

Crowsnest Pass Coal Mining:

A Déjà Vu to Avoid

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One flight over the Elk Valley in southeastern British Columbia demonstrates the enormous territory devoted to open pit coal mining operations. Teck Resources, a Canadian company, is the primary owner and operator of five surface coal mines within a hundred kilometre radius of the Elk Valley. The coal at all five mines is metallurgical (coking coal) destined for export to Asian steel producers. Coking coal is converted to coke, which is then used in a blast furnace to smelt iron ore. According to the World Coal Association, approximately 770 kilograms of coal are required to produce one tonne of steel. In 2013, Canada was the sixth highest coking coal producer in the world, primarily due to developments in northeast and southeast B.C. Alberta, by comparison, is a very small player in the global coking coal market. So one of the first questions asked should be - is there a need for Alberta to engage at all in further metallurgical coal development, considering B.C.'s resources are far more lucrative and closer to ports, and the huge ecosystem tradeoffs Alberta will make?

The bird's eye view of B.C.'s Elk Valley landscape shows a patchwork of large dark dead zones amongst a bounty of mountain peaks and lush valleys. Alberta is preparing to be the next region to adopt that sort of view. Our view will also include the checkerboard squares of clear cuts along the southeastern slopes. As noted in my February 2014 WLA article, *Dark and Dirty: Time to Dethrone King Coal in Alberta*, coal mining has significant negative consequences on the environment due in part to its large

footprint on the landscape. The provincial government seems willing to allow, if not encourage, yet another high impact land use onto our forested headwaters in southwestern Alberta by allowing coal leases throughout and inevitably new open pit mines.

Exploration and investment in coal development near the Crowsnest Pass has increased significantly in the last few years. Altitude Resources Inc. and Elan Coal Ltd. signed a joint venture agreement with Kuro Coal Limited to develop the Elan Coking Coal Project. The Elan lease applications are located 15 kilometres north of the Municipality of the Crowsnest Pass and extend approximately 55 kilometres north, paralleling the Livingstone Range. The *2013 Year in Review of Coal and Mineral Development in Alberta* states that the Elan property has previously been poked and prodded by at least five different companies since the 1940s. It is possible to interpret that as: after the initial interest in the area, each company has eventually arrived at the same conclusion – the lease is not an economically viable coal mining property. It is far from existing railways and other infrastructure; the seams are thin and too steep to allow underground mining; it will be too expensive to produce and ship west for export; and global coking coal prices are volatile.

Meanwhile, the intensity of exploration, through test drill holes, contributes significantly to increased human access and disturbance levels. This is highly valuable recreation land and critical fish and wildlife habitat. Kuro, as part of its joint ven-

ture arrangement, is set to begin more exploratory drilling and prepare a scoping study, a prefeasibility study and a formal feasibility study for the Elan project. The government's willingness to allow intense exploration in prime watershed and recreation areas shows little regard for Alberta's landscapes.

The other current player in the Crowsnest Pass is Riversdale Resources, an Australian company that acquired coal assets from Consol Energy and Devon Canada. These assets included the Grassy Mountain property just north of Blairmore which has also been previously explored, studied, and mined. There is very little on-site infrastructure other than access roads and a main electrical power transmission line. According to Riversdale's website, an electrical power system, haul roads, a coal conveyor system, a coal preparation plant, a rail load out, maintenance shops, and a laboratory are among the list of new mine infrastructure needed for this project to proceed. More infrastructure equals a larger, denser footprint and less wildlife habitat. Riversdale has publicized their rail load out proposals which all suggest using a conveyor belt to transport coal to a facility on secondary train tracks near Highway 3, in Blairmore. All three proposals are likely to disrupt and may even force some current town businesses to relocate, increase road and train traffic, and require new overpass structures. Regulatory approval is still needed for the company to begin construction and operations. Riversdale has hired a number of environmental consultants who have been collecting baseline data since



Grassy Mountain Mine, now owned by Riversdale Resources, was previously mined. The scar it left on the landscape may once again become an open wound.
 PHOTO: © B. VERBEEK

spring 2013 to gain a better understanding of the local environment. But even with best management practices and the highest environmental responsibility, open pit mining has long lasting impacts on the mine area and its surroundings.

To Riversdale's credit, the company has hosted several open houses where community members and stakeholders have voiced both their support and concerns. These meetings suggest the revival of coal is being welcomed by some of the Crowsnest Pass community. There is a powerful historical presence of mining in the pass, with many family roots to the industry. Also many residents of Coleman and Blairmore currently commute west to work on the mines in Elk Valley. Supporters of coal development see it as an economic opportunity for the community. They see it as a chance to increase

employment and bring new prospects for local businesses – a chance to revitalize the municipality.

