

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
Chapter 7 and Errata
Small-Scale Suction Dredging in Lolo Creek and Moose Creek

Clearwater National Forest
Clearwater and Idaho Counties, Idaho

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***Abstract:** This Final Supplemental Environmental Impact Statement (SEIS) provides a chapter on Public Involvement and an Errata Sheet for the Draft SEIS. The Notice of Intent to prepare the original EIS was published in the Federal Register on April 4, 2003, and the Draft EIS was made available for public review and comment in March 2004. The decision was appealed and later withdrawn in favor of preparing a SEIS, which was released for public review on August 24, 2009. (Public comments on the Draft SEIS did not disclose any new issues or a need for new analysis.) The selected alternative (Alternative 3) allows the Clearwater Forest's authorized Officers to approve, without further analysis, a limited number of proposed Plans of Operations in specified reaches of Lolo, Moose, Independence, and Deadwood Creeks. Prior to approval, each suction dredge operator must have all pertinent Federal and State permits/certification, and agree to specific operation conditions and mitigation measures designed to protect threatened fish species and their habitat. The selected alternative also includes stream bank stabilization and reclamation of the abandoned Lolo #5 mining claim.*

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CHAPTER 7

PUBLIC INVOLVEMENT

This chapter discusses public involvement conducted during the Small-Scale Suction Dredging analysis. Included are: (A) public participation opportunities; (B) Tribal consultation; (C) a list of those who commented on the Draft SEIS; (D) comments received and our response; (E) consideration of other science/literature submitted by the public; and (F) a distribution list for the Final SEIS.

A. Public Participation Opportunities

The Small-Scale Suction Dredging project first appeared on the Forest NEPA Quarterly Report in 2003. Since then, the following public involvement activities have taken place:

3/21/03 – Scoping letters were mailed to the general public and the Nez Perce Tribe. The Forest received comments from a total of 40 individuals and organizations.

3/31/03 – A legal notice appeared in the Lewiston Morning Tribune (paper of record).

4/4/03 – A Notice of Intent to prepare an environmental impact statement for the project was published in the Federal Register.

3/04 – The Draft EIS was released for public comment. Comments were received from 11 parties and the Nez Perce Tribe.

12/06 – The Final EIS and Record of Decision (signed) were issued. The decision was appealed by 2 groups and was subsequently withdrawn in favor of preparing a supplemental EIS.

B. Tribal Consultation

In addition to the opportunities listed above, the following consultation occurred with the Nez Perce Tribe:

3/17/03 – The Forest notified the Nez Perce Tribe of the imminent scoping and environmental analysis and initiated government-to-government consultations regarding the project.

2/13/04 – Forest representatives met with Nez Perce Tribal fisheries, watershed, and wildlife specialists.

9/16/04 – Forest representatives met with Nez Perce Tribal water resource personnel.

2/22/08 – During the Quarterly Clearwater National Forest/Nez Perce Tribe Staff-to-Staff Meeting, the project leader and Tribal staff reviewed and edited the operating conditions, design features, terms and conditions, and mitigation measures that would eventually appear in Chapter 2 of the Draft SEIS.

9/30/09 – Provide an update on the project analysis at the Quarterly Clearwater National Forest/Nez Perce Tribe Staff-to-Staff Meeting.

C. List of Those who Commented on the DEIS

The public was given 45 days (August 28, 2009 – October 13, 2009) in which to provide comment on the Draft SEIS. Comments received were contained in two letters from environmental groups and one letter from a federal agency, as follows:

1. Friends of the Clearwater et al. (FOC) – submitted by Gary Macfarlane – also representing the Alliance for the Wild Rockies, and the Lands Council
2. Idaho Conservation League (ICL) – submitted by Bradley Smith
3. US Environmental Protection Agency (Region 10) – Teresa Kubo, Acting Unit Manager

Both FOC and ICL requested that we incorporate their comments submitted on the Scoping Letter, DEIS, and Appeal. Where applicable, their scoping comments were incorporated into the original DEIS; their comments on the DEIS were incorporated into the FEIS; and their appeal points were incorporated into the Draft SEIS. All of these comments are on file and need not be addressed a second time. What follows are their comments, including those from EPA, specific to the Draft SEIS and our response:

D. Comments Received and Our Response

Other Mining

1. Comment: The SEIS suggests it does not cover other proposals for suction dredge mining in the area covered by the analysis. However, will the Forest Service do an EIS for those projects? (FOC)

Response: There are no other proposals for suction dredge mining in the project area. Such proposals outside of the project area would require a NEPA analysis. Insight on what is required for approval of a suction dredging operation can be found in the SEIS in Section 1.1.1 (Permitting Process) and Section 1.2 (Need for an EIS).

2. Comment: The Forest Service's own document, the Big Game Habitat Restoration and a Watershed Scale (BHROWS) indicates that the North Fork, from Kelly Creek to Beaver Creek, and all of its tributaries in that section, except Weitas Creek, are open to suction dredging and that suction dredging occurs. These pose a major threat to water quality and fisheries yet the agency has never done NEPA on these proposals. Please explain why not. (FOC)

Response: Up to the late 1990s, suction dredge miners, in accordance with 36 CFR Part 228, would notify the Forest of their activities with a notice of intent to operate. Miners were also required to apply for and obtain a 3804-A stream alteration permit from the Idaho Department of Water Resources. The permit included a list of specific terms and conditions or best management practices (BMPs) for resource protection. National Forests in Idaho collectively agreed that mining operations that implemented the State BMPs could operate in selected streams with minimal or no effect to fish and water quality. An environmental analysis is not required for a notice of intent.

In 1997, steelhead trout within the Snake River drainage were listed as a threatened species under the Endangered Species Act. The listing of bull trout followed in 1998. Following the 2001 mining season, the Clearwater national Forest initiated the process on consulting, under Section 7 of the Endangered Species Act, with the National Oceanic and Atmospheric Administration Fisheries and the U.S. Fish and Wildlife Service concerning the effects of small-scale suction dredging on these threatened fish species in Lolo Creek and Moose Creek. This required operators to submit a plan of operation for these streams, which does require an environmental analysis.

Since the 2001 mining season, the Forest has not approved any plans of operation for suction dredging in Lolo Creek or Moose Creek, and no dredging has occurred.

Mining Claim Validity

3. Comment: The mining claimants must also demonstrate that a right to mine, under the 1872 Mining Law, exists on each claim involved in the proposed mining operation prior to the initiation of disturbing activities. (FOC)

Response: On National Forest System lands open to entry and mining claim location under the 1872 Mining Law, the 1897 Organic Act affirms the public's right to enter, search for, and develop mineral resources. It also authorized the Forest Service to approve and regulate all activities related to prospecting, locating, and developing mineral resources. Nothing in the Act restricted this authority to activities only on valid claims. In fact, the Act specifically refers to prospecting, which occurs prior to establishing a valid claim.

Furthermore, prior to discovery under the mining law, the doctrine of *pedis possessio* applies. That is, as long as a miner is actively seeking a discovery, a mining claim will hold against adverse locators or the general public, although such a claim would not constitute a possessory right against the U.S., who would continue to hold superior title.

