USDA

United States Department of Agriculture Forest Service

Environmental Assessment

Small-Scale Suction Dredging in Orogrande and French Creeks and South Fork Clearwater River

Nez Perce-Clearwater National Forests
North Fork Ranger District
Red River Ranger District
Salmon River Ranger District

United States Department of the Interior Bureau of Land Management

BLM Cottonwood Field Office

June 2016

For additional information contact: Rebecca Anderson
Interdisciplinary Team Leader
12730 Highway 12
Orofino, ID 83544

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer and lender.

TABLE OF CONTENTS

page

List of Figures and tables

Page

LIST OF APPENDICES

CHAPTER 1

PURPOSE AND NEED FOR ACTION

The Nez Perce-Clearwater National Forests (Forests), in conjunction with the Bureau of Land Management Cottonwood Field Office (BLM), has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental effects that would result from the Proposed Action and alternatives. Additional documentation, including detailed analyses of project area resources, may be found in the project planning record located at the North Fork Ranger District Office in Orofino, Idaho.

1.0 Introduction

The Forests and BLM (Agencies) are proposing allow for the approval of a limited number of Plans of Operations (POOs) in specified reaches of the Orogrande and French creeks and the South Fork of the Clearwater River.

The Agencies manage public lands in a geographically diverse area of central Idaho with occurrences of gold, silver, antimony and copper. Currently, there are 26 unpatented mining claims on the Orogrande and French creeks and 37 on the South Fork of the Clearwater River. Ownership of the claims is shared by a total of 85 potential suction dredge operators. Claims are located under the Mining Law of 1872.

The number of operators varies from year to year. This EA analyzes the permitting of a maximum of 35 operators annually, 20 in Orogrande and French creeks and 15 in the South Fork of the Clearwater River. It should be noted a miner is not required to have a mining claim under the Mining Law of 1872 in order to operate on the National Forests or BLM managed lands.

1.1 Proposed Project Area

Proposed suction dredge mining areas would be located in the mainstems of the Orogrande and French creeks, 5-16 miles east to northeast of Pierce, Idaho in several sections of T37N, R6E, T37N, R7E, T38N, R7E, T38N, R8E, Boise Meridian, Clearwater County, Idaho (Figure 1.1). They are also located in the mainstem of the South Fork of the Clearwater River in several sections from T30N, R3 and 4E upstream through T29N, R3, 4, and 5; T28N, R5 and 6, and then back into T29N, R6 and 7 and 8, 1½ miles upstream of Harpster to Elk City, Idaho County, Idaho (Figure 1.1). Figure 1.2 depicts a typical small-scale suction dredge.

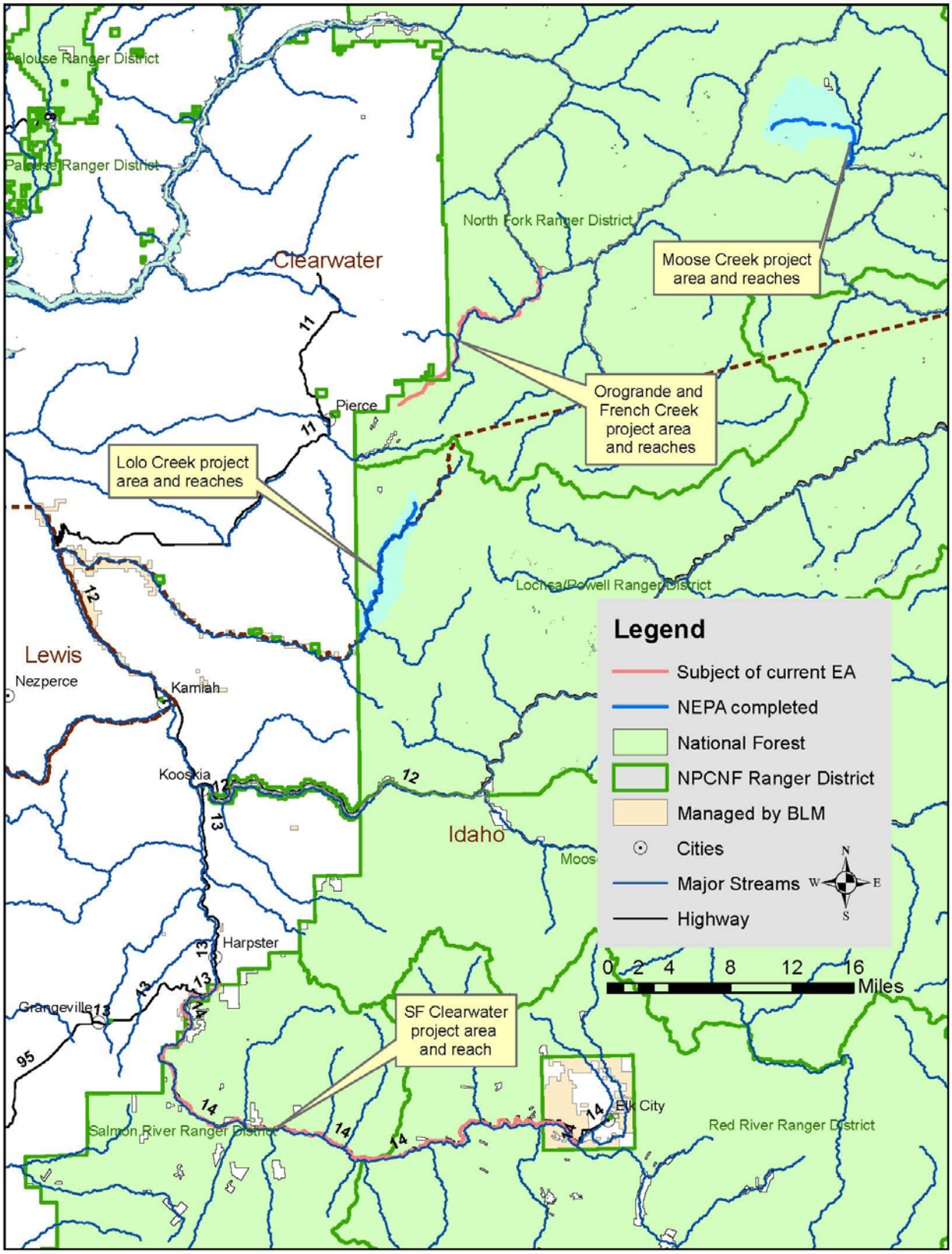
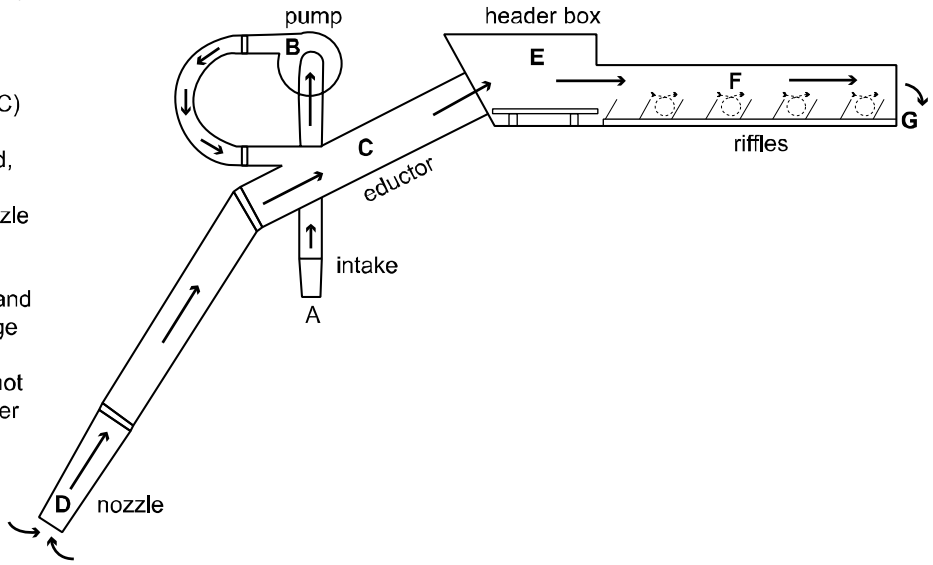


Figure 1-1: Orogrande and French Creeks and South Fork of the Clearwater River Project Areas

Water is sucked through a screened intake (A) by water pump (B). The force of high pressure water into the eductor (C) creates a suction at nozzle (D). Water, sand, gravel and gold are sucked through the nozzle into the header box (E), across the riffles (F) where gold is trapped, and out the end of the dredge (G) into the stream. Streambed material is not sucked through the water pump.



Adapted from Siskiyou National Forest 2001

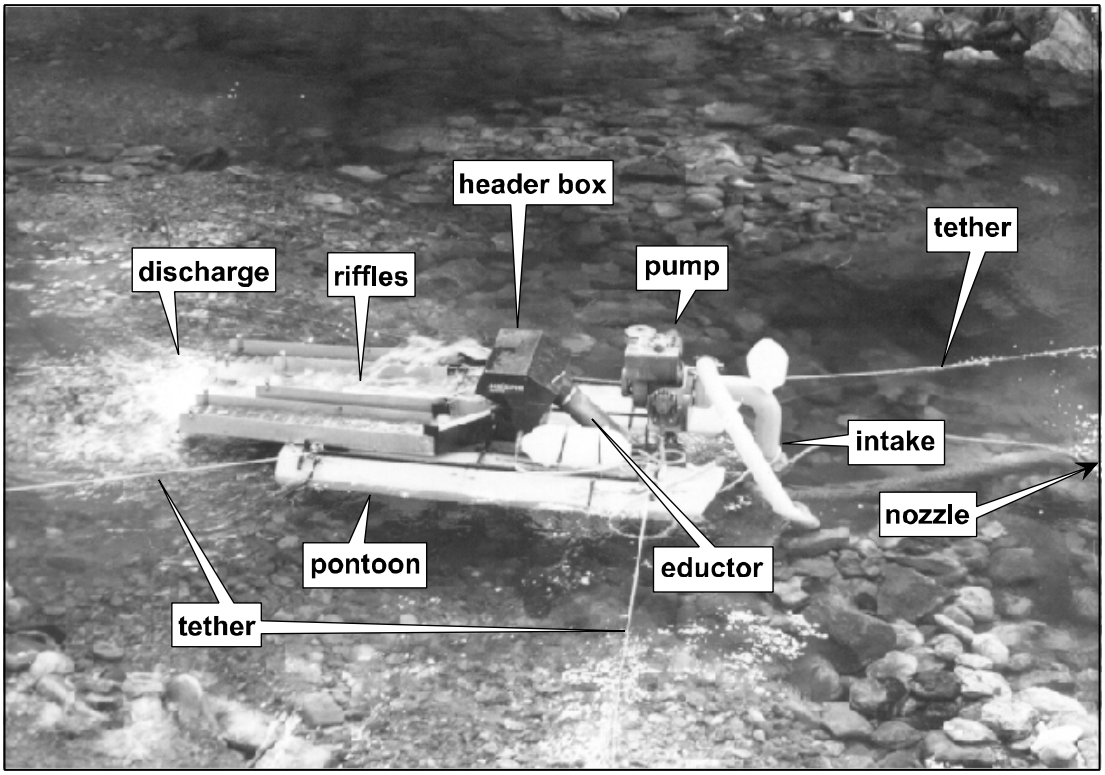


Figure 1-2: Typical Small-Scale Suction Dredge

1.2 Purpose and Need for Action

Laws, regulations, policies, and plans direct the Agencies to support and facilitate mineral extraction while minimizing adverse environmental effects on public 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 POOs.

