UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

November 24, 2020

Earl Stewart
Forest Supervisor
Tongass National Forest, Alaska Region
648 Mission Street
Ketchikan, AK 99901

RE: Hecla Greens Creek Mining Company North Extension Project SEIS

Dear Mr. Stewart:

The Habitat Conservation Division of NOAA Fisheries has received notice that the Tongass National Forest intends to prepare a supplemental Environmental Impact Statement (SEIS) to analyze a mine expansion proposal from Hecla Greens Creek Mining Company (HGCMC). The proposal would amend the 2013 Greens Creek Mine Plan of Operations by expanding their Tailings Disposal Facility (TDF) and related infrastructure as described in their North Extension Project (NEP). The Tongass National Forest will prepare a new SEIS to supplement the 2013 SEIS. The original EIS for the project was signed in 1983 and the mine started processing ore in 1989. NOAA Fisheries is providing suggestions during the scoping period based on our authority under the Essential Fish Habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act.

EFH Requirements
Please prepare an EFH Assessment that examines the environmental consequences to EFH [50 CFR 600.920(e)]. The EFH Assessment must contain:

(i) A description of the action;

(ii) An analysis of the potential adverse effects of the action on EFH and the managed species;

(iii) The Federal agency's conclusions regarding the effects of the action on EFH; and

(iv) Proposed mitigation, if applicable.

If appropriate, the EFH Assessment should also include:

(i) The results of an on-site inspection to evaluate the habitat and the site-specific effects of the project;

(ii) The views of recognized experts on the habitat or species that may be affected;

(iii) A review of pertinent literature and related information;

(iv) An analysis of alternatives to the action, including alternatives that could avoid or minimize adverse effects on EFH; and

(v) Other relevant information.

The EFH Assessment provides NOAA Fisheries insight into the action agency's determination of the action effects on EFH. The level of detail in the EFH Assessment should reflect the level of potential impacts to EFH.

Proposed North Extension Project
The NEP includes the following elements:

- Increasing tailings storage capacity by 4 to 5 million cubic yards through expansion of the tailings disposal facility;
- Relocation of the B-Road with an estimated 4,450 feet length at 30 feet wide with drainage ditches;
- Construction of a new water management pond, or modifying existing ponds 7 and 10, and associated conveyance system;
- Construction of a peat and overburden storage area ranging from 4,600 to 231,000 cubic yards of storage capacity;
- Relocation of an electric powerline and substations; and
- Relocation of a water collection system on Cannery Creek.

Site-Specific EFH
Hawk Inlet and Icy Strait are identified as EFH for 12 Gulf of Alaska fishes during their egg and larval life history stages including Pacific cod, walleye pollock, and sablefish (Table 1, NPFMC 2019). For some species, the egg stage is benthic and directly interacts with sediments or benthic structures. Therefore contaminants in Hawk Inlet sediments could adversely impact the growth and development of groundfish species with eggs that sink to the bottom. For example, a study in Norway showed mine tailings waste exposed to Atlantic cod (*Gadus morhua*) increased mortality in larvae and suggested possible chronic toxicity with long-term effects (Reinardy et al. 2019).

For the five species of Pacific salmon, EFH is defined for both their marine and freshwater anadromous lifecycle stages. Freshwater habitat for Pacific salmon includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in the state (NPFMC 2018). This includes Greens Creek and its tributaries. Hawk Inlet is identified as EFH for Pacific salmon during their marine life history stages. Early juvenile salmon associate with the intertidal nearshore environment (NPFMC 2018), so concerns of water and sediment quality for salmon is not limited to their freshwater life history stages. According to the Anadromous Waters Catalog, chum, coho, and pink salmon were observed in Greens Creek, and four additional streams north of Greens Creek in Hawk Inlet host chum, coho, and pink salmon (Johnson and Blossom 2019). For more information on potential adverse effects to salmon and groundfish EFH, a helpful reference is the report *Impacts to EFH from Non-fishing Activities in Alaska* (Limpinsel 2017), specifically Section 4.2.2 on Mineral Mining.

