

Review Panel Manager
Grassy Mountain Coal Project
160 Elgin Street, 22nd Floor, Ottawa ON K1A 0H3
CEAA.GrassyMountain.ACEE@canada.ca

CPAWS Southern Alberta Review Grassy Mountain Coal Project Environmental Impact Assessment Reference 80101

1. CPAWS SOUTHERN ALBERTA STANDING

The Canadian Parks and Wilderness Society (CPAWS) is Canada's only nationwide environmental charity dedicated solely to the protection of our public lands and waters, and ensuring our parks are managed to protect the nature within them. Founded in 1967, CPAWS Southern Alberta is a respected leader in the conservation and stewardship of the Southern Alberta landscape. We strive to educate, collaborate, engage, and empower Albertans in developing solutions that safeguard, connect, and expand parks and wilderness areas. Over the past fifty years, we have worked successfully to increase protection for Southern Alberta's sensitive and essential habitats, including the Castle River watershed, the Whaleback region, and Kananaskis Country.

CPAWS Southern Alberta has decades of experience influencing management planning for Southern Alberta. For example, since 1993, CPAWS Southern Alberta has been engaged in management planning for the Castle River watershed, including the designation and management plan for the Castle Wildland and Provincial Parks, just a few kilometers south of the proposed mine and processing facility. We played a leadership role in the creation of the South Saskatchewan Regional Plan and accompanying sub-regional plans including the recent Land Footprint Management Plan and Recreation Management Plan, which encompasses the mine site and surrounding landscape. We also have been involved in planning and advocacy in relation to Highway 3, particularly in relation to wildlife connectivity.

Our two thousand members live in or regularly camp, hunt, fish, ride, hike, paddle, ski, and otherwise experience the many recreational and wilderness opportunities in southern Alberta and the Crowsnest Pass region. Our members rely on CPAWS Southern Alberta to engage in public consultations such as this one to express their concerns and represent their interests.

2. CONTEXT

CPAWS Southern Alberta reviewed a limited scope of the project documentation provided to the Joint Review Panel on the Grassy Mountain Coal Mine. The lens during our review is primarily from the perspective of protecting ecological integrity. While there is much to be concerned

about the impacts this mine will have on the environment of the Crowsnest Pass region, we have limited our review to the following issues:

- a. Water Quality (selenium and sulphur pollution)
- b. Westslope cutthroat trout and aquatic resources,
- c. Wildlife habitat and connectivity,
- d. Limber pine and whitebark pine.

The forests of Southern Alberta provide water, sustain fish and wildlife and offer some of the province's best opportunities for recreation and tourism. Pressures on our lands and resources are mounting. Good land-use ensures that our public lands are properly managed with and for Albertans. Several recent land-use initiatives in the region are important to consider in the context of this application.

In 2014, the South Saskatchewan Regional Plan authorized the development of a Land Footprint Management Plan (LFMP) and Recreation Management Plan (RMP) for the Porcupine Hills and Livingstone regions including the proposed site of the Grassy Mountain Coal Project. The LFMP also committed to a Human Spatial Footprint Plan to address non-linear footprints affect on interior habitat conditions in the region (this plan is not yet complete). These new plans are an important step in preserving our outdoor heritage and protecting Alberta's headwaters now and for future generation. They were initiated to address rapid growth and expanding human development and use that are impacting biodiversity, critical source waters, and the functioning of ecosystems. The plans were developed over years, with a much stakeholder and public input to help conserve this ecologically and socially important area.

With the creation of the new Recreation Management Plan, the creation of the Castle Wildland and Provincial Parks and the proposed Livingstone Range Wildland Provincial Park there is a clear direction for the region towards conservation and sustainable recreation.

The Grassy Mountain Coal Mine is a major industrial development in a very sensitive area with highly valued environmental and natural features. The overall project footprint of 1,520 ha is more than eight times the footprint of Blairmore, the nearest community. The scale of this development is substantial and its impact on the montane environment where it is located will inevitably be substantial.