Purpose: To allow the Agencies to expeditiously process POOs by creating cohesive standard procedures for small-scale mining within the project areas that effectively protect resources including special status fish, prevent unnecessary and undue degradation to public lands, and improve the efficiency of the approval process for POOs.

Need: Each year the Forest Service and the BLM must individually process multiple POOs for small-scale suction dredging within the project areas. This involves preparation of environmental analysis to comply with NEPA, and consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) to comply with Section 7 of the Endangered Species Act (ESA). Processing each POO individually is time consuming and inefficient given that the proposed activities in each POO is essentially the same. By completing a programmatic analysis for these POOs, the consultation and analysis to permit up to 35 POOs for Orogrande and French creeks and the South Fork of the Clearwater River would already be completed rather than repeating the process for each individual POO submitted. This would allow the Agencies to approve the POOs in a more timely and efficient manner.

All mining proposals, including those submitted by small-scale suction dredge operators, are made under the authority of the United States mining laws (30 U.S.C. 21-45), which confer the statutory right to enter upon public lands for the purpose of exploration and development of mineral resources. The Agencies have the responsibility to analyze and approve POOs, if the surface resource protection requirements are reasonable as determined by the District Ranger (Forest Service) or the Field Manager (BLM).

In June 2012, the U.S. Court of Appeals for the 9th Circuit Court ruled that the Forest Service's processing of a Notice of Intent (NOI) for a proposed mining operation constitutes a Federal action for the purposes of Section 7 consultation in accordance with the Endangered Species Act [*Karuk Tribe of California v. USFS*, 681 F.3d 1006 (9th Cir. 20 12)]. The Forest Service determined that suction dredging along streams that contain ESA-listed species within the Nez Perce-Clearwater National Forests is a significant disturbance as defined by 36 CFR 228.4(a)(3) and therefore a POO is required along with copies of an approved Idaho Department of Water Resources (IDWR) letter permit and an approved Environmental Protection Agency’s National Pollutant Discharge Elimination System (NPDES) general permit. Similarly, the BLM's regulations at Title 43, Code of Federal Regulations (43 CFR), 3809.11(c)(6) state that an operator must submit a POO for "Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan." In addition, the eastern-most section of the South Fork of the Clearwater River is within a BLM area of critical environmental concern (ACEC), and 43 CFR 3809.11(c)(3) requires operators to submit a POO for operations within designated ACECs.

1.3 Existing Conditions

Since the 1860s, placer gold mining has occurred in rivers and streams across the Forests and BLM managed lands. Three of the more productive streams, Orogrande Creek, French Creek, and the South Fork of the Clearwater River have had sporadic mining activity over the years. With the rise in gold prices during the 1970s, there was a renewed interest in prospecting and exploration. Around this time many prospectors started using suction dredges to explore and mine in stream gravels. Orogrande and French creeks and the South Fork of the Clearwater River are most frequently mined by part-time, small-scale operations using suction dredges with nozzles ranging from two to five inches in diameter and gasoline-powered pumps with up to 15 horsepower motors. Small-scale suction dredging is considered placer mining under federal mining laws. "Recreational" dredging is a term used by IDWR and is not recognized by federal mining laws. Claimant activity ranges from short-term use to season-long stays approved under a POO. Camping and dredging for any amount of time requires a POO on the South Fork of the Clearwater River on Forest Service lands. Requests to remain on-site beyond the 14 day camping limit on BLM managed lands on the South Fork of the Clearwater River would be reviewed and authorized according to the 43 CFR 3809 regulations. Dredging and occupancy for longer than 18 days in dispersed sites along Orogrande and French creeks would require an approved POO. Whenever NOI is referenced in this document, it is referring to Orogrande and French creeks only.

In accordance with the Forests' regulations, until the late 1990s suction dredge miners notified the Forests of their activities through a NOI to operate. Miners were also required to apply for and obtain a 3804-A Stream Alteration Permit from the Idaho Department of Water Resources (IDWR). As of 2015, the IDWR regulates modifications to stream channels under Idaho Administrative Procedures Act (IDAPA) Rule 37.03.07, with specific rules for suction dredging under Rule 37.03.07.064. The IDWR developed an annual self-issued "recreational" mining "letter permit", with specific conditions and prohibitions ("best management practices," or BMPs) for resource protection (the 2016 IDWR permit instructions include a Special Supplement for South Fork of the Clearwater River dredging which is intended to complement the proposed action in that stream). The Forests in Idaho collectively agreed throughout most of the 1990s that operations implementing State required BMPs could operate in selected streams with minimal or no effect to fish and water quality.

However, in 1997, steelhead trout within the Snake River drainage was listed as a threatened species under the Endangered Species Act (ESA). In 1998, bull trout were also listed as threatened within the Snake River drainage. These listings required Federal agencies to conduct assessments of potential effects as a result of activities the agencies proposed to implement, fund, or permit. As a result, the Forests no longer viewed compliance with IDWR suction dredging BMPs as a sufficient procedural constraint on small-scale suction dredging proposed on Federal lands.

After the 1998 mining season the Forests initiated the process of consulting, under Section 7 of the ESA, with the NMFS and FWS concerning the effects of small-scale suction dredging on bull trout in Moose Creek and two tributaries on the North Fork Ranger District and on bull trout and steelhead in Lolo Creek on the Lochsa Ranger District; the most recent of these consultations was in 2013 (USDA FS, 2013 and 2013a), and was based on a 2010 NEPA effort (CNF, 2009 and 2010). Consultation was conducted for small-scale suction dredging activities in Orogrande and French creeks in 2014 (USDA FS, 2014), but not conducted on the South Fork of the Clearwater River.

Prior to the EPA's issuance of an NPDES general permit for suction dredging operations in Idaho, individuals seeking to suction dredge on BLM managed lands either: 1) Applied for and operated under the IDWR Recreational Suction Dredge Permit which the BLM was afforded the opportunity to review and comment on each year prior to the operating season(s). This process was deemed adequate to satisfy the BLM regulations found at 43 CFR 3809.31 (b)(1). The permit specifically stated that operations on federally managed lands required notification of the appropriate agency to determine if additional requirements applied; or 2) If the operation did not qualify under the IDWR permit, then the operator had to submit a plan to the BLM under the 43 CFR 3809 regulations. The plan would be reviewed as outlined under 43 CFR 3809 for a Notice (3809.300) or a Plan of Operations (3809.400). A similar process was in place for suction dredging on Forest Service Managed public lands. In 2013 (revised in 2014), the Environmental Protection Agency (EPA, 2014) came out with new rules and as a result, no suction dredging operations have been processed by the BLM in the Coeur d'Alene District as the Agency works through the process.

1.4 Desired Future Conditions

To have standard procedures in place for small-scale mining in French and Orogrande creeks and the South Fork of the Clearwater River that effectively protect resources including special status fish, prevent unnecessary and undue degradation to public lands, and improve the timely approval process for POOs.

1.5 Decision Framework

The Forest Supervisor and the BLM Field Manager are the authorized officers. They would review the purpose and need, alternatives, potential environmental effects, and public comments in order to arrive at a decision of whether or not to approve the specified number of operations for suction dredging and associated operating conditions, design criteria, and mitigation measures for those operations in designated areas of Orogrande and French creeks and the South Fork of the Clearwater River.

This decision would be implemented through the approval of specific POOs which meet the requirements described under the selected alternative and the Agencies' surface management regulations found at 36 CFR 228 and 43 CFR 3809. The Forest Service's regulations do not provide for denying a reasonable POO; reasonable POOs must be approved. The BLM's regulations state it can disapprove or withhold approval of a POO if: (1) It does not meet the applicable content requirements of §3809.401; (2) Proposes operations in an area segregated or withdrawn from the operation of the mining laws, unless the requirements of §3809.100 are met; or (3) Proposes operations that would result in unnecessary or undue degradation of public lands. Although this is non-discretionary, a POO can be constrained or mitigated to protect surface resources. The constraints cannot make the operation economically infeasible, but may still substantially alter a miner's proposal as needed to protect surface resources or meet environmental laws, such as the Clean Water Act and Endangered Species Act. Hence, the decisions to be made concern approval of resource protection measures that constitute one step in the approval process for POOs.

1.6 Regulatory Framework and Consistency

The Agencies' mineral objectives are to manage public lands to accommodate and facilitate the exploration, development, and production of mineral resources, while integrating these activities with the use and conservation of other resources to the fullest extent possible.

This project analysis and documentation of effects is consistent with the direction described below.

Permitting Process

36 CFR Part 228 directs the Forest Service and 43 CFR 3809 directs the BLM to prepare the appropriate level of environmental analysis and documentation when proposed operations may affect surface resources. These regulations do not allow the Agencies to deny entry or preempt the miners' statutory right on lands open to mineral entry granted under the Mining Law of 1872. The regulations require the Agencies to develop mitigation measures to minimize adverse effects to public resources. The Agencies should avoid adverse effects related or incidental to mining by imposing reasonable conditions that do not materially interfere with operations.

The permitting process:

- Operators present a POO/NOI to the Forest Service or BLM.
- The appropriate Agency completes the suitable environmental analysis to comply with NEPA. This analysis demonstrates operator's compliance with Clean Water Act, Endangered Species Act and Section 7 consultation and Biological Opinions, which includes corresponding design criteria in a POO.
- Discharges from suction dredge operations qualify as point sources and require a Section 402 permit, NPDES permit, authorization by EPA. The operators apply for their NPDES permit with EPA. All Section 402 permits must be certified by Idaho Department of Environmental Quality (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 Agencies approve POOs 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 3804-B Joint Stream Alteration Permit under Section 404 from the IDWR and US Army Corps of Engineers (COE) before any suction dredge mining can be done.

The ***Mining Law of 1872*** states that all valuable mineral deposits in lands belonging to the United States are to be free and open to exploration. In order to make a discovery of a valuable mineral deposit, the operator has a right under the Mining Law of 1872 to enter upon public lands open to mineral entry, and to prospect and explore for mineral resources. The Law allows for mining claim location and possessory title to the valuable minerals within the location. While miners have rights under the Mining Law of 1872, they are legally required to comply with any applicable laws passed since 1872 that have placed additional requirements upon miners.

The ***Organic Administration Act of 1897*** affirms the public's right to enter, search for, and develop mineral resources on lands open for mineral entry, and authorizes the Agencies to approve and regulate all activities related to prospecting, exploring, and developing mineral resources.

The ***National Forest Management Act of 1974*** *(NFMA)* (16 U.S.C. 1600-1614), as amended, reorganized, expanded, and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which call for the management of renewable resources on Forest Service administered lands. The NFMA requires the Secretary of Agriculture to assess forest lands; develop a management program based on multiple-use; sustained yield principles; and implement a resource management plan for each unit. In accordance with the NFMA, all projects and activities must be consistent with the governing Forest Plan [16 U.S.C. 1604(i)].

The ***Federal Land Policy and Management Act of 1976*** *(FLPMA)* (43 U.S.C. 1701-1782), as amended, requires the Secretary of the Interior to prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values, giving priority to areas of critical environmental concern, and develop, maintain and, if appropriate, revise land use plans. The Act also addresses the sale, withdrawal, acquisition and exchange of public lands; the issuance of conveyances for public lands and mineral interest; grazing rights; and rights-of-way.

The ***National Environmental Policy Act of 1970*** *(NEPA) (42 U.S.C. 4321 et seq.)* establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and provides a process for implementing these goals within the Federal agencies. NEPA also established the Council on Environmental Quality (CEQ). Title I contains a Declaration of National Environmental Policy that requires the Federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Section 102 requires Federal agencies to incorporate environmental considerations in their planning and decision making through a systematic interdisciplinary approach. Specifically, all Federal agencies are to prepare detailed statements assessing the environmental effects of and alternatives to major Federal actions significantly affecting the environment.

