Report on Chuitna Coal Project of PacRim Coal

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Impacts from mining coal from the wetlands and forests above the Chuitna River will cause destruction of over 4,000 acres of wetlands and is highly likely to permanently change the ecosystem of the area and the productivity of the Chuitna River.

The ecosystem is a woven fabric of wetlands, tundra, forests, and tiny headwater streams that gather to build larger streams, to eventually pour into the Chuitna River. Forty-one percent of the watershed will be directly impacted from mining and backfilling of the mine. What occurs in these headwaters, wetlands, tundra, and forests is vital to the water quality and the fish downstream. It is in these areas that carbon is stored and nutrients are cycled from detritus to microbes, from microbes to insects. The wetlands in particular are vital to storing water that seeps down into flow paths beneath the earth, to surface at the bottom of streams, keeping them flowing when there is no rain or snow. As water trickles through wetlands, microbes in the muck and peat remove heavy metals and purify the water. Wetlands are the source of both pure water and primary nutrients such as carbon, nitrogen, and phosphorous which make up the very base of the food chain. Wetlands water seeps up to become headwater streams, disproportionately rich in biodiversity for their small size, and the source of much of the food that arrives downstream. Headwaters provide breeding and nursery grounds for insects that spend the rest of their lives in larger streams and rivers, and are an important food source for fish. Headwaters provide spawning grounds and help to regulate stream temperature. The rich biodiversity found here buffers the streams so they recover more rapidly from rapid changes such as climate swings, flooding, and human damage.

Tundra, wetlands, and headwater streams will all be destroyed during mining. And there is little chance they will be restored. Tundra is very sensitive and only revives when specific conditions are met, including maintaining corridors to more tundra throughout the mining process. Wetlands and headwaters cannot be restored to ecological function if the very material that they rely on – deep sediment structure and long-entrained flow paths – are mined through, ground up, and replaced in the mining pit as a relatively homogenous pile of rubble and dirt.

One stream, "Stream 2003" also called Middle Creek, will be completely destroyed. It will not be "impacted", but rather mining will go down hundreds of feet beneath it, completely removing the stream bed and any remnant of the stream for 11 miles. While stream reconstruction has been done successfully by re-grading and re-vegetating banks, or adding or removing debris to create habitat, no one has simply created a new stream where none exists. A new ditch can be dug where the old stream used to be, and can have the same curves and shape. But it will not have the exchange of surface and groundwater at the streambed, upwelling areas for fish to lay their eggs in, biodiversity of insects that headwater streams provide as food for fish, the purity of water and nutrients wetlands provided.

Nor is PacRim attempting to assess the functions of the stream and its associated ecosystems as they are now. Without such an assessment – rates of nutrient cycling, flood control, sediment control, water purification, and more – PacRim has no end goal to attempt to reach.

In summary, there are three main areas of concern with the mitigation plan:

First, the applicants have not directly measured ecosystem functions and thus have not applied current science to the mitigation issues. Without these functional assessments, they do not know exactly what natural resource values are being lost and thus what they need to mitigate for. Second, the approach proposed for replacing the lost streams (especially Stream 2003) is outside the realm of stream restoration or rehabilitation practices. Their approach basically amounts to channel "creation" in an area in which the earth has been disturbed to depths of 300- 500 feet, the natural flow paths destroyed, and landscape topography reshaped. Indeed, there is ample evidence in the peer-reviewed literature that the approach they propose (Natural Channel Design) typically fail ecologically. Third, impacts to the watershed and the headwater streams from the mining activities will fundamentally alter the chemical, hydrologic and sediment regimes which are master variables controlling the water quality and productivity downstream.

In sum, based on the most current and rigorous science, the impacts of this project are very significant and there is no evidence that the restoration and mitigation plans that are proposed will compensate for the natural resource losses.