Except in special circumstance where the Forest Service may need to establish clear title to the lands involved (e.g. in wilderness areas and other withdrawn areas, in land adjustment cases where the lands are segregated, or in mineral patent applications), there is no legal requirement or land management need for the Forest Service to conduct validity determinations on unpatented mining claims.

4. Comment: It appears that so-called policy is neither statute or regulations promulgated as part of the code of federal regulations. As such, the SEIS does not support its contention that mining claim validity is not an issue. (FOC)

Response: It is assumed that this comment refers to the Forest Service Policy on Mining of Public Domain Mineral Estate, September 22, 2003 Informational Memo signed by Mark Rey, Undersecretary, Natural Resources and Environment (SEIS reference USFS 2003g). This policy states "On National Forest system lands reserved from public domain and open to entry under the Mining Law, the Forest Service is not required to inquire into claim validity before processing and approving proposed plans of operations." In order to prospect, explore, and make a discovery of a valuable mineral deposit or establish valid mining claims, the operator has a right under the 1872 Mining Law to enter upon national forests and to conduct upon those lands reasonable activities to prospect and explore for mineral resources. Exercise of this right does not even require the staking of a mining claim, a fact recognized in the Forest Service locatable mineral regulations at 36 CFR 228.3(a), where mineral operations are defined and it is clearly stated that the Forest Service's regulations apply to all functions, work, activities, and uses reasonably incidental to all phases of mineral exploration and mining under the 1872 Mining Law, whether located on or off mining claims.

In *Western Shoshone Defense Project*, 160 IBLA 32, GFS(MIN) 26(2003), the Interior Board of Land Appeals (IBLA) rejected the argument that, before operating approval can be given, the government must verify the validity of unpatented mining claims on which the operations will occur.

5. Comment: The Forest Service cannot presume that the filing of a mining claim means that the claim is valid (i.e. that the "rights" relied upon by the applicant are rights at all). A mining claim location does not give presumption of a discovery. (FOC)

Response: As stated above, the 1872 Mining Law and 1897 Organic Act provides that persons are authorized to enter Federal lands and establish or locate a claim to a valuable mineral deposit and to conduct upon these lands, reasonable activities to prospect and explore for mineral resources. In addition, the Forest Service is not required to inquire into claim validity before processing and approving proposed plans of operations

6. Comment: Before rejecting the no-action alternative under NEPA, the agency is obligated to ensure that the public's resources are not being jeopardized by actions pursuant to invalid mining claims. (FOC)

Response: The Forest Service is not required to inquire into claim validity before processing and approving proposed plans of operations. Forest Service regulations require that all locatable mineral operations must be conducted to minimize, prevent or mitigate adverse environmental impacts to surface resources, including impacts to surrounding lands under the jurisdiction of other federal agencies. The purpose of this project is to develop operating conditions and mitigation measures that protect surface resources, including threatened fish species, from impacts of suction dredging.

7. Comment: Contrary to what is stated in the SEIS, the Interior Department requires that the costs of compliance with environmental regulations be factored into the validity determination. (FOC)

Response: Where the Forest Service may need to establish clear title to the lands (e.g. in wilderness areas and other withdrawn areas, in land adjustment cases where the lands are segregated, or in mineral patent applications), the costs of compliance with environmental regulations would be factored into the validity determination.

8. Comment: It must be stressed that any argument by the Forest Service that a discussion of claim validity is beyond the scope of the issues would violate the Administrative Procedures Act. (FOC)

Response: The Forest Service prepared this SEIS in compliance with all applicable laws, rules and regulations. Compliance with this direction is detailed in the SEIS, page 1-6 thru 1-8. In *Western Shoshone Defense Project*, 160 IBLA 32, GFS(MIN) 26(2003), the Interior Board of Land Appeals (IBLA) rejected the argument that, before operating approval can be given, the government must verify the validity of unpatented mining claims on which the operations will occur.

Mining Plans of Operation/ Permits

9. Comment: The SEIS is unclear whether the plans of operation which had been submitted prior to the DEIS are still valid. Are there new plans of operation? (FOC)

Response: All plans of operations submitted prior to the DEIS will have to be amended or rewritten by the operator to include all the terms and conditions or other measures listed in the SEIS and in State and federal permits (including their NPDES permit).

10. Comment: The SEIS does not clearly answer the question what a limited number of permits means? Is it 29 (DEIS and FEIS) 56 (see page 1-9), more? (FOC)

Response: Under the Alternatives Considered in Detail section, page 2-1, Chapter 2 of the SEIS, it states: “The maximum number of operations approved in any year under this analysis is **18** for Lolo Creek and **38** for Moose Creek. These numbers correspond with the maximums listed in the USFWS and NOAA Biological Opinions.”

11. Comment: There also must be effective monitoring and enforcement of the rules and regulations governing mining at each mine site and assurance that each of the claimants has the proper permits and licenses before initiation of the mining operation. Frankly, we question whether and how the agency can enforce the provisions for resource protection especially without requiring the appropriate permits prior to NEPA analysis. (FOC)

Response: Approval of each plan of operations for suction dredging in Lolo and Moose Creeks is conditioned upon the operator obtaining a NPDES permit with 401 certification. A plan of operation can be amended or rewritten to include all the terms and conditions or other measures listed in the SEIS and in required State and federal permits, including a NPDES permit and 401 certification.

12. Comment: The SEIS is unclear whether the current plans of operations (POOs) are sufficient to meet the requirements (SEIS 2-7 to 2-9). Does the agency maintain that new POOs will need to be submitted before allowing suction dredging to occur? (FOC)

Response: (See response to Comments 9 and 11)

NEPA Issues

13. Comment: A major purpose of NEPA is to evaluate a reasonable range of alternatives. However, the SEIS ducks this issue by dismissing an alternative that withdraws the habitat for listed species from mineral entry and an alternative that does separate NEPA analyses. The agency cannot so narrowly define the purpose and need as to preclude a meaningful analysis of other alternatives. (FOC)

Response: Our goal in defining the purpose and need statements was to properly describe the needs for taking action, which was in line with Section 1502.13 of the CEQ regulations for implementing NEPA that reads: “The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” In the case of this project, a study team was assembled in 2003 to identify specific management needs addressing small-scale suction dredging in the Lolo and Moose Creek drainages. These needs were rolled into a purpose and need statement that became the foundation of the Proposed Action that went before the public for review and comment.

A total of five alternatives were considered, with two of them being eliminated from detailed consideration, as explained on page 2-10 of the SEIS. All of the alternatives contributed to a reasonable range of alternatives, as defined in 40 CFR 1502.14(a).

14. Comment: Alternatives that would allow only one suction dredge per claim, alternatives that would limit the number of dredges further, or that would time suction dredging so that only so many would operate on any stream at one time were not considered. (FOC)

Response: These alternatives were eliminated from detailed consideration for the reasons described in the SEIS, page 2-10. Under 36 CFR 228A, it is illegal for the Forest Service to deny entry or preempt the miner’s statutory right granted under the 1872 Mining Law, to enter upon

public lands for the purpose of exploration and development of mineral resources. Many laws, regulations, policies, and plans direct the Forest Service to support and facilitate mineral extraction while minimizing adverse environmental effects on National Forest resources and ensuring compliance with applicable environmental laws.