The ***Multiple Use Mining Act of 1955*** directs that any mining claim located after July 23, 1955, shall not be used, prior to issuance of patent, for any purposes other than prospecting, mining or processing operations and uses reasonably incident thereto, and that such claims shall be subject to the right of the United States to manage and dispose of vegetative surface resources and to manage other surface resources, and the right of the United State**s,** its permittees, and licensees to use so much of the surface as may be necessary for such purposes or for access to adjacent land.

The ***Mining and Mineral Policy Act of 1970*** directs the Federal Government to foster and encourage private enterprise in the development of economically sound and stable industries, and in the orderly and economic development of domestic resources to help assure satisfaction of industrial, security, and environmental needs.

The ***Agencies Surface Use Regulations*** (36 CFR Part 228 Subpart A and 43 CFR 3809) set forth rules and procedures for use of the surface of public lands in connection with mineral operations both on and off mining claims. The regulations direct the Agencies to prepare the appropriate level of environmental analysis and documentation when proposed operations may significantly affect surface resources. These regulations do not allow the Agencies to deny entry or preempt the miners' statutory right on lands open to mineral entry granted under the Mining Law of 1872. The regulations require the Agencies to develop mitigation measures to minimize adverse effects on public resources. The Forest Service Part 228 regulations and the BLM Manual 3809 – Surface Management include requirements for reclamation.

The ***Forest Service Manual (FSM) 2800 and BLM Regulations 43 CFR 3809*** discuss specific responsibilities and considerations for dealing with a POO. They state that the Agencies should minimize or prevent adverse effects related or incidental to mining by imposing reasonable conditions that do not materially interfere with operations.

The ***Clean Water Act*** (CWA) (33 U.S.C. 1251 *et seq.*), as amended, sets goals to eliminate discharges of pollutants into navigable water, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. Executive Order (EO) 12088 requires the Forest Service meet the requirements of the Act. Sections 303(d), 313, 401, 402, and 404 of the Clean Water Act, are potentially applicable to suction dredging operations. In particular, the EPA has determined that suction dredging constitutes a point source discharge of water pollution and requires suction dredge operators to possess a NPDES permit. The current NPDES general suction dredging permit, approved in April 2013, limits suction dredging in the South Fork of the Clearwater River to no more than 15 operations (with a minimum spacing of 800 feet between operating dredges).

The ***Idaho Stream Channel Protection Act*** requires that the stream channels of the state and their environment be protected against alteration for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality. This means IDWR must approve in advance any work being done within the beds and banks of a continuously flowing stream.

Idaho State Water Quality Standards provide water quality for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water (fishable/swimmable conditions), where attainable and consider the use and value of state waters for public water supplies, propagation of fish and wildlife, recreation, agricultural and industrial purposes, and navigation.

The ***Endangered Species Act*** (ESA) (16 U.S.C. 1531-1544) Section 7(a) requires Federal agencies to consult with FWS and/or NMFS, as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. As required under the ESA, biological assessments and consultation under Section 7 would be completed for this decision. The action alternatives are not expected to result in a jeopardy biological opinion for any listed species.

The ***Clearwater National Forest (CNF) Plan*** (USFS, 1987) and ***Nez Perce National Forest (NPNF) Plan*** (USFS, 1987), as amended, guide all natural resource management activities by providing a foundation and framework of standards and guidelines for National Forest System lands administered by the Forests. The proposed project analysis was guided by the goals, objectives, standards, guidelines, and management area direction within the Clearwater and Nez Perce Forest Plans. Forest-wide goals and standards are found in Chapter II of the CNF plan on pages II-3 through II-30. These goals, objectives and standards discuss the need to facilitate the orderly development of mineral commodities and provide for timely, reasonable, effective and economically feasible environmental protections. In 1995 the CNF Plan was amended by the Interim Strategies for Managing Anadromous fish-producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH) and the Interim Strategies for Managing Fish-producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, Western Montana and Portions of Nevada (INFISH). PACFISH and INFISH provide guidance and monitoring

requirements for minimizing impacts to surface resources, especially in relationship to Riparian Habitat Conservation Areas (RHCAs).

Forest-wide goals and standards are also found in Chapter II of the NPNF Plan on pages II-7 through II-24. These goals, objectives, and standards discuss the need to facilitate the orderly development of mineral commodities and provide for timely, reasonable, effective, and economically feasible environmental projections. In 1995 the NPNF Plan was also amended by PACFISH.

Under the ***Clearwater Forest Plan Lawsuit Stipulation of Dismissal (1993),*** the Forest Service signed a settlement agreement with all parties (Sierra Club and the Wilderness Society representing nine co-plaintiffs) agreeing to several points, including that the Forest Service would only proceed with projects which would result in "no measurable increase" in sediment production in drainages currently not meeting Forest Plan standards. These agreements remain in effect until a Forest Plan revision is completed. The proposed project would not increase sediment production.

The BLM ***Cottonwood Resource Management Plan*** (RMP) (BLM, 2009) provides guidance and direction for"…a comprehensive framework to guide management of public lands and interests administered by the Cottonwood Field Office with a focus on maintaining or restoring resource conditions and helping provide community stability through resource use and enjoyment.". The proposed action is in conformance with the following applicable goals, objectives, and management actions specified in the RMP:

Goal MN-1- Make federal mineral resources available for exploration, acquisition, and production consistent with other resource goals.

Objective MN-1.4-Locatable Minerals (Public lands identified open to mineral entry)

Action MN-1.4.3-If necessary, appropriate site-specific mitigation measures and/or stipulations developed during the BLM's review of an operations plan may be implemented as conditions of approval.

Goal WA-1—Manage water resources to protect beneficial uses and to meet a focus on maintaining or exceed state and federal water quality standards. Maintain or improve the chemical, physical, and biological integrity of water resources.

Objective WA-1.1—Comply with all state and federal requirements to protect water quality.

Action WA-1.1.1—Implement all applicable best management practices to limit nonpoint source pollution and minimize degradation of water quality.

Goal AF-1—Manage habitat to contribute to the conservation of special status and native fish species.

Objective AF-1.1—Provide for diverse and healthy aquatic habitats that contribute to the recovery of listed fish species and conservation of BLM sensitive fish species.

Action AF-1.1.1—Ensure that all ongoing and new BLM management actions support or do not retard or preclude recovery for federally listed fish (Endangered Species Act), designated critical habitat, and important aquatic habitats (supporting spawning, incubation, larval development, rearing, migration corridors, and aquatic habitats for forage species).

Action AF-1.1.2—Ongoing and new activity or project review would be conducted to assess effects to Essential Fish Habitat [Section 305(b)(2) of the Magnuson-Steven Act]. The BLM would consult with National Marine Fisheries Service on any action that would adversely affect Essential Fish Habitat for Chinook or Coho salmon (*O. kisutch*) and would implement appropriate measures to avoid, mitigate, or minimize adverse effects.

Goal WS-1-Manage habitat to contribute to the conservation of special status species habitats and to maintain biological diversity of wildlife.

Action WS-WS-1.5.3- For each new project, compile, develop and implement appropriate species and/or habitat-specific BMPs to avoid or minimize adverse impacts on sensitive species and their habitats. Compile and develop CFO programmatic-level activity BMPs for sensitive species that may be used as needed for ongoing project or for new project development.

Goal SP-1-Maintain or restore special status species and their habitat to contribute to species recovery.

Action SP-1.3.4-Review ongoing discretionary activities for impacts on Idaho BLM sensitive plants and their habitats. Modify activities where necessary to avoid or minimize adverse impacts on Idaho BLM sensitive plants that may contribute to federal listing.

Goal CR-2—Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resources uses, by ensuring that all authorizations for land use and restoring resource use would comply with National Historic Preservation Act, Section 106.

Objective CR-2.1—Determine potential effects from proposed land use authorizations.

Action CR-2.1.4—Minimize effects to site integrity by project redesign, cancellation, or mitigation when significant cultural resources are identified from inventories or consultation.

Action CR-2.1.5—Monitor a sample of previously completed land use authorizations on an annual basis to determine if site objectives were met.

Goal AR-1—Maintain or enhance relevant conditions and helping provide community stability through resource values of more than local importance, use and enjoyment."

Objective AR-1.12—Protect cultural resources, specifically historical mining sites through the designation of the American River Historic Sites District ACEC (6,347 acres).

Action AR-1.12.1—Require mining Plans of Operations as a means to manage long-term mineral exploration/development in areas of high cultural site density.

Section 106 of the ***National Historic Preservation Act*** (NHPA) (16 U.S.C. 470) requires that federal agencies evaluate the effects of their actions on historical, archaeological, and cultural resources and afford the Advisory Council on Historic Preservation opportunities to comment on the proposed undertaking.

The ***Executive Order 12898,*** *Federal Actions to Address Environmental Justice in Minority and Low Income Populations,* directs federal agencies to identify and address, as appropriate,

disproportionately high and adverse health and environmental impacts on minority and low-income populations. The proposed activities would not disproportionately adversely affect minority or low-income populations, including American Indian tribal members.

In accordance with ***Tribal Treaty Rights***, American Indian tribes are afforded special rights under various federal statutes: NHPA; NFMA; Archaeological Resources Protection Act of 1979 (ARPA) (43 CFR Part 7); Native American Graves Protection and Reparation Act of 1990 (NAGPRA) (43 CFR Part 10); Religious Freedom Restoration Act of 1993 (P.L. 103141); and the American Indian Religious Freedom Act of 1978 (AIRFA). Federal guidelines direct Federal agencies to consult with Tribal representatives who may have concerns about Federal actions that may affect religious practices, other traditional cultural uses, or cultural resource sites and remains associated with Tribal ancestors. Any Tribe whose aboriginal territory occurs within a project area is afforded the opportunity to voice concerns governed by NHPA, NAGPRA, or AIRFA.

Federal responsibilities to consult with Tribes are included in the NFMA; Interior Secretarial Order 3175 of 1993; and EOs 12875, 13007, 12866, and 13084. EO 12875 calls for regular consultation with Tribal governments. EO 13007 requires consultation with Tribes and religious representatives on the access, use, and protection of sacred sites. EO 12866 requires that Federal agencies seek views of Tribal officials before imposing regulatory requirements that might affect them. EO 13084 provides direction regarding consultation and coordination with Tribes relative to fee waivers. EO 12898 directs Federal agencies to focus on the human health and environmental conditions in minority and low income communities, especially in instances where decisions may adversely affect those populations. NEPA regulations (40 CFR 1500-1508) invite Tribes to participate in forest management projects and activities that may affect them.

Portions of the Forests are located within ceded lands of the Nez Perce Tribe. Ceded lands are Federal administered lands on which the Federal government recognizes that a Tribe has certain inherent rights conferred by treaty. In Article 3 of the Nez Perce Treaty of 1855, the United States of America and the Nez Perce Tribe mutually agreed that the Nez Perce Tribe retain the following rights:

> …taking fish at all usual and accustomed places in common with citizens of the territory [of Idaho]; and of creating temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing horses and cattle…

The proposed project has been presented to the Nez Perce Tribe at the quarterly staff-to-staff meetings since May 2015.

1.7 Scope of the Analysis

This EA evaluates the potential effects as a result of approving the proposed action.

CEQ requires that Federal agencies consider three types of actions to determine the scope of an EA (40 CFR 1508.25).

Connected Actions are those actions that are closely related. Actions are connected if they automatically trigger other actions that may require environmental analysis; if they cannot or would not proceed unless other actions are taken previously or simultaneously; and if they are

interdependent parts of a larger action and depend on the larger action for justification. There are no connected actions for purposes of this proposal.