CPAWS Southern Alberta is concerned that the proposed project is contrary to the intent of these foundational land-use plans for the region and the ecological importance of the region.

CPAWS acknowledges that the subject project is for steel-making (metallurgical) coal and not for thermal coal. The latter is being phased out in Alberta in accordance with current Government policy and any new thermal coal mine would be in direct contradiction of the current Government of Alberta policy on coal. Likewise, CPAWS acknowledges that there are currently three export (metallurgical) coal mines in Alberta that are explicitly exempted from the Government of Alberta policy on coal. These exempted coal projects are:

1. Coal Valley Mine (Westmoreland) - Hilton
2. Cardinal River Mine / Cheviot (Teck Coal) – Hinton
3. Grande Cache Coal Mine (Grande Cache Coal) – Grande Cache (see below).

The CEAA Panel, in seeking to balance the environmental impacts of the subject project with the proponent's predicted social and economic benefits, needs to consider fully, the ongoing, very inconsistent economic performance of these existing mines given the well-known and demonstrated vagaries of the export demand for metallurgical coal.

In particular, Grande Cache Coal Mines (GCCM) went bankrupt in 2017 after being purchased for over \$1 billion in 2011.¹ About 220 mine employees lost their jobs in 2015 when low metallurgical coal prices led to the mine being closed, leading to subsequent default on loan payments by the overseas mine owner. At the time of its bankruptcy GCCM held mining leases of over 29,000 ha (20 times the Grassy Mountain Coal Project) and estimated coal reserves of 346 million tonnes (slightly greater than the estimated 20-year production of 294 million tonnes for the Grassy Mountain Coal Project).

All the critically important environmental mitigation commitments made by this project proponent for Grassy Mountain mine need to be weighed in view of the Alberta experience with such coal projects suffering major economic uncertainty and changeable viability. The timing and progress of the subject application likely reflects at least some of that considerable uncertainty. The economic uncertainty for this project is obliquely acknowledged at page A-5 of the proponent's August 2016 EIA Project Introduction:

“The Project has been designed to ensure it is economically sustainable such that employees and other stakeholders, including the local community and nearby Aboriginal Groups, can be confident it will continue to operate throughout its 20+ year life and hence make key decisions accordingly.”

The bankruptcy of GCMM also directly resulted in abandonment of regulatory action by the Alberta Energy Regulator for a documented GCMM contravention of applicable regulatory requirements². This necessity reflects the reality that bankruptcy of a mining project can cause default on all regulatory / mitigation commitments made by the project proponent, no matter how valuable or essential the mitigation actions are. Unfortunately, Canada has seen too many such cases occur with mining projects. Perhaps the most notorious of these was the bankruptcy in 1999 of the Australian Royal Oak Mines-owned Giant Yellowknife Mine that has left the Government of Canada with at least \$450-million of environmental remediation liability³⁴.

CPAWS Southern Alberta does not claim that the project proponent is more or less likely to default on its environmental mitigation commitments than other mining projects, but the evidence in Canada has a number of documented cases that mining projects for minerals with

¹ Topf, A. 2017. Billion-dollar Alberta Coal Company Goes Bankrupt. Mining.com. February 7, 2017. www.mining.com/billion-dollar-alberta-coal-company-goes-bankrupt/

² Alberta Energy Regulator. 2017. Investigation Summary Report. 2015-023: Grande Cache Coal Corporation. Licence No. C2011-8F. May 11, 2017. http://www1.aer.ca/compliancedashboard/investigations/2015-023_ISR_GCC_20170511.pdf

³ Indian and Northern Affairs Canada. 2012. Historical Timeline – Giant Mine Remediation Project. http://publications.gc.ca/collections/collection_2014/aadnc-aandc/R74-26-2007-eng.pdf

⁴ Leffler, B. and F. Fionda. 2014. Timeline: Yellowknife's Giant Mine. Global 16x9 "Contamination Nation". <https://globalnews.ca/news/1682932/timeline-yellowknifes-giant-mine/>

volatile market value has left the public assuming responsibility for environmental liability when the mining project defaults.