The purpose and need for the proposed action is to protect surface resources through the approval of acceptable mining Plans of Operations, thereby fulfilling its requirement to minimize adverse effects. The specific operating conditions, design features and mitigation measures developed for this project would protect forest resources. Further restrictions on allowable dredges or timing of mining operations was not necessary to adequately protect forest resources.

15. Comment: The SEIS is unclear as to when how a ROD would be issued. Would there be separate RODs for each proposal? (FOC)

Response: The original plan was to issue two separate RODs; one for operations in Moose Creek and one for operations in Lolo Creek. At the time, Lolo Creek was a listed stream for water quality issues, and the total maximum daily load (TMDL) was still scheduled to be written. Since then, EPA's approved Integrated Report of 2008 has removed Lolo Creek from the list. Although the Idaho Department of Environmental Quality plans to write TMDLs for three Lolo Creek tributaries (Eldorado, Jim Brown, and Musselshell drainages), all of these streams lie outside the project area (SEIS 3-1). Thus, one ROD will be issued, covering operations in both Moose Creek and Lolo Creek.

16. Comment: The DSEIS notes that the 2006 final EIS and ROD were appealed and that this supplemental EIS was developed to clarify the environmental analysis. It is not clear what changes were made based on the appeal and what the resulting modifications are to address those issues. (EPA)

Response: The original decision was appealed. However, the decision was withdrawn prior to deciding on the merits of the appeal. The purpose of the SEIS was to address the seemingly more complex water quality issues in Lolo Creek. Other issues taken from the appeal were also addressed or clarified in the SEIS. The resulting changes between the Final EIS and Draft SEIS are summarized on page ES-5 of the SEIS. It should be noted that most of the appeal points have been repeated in the public comments on the Draft SEIS, and our response addresses each issue raised.

Water Quality/Fisheries

17. Comment: The SEIS does not include recent monitoring data. In fact, turbidity studies date back nearly 30 years, before the Forest Plan! (FOC)

Response: Monitoring data was collected at the Section 6 Bridge on Lolo Creek from 1986 to the present and include over 1,000 samples. State turbidity standards were never exceeded (SEIS 3-2). Moose Creek data was taken in 1981. Prior to and at that time, active timber harvest was occurring in the drainage (SEIS A-7) which could have contributed more sediment in the drainage and subsequent higher turbidity levels. Monitoring from 1981 showed that State standards were not exceeded (SEIS 3-4). Little harvest activity has occurred since the late 1980s and INFISH buffers have been implemented on harvest units. It is highly unlikely that turbidity standards would be exceeded at the present time. The stream is also dominated by cobble and larger substrates (SEIS 3-5). This limits the amount of small material that creates turbid conditions, thus this stream system is not prone to high turbidity levels.

18. Comment: While the sites appear to be outside 303(d) segments it is important to also keep in mind these streams don't meet forest plan standards. (FOC)

Response: The SEIS describes that portions of Lolo or Moose Creeks do not meet the Forest Plan desired condition for cobble embeddedness or stream temperature (SEIS 3-1, 3-3, 3-4, 3-5); however, the analysis indicates there would be no increase in either as a result of the project (SEIS 4-1, 4-2).

19. Comment: The Forest Service is prohibited by the CWA (section 313) from permitting any activity that may violate water quality standards. Since the proposed project will discharge pollutants into the river and due to the fact these streams don't meet all fishery and water quality standards, the activity should not proceed. (FOC)

Response: No streams within the project area are listed as water quality limited by IDEQ (SEIS 3-1, 3-3). The activities would not violate water quality standards for temperature or sediment (SEIS 4-1, 4-2). Implementing the design features found in the SEIS (2-8) would minimize the risk of other pollutants (gasoline) entering the stream.

20. Comment: While the impacts of dredging, including fine sediments released by dredging, are not well known, it is known that dredging increases sediment. Many of these streams do not meet standards that reflect sediment such as cobble embeddedness. (FOC)

Response: Dredging does not increase sediment but does move existing sediment from one location to another (SEIS 4-1). Sediment increases are a result of sediment being added to a stream from terrestrial or streambank sources. Design features will be implemented to prevent bank destabilization or terrestrial sources input. No new sediment would enter the stream as a result of suction dredging.

21. Comment: The Clearwater National Forest Plan Settlement agreement does not permit activities that would increase measurable sediment in areas where forest plan water quality standards are not being met. The SEIS claims that sediment would not be increased, just re-dispersed. The point is old sediment that could have accumulated over a long time and that may be under other rock strata enters the stream and functions, as a matter of fact, like new sediment. (FOC)

Response: See response to comment #20 regarding increases in sediment. In addition, high spring season flows move both large and small substrates, turning over portions of the stream bottom every year. The small material is the most easily moved. Any movement of the large substrate frees the smaller particles and allows them to move downstream. The substrate depth in both Lolo and Moose Creeks, where the miners prefer to work, is relatively shallow (<3') with an underlying bedrock base. Because of the shallow depth, it is unlikely that there is much old sediment stored under the shallow rock strata.

22. Comment: Has an EAWS been conducted for Moose Creek. If not, shouldn't one be done before approving this project? (FOC)

Response: Yes. The EAWS that you cite earlier in Comment #2, Big Game Habitat Restoration at a Watershed Scale (BHROWS), covers the Moose Creek drainage.

23. Comment: Why has the monitoring for turbidity been limited to 150 feet rather than 300 feet downstream of the dredging activity? (FOC)

Response: The Biological Assessment for this project reduced the maximum observable turbidity distance to 150 feet from 300 feet to reduce potential impacts from dredging (BA, pg. 9). The shorter distance means that observable turbidity cannot occur greater than 150 feet downstream from the dredge. If it does, the operator must cease or decrease the intensity of the operation until turbidity is no longer visible at 150 feet (SEIS 2-9).

24. Comment: The analysis that forms the basis of the conclusion that violations of State water quality standards pertaining to turbidity would not be exceeded relies heavily on anecdotal information and observations from past operations in the project and nearby areas. We recommend that the final EIS include detailed information about the data collected and level of uncertainty regarding conclusions related to water quality. (EPA)

Response: A copy of the IDEQ study (2003) conducted on the nearby South Fork Clearwater River can be found in the project file. It describes the results of turbidity, macroinvertebrate, and surface fine sampling at 3 dredging locations. While the macroinvertebrate and surface fine portion of the study was inconclusive, the study found that dredging did not exceed state water quality criteria for turbidity. “As an overall conclusion, results from this study indicate that the limited recreational suction dredge mining activities occurring during 2001 on South Fork Clearwater River caused no measurable short term impairments on aquatic life beneficial uses.”