Similar Actions are those which, when viewed with other reasonably foreseeable proposed actions, have similarities that provide a basis for evaluating their environmental consequences together, but are not necessarily connected. For purposes of this EA, Agencies' approval of multiple POOs are considered to be similar actions; therefore, this analysis considers the approval of 20 POOs in French and Orogrande creeks and 15 POOs on the South Fork of the Clearwater River.

Cumulative Actions are those actions, which when viewed with other proposed actions have incremental effects; and therefore, should be analyzed. This EA considers any past, present, and reasonably foreseeable future activities, which include cattle grazing allotments, timber harvest, and road modifications and maintenance.

In addition, agencies must consider three types of *effects:* direct, indirect and cumulative. The EA discloses the direct, indirect and cumulative effects in Chapter 3. The cumulative effects analysis considered geographic boundaries of the effects; time frames (determining how far into the future to analyze cumulative effects); and past, present, and reasonably foreseeable future actions. The physical boundaries of this analysis are the reaches of Orogrande Creek, French Creek, and the South Fork of the Clearwater River and the extent to which effects may reach downstream or outside of these areas.

In the context of administrative scope, this analysis: (a) is limited to the minerals-based proposed action, (b) is not a general management plan, and (c) would be the final NEPA documentation for future approvals of POOs meeting the terms and conditions of approval.

1.8 Public Involvement

The proposal was listed in the Schedule of Proposed Actions (SOPA) on July 1, 2015 (http://prdp2fs.ess.usda.gov/project/?project=46844&exp=overview). On April 17, 2015, the Forest Service mailed scoping letters to 560 interested parties or individuals and the Nez Perce Tribe. The legal notice and request for public scoping comments was published in the paper of record, The *Lewiston Tribune* on April 22, 2015. In addition, the Agencies submitted the proposal to Nez Perce tribal staff members on May 4, 2015 for comment and discussion. Comments were received from a total of 147 individuals and organizations.

On December 17, 2015, the Forest Service mailed a notice to 138 parties or individuals and the Nez Perce Tribe. The legal notice and request for public comments was published in the *Lewiston Tribune* on December 18, 2015. Comments ranged from criticism of the Forest Service and BLM for suggesting that any conditions could or should be placed on small-scale suction dredge operations, to support for the proposal, to opposition to all suction dredging.

1.9 Issues

Issues are statements of problems to be solved or problems that may be created by the proposed actions. The proposed action was developed to meet the purpose and need for action. The interdisciplinary team and regulatory agencies developed design criteria, operating conditions, and terms and conditions for this project to assure minimal effects to resources. Project issues identified

by the interdisciplinary team and through public scoping are grouped into the categories described below.

1.9.1 Issues Used to Develop Design Criteria and/or Mitigation Measures

The following issues were determined to be important through scoping and guided the design of the action alternatives.

1.9.1.1 Effects to Water Quality

There was a concern that suction dredging would increase sediment production and increase turbidity to the streams; thereby reducing water quality. The South Fork of the Clearwater River is considered a water quality listed stream for sediment/turbidity within the project area (EPA and IDEQ, 2003), but the IDEQ and EPA currently allow up to 15 suction dredging operations within the project reach. There are no sediment/turbidity water quality-listed streams within the Orogrande and French creeks drainages (IDEQ, 2003).

To meet the Lawsuit Stipulation of Dismissal, the proposed action and any alternatives were designed to produce no measurable increase in sediment (although the stipulation does not apply to the proposed project), as well as no measurable increase in bacteria, nutrients, or temperature. An "upward trend" requirement is a condition of the Nez Perce National Forest Plan for timber harvest and road construction, but does not apply to the proposed project. Watershed improvement projects conducted and planned by the Forests, BLM, and Nez Perce Tribe have the potential to produce sediment over the short-term but are designed to result in long-term reductions in sediment and an overall net improvement on a watershed basis.

Bedload is a measurement of sediment and larger size particles that move by rolling or sliding along the stream bottom (particularly during periods of high stream flow). If dredging removed large stable substrates it could affect the energy and direction of the stream flow and cause the channel to change by eroding the channel bottom or banks. Bedload added to the suspended load can be used to determine the total sediment load for a stream. However, design criteria and terms and conditions would prevent the undercutting and destabilization of stream banks and channels.

Suction dredging typically involves dredging one or several cone-shaped holes in the streambed, with the excavated material then placed in a pile or into a previously dredged hole. In the proposed channels, suction dredge operators prefer dredging in areas of larger substrate, because more gold tends to be recovered in those areas. While dredging, small boulders and large cobble are moved out of the way or removed from the hole as the dredge operator works their way to bedrock. Once on bedrock, the operator generally works along the bedrock cleaning out crevices with small pry bars and other similar tools. Terms and conditions would prevent the removal of large stable boulders. Prior to moving to a new site, the operator must disperse and backfill all dredge holes and redistribute tailings to avoid creating unstable spawning sites. Because of these design criteria and terms and conditions, channel stability would not be affected, as described by bedload; and therefore, would not be discussed further in this analysis.

Issue Indicators:

- Increases in terrestrial sediment input to streams;
- Increase in turbidity based on meeting State water quality standards.

1.9.1.2 Effects to Aquatic Habitat and Species (including TES, invertebrates and amphibians)

There is a concern that suction dredging would negatively impact aquatic habitats and the species dependent on the habitat. The disturbance of existing habitats could alter spawning habitat, pool frequency, and bank stability. Activities could also increase turbidity which indirectly affect spawning and rearing habitat for a variety of species. Suction dredging could also cause direct mortality of fish, amphibians and invertebrates.

Issue indicators:

- Increases in terrestrial sediment input to streams;
- Increases in turbidity effects on the risk of displacing aquatic species;
- Changes to pool frequency and quality based on filling by dredge activities or removal of large instream woody material;
- Stream bank stability based on disturbance;
- Degradation to spawning gravels and rearing habitats by direct disturbance and deposition of fine sediments; and
- Direct mortality or injury to aquatic species.

1.9.2 Other Issues Carried Through the Analysis

1.9.2.1 Riparian Wildlife and Plants

There is a concern that suction dredge operations would 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.

Issue Indicators:

- Effects to sensitive wildlife species- loss or degradation of habitat, disturbance and displacement of species, and potential direct mortality or injury;
- Effects to sensitive plant species- loss or degradation of habitat and potential direct mortality;
- Increases in satellite camps, trails and denuded vegetation;
- Increases in land-based weed species introductions; and
- Increases in aquatic invasive species introductions.

1.9.2.2 Recreational Opportunities and Visual Resources

There is a concern that suction dredging would reduce the quality and quantity of recreational opportunities for fisherman, campers seeking dispersed sites adjacent to water, those seeking access to swimming holes, and other forest visitors.

Issue Indicators:

- Recreational opportunities based on location, size, and timing of dredging activities; and
- Changes in use patterns related to displacement of recreational users to other locations.

1.9.2.3 Effects to Heritage and Cultural Resources

There is a concern that suction dredging could affect heritage and cultural resources in both Orogrande and French creeks and the South Fork of the Clearwater River drainages.

Issue Indicators:

- Effects to traditional resources, which may or may not be eligible for the National Register of Historic Places (NRHP), are identified during consultation with the affected groups, such as Native American tribes.

1.9.2.4 Effects to Nez Perce Tribal Treaty Rights

There is a concern that suction dredging activities would affect the ability of the Nez Perce Tribe to hunt, fish, and gather on their ceded lands. Activities may also affect Chinook salmon migration, spawning and rearing in the South Fork of the Clearwater River. The Nez Perce Tribe collects adult Chinook from the South Fork of the Clearwater River tributary of Newsome Creek, raises their offspring at the Tribal managed hatchery on the lower Clearwater River, and then releases the juveniles back into Newsome Creek. The IDFG conducts a similar program with adult broodstock collected in the South Fork of the Clearwater River tributaries of the Red and Crooked rivers, with juvenile rearing at the Clearwater Hatchery, and smolt releases to their streams of origin.Issue Indicators:

- Effects to tribal hunting;
- Effects to anadromous and resident fish species as measured by sediment, turbidity, pool frequency and quality, bank stability, spawning gravel quality, and direct mortality to fish; and
- Effects to gathering activities.

1.9.3 Issues Decided by Law or Policy, Not Affected by the Proposal, or Outside the Scope of the Project

These issues were found to be non-relevant to the decision since they are outside the scope of the proposal, already decided by law or policy, beyond the geographic influence of the proposal, or not affected by the proposal. The rationale for why these issues would not be considered in detail in this analysis is discussed below.

1.9.3.1 Mining Issues

There was a concern that the Agencies were materially interfering with dredging activities. Others cautioned that mining claims must be valid. Others felt that the public derived no revenue from mining and a net public benefit from mining needed to be analyzed and that reclamation bonding should be required for suction dredging activities.

The Agencies do not prevent mining operations; however, in compliance with mining laws and the Agencies' regulations, they provide operating conditions, design criteria and mitigation measures under which suction dredging can occur.

Socially, suction dredging is a way of life for many citizens. For families, suction dredging is a tradition deeply rooted in their personal history. Suction dredging may account for only a small portion of a miner's income, but it offsets their costs during the off-season. Shifts away from these longstanding mining land uses may threaten traditional values of local miners and inhibit the ability of future generations to learn and connect with the heritage of their ancestors.

In the recent past, suction dredgers were not legally allowed to dredge in the South Fork of the Clearwater River because the EPA's NPDES permit was not available. Since 2013 the EPA's permit has been available, but most suction dredgers have not applied for the permit. With the cooperation, coordination and permits from the EPA and IDWR and consultation with NMFS and FWS, a plan of operations that is tied to this Environmental Assessment will be obtainable and will allow for legal suction dredging in the South Fork of the Clearwater River.

The Forest Service Policy on Mining of Public Domain Mineral Estate (Informal Memorandum, USFS, 2003) states "On National Forest system lands and BLM public lands reserved from public domain and open to entry under the Mining Law, the Forest Service and BLM is not required to inquire into claim validity before processing and approving proposed plans of operations." BLM policy states that, "Because public funds are not plentiful, mining claim validity examinations would be completed only in certain priority circumstances. Those are, in priority order, patent applications, plan of operation or notice in a withdrawn area (segregated area is different), plan or notice for what may be a common variety, or in cases of flagrant trespass" (BLM Handbook for Mineral Examiners, 2007). 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 Mining Law of 1872 to enter upon public lands and conduct reasonable activities to prospect and explore for mineral resources. Exercise of this right does not require the staking of a mining claim, a fact recognized under the Agencies' locatable mineral regulations at 36 CFR 228.3(a) and 43 CFR 3809, where mineral operations are defined and it is clearly stated that the Agencies' regulations apply to all functions, work, activities, and uses reasonably incidental to all phases of mineral exploration and mining under the Mining Law of 1872, whether located on or off mining claims. Miners may bolster local economies through the purchasing of equipment, food, gas and other amenities, however no net public benefit is required for suction dredging activities.

Reclamation bonding is required for a POO under 36 CFR 228.13 and 43 CFR 3809.500. 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.

1.9.3.2 Effects to Heritage and Cultural Resources

There was a concern that suction dredging could affect heritage and cultural resources in both Orogrande and French creeks and the South Fork of the Clearwater River drainages. There are several recorded heritage resource sites in these areas. Effects to traditional resources, which may or may not be eligible for the National Register of Historic Places (NRHP), are identified during consultation with the affected groups, such as Native American tribes. Until a formal determination of National Register eligibility is made, all recorded and unrecorded heritage resource sites are treated as eligible for nomination to the NRHP. In addition, the Cottonwood RMP designated the BLM lands in the vicinity of the easternmost segment of the South Fork of the Clearwater River, near Elk City, as an area of critical environmental concern (ACEC) to protect cultural resources – specifically historical mining sites.