Preliminary Conservation Recommendations

The proposed project could have adverse impacts to EFH in the watersheds of Tributary Creek, Greens Creek, Cannery Creek, the two unnamed tributaries West of the tailings facility, and Hawk Inlet. Increasing the tailings storage capacity and adding a new location for a water management pond are the most likely components of the proposed NEP to affect EFH. NOAA Fisheries suggests that the following information be evaluated in the further development the SEIS. The following recommendations, and others, could help conserve EFH:

1. Include nearshore fish surveys in Hawk Inlet to identify Gulf of Alaska groundfish species and life history stages that use Hawk Inlet.

   Spring and summer surveys of Hawk Inlet's nearshore environment would benefit an assessment of impacts to the EFH of egg, larval, and juvenile stages of groundfish and Pacific salmon. Prey species are a habitat component for federally managed fish and should be included in survey records.

2. Conduct annual stream surveys in Greens, Tributary, Zinc, and Cannery Creeks to monitor for changes to their anadromous fish habitat. In combination with fish surveys, regular water and sediment samples should be conducted as well to assess freshwater EFH changes.

   Changes to established salmon EFH may occur due to an increased tailings storage footprint, road construction, water collection system, and a possible new water management pond. Consider surveying the streams for outmigrating juveniles and returning adults. The Plan of Operations notes that Cannery Creek does not support anadromous fish habitat, but as salmon are a pioneer species, consistent surveys of Cannery Creek would confirm or inform that statement.

3. Develop a comprehensive monitoring plan for water quality, sediments and macroinvertebrates in Hawk Inlet in consultation with the resource agencies. This plan would remain in effect for the life of the proposed mine expansion and have annual reporting requirements to the resource agencies.

   NOAA Fisheries recognizes the current Hawk Inlet Monitoring Program, and recommends a supplementary grid-designed sampling scheme to cover the nearshore intertidal zone between Cannery Creek and Greens Creek. The sampling components, water quality, sediments, and macroinvertebrates, are recommended as follows:

   a. Sample sediment in Hawk Inlet to monitor for contaminants monthly throughout the continued operation of the mine to assess for any seasonal or temperature-related variability.

      Hawk Inlet is EFH for fish species at vulnerable life history stages for growth and development. Maintaining a record for sediment samples in various locations in Hawk Inlet's intertidal nearshore environment throughout the year can track seasonal changes and alert to any increases in metal contaminants in the area.

   b. Monitor water quality of Hawk Inlet monthly to assess EFH impacts from tailings storage expansion and continued mining operations.

Similar to a monitoring plan for Hawk Inlet sediments, water samples can inform the HGCMC, State, and Federal agencies on possible adverse impacts from treated water.

c. Sample macroinvertebrates in Hawk Inlet for metal contaminants.

Prey species are a component of EFH for federally managed fishes. Groundfish and Pacific salmon prey on krill and shrimp during the life history stages present in Hawk Inlet, so regular tissue samples of their prey items will assess any adverse impacts from proximity to current or expanded mining operations.

4. Increase the spatial density of the sampling in the South end of Hawk Inlet due to the ongoing elevated metal concentrations in sediment samples from sites S5-N and S5-S (ADEC 2017). The extent of 1.12 acre rectangle of State 303(d) listed waters around the docks is not currently based on nearby sediments samples returning low metal concentration.

   Hawk Inlet is EFH for fish species at vulnerable life history stages for growth and development. Propeller wash and tidal processes may spread the toxic sediment and increase the size of the area containing sediments with dangerously elevated levels of metals.

5. Consider including dust mitigation measures into the SEIS.

   As the tailings facility becomes larger and is able to increase storage capacity, the concern of fugitive dust entering the groundfish and salmon EFH will increase.

Suggestions For Alternatives

During the Greens Creek Mine SEIS interagency scoping meeting, there was an invitation to provide new or preferred alternatives to the NEP. NOAA Fisheries offers the following:

1. Modify existing Ponds 7 and 10 in lieu of creating a new water management pond.

   Modify existing Ponds 7 and 10 in order to minimize the overall footprint of operations near the Cannery Creek watershed. Constructing a new pond elsewhere could impact the riparian habitat and vegetation along Cannery Creek in some of the pond alternatives, increases the need for road construction and concerns of contaminated runoff associated with that action, and increases risk of releasing contaminants in the site through excavation (Limpinsel et al. 2017). Instead, keeping the existing Ponds 7 and 10 with modifications reduces the amount of construction and disturbance necessary.

