water temperature, particularly given the narrow tolerance of WSCT to these changes (at para 1255).

In paragraphs 1256 to 1267 the panel describes the potential impact of the mine on sediment transport and WSCT food supply in Gold Creek, and after setting out Benga's assessment and the response by DFO, the panel concludes the loss of some upstream tributaries to the mine footprint creates uncertainty on the extent of changes to sediment supply and associated food productivity for WSCT: "[T]he loss of riparian and tributary habitats is likely to result in a reduction in overall productivity in both Gold and Blairmore Creeks and residual adverse impacts on WSCT." (at para 1267)

In paragraphs 1268 to 1273 the panel (1) describes the potential impacts of mine blasting on WSCT; (2) notes Benga's position that after taking into account mitigation measures the blasting would have "no detectable changes in WSCT relative abundance" (at para 1270); (3) sets out DFO's view that Benga's proposed monitoring and mitigation of blasting effects was inadequate for a threatened fish population; and (4) concludes "Benga did not develop site-specific mitigation measures or present a monitoring plan that would address the risks posed to WSCT populations, which introduces uncertainty and poses a risk to WSCT populations in Gold and Blairmore Creeks." (at para 1273)

The AER decision also extensively discusses the potential impacts of the mine on surface water quality in nearby watercourses, including Gold Creek. This portion of the decision is found at paragraphs 841 to 1164, and what follows is a brief summary of these findings as they relate to WSCT.

The most significant potential impact of the mine on WSCT would be selenium contamination deposited into the Gold Creek and Blairmore Creek watersheds from runoff water and groundwater in the mine and its associated infrastructure (e.g., waste rock disposal areas). The panel describes Benga's water management plan at paragraphs 849 to 854, with diagrams to visually explain the mitigating function of surge ponds, sediment ponds, and saturation zones. The impact of selenium runoff in the Elk Valley on the collapse of WSCT populations led the panel to observe crucially that "[t]he Elk Valley serves as a cautionary example regarding what could occur when sources of

selenium and calcite formation are not controlled. It affirms the importance of preventing problems before they arise, rather than relying on adaptive management after contamination problems have taken hold." (at para 848)

Benga's assessment of selenium impacts and its proposed mitigation measures were questioned extensively by nearly all other hearing participants who asserted that Benga was underestimating the impacts of selenium on WSCT and overestimating the efficacy of its proposed mitigation measures. The panel findings on selenium impacts are summarized at paragraphs 1146 to 1153:

> Throughout this chapter, we identify a large number of uncertainties that arise from Benga's analysis of surface water quality. At many points in the analysis of the pathway of effects by which contaminants from the project could impact surface water quality, Benga made optimistic assumptions that were not well supported by evidence and submitted that it would effectively adopt an "adaptive management" approach, which involved proceeding with the project and determining later whether its assumptions were correct. If they were not, Benga did not have well-developed backup plans in hand.
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> If Benga's assumptions turned out to be incorrect, it might have been too late to avoid surface water quality impacts that, as was demonstrated in the nearby Elk Valley, could prove challenging and expensive to resolve. This does not represent a conservative approach appropriate to the sensitivity of the project location and the threatened status of one of the main receptors, westslope cutthroat trout.
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> Throughout the many sections of this chapter, we identify several optimistic and non-conservative assumptions made by Benga that undermined our confidence in the results it presented. We summarize some of our main findings below.
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> The current project as proposed is unlikely to capture the 95 or 98 percent of selenium-rich contact water coming from the waste rock dumps that would be needed to achieve modelled selenium concentrations in the effluent and receiving streams. Applying a more realistic capture efficiency rate, as part of a conservative approach, would result in significantly higher concentrations of selenium in the effluent, and in both Blairmore and Gold Creeks, in the absence of further mitigation.
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> Benga overestimated the effectiveness of its primary mitigation approach to managing selenium: saturated backfill zones. These structures are unlikely to achieve the extremely high performance level (removal of 99 per cent of influent selenium concentrations, or the production of effluent with selenium concentrations below 15 µg/L) that would be needed to achieve Benga's modelled selenium concentrations in the effluent and receiving streams. Benga did not demonstrate that the saturated backfill zones can achieve the necessary high level of effectiveness, at the scale of this project. Even a modest reduction in effectiveness from Benga's assertions would yield a large increase in selenium in saturated backfill zone effluent. And even if the saturated backfill zone did work as effectively as Benga suggested, modelled selenium concentrations in Blairmore Creek would eventually exceed Benga's proposed site- specific objective.