Compliance with Section 106 of the NHPA, including survey and eligibility evaluation of potentially affected resources, is being completed. Mitigation measures would require involvement during the planning and monitoring of activities by an Agency archaeologist. Other measures would 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 ensure compliance with POOs, including avoidance of historic properties. The Agencies' regulations and policy require that discovery of any potential heritage resource be left alone and reported to the District Ranger or BLM Field Manager and the Agency archaeologist. Should a suction dredge operator uncover a resource while working, work would be stopped immediately, pending inspection by the Agency archaeologist. If the Agency archaeologist identifies NRHP-eligible resources, mitigation measures would be identified during consultation with the Idaho SHPO and, if Native American resources are potentially affected, Tribes.

In summary, project operating conditions, design criteria and mitigation measures would minimize potential effects to heritage resources. If any resources were discovered during project implementations, project activities would cease pending inspection by an Agency archaeologist. Mining POOs include regulations found in 36 CFR 228.4e and 36 CFR 800 to protect cultural resources.

1.10 Availability of Project Files

An important consideration in preparation of this EA has been the reduction of paperwork as specified in 40 CFR 1500.4. In general, the objective is to furnish enough site-specific information to demonstrate a reasoned consideration of the environmental effects of the alternatives and how these effects can be mitigated. More detailed information is in the project file in the District planning records and is available for public inspection.

The reader may want to refer to the Forest Plans and Environmental Impact Statement (EIS) (USFS, 1987) and the BLM Record of Decision and Approved Cottonwood Proposed Resource Management Plan (RMP) (2009) and EIS (BLM, 2008). The present EA is "tiered" to the Forest Plan EIS, RMP EIS, and the respective Records of Decision, as encouraged in 40 CFR 1502.20. Copies of the Forest Plan, Forest Plan EIS, and the Cottonwood RMP and EIS, are available at libraries in the project locale and at the Forest Supervisor, Ranger District, and BLM Cottonwood Field Office.

2.0 Proposed Action and Alternatives

This chapter describes the alternatives selected for detailed analysis and those eliminated from further consideration. The chapter includes a description of each alternative along with a comparison of the features of the alternatives as they relate to the purpose and issues, providing a clear basis of choice among the options for the decision maker and public.

2.1 Alternatives Considered in Detail

2.1.1 Alternative 1: No Action

The No Action Alternative is defined as not approving the proposed POOs. Under this alternative, miners who submit POOs for suction dredging in Orogrande and French creeks and the South Fork of the Clearwater River would not receive approval for their POOs unless individual NEPA is completed for each POO submitted.

2.1.2 Alternative 2: Proposed Action

Alternative 2 would allow for the approval of proposed POOs in specified reaches of Orogrande and French creeks and the South Fork of the Clearwater River. The POOs would include specified design criteria which were derived from public comments, government-to-government consultation with the Nez Perce Tribe, and consultation with other governmental agencies. The maximum number of operations approved in any year under this alternative would be 35: 20 for the Orogrande and French creeks (Figure 2-1) and 15 for the South Fork of the Clearwater River (Figure 2-2) and are located as follows:

Orogrande and French Creeks

5 to 16 miles east and northeast of Pierce, Clearwater County, Idaho in portions of:

- T37N, R6E, S24-27, 33, and 34
- T37N, R7E, S2-7, 18, and 19
- T38N, R7E, S24- 26, and 32, 35
- T38N, R8E, S18, 19, and 30, Boise Meridian

South Fork of the Clearwater River

From approximately 1 ½ upstream of Harpster to about 2 miles downstream of Elk City, Idaho County, Idaho in portions of:

- T30N, R3, S25 and 36
- T30N, R4, S4, 7- 9, 18, 19, 30
- T29N, R3, S1, 12, 13 and 35
- T29N, R4, S18-23, 25-29
- T29N, R5, S27-30, 34, 35 and (36) PB57
- T28N, R5,(S1) PB37
- T28N, R6,S3, 4, 5, (6) and PB37
- T29N, R6, PB51-53, 55, 56
- T29N, R7, S20-22, 26-29, and PB 51-54
- T29N, R8, S29, 30, 32, and 33, Boise Meridian

Suction dredging would be approved only during periods consistent with IDWR and EPA regulations. Orogrande and French creeks' season is June 30 – September 15; the South Fork of the Clearwater River's season is July 15 – August 15.

The activities authorized would be substantially restricted to reduce or eliminate effects on Forests and BLM-managed resources and on aquatic and riparian animal and plant species in the project areas. Many of these restrictions were developed to conform to existing IDWR "letter permit" and EPA NPDES General Permit restrictions, and others have been developed in the course of ESA Section 7 consultation with the NMFS and FWS (USDA FS, 2014 and USDA/USDI, 2016). In addition to restrictions on the specifics of the POOs, the Agencies have also proposed monitoring and reporting on the implementation of the POOs to Federal and State agencies and the general public.

The full list of restrictions, monitoring, and reporting which would be associated with the approval of the proposed POOs and acknowledged with a NOI is provided in the EA. Briefly, miners with approved POOs and acknowledged NOIs would be limited to operating during the respective IDWR "letter permit" dredging seasons, would be limited to 300 linear stream feet of dredging distance in any one season, and operations would be spaced a minimum of 800 linear stream feet apart. Specific areas within approved dredging reaches would be off-limits to operation, including some types of primary habitat for ESA-listed and Agencies' Sensitive species. Agency staff would delineate approved dredging reaches prior to the start of the respective dredging seasons and would monitor operations and/or stream habitat characteristics before, during, and after dredging operations. The results of this monitoring would be reported before the end of each calendar year.

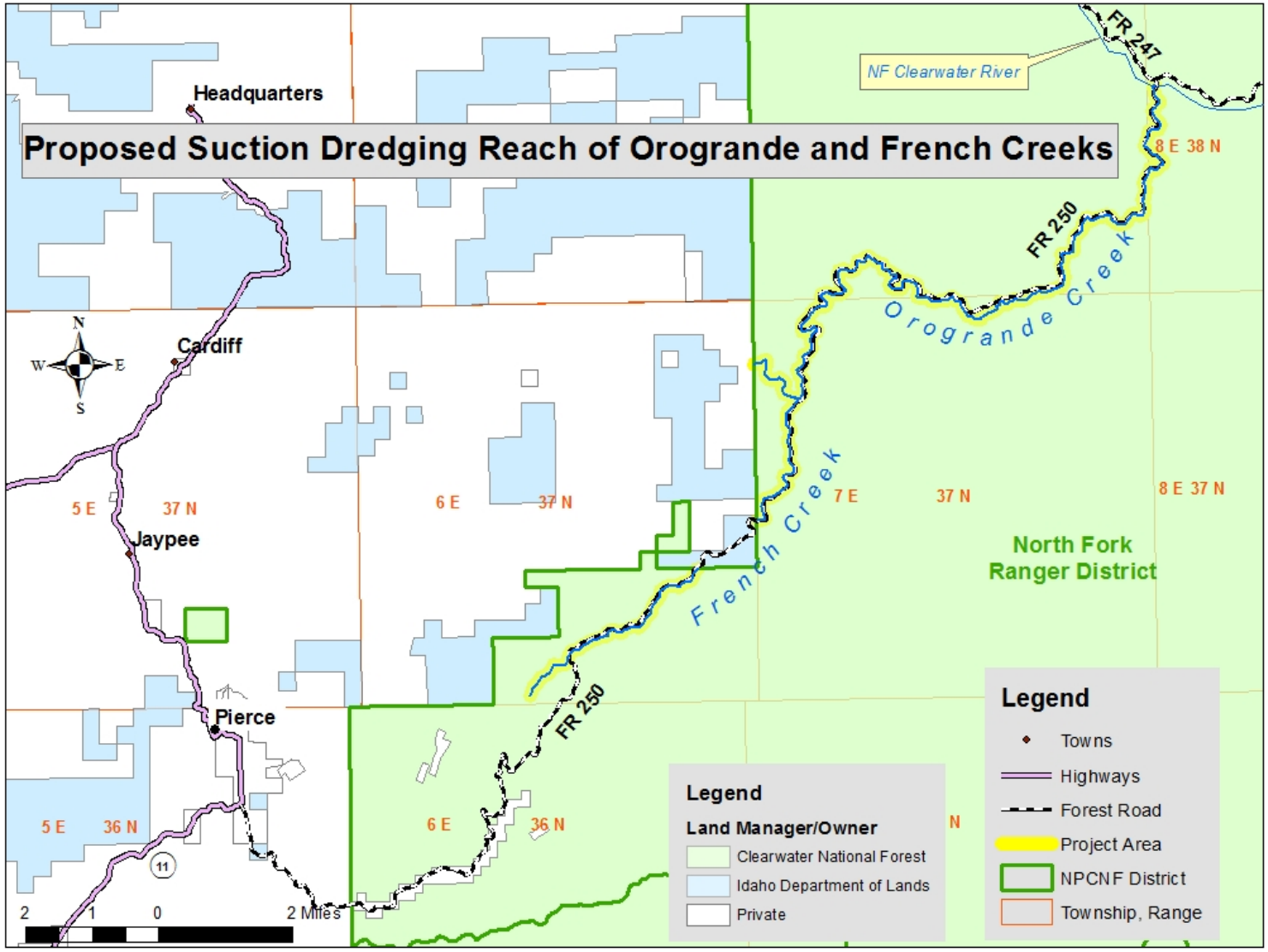


Figure 2-1: Location of the proposed Orogrande and French Creeks suction dredging reach.