   More intense rainfall events are forecasted for Southeast Alaska due to changes in the climate. Consideration for increased precipitation in the Greens Creek area should be included in the SEIS and design of the pond modifications and pond alternatives, as well as other mine infrastructure. *Dynamical Downscaling for Southeast Alaska: Historical Climate and Future Projections* (Lader et al. 2020) is the most recent publication on the changes predicted for Southeast Alaska.

2. NOAA Fisheries agrees with the Plan of Operations that expanding the existing tailings pile would keep the tailings in one location and simplify long-term water management.

NOAA Fisheries suggests an alternative that expands the tailings facility east, away from Hawk Inlet. This proposed alternative would:

- Expand the pile to the east at the existing maximum height, until it contacts the mountain.
- Move the road to the western edge of the existing tailing facility and agree to not expand the pile across the road towards Hawk Inlet. Locating the road here would provide easier access to the monitoring wells.
- Stack the majority of the additional tailings physically higher than the existing treatment ponds allowing for collected water to move via gravity.
- Minimize the amount of vegetation clearing and peat removal anticipated in the NEP. Peat is wetland habitat, and can help filter water. Moving 4,600 to 100,000 cubic yards of peat could create unanticipated water quality problems as that peat may already be binding up metals. Once the peat is moved it is doubtful it will serve the same ecological function in the new location.
- Note: This alternative should be considered even if it may barely encroach on the 950,000 acre Admiralty Island National Monument.
- Note: The 2013 SEIS did not evaluate this alternative. Many hillslopes in Southeast Alaska contain loose material and this may have been the reason it was not evaluated. If loose material does exist, it may be possible to remove it prior to expanding the pile, and then reuse it as capping material during closure.

NOAA Fisheries hopes you find this information useful when preparing your SEIS. If you have questions, please contact Molly Zaleski at molly.zaleski@noaa.gov or Sean Eagan at sean.eagan@noaa.gov.

Sincerely,

for James W. Balsiger, Ph.D.
Administrator, Alaska Region

Cc:
Submitted electronically to: https://www.fs.usda.gov/project/?project=57306,
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Table 1. Fishes with EFH in the tributaries and waters in and adjacent to the proposed NEP. The North Pacific Fishery Management Council identified EFH with the Fishery Management Plan for the Groundfish of the Gulf of Alaska (NPFMC 2019) and the Fishery Management Plan for the Salmon Fisheries in the EEZ off Alaska (NPFMC 2018).

Common Name	Scientific Name	Life History Stage(s)	Fishery Management Plan
Pacific cod	*Gadus macrocephalus*	larvae	Groundfish of the Gulf of Alaska
Walleye pollock	*G. chalcogrammus*	eggs, larvae	
Sablefish	*Anoplopoma fimbria*	larvae	
Pacific ocean perch	*Sebastes alutus*	larvae	
Yellowfin sole	*Limanda aspera*	eggs	
Northern rock sole	*Lepidopsetta polyxystra*	larvae	
Southern rock sole	*L. bilineata*	larvae	
Alaska plaice	*Pleuronectes quadrituberculatus*	eggs	
Dover sole	*Solea solea*	eggs, larvae	
Flathead sole	*Hippoglossoides elassodon*	eggs	
Rex sole	*Glyptocephalus zachirus*	eggs, larvae	
Arrowtooth flounder	*Atheresthes stomias*	larvae	
Chinook salmon	*Oncorhynchus tshawytscha*	eggs, larvae, juvenile, immature adult, mature adult	Salmon Fisheries in the EEZ off Alaska
Chum salmon	*O. keta*	eggs, larvae, juvenile, immature adult, mature adult	
Coho salmon	*O. kisutch*	eggs, larvae, juvenile, mature adult	
Pink salmon	*O. gorbuscha*	eggs, larvae, juvenile, mature adult	
Sockeye salmon	*O. nerka*	eggs, larvae, juvenile, immature adult, mature adult	