The Joint Review Panel clearly needs to factor such tangible and over-riding risks into the decision-making balance that it faces in judging the public interest merits of the Grassy Mountain mine. To facilitate fully discharging its responsibility to determining the public interest, CPAWS would encourage the Joint Review Panel to visit one or more open pit metallurgical coal mines, either nearby in Elk Valley, B.C. or in West Central Alberta.

Additional information

- Provide an assessment of how the proposed Grassy Mountain Coal Project aligns with linear thresholds defined in the Land Footprint Management Plan?
- Provide information on how the Project aligns with the Recreation Management Plan and Castle Region Tourism Strategy?
- How will the proponent and Project address the Human Spatial Footprint Plan?
- How can CPAWS be assured the public will not assume responsibility for environmental liability, mitigation and reclamation if the mining project defaults?

3. SELECTED SPECIFIC / DETAILED CONCERNS

3.1. Water Quality

3.1.1. Selenium

Selenium (Se) is a naturally occurring element present in the rocks and minerals of earth's crust including the waste rock of the coal mines in the southern Canadian Rocky Mountains. It can be harmful if present at elevated concentrations. Coal mining can accelerate the release of Se to the environment by exposing waste rock to air and water.

Appendix 10 of the Updated Environmental Impact Assessment (Geochemistry Reports) addresses management of selenium leaching potential. This section notes:

“The Project will extract coal from rock using comparable mining and processing methods to those employed in other Rocky Mountain coal fields in southeastern and northeastern British Columbia and Alberta. At many of these operations, selenium leaching needs to be managed to address selenium concentrations observed in nearby surface waters.”

Furthermore, the SRK Consulting Grassy Mountain Water Quality Management Report states:

“Capture of seepage is expected to be necessary for many years after the end of the operation.”

Selenium pollution is of concern to drinking water quality and aquatic life from macroinvertebrates to native fish. Substantial physiological changes may occur in fish with high tissue concentrations of Se. Fish affected by Se may experience swelling of the gill lamellae, which impedes oxygen diffusion across the gills and blood flow within the gills. Respiratory capacity is further reduced due to Se binding to hemoglobin. Other problems include

degeneration of liver tissue, swelling around the heart, damaged egg follicles in ovaries, cataracts, and accumulation of fluid in the body cavity and head. Selenium often causes a malformed fish fetus which may have problems feeding or respiring; distortion of the fins or spine is also common.

Selenium bioaccumulates in aquatic habitats; this results in higher concentrations in organisms than in the surrounding water. Further concentration through bioaccumulation occurs along the food chain, as predators consume selenium rich prey. It is recommended that a water concentration of 2 µg Se/L be considered highly hazardous to sensitive fish and aquatic birds.

Total selenium measured by the proponent in Gold Creek for the 2016 EIA exceeded the local water quality guidelines in 25% of the samples during the summer and 20% of the samples during the winter.

It is clear that selenium must be managed for this project and that selenium contamination has been an issue at other metallurgical coal mines in the region. It appears that the proponent has chosen not to invest in an active water treatment plant to remove selenium and rather to rely on a passive scheme of surge ponds which will collect selenium-affected water, sediment ponds for treatment for suspended solids, and the raw water/southeast ponds which will capture water from the south rock disposal area. These mitigations all rely on “natural” anoxic electrochemical reducing conditions to precipitate the selenium within saturated backfill. The economic appeal of a passive process is understandable, but reliance on a passive process eliminates the close operational control that may be necessary to ensure successful selenium removal.

