Baseline Data Collection in Support of Habitat Restoration and Mine Reclamation: Chuitna Coal Mine, Alaska

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Abstract: The Chuitna Coal Project is located 70 kilometers west southwest of Anchorage AK and in the early development stages. With increasing demand for coal worldwide, Pac Rim Coal began meeting with state and federal agencies to discuss the requirements for the State of Alaska SMCRA, COE 404 and the EPA NPDES permits needed to begin development of the coal reserves in the Chuitna Area. The proposal included a large surface mine that would produce ~12 million tons of coal a year for export to overseas markets. During the initial meetings with the company, it was clear that the project would need to address mitigation and restoration of wetlands, wildlife habitat, and adronomous and local fish populations. During the winter of 2006, a series of baseline study plans were proposed for the following summer meant to supplement the baseline data that had been collected since the early 80s on these areas of concern. The study plans were designed to meet the State of Alaska's requirements to incorporate geomorphic principles into the reclamation plans and to reestablish the wildlife and fisheries land uses of the area disturbed by mining.

The collection of the appropriate baseline data is important in the early stages of mine development if geomorphic principles are to be incorporated into the mine reclamation plan. High resolution aerial photography and DEM of the mine area were flown by the company, which will be used to determine the proper drainage density and appropriate post mining topography. Some of these study plans included hydrologic studies that characterized water quality and quantity for both surface and ground water. Geologic information will be used to develop a plan that assures the re-establishment of the hydrologic system in the constructed stream. This will allow the mining operation to seperate appropriate materials be placed in the backfill to assure sustained flow in the stream. A study of fish habitats, which is very important for the re-establishment of a viable fishery, included type of fish and their population changes throughout the summer. As part of the this study, channel morphology was recorded. This information will be used to design fish habitat in the reconstructed stream system. Wildlife study plans were developed to understand local subsistence uses of the wildlife and wildlife population use and movement through the mine area. The geomorphology of the site will be constructed with appropriate vegetation communities to support this land use.