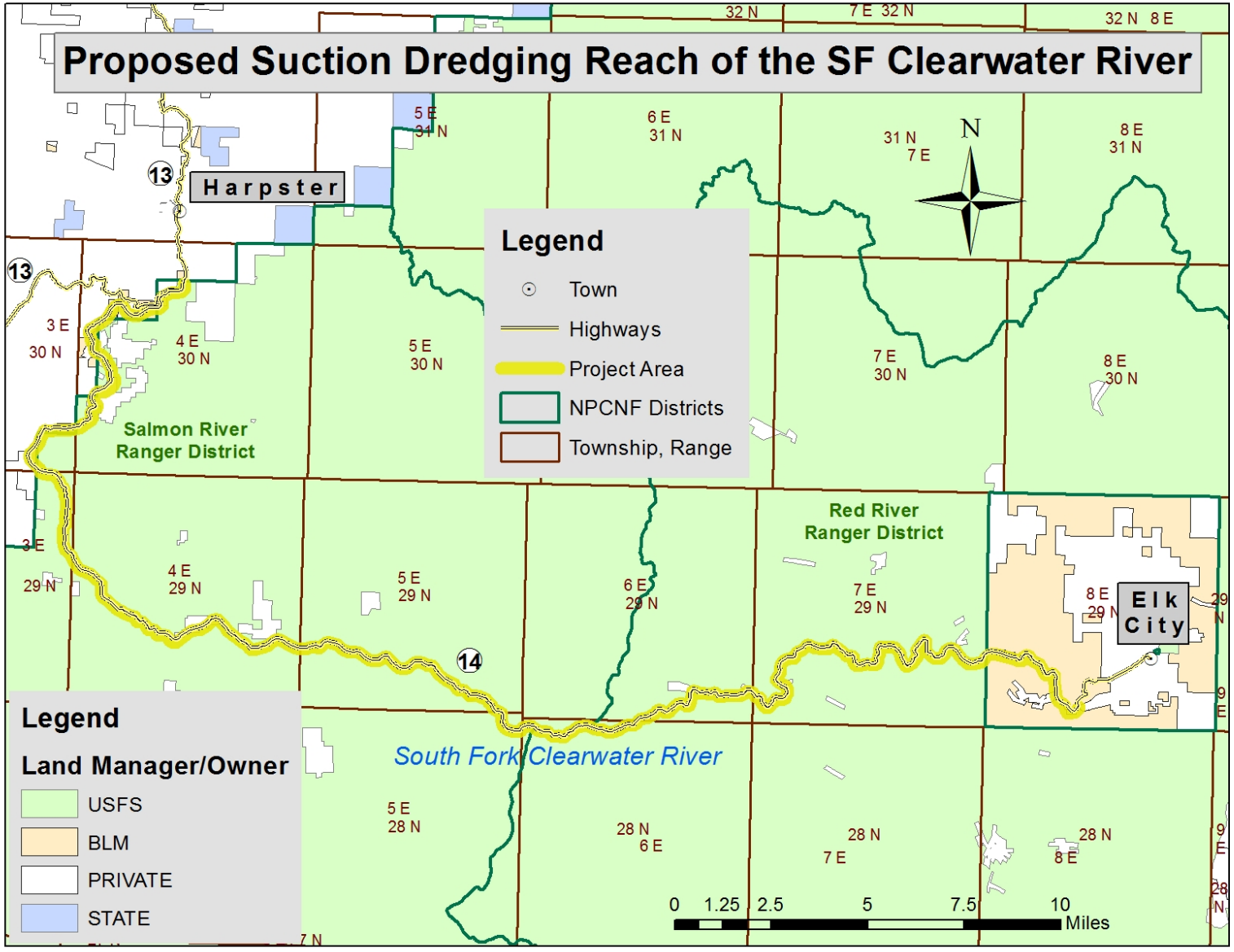


Figure 2-2: Location of the proposed South Fork of the Clearwater River suction dredging reach.

2.1.2.1 Monitoring and Reporting Requirements

The action alternative would include the following monitoring and reporting requirements.

To ensure that mining operations are conducted in a manner consistent with the operational conditions associated with consultation, the Agencies would conduct some level of implementation and effectiveness monitoring, the results of which would be communicated to the appropriate agencies and entities. These measures include Idaho Department of Water Resources (2015) BMPs for suction dredging, EPA NPDES permitting BMPs, and Forest Service and BLM measures to avoid or minimize the take of ESA species.

● As minimum annual site preparation and monitoring activities for each operation, the Agencies would fully delineate (by 15-meter reaches), photograph, and sketch suction dredging or other placer mining sections and monitor site preparation and operations annually for each. The photographs and sketches would clearly document the condition of the active channel of each operational site at the upper and lower boundaries of the delineated site, and at at least three cross sections within or in proximity to the site which are likely to be modified by the mining operation.

● The initial maximum length of a delineated mining operation site would be 45 meters (3 reaches or approximately 150 feet). To the extent that the operator demonstrates that a site is of an insufficient size for the operation the Agencies may add additional reaches up to a maximum site length of 90 meters (300 feet) per season.

● The Agencies would coordinate closely with operators to either conduct full site delineation and any additional pre-project data collection prior to initiation of operations at the site or to initially direct operators to specific areas within their dredging sections that would have little or no potential for direct effects on individual ESA-listed species or enduring habitat effects. The Agencies would also make multiple site visits at all active mining operations during the dredging season to record site information and ensure that miners are complying with NOI/POO conditions.

● A post-project monitoring visit of each mining site would also be conducted annually by the Agencies within one month of the end of the IDWR dredging season. At a minimum, post-project photographs would be sufficient in location and number to document any substantial changes in stream channel and riparian conditions when compared with pre-project photos. In particular, project area modifications which are likely to persist into the next steelhead spawning season or spring/summer Chinook spawning season would be noted.

2.2 Alternatives Eliminated from Detailed Consideration

Federal agencies are required by the NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not analyzed in detail (40 CFR 1502.14). Public scoping comments and Draft EA comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of the alternatives would have modified the Proposed Action to the point that the purpose and need for action would not be met, would have been duplicative of the alternatives considered in detail, or were determined to be components that would cause unnecessary environmental harm. Therefore, the following alternatives were considered, but eliminated from detailed analysis for the reasons summarized below.

2.2.1 Alternative 3 - Withdrawal of Special Areas from Mining

A commenter stated that the Agencies withdraw all Riparian Habitat Conservation Areas (RHCAs), potentially eligible National Wild and Scenic Rivers, and/or all areas that contain special features. Withdrawn lands are closed to mineral entry under the mining laws. This alternative was not carried forward because it is not consistent with the purpose and need to develop operating conditions that protect surface resources so that the POOs can be approved and the NOIs acknowledged. This alternative is not in compliance with the Mining Law of 1872 and Agencies minerals regulations at 36 CFR 228.4(f) and 43 CFR 3809.

Neither PACFISH or INFISH or the BLM's Aquatic and Riparian Management Strategy (BLM, 2009) direction precludes mining activities in RHCAs. PACFISH does require an approved POO, a reclamation plan, and a reclamation bond. INFISH requires the Agencies to take all practicable measures to maintain, protect, and rehabilitate fish and wildlife habitat affected by mining operations within RHCAs, but does not require POOs or bonding. Proposed activities are also consistent with standard MM-6 for the inspection, monitoring and reporting for mineral activities. Any suction dredge operations on the upper South Fork of the Clearwater River which occurs on BLM lands (Elk City township) would require a POO in accord with the BLM Resource Management Plan (BLM, 2009).

The proposed project area along the South Fork of the Clearwater River is eligible for Wild and Scenic River designation. Forest Plan standards for managing minerals within Wild and Scenic River corridors require mitigation of mineral extraction on visual, recreation and water resources.

2.2.2 Alternative 4 – Limit the number of suction dredgers to less than 15 operations and/or allow more than 35 operations.

The limit of 15 suction dredge operations within the mainstem South Fork of the Clearwater River proposed in Alternative 2 is based on the limit imposed for the EPA's NPDES General Permit, which itself was derived from the sediment TMDL for the mainstem of the South Fork of the Clearwater River. Mining law and Forest Service and BLM regulations do not place a pre-set limit on the number of miners in a given area, and the number of miners seeking to suction dredge in the South Fork of the Clearwater River is expected to be at or near the NPDES permit/TMDL limit of 15. Because of the limitations and conditions on suction dredging described in this EA are expected to greatly reduce or eliminate potential impacts on aquatic organisms, water quality, etc., the Agencies do not believe that an arbitrary reduction of the number of approved POOs meets the purpose need.

2.2.3 Alternative 5 – Limit the duration of the suction dredging season (14 days vs. 30 days).

Suction dredging would be approved only during periods consistent with Idaho Department of Water Resources (IDWR) and the Environmental Protection Agency (EPA) regulations. Orogrande and French creeks' season is June 30 – September 15; the South Fork of the Clearwater River's season is July 15 – August 15. . In absence of information showing excessive or disproportionate harm to resources during particular portions of the IDWR seasons, modifications of the existing dredging seasons are not justified and would be arbitrary.

2.2.4 Alternative 6 – Not allow suction dredging in the years with high fish returns (i.e. administrative closures when the runs for steelhead and chinook runs are projected to be high).

The timing of the dredging season on the South Fork of the Clearwater River is designed to fit between the periods of steelhead fry emergence and spring Chinook salmon spawning, and is well before adult steelhead and fall Chinook salmon arrival. In addition, mitigation measures would greatly reduce or eliminate effects on all lifestages of all these species, so the projected or actual run sizes for these species would not be sufficient reason to disapprove POOs.

2.3 Comparison of Alternatives

This section provides a summary of the potential effects to each resource that would result from implementation of each alternative considered in detail. Table 2-1 summarizes the findings for each alternative, and allows a comparison of potential effects among the alternatives.

Each alternative has been evaluated for its effects on the resources based on the key issue that drove the development of the alternative. Issue indicators are parameters used to measure the effects of each alternative on the resources emphasized by the issue.

The proposed action was formulated considering an array of internal issues, including effects to water quality, aquatic habitat and species, riparian wildlife and plants, recreation, visual and cultural resources, tribal treaty rights, and roadless areas.

Table 2-1: Alternative Summary

Resource Issue ♦ *Issue Indicator*	*Alternative 1: No Action*	*Alternative 2: Proposed Action*
Water Quality ♦ Increases in sediment	No effect	no increase from terrestrial sources; existing instream sediment moved from one location to another but no increase in overall sediment
♦ Increase in turbidity	no effect; IDEQ standards would continue to be met or not	slight increase during 78 day (32 days for South Fork of the Clearwater River) operation period but would not exceed IDEQ state standards
Aquatic Habitat and Species (including TES, Invertebrates and amphibians) ♦ Increase in sediment	No effect	no increase from terrestrial sediment; existing instream sediment moved from one location to another; localized negligible increase in turbidity and deposited sediment to aquatic habitats immediately downstream from suction dredging operation; low risk to species
♦ Increase in turbidity	no effect; IDEQ standards would be met	slight increase may affect feeding but risk is low due to short daily and annual duration
♦ Changes to pool frequency and quality	no effect	no long-term change because miners would not be permitted to make persistent alterations of stream channel conditions

Resource Issue ♦ *Issue Indicator*	*Alternative 1: No Action*	*Alternative 2: Proposed Action*
♦ Stream bank stability	no change	Overall no change to bank stability; negligible streambank disturbance to soils and riparian (e.g., access or staging for suction dredging).
♦ Degradation to spawning gravels	no effect	dredging not permitted in prime spawning habitat; minimal effects expected
♦ Direct mortality to aquatic species	no effect	slight potential for fish; higher for aquatic insects; overall would not affect populations
Riparian Wildlife and Plants ♦ Sensitive wildlife species	no effect	no reduction in habitat; disturbance or displacement would last during 78 day (32 days for South Fork of the Clearwater River) season and average about 5 hours per day; minimal effects to wildlife based on disturbance; potential mortality to amphibians but risk is low due to low numbers of animals
♦ Sensitive plant species	no effect	no reduction in habitat; potential trampling by miners and impacts to soil or vegetation expected to be negligible; effects expected to be limited due to use of existing trails by miners and recreationists and expected low occurrences of sensitive plants
Recreational Opportunities and Visual Resources		

Resource Issue ♦ *Issue Indicator*	*Alternative 1: No Action*	*Alternative 2: Proposed Action*
♦ Recreational opportunities	no effect	minor effects to fishing, camping and hiking due to limited 78 day (32 days for South Fork of the Clearwater River) mining season, and small area affected. No impact to hunting opportunities due to season restrictions for suction dredging
Nez Perce Tribal Treaty rights		
♦ Tribal hunting	no effect	Disturbance and displacement of game may occur but duration is about 5 hours per day for 78 days (32 days for South Fork of the Clearwater River); no effect expected as game have suitable habitat nearby
♦ Anadromous and resident fish species as measured by sediment, turbidity, pool frequency and quality, bank stability, spawning gravel quality and direct mortality to fish	no effect	minimal effects based on turbidity increases and direct mortality of fish; would not affect continued persistence of any species in project areas
♦ Gathering activities	no effect	no expected effects

3.0 Affected Environment and Environmental Effects

This chapter describes the baseline (existing) conditions against which environmental effects can be evaluated with the implementation of any of the action alternatives. It presents the scientific and analytical basis for comparison of each alternative.

This section also summarizes the potential direct, indirect, and cumulative effects to the Affected Environment as a result of implementing the proposed alternatives. Effects may include ecological, aesthetic, historic, cultural, economic, social, or health. The potential effects may be beneficial or detrimental, and may result from actions possessing both beneficial and detrimental effects, even if on balance the effect would be beneficial (40CFR 1508.8).