Claims are made in the EIA that this passive process has been shown to work at other similar operations and that this passive process will be much more cost effective than an active treatment plant. The Joint Review Panel needs to ask why specific evaluation of the success of this approach at similar metallurgical coal mines in B.C. has not been elaborated. In particular, the Joint Review Panel needs to understand why, if the recommended approach is successful, why B.C. is engaged in an international controversy with Montana, involving the International Joint Commission, over claims that B.C. is allowing coal mining-derived selenium contamination of the Elk River watershed to contaminate the trans-boundary Kooecanusa reservoir. A Global News reports a July 8, 2018 Canadian Press story:

“Teck was fined \$1.4 million in 2017 over selenium discharges. The company is being investigated for further violations. ‘Nobody’s happy that there’s selenium in excess of water quality guidelines,’ said Douglas Hill of B.C.’s Environment Department. ‘But we’re reasonably satisfied that Teck’s making best efforts to address the problem.’ ”⁵

Given the experience of Teck, CPAWS Southern Alberta is unconvinced that Benga Mining will be able to adequately treat its wastewater and that Se pollution, with its attendant impacts on fish and the organisms that consume fish, is an inevitable consequence of this mine proposal in the long-term.

⁵ Weber, B. 2018. U.S. officials accuse Canada of sitting on damning data on B.C. mining toxins in a transboundary river. Canadian Press, July 8, 2018. <https://globalnews.ca/news/4319395/us-canada-environmental-dispute-bc-mining-toxins/>

Additional information:

- Provide rationale as to why Benga Mining did not choose active water treatment plant to remove selenium rather to rely on a passive scheme.
- Provide evidence that passive mitigation including surge ponds, sediment ponds, and raw water ponds have been successful at removing selenium at other project sites in the region.

3.1.2. Sulphate

Sulphate is also clearly a water quality concern for this project. The report by Hatfield Consultants (Consultant Report #5 – Water Quality) states that water quality modeling shows that Environmental Quality Guidelines for Alberta Surface Waters were predicted to be exceeded for sulphate.

Specifically, the Consultant Report #5 states:

“Sulphate concentrations in Blairmore Creek are predicted to increase steadily over mine life to above the maximum published guideline of 429 mg/L (at 181-250 mg/L hardness) at all model locations downstream of the West Sedimentation Pond release.”

Details are provided on these model predictions that show exceedance of the relevant Alberta water quality guideline for most predictions, but introduces a quality criterion referenced as Elphick et al. (2011)⁶ that proposes, based on toxicity testing for a variety of endpoints with various aquatic species, a no-effect threshold for sulphate of 725 mg/L. Although this 2011 reference was published in a credible peer-reviewed journal, it has only been cited 31 times as of January 2019 with no citations indicating that this single research study has been adopted by any regulatory agency to establish water quality guidelines for sulphate. Much better transparency would have been achieved if the consultant’s report had specified that the authors of this paper were affiliated with the consultant and that the research was funded by five mining companies, including Teck Resources Ltd., owner and operator of metallurgical coal mining operations in British Columbia and Alberta. Regulatory guideline levels are not usually based on a single research study as appears to be encouraged in Consultant Report #5, essentially promoting adoption of its own study.

The final conclusions of this water quality report focused on sulphate. Unfortunately, the main technical report on water quality provided a somewhat unsatisfactory finding that emphasizes changing the water quality objective for sulphate for this site and relying on vigilant monitoring without providing tangible measures to reduce the excessive sulphate discharge from this development stating:

“In conclusion, different water quality issues due to the Project activities would be addressed by applying appropriate mitigation measures. Effects of process-related water release are predicted on sulphate in the receiving surface environments. The predicted sulphate concentrations were above the range of hardness-dependent sulphate guideline value which is 429 mg/L for a

⁶ Elphick, J.R. et al. 2011. An aquatic toxicological evaluation of sulfate: The case for considering hardness as a modifying factor in setting water quality guidelines. *Environmental Toxicology and Chemistry*. 30(1): 247-253.

maximum hardness level of 250 mg/L. Therefore, development of a site-specific sulphate objective based on site water hardness is recommended. Water quality model outputs should be considered as information for decision-making rather than representing absolute predictions of receiving water quality; monitoring vigilance is recommended to track and identify any trends in water quality and further refine model predictions.”

