

**Testimony Before the
Alaska Senate Judiciary Committee
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Submitted by:

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Introduction: Chairman French and members of the Judiciary Committee, my name is Lance Trasky. I have 42 years of experience as a fisheries research biologist, a habitat biologist, and a Regional Supervisor with the Alaska Department of Fish and Game.

Establishing a restoration bond for the proposed Chuitna Coal Strip Mine will be very difficult because there is nothing in the scientific literature or the projects cited by Pacrim and the Alaska Department of Natural Resources which supports the claim that re-creation of a wild Pacific salmon stream and its associated drainage has ever been successfully accomplished or is even feasible. It is also unlikely that the spawning channel and rearing ponds that Pacrim has offered as interim mitigation for the loss of salmon production from Chuitna River tributaries for 25 to 50 years would be successful in maintaining these runs.

The Problem

The Chuitna River supports substantial runs of all five species of Pacific salmon. It is an important contributor to the Cook Inlet commercial and subsistence fisheries. It is believed to be the major source of Chinook salmon to the Tyonek subsistence fishery. The Chuitna is the major Chinook salmon producing system on the west side of Cook Inlet and supports a Chinook sport fishery second only to the Deshka River. The Board of Fish has recently declared the Chuitna River a stock of concern because of shortfalls in escapement.

In the first phase of mining, Pacrim has proposed to strip mine 8,000 acres of the three major Chuitna River salmon producing tributaries. Mining would remove 11 miles of

one tributary and all surface and subsurface features to a depth of 300 feet. To create a new 11 mile long salmon spawning and rearing stream, Pacrim would have to re-construct the entire upper stream drainage from bedrock on up. Re-creation of both surface features such as wetlands and subsurface features such as the shallow and deep aquifers which provide critical ground water flow to these three major tributaries would be necessary. Because sockeye, Chinook, and coho salmon select areas of upwelling ground water for spawning and the input of ground water is essential to the overwinter survival of salmon eggs and larvae in cold climates, the creation of shallow aquifers would be one of the most critical elements in creation of a new salmon stream. Finally an 11 mile long stable stream channel and riparian area incorporating all the complex and interconnecting structures and processes that allow salmon to successfully spawn and rear would have to be constructed on top of 300 feet of mine tailings. This has never been done and it is likely not feasible.

ADNR and Pacrim Examples Are Not Relevant:

Both Pacrim and ADNR have provided examples of projects which they claim support their contention that creation of a productive salmon stream after strip mining is feasible. I have reviewed these projects and have personal experience with most of the Alaska projects cited. These projects do not support the contention that re-creation of a new salmon spawning and rearing stream is feasible. None of the examples provided by ADNR or Pacrim involved complete removal of an entire drainage with its associated salmon spawning stream, aquifers, wetlands, vegetation, and the subsequent creation of a new functioning salmon stream with all of these essential attributes on top of the mine overburden. The objective of most of these projects was to improve habitat in damaged fish streams, with no expectations that salmon or other fish species would be restored to pre-development levels of productivity. Only three of the projects cited by ADNR and Pacrim even involved salmon streams, and none of these streams were strip mined. Projects cited involving grayling or catfish have no relevance to the Chitna because these species have very different life histories. The available information for the projects cited did not mention restoring aquifers or ground water. All of the Alaskan projects cited by Commissioner Sullivan and Pacrim as examples of the feasibility of restoring the Chitna River drainage after strip mining are small-scale compared with the proposed Chitna Coal Project, which includes 21,000 acres of leases and over 8,000 acres in the first phase of mining. In contrast the Valdez Creek mine which was cited by ADNR and was the largest placer mine in Alaska was only 640 acres and only a mile of grayling stream was constructed.

A letter I wrote to Commissioner Sullivan describing in some detail why the projects that ADNR is using to support their decisions on this project are not relevant to the proposed Chuitna coal strip mine is included in the handouts.