There is no known or suspected irreversible or irretrievable commitment of resources as a result of implementing the proposed alternative. There are also no known or suspected adverse effects to any resource which cannot be avoided as a result of implementing the proposed alternative.

3.1 Fisheries, Wildlife, Hydrology and Soils

3.1.1 Affected Environment

Orogrande and French Creeks

About 20.3 miles of the mainstems of Orogrande and French creeks could potentially be suction dredged as a part of the proposed action; all of the 19.3 miles of this stream channel is on land managed by the Forests, although portions of these streams are on private and state land (Figure 2-1). No French Creek or Orogrande Creek tributaries (except French Creek) are included in this proposed action. Below the lower boundary of the proposed potential dredging reach Orogrande Creek enters the North Fork of the Clearwater River, which flows for about 31 miles through Forests-managed land until reaching Dworshak Reservoir (at full pool).

The Orogrande Creek drainage area above the lower project boundary consists of the entire Orogrande Creek watershed (i.e., HUC 5) of about 58,850 acres (38,831 NFS acres), and includes the French Creek, Upper Orogrande Creek, and Lower Orogrande Creek subwatersheds (HUC 6s, Figure 2-1). The entire project area consists of about 1,476 acres and is within the French and Lower Orogrande Creek HUC 6s with a small portion in the Upper Orogrande subwatershed. The mouth of Orogrande Creek is at about 2,200 feet above mean sea level (msl), with the French/Orogrande Creek confluence at about 3,200 feet msl; the highest point of the ridge delineating the watershed is Hemlock Butte (drained by Hem Creek, a French Creek tributary) at 6,053 feet msl, with the ridge just above the uppermost reach of French Creek at about 4,800 feet msl.

The primary land uses in the project area drainages are forestry and recreation, with historic production mining and current artisanal mining. The private, State, and Federal portions of the Orogrande Creek watershed were heavily logged in the mid-20th Century, with reduced logging in the last few decades; portions of the lowermost portion of the watershed and a portion of the French Creek subwatershed were also burned as a result of early 20th Century wildfires; however, there are still substantial areas of mature and old growth timber in the watershed.

The Orogrande Creek watershed and project area are moderately to heavily roaded, with Forest Road 250 closely (i.e., typically within 50-150 feet) paralleling nearly the full lengths of the French and Orogrande Creek mainstems (Figure 2-1). Aside from road prism, the riparian areas along the subject streams are predominantly conifers, with bands of riparian woody vegetation of varying widths.

The Orogrande Creek near its lower boundary averaged about 53 feet in wetted width and about 1.1 feet in depth in a survey conducted in September 1997 and the comparable metrics for the channel just below the Orogrande and French Creek confluences, Orogrande Creek at the Forests boundary, and French Creek just above the Orogrande Creek confluence were, respectively about 58 feet in wetted width and 0.9 feet in depth, 26 feet in wetted width and 0.7 feet in depth, and 30 feet in wetted width and 0.7 feet in depth (CBS 1998, Figures 1 and 2). Farther upstream on French Creek, the mean width and depth for just above the Sylvan Creek confluence and in the uppermost survey reach were 15 feet in width, and 0.7 feet in depth, and 6 feet in width and 0.2 feet in depth (CBS 1998). The lower Orogrande Creek stream channel in the project area is typically of a relatively low gradient (about 2.0% or less), but with a few steeper sections, including the lowermost canyon section of 1.25 miles, which averages nearly 5% and includes a bedrock cascade. The stream as a whole is dominated by cobble/rubble substrate, but boulders are frequent and dominate in some reaches (CBS 1998). French Creek gradients average higher than those of the Orogrande Creek mainstem, especially in the upper two miles of the stream, with a similar dominant substrate, except for the upper 1.25 miles, which tends to gravel.

Entrenchment ratios vary on Orogrande and French creeks, with about three-quarters of the survey reaches at least moderately entrenched (Rosgen A or B channels), with the remainder (the middle section of Orogrande Creek and the upper French Creek reach) having moderately wide floodplains and higher sinuosity (Rosgen C channels, CBS 1998, Rosgen 1994). About 85% of the project area reaches had low to moderate cobble embeddedness (CE, in the 12-37% range) from sand and silt, but one Orogrande and three French Creek reaches had higher CE (>40%, CBS 1991). Channel stability (using the rating method that considers both banks and bottom in CBS 1998) varied among survey reaches in the two project streams, but was almost uniformly good.

Calculated mean annual streamflow at the mouths of Orogrande and French creeks are about 205 and 111 cubic feet per second (cfs), respectively, while the averages of the July, August, and September 50% exceedance streamflows at these points are about 55 and 25 cfs, respectively (StreamStats online). For Orogrande Creek just above the French Creek confluence, the mean annual and dredging season 50% exceedance is about 11 cfs (StreamStats online). Peak flows in Orogrande and French creeks typically occur in May or early June [assuming congruence with the USGS North Fork Clearwater Canyon gauge (online data access)]; flow volume in the project area is likely uniformly low in August and early September, with considerable variability in July based primarily on the annual snowpack volume.

The IDEQ currently (i.e. in the draft 2012 305(b) report) considers Orogrande Creek and all named tributaries (less French, Hem, and Joy creeks) as not fully supporting beneficial uses. These streams have Total Daily Maximum Loads calculated for water temperature (IDEQ 2003), but there are currently no 303(d)-listed streams in the watershed. The Forests have monitored water temperature at sites in the project area at several sites for the better part of the last two decades; these data show that the peak water temperature in the project reach typically reaches its annual

peak in mid-July or early August, with the maximum daily temperature at the thermograph sites on Orogrande Creek and lower French Creek averaging about 15-24 °C during this period, while tributary stations averaged 14 to 23°C daily maxima.

The fish community of the Orogrande Creek watershed has been shown to consist mostly of native species: predominantly westslope cutthroat trout and residual steelhead/redband rainbow trout (Figure 2). Non-native brook trout are present mainly in small upper Orogrande Creek tributaries and occasionally in the mainstem of Orogrande Creek and some adult kokanee migrate from Dworshak Reservoir and spawn in lower Orogrande Creek in the fall. As discussed in greater detail below, native bull trout have been recorded from Orogrande Creek on a few occasions, but it seems very unlikely that a reproducing population still exists in the watershed. Native species also present include sculpin, speckled dace, and mountain whitefish. Western pearlshell mussel is a "Sensitive" species and is present in the subbasin, but is not known from the Orogrande Creek watershed. The most recent electrofishing surveys in the Orogrande Creek watershed show there are 6 sites in Orogrande Creek and five tributaries by the IDEQ in 2006 and 2008 which found westslope cutthroat trout, redband/rainbow trout, brook trout, and sculpin, although not all in one site (IDEQ website).

Species presence in the Orogrande Creek watershed, including the project area, from surveys by the CNF and others (CBS 1992, 1996, and 1998, Hanson et al. 2014, and IDEQ website) are described in Table 3 or shown in Figure 2 and demonstrate that WCT are ubiquitous and that only a few bull trout are or have been present in the recent past in the project area and project area watershed.

South Fork of the Clearwater River

About 40.4 miles of the South Fork of the Clearwater River (in a 47-mile reach) could potentially be suction dredged as a part of the proposed action (Figure 2-2). Below the lower boundary of the proposed potential dredging reach, the South Fork of the Clearwater River flows for about 15.5 miles before joining the Middle Fork Clearwater River to form the mainstem Clearwater River, primarily through privately-owned land and the Nez Perce Indian Reservation. The South Fork of the Clearwater River drainage area above the lower project boundary is about 869 miles^2, which diminishes to about 253 miles^2 at the upper project boundary. The upper 2.7 miles of the South Fork of the Clearwater River project reach on public land are within the Elk City township and under BLM management. Figure 2-2 shows that the project reach of the South Fork of the Clearwater River flows through 6 subwatersheds, which are primarily in public ownership, mostly by the Forests.

The primary land uses in the project area drainages are forestry, roads, and recreation, with some cattle grazing and mining. In addition to the town of Elk City, there is also some residential development on private lands within the Elk City Township, and on scattered private inholdings (IDEQ and EPA 2003). The subbasin and project area are relatively heavily roaded, with Idaho Highway 14 (and a short segment of Highway 13) closely (i.e., typically, but not always, within 25-100 feet) paralleling all of the subject reach (Figure 2-2). Where relatively distant from the highway, the riparian areas (from an elevation of about 1,600 feet up to about 3,900 feet msl) are predominantly conifers, with bands of riparian woody vegetation of varying widths. The riparian

areas between Highway 14 and the South Fork of the Clearwater River are often primarily rock riprap and scattered shrubs where the highway is very close to the water. The IDEQ and EPA (2003) notes that "riparian vegetation has been severely reduced for the entire length of the mainstem by State Highway 14."

Calculated mean annual streamflow at the bottom and top of the dredging reach is about 1,180 cubic feet per second (cfs) and 335cfs, respectively, while the average of the July and August 50% exceedance streamflows at these points is about 388 and 98 cfs, respectively (USGS, 2012). Peak flows have recently occurred from mid-April through early June.

The IDEQ and EPA (2003) describe the physical characteristics of the project reach as: The main stem South Fork of the Clearwater River begins at the confluence of the American River and the Red River. From this point to about Tenmile Creek, the river is relatively low-gradient (C channel) riffle/pool habitat dominated by gravel and cobble substrate. The channel has been altered by dredge mining and the placement of State Highway 14. From Tenmile Creek to Mill Creek *(i.e., to just above the lower end of the project reach)*, the river becomes steeper and more confined with the substrate dominated by boulders and cobbles. The channel type is typically A, B, or G (Rosgen, 1994). This is a high-energy reach through which the sediment is readily transported. Cobble embeddedness (40%) is rated low condition for the upper South Fork of the Clearwater River. Percent surface fines were 12% in the upper South Fork of the Clearwater River and were rated moderate condition. Percent fines by depth for spawning gravels are rated poor condition for the upper South Fork of the Clearwater River and 40% were less than 6.3 mm (USFS, 1999)." The IDEQ and EPA (2003) measured bankfull width in the mainstem of the South Fork of the Clearwater River and determined that the mean width was about 110 feet, with a range from about 60 feet to over 150 feet.

Regarding water temperature, the IDEQ and EPA (2003) wrote: "Temperature is rated low condition for bull trout and steelhead spawning, rearing, and migration. The highest mean weekly temperature was 26.6 °C (80 °F) at (the Mount Idaho bridge (*near the lower end of the project reach*), and temperatures exceeded 15.5 °C (59.9 °F) during the steelhead spawning interval (USFS, 1999). Generally temperatures in the South Fork of the Clearwater River mainstem are too warm for native fish and temperatures increase after the river leaves the (Forests). Several factors contribute to this temperature increase including stream aspect (north-south), elevation, warmer ambient air temperature, and a high width-to-depth ratio. Data collected in the South Fork of the Clearwater River between 1991 and 1993 by the Forests, BLM, and U.S. Geological Survey (USFS, 1999) show temperatures exceeding levels conducive to Chinook, steelhead/rainbow, cutthroat, and bull trout optimal growth, migration, and survival…data collected by the BLM just upstream of the Crooked River Bridge... (*near the top of the project reach*)… suggest that the temperatures recorded at the Mt. Idaho site are indicative of those found throughout the upper South Fork of the Clearwater River basin (USFS, 1999)."

