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Greens Creek Mine North Extension Project Draft Supplemental Environmental Impact Statement

May 2023

By Kimberly Titus, Ph.D.

Wildlife Professional

Thank you for the opportunity to comment on the proposed expansion of the Greens Creek Mine expansion and extended operations. Science informs, science does not decide - but science is necessary for decision-making. This document lacks some key science. I am focused on brown bear and sampling related to human health.

BROWN BEAR

The brown bear section lacks current, relevant information - it is off point. This is despite the fact that the monument was created to a significant extent to conserve and sustain this brown bear population. This section completely misses the ecological/management questions that are necessary to make an informed decision that uses current science.

I applaud the mine for their diligence in reducing brown bear deaths associated with mining activity; and the training of staff to reduce the threat to mine workers.

I personally conducted the last density/population estimate of Admiralty Island brown bears. The study area was centered on the Greens Creek/Hawk Inlet watershed. That was in the early 1990's. A portion of that work was funded by Greens Creek mine via a grant to ADF&G. Most of the work was funded by ADF&G; none by the Forest Service. I am concerned that the finding by Bethune (2021) that the Admiralty Island bear population is stable - that might be true; it might not be. You are taking this work out of context and it is easy to reference, but it is inappropriate. That is based on hunter-kill information and it is a very poor surrogate for real population data and interpretation.

I have no idea why the work of John Schoen, LaVern Beier and Kimberly Titus is not referenced. Zero references. There are a multitude of references for the work we did at Greens Creek/Hawk Inlet. We cooperated closely with Greens Creek mine and it was a quite positive relationship.

Significantly, the DEIS fails to address the population of brown bears in the Greens Creek / Hawk Inlet watershed. There should be/should have been another density estimate for this area. I fully understand that ADFG manages bears on the Unit 4/island area. Yet, this is misguided in terms of the mines' footprint and this decision document. The question that needs to be answered is whether the long-term chronic mine activity and the expansion has degraded the bear population in the watershed. Science can and should answer this question as part of the decision-making process. Colleagues and I studied these bears to provide a baseline in the Hawk Inlet area watershed. There needs to be some follow-up regarding the status of adult bears in the watershed. We know from radiotelemetry studies that adult females tagged in the vicinity do not leave the watershed during their lifetime. This is to be expected as adult female brown bears on Admiralty Island have a) some of the smallest home ranges of any studied brown bears in the world and b) they are very faithful to their use areas. The question for the mine and the Forest Service is whether subadult female brown bears "settle" into the area to reoccupy the watershed at the same rate - often of their parents. If so, then all is well, aside the habitat loss of the mine expansion. If not - because of habitat disturbance and habitat loss, then the likely reason is the chronic footprint of activity of the mine. I suggest that this be understood. Admiralty Island is too important as a high density brown bear population to possibly be degraded in this manner.

Lead and brown bears - I am surprised that lead levels in brown bears have not been tested. There are some recent scientific papers on elevated lead levels from brown bears in various parts of their range. (E.g., Fuchs, B., K. Joly, G. V. Hilderbrand, A. L. Evans, I. Rodushkin, L. S. Mangipane, B. A. Mangipane, D. D. Gustine, A. Zedrosser, L. Brown, and J. M. Arnemo. 2023. Toxic elements in arctic and sub-arctic brown bears: Blood

concentrations of As, Cd, Hg and Pb in relation to diet, age, and human footprint; Environmental Research 229: 115952) This is an Alaska study. There are other studies that are relevant. Lead should be tested in resident female brown bears. Given that there are elevated lead levels in some parts of this watershed - and that brown bears are omnivores - they could bioaccumulate lead in any number of ways. For example, consuming freshly emergent beach grasses in the spring, consuming mussels and clams, etc. Obtaining samples and comparing across Admiralty Island watersheds is not a massive task. There are scores of brown bears killed annually on the island and hunters are typically eager to participate in sampling efforts.

Brown bear denning habitat - I have personally recovered "shed" brown bear radiocollars and visited recently unoccupied bear dens on the uphill side of the tailings area. I cannot determine from the proposal if these dens will be destroyed or rendered no longer useable because of chronic disturbance; a cumulative impact to the population. Greens Creek mine, the Forest Service or a qualified consultant should have provided some analysis of brown bear denning habitat based on physical surveys. With no data, the DEIS provides no analysis of if and how there will be a loss of bear denning habitat in the watershed. Loss of bear denning habitat in the watershed may lead to a decline in the watershed population of brown bears.

Page 3-212 "Impacts on brown bears would be similar to those of the no-action alternative but would include an incremental increase in habitat loss (see above) and increased duration of noise and human presence. However, brown bears continue to use the area around the Mine, indicating some level of tolerance to the current level of human activity at the Mine. Nevertheless, it is expected that an increase in the duration of human activity by the proposed alternative would likely increase the risk of vehicle collisions and defense-of-life mortalities of brown bears." This is wild speculation. Some brown bears do become tolerant - nobody knows which ones do/don't. Adult females may become more tolerant if they have cubs to avoid adult males; there is some literature on this subject, but none is referenced. If the population of brown bears in the watershed is constant over the past 20+ years (which you don't know; nor is there any information on adult females) then there may or may not be more or fewer DLP cases. The data are so few that trends are and will be impossible to detect. Please don't speculate. It gives the reader some notion that there is good information. At the very least, use published information and the expertise that is available.

Overall, the information provided on the impacts of the mine and the DEIS alternatives is both stale and off-point. The DEIS just rehashes old brown bear information. Brown bear is THE iconic species on Admiralty Island. There must be a reasonable analysis - using real - not modeled data. This is quite doable. It is sad that such information is not contained in the document. Both the Forest Service and the mine can do better - your professionals.

HUMAN HEALTH

I personally crab and shrimp in Hawk Inlet. I have done so for over 20 years. I caught crab and shrimp as recently as 15-17 May 2023. Where can I find the lead (and other metal concentrations) sampling data to be assured that I am not consuming lead? The DEIS references the human use of deer, shrimp, crab, etc., but there is no associated contaminant information. Please provide the data in terms of human health. Surely there is annual sampling of species like Dungeness crab and spot prawns. Humans eat these species.

Thank you again for the opportunity to comment.

Sincerely,

Kimberly Titus