Additional information:

- Provide additional peer reviewed literature defending a no-effect threshold for sulphate of 725 mg/L.
- Provide rationale why monitoring is an appropriate response to predicted above-guideline levels of sulphate rather than mitigation measures to reduce sulphur levels in the water.
- Provide a sulphur reduction plan should monitoring results show continued sulphur levels above water quality guidelines.

3.2. Westslope Cutthroat Trout and Aquatic Resources

The project has the potential to impact fish and fish habitat, water quality and stream flows. The project area will directly and substantially impact Blairmore Creek and Gold Creek watersheds, which support Westslope Cutthroat Trout (WSCT), (*Oncorhynchus clarkii lewisi*). WSCT is a “threatened” species under both the Species at Risk Act and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Out of approximately 274 waterbodies historically occupied by WSCT, there are only approximately 51 pure-strain populations currently identified in the original WSCT distribution in Alberta. A recovery strategy for WSCT was issued in 2014. The goal of the recovery strategy is to protect and maintain the existing $\geq 99\%$ pure populations (currently believed to be approximately 51) at self-sustaining levels, and to re-establish additional pure populations to self-sustaining levels, within the species’ original distribution in Alberta. While current Critical Habitat is delineated by the location of these pure-strain populations, upstream tributaries are also important in maintaining water quality and habitat conditions for the species. It is possible the Critical Habitat could be expanded to include additional mainstream areas and upstream tributaries.

Flows on Gold Creek and the Crowsnest River are also predicted to decrease as a result of the project. Climate change predictions suggest that this region is a climate refugia for cold water species including WCTR, which will be important to maintain as climate change progresses. The EIA is unclear on the effect of decreased flows on westslope cutthroat trout Critical Habitat and does not take into account the expected effects of climate change to water flows and temperatures.

Mitigation that relies on varying buffers and applying off-setting habitat creation for a highly-valued, but range restricted and threatened species like WSCT appears to be an uncertain endeavor at best. CPAWS Southern Alberta is concerned that for such a species at risk that too much confidence is being placed in this approach. No disturbance or loss of Critical Habitat should be

The Crowsnest River is an internationally-recognized fly-fishing river. The National Geographic international travel site states:

“The Crowsnest River is regarded by avid fly fishers as one of western Canada’s premier trout streams...The river’s feisty rainbow trout are the main attraction to anglers, although cutthroat and bull trout are also present. The pools and riffles of the Crowsnest are a haven for both novice and expert fly fishers. Although fish can be taken from the entire length of the Crowsnest River, the stretch of river downstream from the bridge on the Hillcrest East Access to the crossing of Highway 3 (Crowsnest Highway) below Lundbreck Falls is the most popular run.”⁷

The high fly-fishing value area described is downstream from the confluence of Blairmore Creek with the Crowsnest River.

The value to the region and to Alberta of this local natural treasure should be self-evident. The standard project proponent mitigation approach of providing off-setting habitat for that which is adversely affected is not realistic for any adverse fishery impacts on the Crowsnest River.

Additional information:

- Confirm that a 100m setback will be observed for all riparian areas affected by the Project.
- No damage to Critical Habitat should be permitted. Provide evidence that loss of habitat in Blairmore Creek and Gold Creek will not affect Critical Habitat or upstream mainstream or tributaries. Provide assurance that in the event of updated and expanded Critical Habitat designation that no additional Critical Habitat will be affected.
- Provide an assessment of water flows under predicted climate change scenarios, including potential effects on WCTR habitat. Provide evidence that altered water flows including effects of climate change will not affect WCTR Critical Habitat.

3.3. Wildlife Habitat and Connectivity

Several wildlife species of management concern occur in the Crowsnest Pass area, including grizzly bears, elk, moose, white-tailed and mule deer, mountain goats, bighorn sheep, Canada lynx and American marten as well as five SARA listed species: olive-sided flycatcher, common nighthawk, short-eared owl, and little brown myotis.