25. Comment: The cumulative effects section points out that “there would be no overall increase in instream sediment since it would only be moved from one location to the next.” These conclusions seem to be based on a conceptual understanding of the physical processes involved. We recommend including references and data that may be available from published studies to evaluate the issue of cobble embeddedness in the vicinity of the project and over the life of project. (EPA)

Response: There is little literature available on cumulative effects studies for recreational suction dredging, therefore a conceptual understanding of local stream conditions and observations from previous suction dredging activities that occurred in Lolo and Moose Creek was used. We reviewed the following paper to determine if any other information was available: Harvey and Lisle, 1998: Effects of Suction Dredging on Streams: A Review and an Evaluation Strategy. (in Fisheries, Vol. 23, No.8, August). This review discussed the potential effects of suction dredging on stream morphology, water quality, and aquatic species. They concluded that “Effects of dredging commonly appear to be minor and local, but natural resource professionals should expect effects to vary widely among stream systems and reaches within systems. Managers should carefully analyze each watershed so regulations can be tailored to particular issues and effects”. We developed the operating conditions, design features and terms and conditions based on local stream characteristics as well as professional judgment and past monitoring of suction dredging at these sites. None of the studies used cobble embeddedness as a measured parameter.

26. Comment: The temporal scope of the DSEIS seems to be limited to the number of days suction dredges operate in a year versus looking at the life of the project. We recommend conducting a cumulative effects analysis that considers a temporal scale consistent with the life of this approval and continual dredging over time in the stream channel. (EPA)

Response: The cumulative effects area was based on the maximum number of miners that would dredge in a season based on previous use information. We have not observed a year where all miners would dredge all available areas every year. Based on past experience and observation, it is apparent to us that high spring flows reset these streams every year; therefore we based our

cumulative effects on one season of use. The design features listed in the SEIS (2-7) were developed in order to minimize effects to water quality and aquatic systems. NOAA Fisheries and the US Fish and Wildlife Service were involved in the development of the features and agreed that the project would not jeopardize the existence of listed fish species.

27. Comment: Section 4.2 quantifies the amount of disturbance that would occur in linear feet and percentage of stream channel in the project areas. The EIS should clarify that this is an annual estimate from monitoring in 2001, and that multiple years of operation could increase the amount of potential disturbance. We recommend that the EIS define the duration of potential disturbance and clarify or base the effects analysis on this duration. (EPA)

Response: The amount of potential disturbance was based on the 2001 mining season. The annual expected duration was disclosed in the SEIS (4-7). Mining is expected to occur for about 5 hours per day for 45 days on Moose and 30 days on Lolo Creek, multiplied by the total number of miners. This gave us the 3% estimate of disturbance for each of Lolo and Moose Creeks. Multiplying the amount over several years would not likely be accurate since miners typically do not mine the same site in consecutive years. Based on past experience and observation, it is apparent to us that high spring flows also reset these streams every year. Also, the design features presented in the SEIS greatly limit the area where miners are allowed to dredge. We based our estimate on past experience, which we believe to be a reasonable annual estimate.

Permits

28. Comment: At this time the Forest Service cannot approve suction dredge mining operations in the State of Idaho. In order to operate a suction dredge and discharge sediment into these waterways, it is necessary for the operator to obtain an NPDES permit from the Environmental Protection Agency. Because there are currently no such NPDES permits issued for the State of Idaho, these operations cannot be approved as proposed in the SEIS for this project. (ICL)

Response: At the present time, EPA is writing a general NPDES permit for suction dredging in Idaho. Suction dredging in Lolo and Moose Creeks will not be approved until the dredge operators obtain all Idaho and Federal permits including the Environmental Protection Agency's NPDES permit, the Corps of Engineers/State of Idaho's joint 404/ Permit to Alter a Stream Channel, and State 401 certification. Operators must also comply with all additional conditions or measures stipulated in the permits, and must comply with the State of Idaho's Placer Mining - Best Management Practices (refer to Operating Condition #30, p 2-9, SEIS).

29. Comment: The EPA is currently in the process of drafting a general NPDES permit that would cover "recreational" class suction dredge operations in Idaho. Until that permit is complete, we recommend that the Forest Service not approve the portion of this project that permit the 56 suction dredge mining operations proposed in Lolo and Moose Creeks. (ICL)

Response: This project represents one step in the permitting process. The SEIS, on page 1-1, describes the permitting process as follows:

- Operators present a plan of operations to the Forest Service.
- The FS completes the appropriate environmental analysis to comply with the National Environmental Policy Act. This analysis demonstrates operators compliance with clean water act based on design features in a Plan of Operations.
- Discharges from suction dredge operations qualify as point sources and require a Section 402 permit, National Pollutant Discharge Elimination System (NPDES) permit, authorization by EPA. The operators apply for their NPDES permit with EPA. All Section 402 permits must be

certified by IDEQ under Clean Water Act, Section 401. IDEQ must grant, deny, or waive certification for a project before a federal permit or license can be issued.

- Upon completion of 401 certification by IDEQ, EPA can issue their NPDES permit to individual applicants (IDEQ, 2002).
- The Forest Service approves proposed plans for operations after operators have received their NPDES permit. Under the *Idaho Stream Channel Protection Act* (Idaho Code Section 42-3803(a)) dredge operators would also obtain a 3804B Joint Stream Alteration Permit under Section 404 from the Idaho Department of Water Resources (IDWR) and US Army Corps of Engineers (COE) before any suction dredge mining can be done.

30. Comment: The Forest Service cannot approve the project before the information and data necessary for NPDES permits have been obtained. The SEIS does not make this clear. (FOC)

Response: The permitting process is described in detail above, on page 1 of the Executive Summary and on page 1-1 of the SEIS.

31. Comment: The Forest Service cannot meet its duty under 36 CFR 228.8 to ensure that the project will comply with the CWA without an understanding of the specific nature of the discharges. (FOC)

Response: The SEIS describes that stream sediment, sand, and small rocks are pulled into the dredge and then discharged from the dredge back into the stream (1-3). Design features minimize the risk of gasoline, human waste, or terrestrial sediment (other discharges) from entering the stream (SEIS, 2-6 through 9). Under CFR 228.8, the Forest is required to conduct operations that minimize adverse environmental impacts including water quality, solid waste, and fish and wildlife habitat. The SEIS describes design features to minimize impacts and describes the impacts associated with dredging operations (4-1 through 4-15). The potential adverse environmental impacts of dredging have been minimized.

32. Comment: The Court in Dubois ruled, "the Forest Service was obligated to assure itself that an NPDES permit was obtained before permitting the [requested activity]." How will this be done? When will the Forest Service make the decision and will the agency require all claimants to submit required permits and plans at the same time or forgo dredging? (FOC)

Response: Suction dredging in Lolo and Moose Creeks will not be approved until the dredge operators obtain all Idaho and Federal permits including the Environmental Protection Agency's NPDES permit, the Corps of Engineers/State of Idaho's joint 404/ Permit to Alter a Stream Channel, and State 401 certification. Operators must also comply with all additional conditions or measures stipulated in the permits, and must comply with the State of Idaho's Placer Mining - Best Management Practices (refer to Operating Condition #30, p 2-9, SEIS).

33. Comment: Contrary to what the SEIS states about IDEQ's belief that suction dredge mining is non-point pollution, the federal courts have expressly held that the outfall from in-stream placer mining equipment is a point source discharge under the CWA that cannot proceed without an NPDES permit.

Response: See responses to comments 28, 29, and 30. The SEIS explains the permitting process on page 1-1. The Forest Service will not approve Plans of Operations until the NPDES permit is received.

