

Coal is Still a Concern



By Devon Earl, *AWA Conservation Specialist*

This spring, Albertans breathed a sigh of relief when the Government of Alberta made the decision to pause temporarily all new coal exploration and development on the Eastern Slopes of the Rocky Mountains, following recommendations by the Coal Policy Committee. While this was a step in the right direction, Albertans are still waiting for a future without coal on our beloved Eastern Slopes to be enshrined into legislation through subregional land-use planning. Despite the relative silence on the coal file in Alberta over the past few months, it remains a hot topic on the world stage.

In June 2022, the United States government called for Canada to join in an assessment of cross-border water contamination from Teck Resources Ltd. coal mines in British Columbia. The five active open-pit coal mines in the Elk River Valley release selenium into the Kootenay watershed (spelled “Kootenai” in the United States), affecting water quality and fish in the downstream states of Montana and Idaho. The US Government is now calling for Canada to join them on a reference (also known as a request) to the International Joint Commission (IJC) to look into water quality issues resulting from these coal mines.

The IJC conducts assessments and facilitates solutions for cross-boundary water pollution issues. Canada and the United States both have obligations under the *Boundary Waters Treaty* not to pollute waters flowing across the boundary to the injury of health or property of the other. IJC’s aim is to mediate water disputes between jurisdictions, and it

generally operates jointly with both countries involved. The assessment would determine the extent of pollution issues and provide recommendations to solve the identified problems. Canada and the US have collaborated on these joint references in the past; however, the Canadian government has not committed to joining the reference in this case. In April 2022, Global Affairs Canada provided a written notice to Ktunaxa Nation in B.C. that they were rejecting the reference proposal. Ktunaxa Nation and several other First Nations have been requesting a reference to the IJC since 2012 due to water quality issues and consequent health concerns. Canadian officials have since indicated that they have not ruled out the possibility of an IJC reference, contradicting their earlier communications with Ktunaxa Nation.

These water quality issues in the Kootenay (Kootenai) basin are not new. Fish populations such as burbot have been declining in Lake Koochanusa since the late 1980s. In many cases, the levels of selenium measured in ovary tissues of fish in Lake Koochanusa have exceeded the threshold where fish are likely to experience harmful effects. In 2020, a study looking at selenium in fish tissue samples showed increasing levels compared to previous years. Elevated levels of selenium in water can cause reduced reproduction, embryo toxicity, and deformities in young fish.

Once water has been contaminated with coal mine pollutants such as selenium, those pollutants are extremely costly if not impossible to remove. Additionally, the nature of water is that it traverses boundaries, giving life to – or harming

– all the many beings, including people, living downstream of that contamination. In Alberta, even though there is no new coal exploration or development allowed on the Eastern Slopes, there are still environmental concerns associated with existing mines, reclamation of inactive mines, and the footprint associated with coal exploration to consider.

In the McLeod River watershed, long-term trends in surface water quality have been studied in relation to two inactive mines undergoing reclamation (Luscar and Gregg River mines, inactive since 2004 and 2000 respectively) and one active mine (Cheviot mine, active since 2005). Reclamation activities at the Luscar and Gregg River mines have affected water quality in the Luscar Creek and Gregg River respectively, which are both tributaries to the McLeod River. Data from 2005 to 2016 shows elevated selenium levels in both water bodies downstream of the inactive mines compared to upstream reference sites. In addition, concentrations of most metals and dissolved solids that were measured in these water bodies were also elevated downstream of mining compared to upstream. Although the concentrations of selenium and other metals decreased over time with reclamation activities, many were still above the threshold that is recommended to preserve healthy aquatic life, including fish. This shows that while reclamation activities are important in improving water quality, the effects of coal mining on water quality are persistent long after the cessation of mining. As expected, surface water quality in the McLeod River downstream of the active Cheviot Mine also showed elevated levels of selenium,

other metals, and dissolved nitrogen.

The elevated selenium observed in fish eggs in the tributaries of McLeod River translated to adverse effects on rainbow trout fry (the lab-raised offspring of mature fish captured in the mine-affected area of Luscar Creek, Gregg River and unaffected reference sites). Though deformities were observed in native rainbow trout, this trend was not observed in brook trout, an invasive species. This is notable because it shows how human activities are impacting the ability of native trout to compete with introduced species. This likely has implications for Alberta's other endangered native salmonids such as westslope cutthroat trout and bull trout. Reclamation activities are essential to improve water quality after coal mining, but are often not enough to counteract all negative impacts from coal mining in the decade following mine closure.

One of the challenges of coal mine reclamation is returning the land to the functionality that it had prior to mining. Particularly when it comes to open-pit mines, this is often an unachievable

goal. Take for example Benga's proposed Grassy Mountain mine. Grassy Mountain was expected to destroy approximately 21,000 endangered whitebark and limber pine trees. Benga proposed that at year 15, they would start planting three times the number of tree seedlings that they destroyed to mine the coal. However, 86 percent of the steep slopes in the mining area would have been eliminated. These steeper slopes are important habitat for whitebark pine because they allow this species to outcompete other species that prefer flat ground or gentler slopes. The resulting landscape after reclamation was unlikely to be suitable habitat for this species. This is just one example of how reclamation is often inadequate in returning the landscape to the same functionality that it had before. Of course, in the case of Grassy Mountain, Benga's poor reclamation strategy (if it can be considered a strategy at all), was one reason that the project was rejected by the Joint Review Panel.

In addition to active coal mines and mines undergoing reclamation, there is also the issue of reclaiming the

disturbance on the Eastern Slopes from coal exploration following the rescission of the 1976 Coal Policy in 2020. This decision opened up many previously-protected lands to coal exploration, resulting in hundreds of kilometres of new roads for industrial access and drill sites on the landscape. This type of development disrupts wildlife movement, vegetation communities, and water quality. Roads are difficult to reclaim and lead to sedimentation which affects water quality and fish habitat, and habitat fragmentation disrupts wildlife movement and ability to find food and mating opportunities. Access roads also contribute to the linear disturbance on the landscape from all human use. Linear disturbance and all other disturbances taken together have a massive cumulative impact on the environment.

AWA would like to see land-use planning set science-based limits on linear disturbance and industrial development, including a ban on all coal mining on our Eastern Slopes, which are vitally important headwaters that provide a suite of irreplaceable ecosystem services. 🐟



The presence of harmful substances such as selenium can persist in watercourses downstream of inactive or reclaimed coal mines. Elevated selenium concentrations pose an increased risk to the health of Alberta's native trout species such as Athabasca rainbow trout (pictured) who rely on these streams and channels for survival. Photo © P. Meintzer