Important wildlife habitat patches for multiple species (elk, grizzly bear, wolverine, bighorn sheep, and moose) exist just to the east of the proposed mine permit boundary. Primary wildlife corridors for wide-ranging mammals such as grizzly bear and elk also bisect the proposed mine permit area in the both the south and the north ends of the Wildlife LSA⁸.

The north portion of the mine permit boundary is also situated within a Core Grizzly Bear Zone. Alberta’s Grizzly Bear Recovery Plan provides a framework of actions that are needed for the

⁷ The Crowsnest Angler. 2018a. Crowsnest River Flyfishing – Alberta, Canada. Crown of the Continent. National Geographic - A travel guide to the places most respected and recommended by locals.

<https://crownofthecontinent.natgeotourism.com/content/crowsnest-river-flyfishing-alberta-canada/cotea3f033f96f905aaa>

⁸ Southern Eastern Slopes Collaborative. 2018. Southern Eastern Slopes Conservation Strategy www.southerneasternslopes.ca

successful recovery of this species. Key recommendations of the plan include controlling access, development, and use in high-quality grizzly bear habitat.

The EIA provides an initial overview of wildlife impacts that may arise with this project that initially provides some reassurance that objective consideration of adverse impacts has been done:

“3.1 Key Wildlife Issues

Project development has the potential to interact with wildlife in different ways. The Project may alter wildlife habitat availability, habitat connectivity/movement, and wildlife mortality risk and health, all of which may affect the abundance of wildlife in the area (Table 3.1-1). Effects on habitat availability may be either direct (e.g. vegetation clearing) or indirect (e.g. avoidance of habitat because of sensory disturbance)...

3.1.1 Habitat Availability

Habitat availability will be altered by the Project, either directly through habitat loss within the Project footprint, or indirectly through wildlife avoidance as a result of sensory disturbance. Land clearing during Project construction creates a direct loss of habitat, which for some species may represent the greatest single effect of the Project. Wildlife with small home ranges and highly specific habitat requirements may be affected at the local level, depending on population size and Project location. Other species with different seasonal requirements, such as toads which require aquatic habitat in spring and summer and upland habitat in winter, may reduce their use of an area if one seasonal habitat is lost. The effects of habitat loss can continue long after the habitat loss has occurred. Habitat loss is considered to be the leading cause of biodiversity loss by many authorities (Pimm and Raven, 2000 Brooks et al., 2002; Fahrig, 2003).

Sensory disturbance associated with Project development (e.g. noise, artificial lighting, blasting, and human activity) will also result in indirect habitat loss. These sensory disturbances, which can be ongoing or periodic, may result in wildlife avoiding otherwise suitable habitat, particularly species sensitive to human disturbances such as marten, wolverine, and various species of birds. Sensory disturbance may also affect reproductive success (Habib et al., 2007) or foraging ability of some wildlife species (Bird et al., 2004; Longcore and Rich, 2004; Buchanan, 2006; De Molenaar et al., 2006; Navara and Nelson, 2007). Lights may even alter bird and bat movement behaviour, which in turn could potentially increase energy expenditures and mortality risk (Gauthreaux and Besler, 2006; American Bird Conservancy, 2007). Some wildlife species, such as grizzly bears, may also avoid areas with high levels of human activity (Gibeau et al., 2002). For some sensitive species, indirect habitat losses may account for a greater loss of effective habitat than results from direct loss through vegetation removal.

3.1.2 Habitat Fragmentation and Connectivity

Like other coal projects, the Project has the potential to adversely affect wildlife by disrupting their movement patterns and reducing access to seasonally important habitats. For most species, the ability to move among patches of habitat is crucial. For example, toads move between breeding and hibernation habitats in spring and fall (Garcia et al. 2004). Landscape permeability is particularly important for species with larger home ranges such as moose, elk, and grizzly bear. Inability to access requisite habitats may result in use of lower quality habitats with sub-optimal forage and shelter, leading to impaired health and lower reproduction rates.