Others strongly oppose the project. These individuals and groups do not want to see further demolition of the landscape. Some local landowners are concerned for their property values, their drinking water and clean air, and their right to solitude and quiet. After a tour of one landowner's property adjacent to the Grassy Mountain Mine, it was easy for me to imagine the direct adverse effects it will have on these locals and potentially on many southern Albertans. I could hear the sound of heavy machinery up on the hillside in an otherwise tranquil setting. Wildlife is abundant in the area and beautifully clear creeks flow through the valley heading east. Many are home to native trout. Gold Creek and its tributaries,

located less than a kilometre from the mine site, are listed as critical habitat in the federal recovery strategy for westslope cutthroat trout. There is a lot these landowners stand to possibly lose.

A whole different set of issues could arise here because Grassy Mountain was previously mined. Contaminated water sitting in cavities from previous mining operations could be a major environmental concern. Whether or not the onus is on Riversdale to take over that liability is unclear. Water contamination is a very real risk posed by many types of mining, and one which our western neighbours have been facing. Teck Resources has had a major issue dealing with elevated levels of selenium in the Elk watershed below the mine sites. Selenium is a naturally occurring metal necessary for the health of all animals in trace amounts.



A northeast view overlooking Gold Creek – a beautiful wild area in jeopardy from the nearby Grassy Mountain coal mine development. Photo ©: B. VERBEEK

But, as with most metals, it becomes toxic and eventually lethal in large amounts. Excess selenium in fish eggs causes reduced hatching success and a host of abnormalities in post-hatch survivors. A 2013 report by Rick Heuer and Erin Sexton of the Flathead Lake Biological Station compared water quality of the Flathead River and the Elk River upstream and downstream of the five mines. They found significantly higher levels of selenium, nitrates, and sulphates in the Elk River below the mine area. The toxic threshold for sensitive fish species is $2\mu\text{g/L}$ (micrograms per litre). Environment Canada's data collected below the mines showed concentrations of selenium in fish eggs frequently exceeded $60\mu\text{g/L}$. Teck has been pouring money into addressing the problem as part of its effort to try to im-

prove water quality over the next several years.

The Crowsnest Pass and the Elk Valley share the same geology. Selenium poisoning in Alberta's southern watersheds may become a serious issue if coal development continues. This is further supported by ongoing concerns in west-central watersheds where coal mining is well established. The risks to our drinking water and our world-renowned trout streams must be recognized.

There has been a continued push for increased federal environmental regulation in the coal mining sector. Of all the different mining operations in Canada, including metal, diamond, coal, and potash, only metal mines have a specific regulation under the *Fisheries Act: the Metal Mining Ef-*

fluent Regulations (MMER). Canadian coal mines are primarily open pit surface mines which produce effluent (defined as an outflow of liquid containing deleterious substances) from the extraction and processing operations. Most effluent treatment at coal mining operations in Canada is done by conventional means, such as diversion, settling, and sedimentation. The treated effluent is then discharged into the receiving environment. In 2012 Environment Canada proposed to include coal mining under the existing MMER effluent standards. This would ensure pH, total suspended solids, ammonia, arsenic, aluminum, iron, manganese, and selenium would have specific release limits. They also proposed that coal mine owners and operators be required to conduct environmental effects monitoring

(EEM) activities that are currently specified in the MMER. These measures would help to fill significant provincial gaps in regulating coal mine effluents. Final approval of Environment Canada's recommendations would standardize effluent release all across Canada and better control the release of toxic materials into watersheds.

As renewed interest in coal leases seeps north from the Crowsnest Pass, environmental effects will multiply. Any coal development approaching the Gap (the Oldman River crossing the Livingstone Range) and in the upper Oldman watershed, which are both in the scope of Elan's coal lease applications, must not be considered. Any outdoor enthusiast will tell you that area is blessed with prime fishing, hunting, hiking, biking, and camping possibilities. The ecological and recreational value of this largely unprotected country is immeasurable yet its intactness is rapidly declining. Allowing more coal developments along the Eastern Slopes would take another giant step backwards from securing headwaters. When it comes to coal mining in the Pass, the risks seem far greater than the rewards for Albertans.

AWA believes it is incumbent on our government to privilege the ecological values of water and wildlife over coal mining in the upper reaches of the Oldman River drainage. If Alberta is seeking to improve its global environmental image, new open pit mines along the classic Eastern Slopes should be out of the question.

AWA believes Alberta and B.C. need to cooperate and better represent these values in the balance between economic development and environmental protection. Further piecemeal dissection of these ecologically and aesthetically important landscapes must be prevented. ▲

Gold Creek and its tributaries, part of the Oldman watershed and less than one kilometre from Grassy Mountain Mine, boast pure-strain westslope cutthroat trout. Photo ©: B. VERBEEK