Federal and state biologists question the feasibility of salmon stream restoration

In a 2007 letter to the Environmental Protection Agency, the National Marine Fisheries Service (NMFS) concluded the Chuitna Coal Strip Mine would cause permanent impacts to the Chuitna watershed and associated salmon habitat. NMFS stated, “We are aware of no example of successful salmon stream restoration at this scale”. In the Diamond Chuitna Coal Project Final Environmental Impact Statement, EPA also concluded “that it is questionable whether mined through streams could be returned to pre-mining productivity: therefore, fish productivity loss could be a long term loss”. The Alaska Department of Fish and Game provided the following response to a letter from ADNR asking whether reclamation of the Chuitna Coal Strip Mine was feasible: “while we are aware of small scale successes in reclaiming certain stream functions we are not aware of any evidence documenting whether large-scale reclamation of ecosystem function can or cannot be accomplished.”

In the process of reviewing the Alaskan projects cited as examples of post-mining stream restoration by Commissioner Sullivan and PacRim, I asked a number of fisheries biologists and hydrologists who were involved in these projects if they believed that these projects demonstrate that restoring thousands of acres of strip mined salmon streams, aquifers and drainages was feasible. They all said no. They were also unaware of any example of where a salmon producing drainage has been removed by strip mining to depths of several hundred feet, and a new stream created on top of mine overburden.

Compensation for permanent loss of salmon production:

PacRim has proposed to construct a spawning channel and rearing ponds to replace salmon production from Chuitna tributaries lost due to mining during the 25 to 50 years before a new stream would be created. ADNR has cited salmon usage of USFS gravel pits adjacent to Granite Creek on the Kenai Peninsula and two Canadian spawning channels as confirmation that these methods could replace lost salmon production. However, we know that other Canadian spawning channels and all of the spawning channels that have been constructed in South Central Alaska in the last 30 years have failed over time. Similarly, other gravel pits such as the ADF&G’s and ADOT’s attempt to convert the Quartz Creek gravel pit on the Sterling Highway to salmon spawning and rearing habitat have failed. Most importantly, because of the

presence of invasive northern pike in the Chuitna drainage, any attempt to sustain salmon production by spawning channels and rearing ponds is unlikely to succeed. Pike thrive in these low gradient environments and have extirpated salmon and trout from all of the lakes, gravel pits (Cheney Lake in Anchorage) and slow moving streams pike have invaded in South Central Alaska.

Conclusion

I have not found any independent restoration experts, scientific studies or projects cited by ADNR and Pacrim that support the contention that reconstruction of a salmon stream with its associated drainage, confined and unconfined aquifers, wetlands, and other essential elements on top of 300 feet of mine overburden is feasible. Restoration of a strip mined salmon producing drainage would be exponentially more difficult than small scale projects to reroute a stream around a man made barrier, revegetate stream banks, or attempts to confine a unstable placer mined grayling stream to a single channel.

In considering standards for bonding mines such as Chuitna, legislators should keep in mind that all of the techniques cited by ADNR and Pacrim as examples of the feasibility of recreating salmon stream drainages were developed in the Pacific Northwest and British Colombia in an attempt to halt or reverse the continuing decline of anadromous salmon populations due to habitat loss. Billions of dollars have been spent in the U.S. and Canada with little success. If the projects cited by PacRim and ADNR as proof of the feasibility of re-creating a salmon stream worked, these methods would be used everywhere and salmon populations would not continue to decline. The problem is that from a salmon habitat perspective, the effect of permanent landscape changes such as the deep strip mining proposed for the Chuitna River drainage cannot be reversed.

Currently, ADNR has considerable discretion in setting bond amounts. It is important to recognize, if the state allows strip mining through a wild salmon stream at Chuitna, it will set state policy that will endure. So, in light of the fact that there is nothing to indicate that restoration of strip mined salmon drainages to pre-mining functions and values or that artificial maintenance of genetically unique runs is feasible, the Legislature should take a hard look at whether mining through salmon streams is a precedent the state should pursue. If so, there will need to be some very difficult discussions about how to put a value on the loss of a renewable resource – wild Alaska salmon – in perpetuity.

Thank you for the opportunity to comment.