34. Comment: It should be noted that suction dredge mining operations are a point source discharge under the Clean Water Act. Section 3.1.1 of the DSEIS indicates that suction dredging is considered a non-point source for pollution by IDEQ. This statement is misleading and approval of plans of operations should be contingent on operators obtaining an NPDES permit. Operating a suction dredge without a permit is a violation of the Clean Water Act. (EPA)

Response: While there may be a discrepancy between the Clean Water Act and IDEQ in the a point source or non-point source of pollution designation, approval of the Plans of Operation will be contingent on operators obtaining a NPDES permit as described in the SEIS (1-1).

TES and MIS

35. Comment: Contrary to what is alleged in the SEIS, dredging affects benthic invertebrates (especially mollusks which disperse slowly and mussels whose populations are currently unstable) and fish habitat (downed woody debris and spawning beds). (FOC)

Response: The SEIS acknowledges potential effects to aquatic insects and mussels (SEIS 4-6). Recent monitoring of Musselshell and Browns Creek shows that mussel populations are strong in these streams (both tributaries to Lolo Creek). Mussels are not expected to occur in Moose Creek due to large substrate size (SEIS 4-6). As stated in the SEIS, mussels prefer sandy habitat which is not the type of habitat that dredge operators prefer. Design features have been developed to minimize impact to fish habitat (SEIS 2-6, 2-7). Large instream wood or stable boulders are not to be moved and spawning habitat would be avoided (as designated by a Forest Service Fisheries Biologist).

36. Comment: The SEIS generally assumes that since impacts are expected to be temporary, there is no real impact. This ignores the fact that dredging would take place in a time of year of stress, when water temperatures are elevated. (FOC)

Response: The SEIS considered effects to water quality and aquatic habitat and species (including TES, invertebrates and amphibians) as measured by the issue indicators detailed on pages 1-10. Impacts as measured by these indicators are summarized on page 2-11 and detailed in Chapter Three.

Dredging takes place during the warmest part of the year. As noted in the SEIS, densities of steelhead in Lolo Creek are very low due to low adult escapement (SEIS 3-6). No bull trout have been found in the Lolo Creek since 2005 and cutthroat have only been found above the project area outside the range of steelhead (SEIS 3-6, 7). Densities of bull trout are very low and cutthroat trout are low in the Moose Creek project area (SEIS 3-7). The likelihood of effects to fish species, even with warmer than preferred temperatures, is considered low to negligible due to low numbers of fish in the dredging areas (SEIS 4-5).

37. Comment: Furthermore, the conditions do not guarantee no harm to fish or other aquatic organisms. They are based upon the assumption that dredge miners are experts in fisheries and expects them to notice tiny fry or alevins and notice if mercury is displaced. All the above is difficult even where operators are trying to comply. Other conditions are subjective in nature. (FOC)

Response: An environmental impact statement does not require a project to cause no harm. Instead it requires the disclosure of potential effects on identified resources and designs to minimize those effects. The SEIS, Biological Assessment, and Biological Opinion acknowledge potential harm to fish and other aquatic species (SEIS 4-5, 6 and Project File). Operating

conditions and monitoring and reporting requirements are described in detail in the SEIS on page 2-7 thru 2-10 to minimize the effects. The operating conditions do not assume that miners are experts. The conditions have been discussed and coordinated with the miners so that implementation is understandable and straightforward. They include timing restrictions, avoidance of spawning areas that are designated by a Forest Service fisheries biologist, and required screens on the dredge pump intakes.

38. Comment: When non-riparian areas are the site of proposed disturbing activities, the agency claims little no impact to MI or TES species because they use RHCAs and PACFISH/INFISH buffers will protect their habitat. Now, the agency ignores analyzing species that it previously claims use riparian habitat extensively. (FOC)

Response: The SEIS analyzed the potential for suction dredging related activities to remove or damage riparian vegetation through trampling, dispersed camping and the movement of equipment into and out of the dredging sites. This in turn could affect sensitive wildlife and plant species. Those riparian species that may occur within the project areas were discussed in detail in the SEIS (3-8, 3-9). Effects to those speices were also discussed in the SEIS (4-8, 4-9). The risk of effects to all identified species was considered low. Habitat disturbance is expected to be minimal, trampling would generally occur in existing disturbed areas, or the species can tolerate some level of human disturbance.

Financial Assurance

39. Comment: Under 36 CFR 228, the agency should require a financial assurance that ensure that reclamation would be completed in the event of abandonment of the site. The SEIS fails to detail the amount, scope, and form of the financial assurance. (FOC)

Response: On page 1-12, the SEIS states that reclamation bonding is required under 36 CFR 229.13 and Forest Service manual direction 2817.24. Reclamation costs would be determined at the pre-mining meeting with each individual operator. The operator provides a guarantee to perform reclamation work in the amount equal to the estimated cost of the work.

40. Comment: We recommend that the EIS include detailed information regarding reclamation and bonding. Additional information should include: (a) types of reclamation activities that may be anticipated; (b) anticipated cost to the FS of implementing such reclamation tasks should the operator be unable or unwilling to do so; (c) the types of financial guarantees that would be acceptable, and information on whether such types are secure and accessible if the need arises; and (d) information on how and when bonds would be updated. (EPA)

Response: The types of reclamation activities are identified in the SEIS, pages 2-7, 2-8, and 2-9, specifically mitigation measures 9, 10, 22, 23, and 29. Bonds would be updated annually. The remainder of this comment is handled with the response to Comment #39.

Heritage Values

41. Comment: The SEIS ignores this important topic. It was included in the early EIS. Why is it ignored? (FOC)

Response: Impacts to heritage and cultural resources are discussed in the SEIS on page 1-12. Compliance with Section 106 of the National Historic Preservation Act, including survey and eligibility evaluation of potentially affected resources, was completed for the study areas. Mitigation measures include informing suction dredge operators about the importance of historic

features, and not allowing dredge miners to excavate, disturb, or reuse historic materials or features. Sites at or near dredge locations would be periodically monitored during the dredging activities to insure compliance with operating plans, including avoidance of historic properties.

Forest Service regulations and policy require that discovery of any potential heritage resource be left alone and reported to the District Ranger and Forest archaeologist. Should a suction dredge operator uncover a resource while working, work would be stopped immediately, pending inspection by the Forest archaeologist. If the Forest archaeologist identifies NHRP-eligible resources, mitigation measures would be identified in consultation with the Idaho State Historic Preservation Office and (if Native American resources are potentially affected) tribal groups.

Roadless Areas

42. Comment: The SEIS inadequately addresses this issue. It claims most impacts will be temporary. The lack of analysis of the impacts on the wild and wilderness character of the roadless area and the fact these impacts will be repeated each year shows they are not temporary impacts, particularly in the precise NEPA definition of temporary. (FOC)

Response: The impacts of suction dredging on the characteristics, as defined in 36 CFR 294.21 under the Idaho Roadless Rule, of the Moose Mountain Roadless Area are summarized in Table 2-1, page 2-13, Chapter 2, and are described in detail in the Potential Effects section, pages 4-12 through 4-15, Chapter 4 of the SEIS. Effects range from no effect to minimal effect for each of the nine roadless area characteristics. The term “temporary” is used to describe the duration of the effects of noise and other human impacts on plants, wildlife, and fish.