Construction of open pit coal mines, access roads, coal conveyors, and utility corridors (e.g. pipelines, transmission lines) can function as physical barriers to the movement of certain animals, while sensory disturbance associated with use of access roads and construction and operation of Project facilities can prevent animals from effectively moving across the landscape. The effects of these physical and sensory barriers, together with effects of habitat loss through vegetation clearing, can lead to habitat fragmentation and loss of connectivity within a species' home range.

Habitat fragmentation occurs when a continuous block of suitable habitat is divided into smaller blocks separated by barriers to wildlife movement. These barriers can include physical structures, strips of unsuitable habitat, or areas with high levels of noise and human activity.

Habitat fragmentation can have especially negative effects on species with low population densities and large home ranges, such as grizzly bears. Without access to a sufficiently large area to meet their needs, such species may suffer from lowered reproduction and survival rates. A major barrier to movement can also prevent gene flow among adjacent populations (Proctor et al., 2002). This can lead to the extirpation of wildlife populations if isolated populations become too small to avoid inbreeding depression. In contrast, wildlife movement across the landscape is often facilitated by natural corridors such as valleys and riparian zones associated with wetlands and watercourses. Disrupting movement along natural corridors may prevent gene flow among adjacent populations. Maintaining the integrity of valleys and riparian zones can help preserve the natural movement patterns of wildlife.”

A major sentinel species of concern for this location is the Grizzly Bear which was classified as follows:

Grizzly Bear	Alberta: Threatened COSEWIC: Special Concern SARA: Schedule 3	<i>Known to occur in WLSA; culturally important to First Nations; potentially declining population in the Castle-Livingstone region; susceptible to industrial activities and vulnerable to conflicts with humans; provincially and federally listed species.</i>
--------------	--	---

The draft Alberta Grizzly Bear Recovery Plan 2016-2021 states that threats to grizzly bear include human-caused grizzly bear mortality, anthropogenic habitat alteration and loss of connectivity.

Despite the reality that the Grassy Mountain Mine Project will disturb a large area of habitat with major open pit mining and will attract extensive human activity during its construction and operational phase, the wildlife impact assessment optimistically concludes, largely based on the eventual long-term replacement of habitat by the mine reclamation process:

“The magnitude of cumulative effects on habitat fragmentation and movement for grizzly bears is predicted to be nil in magnitude and not significant. The probability of effects occurring is low and the confidence rating is high.”

CPAWS could have greater confidence in this optimistic assessment for impacts grizzly bears (as a key sentinel species of wildlife) if there had been any apparent review of evidence for impact on grizzly bears at any other B.C. or Alberta open pit coal mines. For example, we note the

recent report by a Lamb, University of Alberta PhD candidate, about grizzly bears nearby in B.C. stating that:

“Mortality rates in the Elk Valley are among the highest in North America and the area has the highest non-hunting mortality rate in B.C.”⁹

More broadly the EIA claims at an overview level, despite the wide range of sensitive wildlife that will admittedly be impacted by the operations of the Grassy Mountain Coal Mine, that all will be well after the project is completed, stating:

“Of the confirmed species, four are SARA-listed (olive-sided flycatcher, common nighthawk, short-eared owl, and little brown myotis), five are COSEWIC-listed (western toad, barn swallow, grizzly bear, American badger, and wolverine), a total of 67 species are protected under the Migratory Birds Convention Act, and several are provincially rated as Sensitive.

The construction and operation of the Project will result in habitat loss, increased habitat fragmentation, and changes in wildlife movement, mortality risk, and abundance for the VCs, special status species, and migratory birds. With progressive reclamation and the implementation of extensive mitigation plans, it is expected that long-term Project effects on habitat availability, wildlife movement, mortality risk, wildlife abundance, and wildlife diversity will be not significant.”