> Benga did not adequately describe or assess the alternative, additional selenium mitigation measures it would pursue if it turns out that the saturated backfill zones are not as effective as needed. Benga provided almost no substantive information on alternative treatment measures, and only intends to implement them "if needed" based on monitoring results, which introduces the possibility that there could be an unacceptable time lag between discovery of a contamination problem and construction of an alternative treatment approach. The strategy of "putting all one's eggs in one basket," when the basket (in this case, saturated backfill zones) is unproven, does not give us confidence that significant adverse environmental impacts can be avoided even if additional mitigation measures were later put in place.
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> We conclude the project is likely to cause significant, adverse effects to surface water quality. (at paras 1146— 1153)

WSCT and Habitat Offsets

In light of the evidence confirming the likelihood of significant adverse impacts to WSCT and its critical habitat in Gold Creek, the only way for this mine to be constructed and operated lawfully under *SARA* was for DFO to authorize the mine under section 73 of *SARA* which would require that any impact from the mine not jeopardize the survival or recovery of the species. Given the evidence of DFO that the WSCT population in Gold Creek is one of only 10 remaining populations in Alberta considered to be viable in the long term, that any negative impacts to the population would jeopardize the survival or recovery of the species, and the submissions made to the panel on the impacts of the mine on WSCT critical habitat in Gold Creek, it is difficult to envision a scenario in which this project would meet the requirements of section 73. The implementation of *SARA* and critical habitat protection in the face of a major development project such as this one is increasingly leading to a discussion about offsetting harm to critical habitat with measures that create or restore habitat elsewhere, in an attempt to address the requirements of section 73 (for a recent comment regarding offsets and impact to the critical habitat for a SARA listed species – boreal caribou in Alberta - see Canada and Alberta Agree to More Pie-In-The-Sky on Woodland Caribou).

Unfortunately, the role of offsets under *SARA* and how they can be implemented remains a significant unknown, despite the fact that the legislation has been in force for more than 15 years. Federal officials published a draft version of policy guidance for public comment approximately 5 years ago and since then have apparently did little or nothing with the draft. The Faculty's Public Interest Law Clinic was retained in 2016 to assist two groups with making submissions to Environment and Climate Change Canada on the proposed policy; Drew Yewchuk and I published that submission in Comments on the Proposed Species at Risk Act Permitting Policy. The essence of this submission was that authorizing harm to critical habitat in exchange for an offsetting plan was at best an unproven promise with a host of troublesome issues (several of which were apparent in this case), and we expressed the view that an offsetting policy that would authorize harm to critical habitat with a section 73 permit is fundamentally inconsistent with the overall purpose of *SARA* which is to protect threatened species from further losses and facilitate their recovery to

sustainable population numbers. While offsets are an important component of environmental policy more generally when implemented in accordance with the mitigation hierarchy – see here for an introductory webinar on biodiversity offsets and also see David W. Poulton, "Biodiversity and Conservation Offsets: A Guide for Albertans" (Canadian Institute of Resources Law, 2015) at page 5 – in my view they have no place under *SARA* for authorizing harm to a listed species because by the time a species is listed as threatened or endangered under *SARA* the days for trade-offs and mitigation measures are long gone.

Benga's proposed offsets included the enhancement of in situ habitat within the Gold and Blairmore creek watersheds, as well as genetic research on these WSCT populations (at paras 1275— 1278). Other hearing participants questioned some of Benga's assumptions underlying its offsets plan (e.g., whether overwintering habitat was a limiting factor for population numbers – at para 1281). In particular, DFO was of the view that the plan "did not provide confidence" it would offset the mine impacts on WSCT (at para 1279) and "did not demonstrate how the proposed offsetting would meet the population and distribution objectives for WSCT (as stated in the 2019 Recovery Strategy-Action Plan) and not jeopardize the survival and recovery of this species." (at para 1289)

A key discussion on offsets in the decision, one which may have implications going forward on the use of an offsets plan to address unavoidable harm to designated critical habitat for an endangered or threatened species listed under *SARA*, is found generally at paragraphs 1290 to 1302. In particular, the time gap between harm to critical habitat and the later implementation of an offset was identified by DFO as a problem for any approval of this project under *SARA*:

> We note that DFO has clearly indicated that offsetting measures should be constructed and proven effective prior to project impacts occurring on WSCT habitat. This will support a determination that the survival and recovery of WSCT will not be jeopardized. DFO has stated that this is a precondition that must be met prior to issuing a permit under section 73 of *SARA*, which we understand is a requirement for the project to proceed. We also note that Benga has rejected this approach as untenable. Given the sensitivity of the species and habitat in question, we understand DFO's position on this matter. However, we cannot base our decisions on what DFO or its minister may or may not decide in future regulatory applications. For our purposes, we must be persuaded on a balance of probabilities that Benga's proposed offsetting plan is technically feasible and likely to be effective. We are not persuaded this is the case. (at para 1301, emphasis added)

One of the most significant limitations for the effectiveness of offsets is that critical habitat is, by definition, rare and non-fungible. It would not be habitat *critical* to the survival and recovery of the species otherwise. Accordingly, a requirement that the offset be proven effective prior to project impacts is very important towards ensuring the use of offsets does not undermine the overall purpose of *SARA*.

Conclusion

Once the WSCT was listed under *SARA* and its recovery strategy initially published in 2014, the impact of the proposed Grassy Mountain mine on WSCT was always going to be a primary issue

in the assessment and decision-making process for this project. Indeed, my criticism here is the fact that the destruction of critical habitat for a threatened species listed under *SARA* – harm which would necessarily have to occur for this mine project to be constructed - did not seem to register with much significance in the regulatory review until very late in the process. Simply put, if we are serious about our intentions to halt the demise of species whose survival is threatened because of human activity, then the usual fare of mitigation proposals or adaptive management to address project impacts must give way to a regulatory approach that places higher significance on the need to protect critical habitat. This decision is a noteworthy and positive step in that direction, and represents justice for the WSCT at Grassy Mountain.

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