The 22,000-acre Moose Mountain Roadless Area is triangular in shape and is bounded by two open (year-round) arterial roads and a clearcut. Within the roadless area, a total of 19 mining claims could be approved, and the suction dredging season would last 45 days (July 1 through August 15). To receive approval, the claimant would have to submit a Plan of Operations and obtain all the required permits, and at the end of each season, the claimant would be required to reclaim any area disturbed by their operations. The sights and sounds of suction dredging along the edges of the roadless area would be similar to those associated with existing camping, vehicle traffic, and other recreational activities.

Restoration

43. Comment: The DSEIS conceptually describes the Lolo #5 stream improvement project included in Alternative 3. The FEIS should include a more detailed description of the work to be performed and include a map and diagrams illustrating design concepts. (EPA)

Response: Currently, there is not a more detailed design for the stream improvement project. A formal contract for the design of the project would possibly be let in 2010, provided funding is available. Current concepts include a reroute through one bend of the stream channel, armoring where necessary, and the development of a pond away from the stream to provide habitat primarily for amphibians.

44. Comment: One component of the reclamation is armoring of the stream bank. We recommend that you consider alternatives to armoring (for example, soft reclamation techniques using soil pillows, root wads, etc.) to accomplish the same objectives. (EPA)

Response: Armoring would be conducted using bioengineering techniques (plantings/rootwads/coir logs). It is unlikely that hard structures would be needed, due to the nature of the site (i.e. sand/gravel/cobble substrate that easily vegetates).

45. Comment: We recommend that the EIS provide additional information about historic mining and disturbance in the watershed. (EPA)

Response: Sufficient information on past mining activities in Lolo Creek and Moose Creek can be found in the SEIS on pages ES-1, 3-1, 3-2, and 3-3, and in Appendix A.

Climate Change

46. Comment: EPA believes that the cumulative effects analysis in the NEPA document should include changes to resources that can reasonably be anticipated due to climate change that may have bearing on aspects of the project (e.g. changes in hydrology that may increase sediment). With relationship to aquatic resources in the project area the analysis should consider, for example, additional sediment loading from high precipitation events in conjunction with dredge operations and those effects to water quality related to turbidity and salmonid spawning habitat. (EPA)

Response: In response to this comment, we considered the scope and nature of the effects of small-scale suction dredging operations on affected resources and the availability of monitoring data (i.e. precipitation) that might show trends due to climate change. We would also note that the temporal scope of the action is just the 45-day dredging season (30 days for Lolo Creek), since high spring flows reset the streams each year.

Specific to water quality, the analysis determined that small-scale suction dredging would cause no increase in sediment, but would instead move existing sediment from one location to another (SEIS, Chapter 4, pg. 4-1). Turbidity would increase slightly during the operation period, but would not exceed State standards.

The likelihood of impacts to listed fish species is considered very low. The limited dredging season would minimize impacts to most larval and juvenile fish and would occur after steelhead trout and bull trout emerge from the substrate (SEIS, Chapter 4, pg. 4-5). Effects to spring chinook in Lolo Creek would be minimized, as the dredging season ends prior to the spawning season. Also, dredging operations are not allowed in prime spawning habitat.

A review of 37 years of monitoring data from the Natural Resource Conservation Service (NRCS) shows that there are currently no increasing or declining trends for precipitation in the Lolo Creek or North Fork Clearwater drainages (refer to Project File). Precipitation levels show fluctuations from year to year, both wetter and drier, although no discernable trend of increasing extremes is apparent at this time. We understand that existing long range climate modeling at broad regional scales predict, generally, increases in extreme climatic events. At this point, we believe this broad long range data is too coarse and includes far too much uncertainty at the site scale to incorporate into a useful analysis for this particular proposal. Conversely, we believe the NRCS data provides more relevant and useful data and context for understanding potential effects of the proposal.

E. Consideration of Other Science/Literature Submitted by the Public

Members of this project interdisciplinary team are considered proficient in their field of study by way of academic achievement, agency training, years of professional experience, and in some cases, certification programs. In addition, each team specialist has cited numerous scientific studies and literature used to support discussions and conclusions made in this project's analysis (refer to References). One other study was brought forward in the letter from Gary Macfarlane (Friends of the Clearwater et al). That study, which is also listed in the reference section of the SEIS, is listed below, along with rationale on whether or not it was used in this project's analysis.

Harvey, B.C. and T.E. Lisle. 1998. **Effects of Suction Dredging on Streams: A Review and an Evaluation Strategy.** In Fisheries. Volume 23, No. 8, August.

This study was used to develop, in part, the design features discussed in the SEIS, which include:

- dredges must have intake screens installed,
- dredging is not allowed in streambanks, in spawning habitat, or in gravel bars at the tails of pool habitat,
- mining would not undermine large wood or stable boulders, would not dam stream channels with dredge tailings, and
- dredge piles would be redistributed and holes backfilled before moving to a new location (SEIS 2-7 to 9).

The effects to aquatic species were noted and cited in the SEIS (4-5). While the effects to aquatic invertebrates was not cited from this report, the one that was cited (Royer, SEIS, page 4-9) found similar results.

F. Distribution List for the Final SEIS (Hardcopy or Web Document)

Tribal Organizations

Nez Perce Tribal Executive Committee

U.S. Congressmen

Representative Walt Minnick
Senator Jim Risch
Senator Mike Crapo

County Officials

Clearwater County Commissioners
Idaho County Commissioners

Federal Agencies

Advisory Council on Historic Preservation
DOE – US Department of Energy
 Office of NEPA Policy & Compliance
EPA – Environmental Protection Agency
 Region 10 EIS Review Coordinator
FAA – Federal Aviation Administration
 Northwest Mountain Region
FHA – Federal Highway Administration
 Division Administrator
NOAA – National Oceanic & Atmospheric Admin
 National Marine Fisheries Service
 Office of Policy and Strategic Planning
NPPC – Northwest Power Planning Council
U.S. Army Engr. Northwestern Division
U.S. Coast Guard – Environmental Management
USDA – U.S. Department of Agriculture
 Deputy Director APHIS PPD/EAD
 Forest Service

Idaho State Agencies

Department of Health and Welfare
 Division of Environmental Quality
Department of Parks and Recreation

Environmental/Special Interest Organizations

Friends of the Clearwater
Alliance for the Wild Rockies
The Lands Council
Idaho Conservation League

Libraries

USDA – National Agriculture Library

Plus, individuals/groups that request a copy of the Final SEIS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

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OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

October 23, 2009

Ralph Rau, Acting Forest Supervisor
12730 Highway 12
Orofino, ID 83544

**Subject: Small-Scale Suction Dredging in Lolo Creek and Moose Creek,
Clearwater and Idaho Counties
EPA Project Number: 04-025-AFS**

Dear Mr. Rau:

The U.S. Environmental Protection Agency (EPA) reviewed the draft supplemental Environmental Impact Statement (DSEIS) for the *Small-Scale Suction Dredging in Lolo Creek and Moose Creek* in Clearwater National Forest. Our review was conducted in accordance with EPA responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

The DSEIS is being developed to supplement the final EIS released in 2006 and associated Record of Decision (ROD), which was appealed. The DSEIS analyzes two action alternatives (Alternatives 2 and 3) associated with placer mining in reaches of Lolo Creek, Moose Creek and two tributaries (Independence Creek and Deadwood Creek). The proposal is to approve 18 operations in Lolo Creek and 38 in Moose Creek. Alternative 3 is identified as the Preferred Alternative and includes stream improvement projects to an abandoned mining claim in Lolo Creek.