Given the status of several species of management concern in the study area, it is not appropriate to determine effects after reclamation. The ability of wildlife to move between patches of habitat is essential to their ability to meet their life needs for security, food, and mating, as well as to adapt to changing ecological conditions. The construction and operation of an open pit coal mine at this location has the potential both to destroy a significant amount of habitat that supports multiple wildlife species, including a grizzly bear population that is classified as Threatened under Alberta’s Wildlife Act, as well as sever wildlife movement opportunities for other wildlife. These “short-term” effects during the life of the mine could impede the ability of species of management concern to recover after reclamation.

Additional information:

- Most research suggests that open road density of 0.6 km/km² is a rough threshold above which female grizzly bears may have unsustainable survival rates or levels of habitat avoidance and such areas become population sinks¹⁰. Provide rationale on why 0.6-2.4 km/km² is considered only Moderate Risk for grizzly bears.
- Provide an assessment of the alignment of the Project with the Land Footprint Management Plan linear density thresholds.
- Provide information on if or how elk movement data were incorporated into the EIA for wildlife connectivity.

⁹ Anon. 2018b. Bear biologist to outline why Elk Valley ecological trap. <https://www.e-know.ca/regions/elk-valley/bear-biologist-outline-elk-valley-ecological-trap/>

¹⁰ Proctor, M.F., B.. McLellan, G.B. Stenhouse, G. Mowat, C.T. Lamb, M.S. Boyce. 2018. Resource Roads and Grizzly Bears in British Columbia and Alberta, Canada. Canadian Grizzly Bear Management Series, Resource road management. Trans-border Grizzly Bear Project, Flathead Grizzly Bear Project, fRI Research Institute Grizzly Bear Program, South Rockies Grizzly Bear Project, Elk Valley Grizzly Bear Project, University of Alberta.

- What is the confidence that population trends of species at risk in the region will allow for recolonization and recovery of habitat in the study area after reclamation?

3.4. Limber pine and whitebark pine

Two species that will be directly impacted by the mine footprint and associated activities are federally listed by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (COSEWIC 2015): *Pinus albicaulis* (whitebark pine) and *Pinus flexilis* (limber pine). Whitebark pine is listed as “Endangered” in Alberta and British Columbia and under SARA Schedule 1. Limber pine was designated as “Endangered” throughout its range in Alberta and British Columbia by COSEWIC in November 2014. Whitebark pine and limber pine are also ranked as “At Risk” and are ranked as “Endangered” under Alberta’s Wildlife Act.

Alberta’s recovery plan for limber pine states that loss of habitat and populations of limber pine is undesirable and should be minimized. The recovery goal is to conserve existing populations and habitat and to restore populations across its current and historical range in sufficient numbers to continue functioning in its ecological role. Limber pine and whitebark pine area also particularly vulnerable to climate change. Reducing direct mortality to limber pine, such as will occur if the Grassy Mountain Coal Mine proceeds, is the first recovery objective. The recovery plan for whitebark pine contains identical goals and objectives.

Given the fragile state of limber pine and whitebark pine populations in southern Alberta, activities that will result in mortality to individuals of these species should not be permitted.

Additional information:

- Provide rational for the destruction of an endangered species such as whitebark pine in the project area is justified.
- Provide an assessment of the cumulative effects of the loss of whitebark pine including predicted climate change effects.

4. CPAWS’ PROPOSED OUTCOME FOR THESE APPLICATIONS

Due to the extent of habitat loss and fragmentation of habitat corridors, the irreplaceable compromise of habitat for pure strain westslope cutthroat trout, the potential for irremediable selenium and sulphur pollution in the Crowsnest River watershed, and the likely mortality of limber and whitebark pine trees in the project footprint, CPAWS requests that these applications be denied.

5. CONCLUSION

CPAWS-SAB is very concerned about the potential ecological impacts of a new coal mine in the Crowsnest Pass region of Alberta. We request to be allowed to participate in any hearings conducted by the Alberta Energy Regulator to expand upon the submissions made above.

<Original signed by>

Katie Morrison
Conservation Director
CPAWS Southern Alberta Chapter