The DSEIS does a good job discussing the issues generated from scoping, and the proposal includes operating conditions, design features, and mitigation measures that appear to be a thorough and a reasonable set of controls to mitigate for anticipated impacts. We appreciate the inclusion of the 9 monitoring requirements discussed and we support having interagency field trips to review mining sites to determine if additional mitigation measures are needed. Additionally, we are pleased to see that the Preferred Alternative includes a restoration component. The restoration activities proposed for the abandoned Lolo #5 mining claim, together with the proposed streambank stabilization should off-set some of the unavoidable impacts associated with the proposed action.

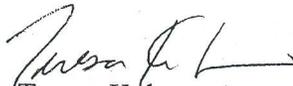
Although we support the above measures we have some concerns related to water quality based on lack of information and potential cumulative impacts. The DSEIS concludes that state water quality standards would not be exceeded for turbidity. This conclusion relies on observations from monitoring past operations and nearby projects. We are concerned that there is no detailed information on the data collected, stream conditions and location under which observations were made, and a level of uncertainty for predictions made. In addition, we believe

that the temporal scale of the water quality analysis is not adequate. The DSEIS does not identify the time frame covered by the approval of plans of operations, and the cumulative effects analysis is very limited in scale. This analysis only covers periods of time when suction dredging is occurring (i.e. 30 days for Lolo Creek, page 4-7). The document should consider impacts to water quality associated with suction dredging a stream reach over multiple years, and the cumulative effects of that activity along with other foreseeable actions in and around the project area. The EIS should state how long this approval period is for, and the cumulative effects analysis should consider more than the point in time when suction dredging is occurring. We have included additional detailed information regarding our above concerns and recommendations in the attached detailed comments. Based on our above concerns we have rated the DEIS, EC-2 (Environmental Concerns - Insufficient Information).

It should be noted that suction dredge mining operations are a point source discharge under the Clean Water Act. Section 3.1.1 of the DSEIS indicates that suction dredging is considered a non-point source for pollution by IDEQ. This statement is misleading and approval of plans of operations should be contingent on operators obtaining a National Pollutant Discharge Elimination System (NPDES) permit. Operating a suction dredge without a permit is a violation of the Clean Water Act. EPA is currently in the process of developing a "general NPDES permit" for suction dredge operations using nozzles that are 5 inches or less in diameter. It is our understanding that the operations analyzed in this DSEIS would be in this category. A fact sheet is attached that includes answers to common questions regarding suction dredge operations.

Thank you for the opportunity to provide comments on this DSEIS. If you have any questions please contact Lynne McWhorter at (206) 553-0205 or via email at mcwhorter.lynne@epa.gov.

Sincerely,



Teresa Kubo
Acting Unit Manager
Environmental Review and
Sediment Management Unit

cc: US EPA Idaho Operations Office

EPA's Specific Comments on the DSEIS for Small-Scale Suction Dredging in Lolo Creek and Moose Creek

Changes between Final EIS and DSEIS

The DSEIS notes that the 2006 final EIS and ROD were appealed and that this supplemental EIS was developed to clarify the environmental analysis. The executive summary includes a short summary of changes between the 2006 final EIS and includes the following subjects: roadless area characteristics, water quality, cumulative effects, and irretrievable commitment of resources. It is not clear what changes were made based on the appeal and what the resulting modifications are to address those issues. The one reference to the appeal is that the effects to roadless areas were not adequately addressed in the final EIS. However, the discussion does not include specifics of what the issue was and the resulting changes other than providing a clarification that remote claims off existing roads and trails within roadless areas would be accessed by foot by miners. Regarding this topic, we support maintaining roadless areas and requiring foot access only in remote areas. Regarding the more general subject of previous issues and modifications, we recommend that the EIS include additional detail regarding the elements of the final EIS that were appealed and how these issues are addressed in this iteration.

Water Quality

Sediment and Turbidity

We are glad to see that Lolo Creek is no longer identified as water quality impaired and that there are no other water quality listed streams in the project area. We believe that the terms and conditions (pre-mining site reviews, monitoring of plumes up to 150 feet below an operation, and others) to prevent degradation and address water quality seem to be appropriate. However, the analysis that forms the basis of the conclusion that violations of State water quality standards pertaining to turbidity would not be exceeded relies heavily on anecdotal information and observations from past operations in the project and nearby areas. The report cites monitoring conducted downstream of suction dredge operations on the South Fork Clearwater River to conclude that turbidity levels for this project are expected to remain low, of short duration (only while dredges are operating), and short distance (less than 150 feet). We recommend that you discuss the completeness of this information, as it is our recollection from a discussion on a field trip that monitoring on tributaries of the South Fork Clearwater below dredge operators observed highly turbid plumes in at least one case. This would suggest that potential turbidity impacts are possible, but dependent on various site-specific conditions and factors. Broad conclusions about the potential for violations of the water quality standard for turbidity should be tempered accordingly.

Section 4.1.2 discusses sediment effects and focuses on cobble embeddedness. This section is very general and concludes that there may be slight increases or decreases in the immediate vicinity of a dredging operation, but that overall cobble embeddedness levels are not expected to change. This approval seems to allow for a high density of dredging given the relatively small size of the streams and we are concerned with water quality both from a turbidity and bedload sediment standpoint. The cumulative effects section points out that "there would be no overall increase in instream sediment since it would only be moved from one location to the next." These conclusions seem to be based on a conceptual understanding of the physical processes involved. We recommend that the EIS include additional supporting information and

data to evaluate this issue. In addition to cobble embeddedness, we also recommend that you address questions related to streambed stability and structure. The issue of streambed stability becomes more relevant as you consider impacts over time. Suction dredging activities are likely to occur for many years, with operators moving or advancing their operation to new sections of streambed. With each successive year of operation, there would be more disturbance and redistribution of streambed sediment throughout the watershed.

The temporal scope of the DSEIS seems to be limited to the number of days suction dredges operate in a year versus looking at the life of the project. EPA has issued guidance on how we are to provide comments on the assessment of cumulative impacts, *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (<http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>.) One of the principles of this guidance is related to temporal scope and states that the life of the project is the most common temporal scope used and that this may not be appropriate if the effects last longer than the life of the project. Because we are unclear what the life of this approval period is, it is difficult to determine what the longer cumulative effects could be. The EIS should consider spatial and temporal boundaries that are not overly restricted in the cumulative impact analysis.

Recommendations:

- We recommend that the final EIS include detailed information about the data collected and level of uncertainty regarding conclusions related to water quality.
- We recommend including references and data that may be available from published studies to evaluate the issue of cobble embeddedness in the vicinity of the project and over the life of project.
- We recommend conducting a cumulative effects analysis that considers a temporal scale consistent with the life of this approval and continual dredging over time in the stream channel.

Aquatic Habitat and Species

Section 4.2 quantifies the amount of disturbance that would occur in linear feet and percentage of stream channel in the project areas (0.4 miles or approx. 3% of Lolo Creek and 0.5 or approx. 3% of Moose Creek). The EIS should clarify that this is an annual estimate from monitoring in 2001, and that multiple years of operation could increase the amount of potential disturbance. The EIS should describe the duration or number of operating seasons that are being considered in the alternatives, and then disclose effects associated with that number of seasons. For example, cumulative effects to aquatic habitat associated with three years of seasonal operation may be very different than 10 to 20 or more years of seasonal operation.

Recommendation:

- We recommend that the EIS define the duration of potential disturbance and clarify or base the effects analysis on this duration.

Restoration

The DSEIS conceptually describes the Lolo #5 stream improvement project included in Alternative 3. The FEIS should include a more detailed description of the work to be performed and include a map and diagrams illustrating design concepts. This information is needed for the

public to understand and comment on the need for stream improvement and expected effectiveness of the reclamation envisioned. In addition, one component of the reclamation is armoring of the stream bank. We recommend that you consider alternatives to armoring (for example, soft reclamation techniques using soil pillows, root wads, etc.) to accomplish the same objectives. We would be willing to meet with you to discuss ideas in this regard. It would also be helpful to discuss the degree of disturbance in the watershed from other past operations. This would provide context and may help to determine where restoration should be focused.

Recommendations:

- We recommend that the EIS provide additional information about historic mining and disturbance in the watershed.
- We recommend that the EIS provide details and figure(s) on the proposed restoration design.

Reclamation

Section 1.7.3.1 notes that reclamation bonding would be required, costs would be determined on a case-by-case basis, and that the operator would provide a financial guarantee to perform reclamation work. We recommend that the EIS provide additional information on this topic to inform the public and decision maker on the risks posed to the environment should an operator be unable or unwilling to complete reclamation.

Recommendation:

- We recommend that the EIS include detailed information regarding reclamation and bonding. Additional information should include:
 - Types of reclamation activities that may be anticipated (re-filling dredge holes, hauling out equipment or refuse, and the like).
 - Anticipated cost to the FS of implementing such reclamation tasks should the operator be unable or unwilling to do so.
 - The types of financial guarantees that would be acceptable, and information on whether such types are secure and accessible if the need arises.
 - Information on how and when bonds would be updated.

* **Climate Change**

Currently, there are concerns that continued increases in greenhouse gas emissions resulting from human activities contribute to climate change. Effects of climate change may include changes in hydrology, sea level, weather patterns, precipitation rates, and chemical reaction rates. EPA believes that the cumulative effects analysis in the NEPA document should include changes to resources that can reasonably be anticipated due to climate change that may have bearing on aspects of the project (e.g. changes in hydrology that may increase sediment). We are concerned that reasonably foreseeable impacts of climate change on the project area are not addressed and we support incorporating climate change adaptation into the project's decision making process.

With relationship to aquatic resources in the project area the analysis should consider, for example, additional sediment loading from high precipitation events in conjunction with dredge operations and those effects to water quality related to turbidity and salmonid spawning habitat.

EPA understands that many questions surrounding climate change remain unanswered. Although there may be little if any effects on the project, a discussion should be included considering potential impacts related to this topic. We have included a list below of resources that may be helpful in considering climate change impacts and adaptation discussions in the document. We also recommend referring to the University of Washington's Climate Impacts Group website (<http://cses.washington.edu/db/pubs/allpubs.shtml>) for a compilation of additional publications on research related to climate change.

Suggested Climate Change References

Botkin, D.B. et al., 2007. Forecasting the effects of global warming on biodiversity. *Bioscience* 57, 227–236.

Grace, J., Berninger, F., Nagy, L., 2002. Impacts of climate change on the tree line. *Annals of Botany* 90, 537–544.

Morin, X., Thuiller, W. 2009. Comparing niche- and process-based models to reduce prediction uncertainty in species range shifts under climate change. *Ecology*, 90(5), 1301-1313

Peterson, David L., McKenzie, Don. 2008. Wildland Fire and Climate Change. (May 20, 2008). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. <http://www.fs.fed.us/ccrc/topics/wildland-fire.shtml>

Ruggiero, Len; McKelvey, Kevin; Squires, John; Block, William. 2008. Wildlife and Climate Change. (May 20, 2008). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. <http://www.fs.fed.us/ccrc/topics/wildlife.shtml>

SAP 4.4. Adaptation Options for Climate-Sensitive Ecosystems and Resources | National Forests. <http://www.climatescience.gov/Library/sap/sap4-4/final-report/sap4-4-final-report-Ch3-Forests.pdf>.

APPENDIX C

Errata to the Draft SEIS

- Pg. 1-1, second bullet, capitalize clean water act to read Clean Water Act.
- Pg. 1-8, second paragraph, change last sentence to read, “This SEIS is tiered to the Clearwater National Forest Plan, as amended by PACFISH and INFISH.”
- Pg. 1-11, first sentence under 1.7.2.4, add “members” after Tribal.
- Pg. 1-12, second paragraph under 1.7.3.2, replace (Lucky Beau) with (Northwest Lolo Placer).
- Pg. 1-12, second sentence, third paragraph under 1.7.3.2, replace “construction” with “activities”.
- Pg. 2-1, last paragraph, delete (Appendix D).
- Pg. 2-9, monitoring requirement #3, insert “to” after operator.
- Pg. 2-12, Table 2-1, fifth row under Alternatives 2 and 3, replace “effect” with “affect”.
- Pg. 3-1, last paragraph, delete last sentence.
- Pg. 3-2, first paragraph, delete first “a” in third sentence; delete “for moderate (Rosgen B) gradient channels” in the fifth sentence; and delete “or less” in the sixth sentence.
- Pg. 3-2, second paragraph, add “There is no turbidity data for Dutchman Creek.” after last sentence.
- Pg. 3-2, third paragraph, first sentence, add “the” after of.
- Pg. 3-4, first paragraph under Lolo and Dutchman Creeks, change “spawing” to “spawning”.
- Pg. 3-5, fifth paragraph under Moose, Deadwood, and Independence Creeks, insert “in” after monitored.
- Pg. 3-6, first paragraph, change “no” to “not” and “would” to “will”.
- Pg. 3-9, seventh paragraph, delete “Idaho strawberry”.
- Pg. 3-10, third paragraph, add “near Powell, Idaho” after Highway 12.
- Pg. 3-11, #7, last sentence, add “than” after Other.
- Pg. 4-1, second to last sentence, change “fro” to “from”.
- Pg. 4-2, second paragraph, add “agency personnel” after regulatory.
- Pg. 4-2, Cumulative Effects to Moose Creek, the installation of the Independence Creek ford was completed during the summer of 2009. Thus the effects of installation are no longer a factor.
- Pg. 4-5, last paragraph, third sentence should read, “They concur that the project “may effect, likely to adversely affect” bull trout but that the project would not likely jeopardize the continued existence of bull trout in the Moose Creek drainage.”
- Pg. 4-7, last sentence, change “effect” to “affect”.

Pg. 4-9, second paragraph under Cumulative Effects, combine the last two sentences by replacing “Therefore,” with “and”.

Pg. 4-13, #1, *Air*, fifth sentence, change “the” to “they”.

Pg. 4-14, #7, change “steam” to “stream”.