Additionally, fine-grained water temperature data from a very recent study (Dobos, 2015) is similar to that of the NorWeST modelling: peak daily water temperature in the likely most popular reach for suction dredging (between the Crooked River and Newsome Creek confluences) during the proposed dredging season in 2013 and 2014 was, respectively, in excess of 24 and 23°C. Some river sections (in particular, the reach between the Silver and Johns Creek confluences) were somewhat cooler than the upper and lower South Fork of the Clearwater River reaches, so the mean

maximum daily water temperatures for the entire project reach for 2013 and 2014 dredging season period were 22.9 and 22.8°C. The metric used in the Matrix of Pathways and Indicators for bull trout is MWMT; using the same data as above summed over the full project reach between July 15 and August 15, peak MWMT for 2013 was 22.5°C and was as low as 19.7°C. Similar MWMT figures for 2014 were 22.0°C and 20.5°C.

The South Fork of the Clearwater River Subbasin Assessment and Total Maximum Daily Loads [TMDLs; Idaho Department of Environmental Quality (IDEQ and EPA) 2003] addresses water quality-limited streams listed under Section 303(d) of the Clean Water Act and listed 13 water bodies within the subbasin as water quality-limited. The mainstem was listed for sediment and water temperature from its mouth upstream to the confluence of Red and American Rivers, and TMDLs were developed for these pollutants (IDEQ AND EPA 2003). The sediment TMDL targets a 25 percent reduction in human-caused sediment yield to the South Fork Clearwater River. No specific targets were set for tributaries, but it was recognized that much of the sediment yield reduction would need to take place in the tributaries. The water temperature TMDL calls for canopy density or shade targets on a stream reach basis throughout the subbasin.

In the assessment (IDEQ and EPA 2003), the South Fork of the Clearwater River and its tributaries were identified in Idaho's Clean Water Act Integrated Report as exceeding Idaho's water quality sediment criteria based partly on information from the 1987 Nez Perce National Forest plan. Idaho's water quality standard for sediment is both numeric and narrative. The numeric standard requires that turbidity must not increase more than 5 NTUs or more than 10% when background is greater than 50 NTU measured below a mixing zone. The narrative standard requires increases in sediment load, including bedload, not impair aquatic life beneficial uses. In 2003, the DEQ collected sediment data and evaluated bedload and turbidity downstream from dredges operating under IDWR recreational dredge permits. The evaluation showed turbidity exceedances limited to within 500 feet of the discharge and minimal downstream increases in bedload. The number of active claims operating under a recreational suction dredge permit was fifteen in 2000, seven in 2001, and eight in 2002. Based on this evaluation, the TMDL provides a 314 tons/per day waste load allocation for fifteen active recreational suction dredges, assuming recreational dredges can be expected to move up to 2 cubic yards of material an hour and operate for 8 hours. A five hundred-foot mixing zone was authorized below each dredge as allowed by Idaho's water quality standards.

The fish community of the South Fork of the Clearwater River appears to still be dominated by native species, in particular, steelhead/redband rainbow trout (steelhead), spring Chinook salmon, and westslope cutthroat trout (IDEQ and EPA, 2003). Native coho salmon and Pacific lamprey exist at low levels in the South Fork of the Clearwater River, and have recently been the subject of reintroduction efforts by the NPT (NPT, 2006; Ward, et al., 2012). Native fall Chinook salmon have recently begun to increase spawning within the South Fork of the Clearwater River, and the Nez Perce Tribe operates an acclimation facility which releases hatchery-reared juvenile fall Chinook salmon about 7 miles downstream of the lower portion of the project reach (NPT, 2015). As discussed in greater detail below, native bull trout are occasionally recorded from the mainstem of the South Fork of the Clearwater River, and have spawning and rearing populations in a few tributaries. Native species also present include sculpin, several species of cyprinids, and mountain whitefish. Non-native brook trout are present in several of the South Fork of the Clearwater River

tributaries (IDEQ and EPA, 2003), and likely exist in low levels in the mainstem of the South Fork of the Clearwater River. Western pearlshell mussel is a Forest Service Region 1 "Sensitive" species and is likely present in the South Fork of the Clearwater River mainstem and several tributaries.

Fish are present in some project area streams, and so the project could potentially affect fish and habitat within and downstream of the project area. Past management activities in all of the prescription watersheds within the project area have affected aquatic processes, principally historic in-channel mining, road construction, and vegetative harvest (USDA Forest Service, 1998).

a. Aquatic MIS Analysis

Management Indicator Species (MIS) were identified in the Forest Plans to allow assessment of the effects of planned management activities on viable populations of fish and wildlife, including those that are socially or economically important, via habitat monitoring. Some of the MIS have specific habitat requirements that allow MIS monitoring to represent impacts on some non-MIS species with similar habitat requirements.

Tables 3-1 and 3-3 display the MIS and other special status species evaluated. The analysis is separated into Aquatic species (Table 3-1 and following text) and Wildlife (Table 3-3 and following text).

Information on those aquatic MIS species likely to occur in the project areas is presented in individual detail below; the analysis areas are the project areas. As noted and documented in Table 3-1, some of the Forests MIS species are either not historically native to or have been extirpated from the project area. These species (Yellowstone cutthroat trout and redband trout) would not be carried over to effects analysis in Section B.

Table 3-1: Aquatic MIS, ESA-listed, and Sensitive Species Considered.

Species	Special Status*	Considered in this Analysis	Rationale
Westslope cutthroat trout *Oncorhynchus clarki lewisi*	MIS, S	Yes	Native to the Clearwater River basin, and ubiquitous in fishbearing streams in the O/FC project area (CBS 1992, 1992a, 1998; IWW 2000) and most other portions of the South Fork of the Clearwater River subbasin (NPNF 1998), although not abundant in the mainstem South Fork of the Clearwater River.
Yellowstone cutthroat trout *(Oncorhynchus clarki bouvieri)*	S	No	Native to and present in Idaho, but not native to the Clearwater River basin except (perhaps) Waha Lake (Behnke 1992).

Species	Special Status*	Considered in this Analysis	Rationale
Snake River steelhead trout *Oncorhynchus mykiss gairdneri*	MIS, T	Yes	Native to the project area, and present in the South Fork of the Clearwater River (70 FR 52630). Formerly present on much of the North Fork RD in the NFCR drainage, but blocked by Dworshak Dam for 40+ years (70 FR 52630).
Redband/rainbow trout *Oncorhynchus mykiss gairdneri*	MIS, S	No	For the purposes of this report, redband trout are inland and non-anadromous rainbow trout which are isolated (on a large geographic scale) from anadromous rainbow trout stocks (i.e., steelhead, May et al. 2012). On the North Fork RD, present as landlocked populations of steelhead above Dworshak Dam.
Snake River spring/summer Chinook salmon *Oncorhynchus tshawytcha*	MIS, S, EFH	Yes	Native to the SRCR subbasin and present in the South Fork of the Clearwater River as migrating and rearing individuals (70 FR 52630). Formerly present on much of the North Fork RD in the NFCR drainage, but blocked by Dworshak Dam for 40+ years (70 FR 52630).
Snake River fall Chinook salmon *Oncorhynchus tshawytcha*	T, EFH	Yes	Native to Clearwater River (70 FR 52630) and recently shown to spawn in the South Fork of the Clearwater River within the project area (Arnsberg et al. 2016). Possibly native to and present on portions of the North Fork RD in the NFCR drainage, but blocked by Dworshak Dam for 40+ years (70 FR 52630).
Coho salmon *Oncorhynchus kisutch*	EFH, S[2]	Yes	Native to the Clearwater River basin, but considered extinct there in the 1980s. Recent re-introduction to the basin, but not currently known to exist in the South Fork of the Clearwater River or tributaries within the project or cumulative effects area.
Kokanee salmon *Oncorhynchus nerka*	MIS	No	MIS for mainstem of NFCR, and likely annually present in lower Orogrande Creek (Kenney, personal observation).

Species	Special Status*	Considered in this Analysis	Rationale
Bull trout *Salvelinus confluentus*	T	Yes	Native to the O/FC and South Fork of the Clearwater River drainages. Not known to be currently present in either project area other than as migrating or rearing individuals in the mainstem O/FC and South Fork of the Clearwater River. (USFWS 2002).
Pacific lamprey *Lampetra tridentata*	S	Yes	Native to and present on portions of the South Fork of the Clearwater River drainage and recently reintroduced to some streams in the subbasin, but not known to occur in project area streams other than, at least as migrating individuals, the mainstem South Fork of the Clearwater River (Ward et al. 2012).
Western pearlshell mussel *Margatifera falcate*	S^1	Yes	Occurs in portions of the South Fork of the Clearwater River mainstem (G. Seloske personal observations). No populations known in the O/FC project area, but potentially present as the species occurs in portions of the NFCR mainstem and Kelly Creek (Kenney personal observations).

*MIS – Forest Service Management Indicator Species; S – R1 and BLM Idaho Sensitive Species; S^1 – R1 Sensitive Species; S^2 – BLM Idaho Sensitive Species; T – ESA "Threatened" species; EFH – Essential Fish Habitat present for this species.

Westslope cutthroat trout

Background. Westslope cutthroat trout (WCT) are native to Snake River tributaries in Idaho from the Salmon River downstream (although likely excluding the Palouse River) and Upper Columbia River tributaries (Behnke, 1992) and are often the most abundant (or only) native salmonid inhabitants of the low-order streams in these drainages. The species naturally coexists with anadromous or formerly-anadromous redband rainbow trout in many Idaho streams with varying degrees of hybridization (Weigel, et al., 2003).

Westslope cutthroat trout in the South Fork of the Clearwater River represent an important metapopulation in the Clearwater River basin and the South Fork of the Clearwater River subbasin has a high inherent capability to support westslope cutthroat trout, based on general features such as climate, elevation, relief, and geology. Historically, distribution of WCT in the South Fork was probably similar to existing distribution (USDA Forest Service, 1999). According to the South Fork Clearwater Landscape Assessment (USDA Forest Service, 1999), WCT in the South Fork of the Clearwater River subbasin are typically found as small resident fish in the upper third of the major tributaries (in particular, Mill Creek, Johns Creek, Tenmile Creek, Crooked River, Red River, American River, and Newsome Creek) with an occasional fish located in the downstream reaches of

these tributaries or the South Fork of the Clearwater River itself. Dobos (2015) surveyed the mainstem of the South Fork of the Clearwater River in August, but observed relatively few WCT.

In the North Fork of the Clearwater River basin, Forests-sponsored sampling at several dozen sites in the Orogrande Creek watershed (CBS, 1992, 1998) recorded WCT as the most abundant and wide-spread native fish species. WCT were present at all of the sample sites in which any fish were observed in the project reaches.

Cutthroat trout require cold water and relatively low levels of fine sediment to breed and survive (McIntyre and Rieman, 1995), so the presence of individuals of the species, especially juveniles, indicates relatively high water quality. Cutthroat trout populations are sometimes extirpated or reduced in low order streams by non-native brook trout (Peterson et al. 2004), and such population effects are most prevalent when accompanied by water quality or stream channel degradation (McIntyre and Rieman, 1995).

Summer Steelhead (redband rainbow trout)

Steelhead are the anadromous form of rainbow trout, and redband trout are a subspecies of rainbow trout found in interior regions of the Pacific Northwest and California. Rainbow trout are officially recognized as *Oncorhynchus mykiss,* a species that exists in different forms along the Pacific Rim from southern California up to Alaska and across the Bering Strait in northeast Russia (Behnke, 1992); coastal and redband (inland) subspecies exist in the Columbia River basin. Anadromous rainbow trout are called steelhead and so both steelhead and resident rainbow trout in Snake River tributaries were originally of the redband subspecies.

In subbasins where anadromy is possible, all rainbow trout are generally considered to be steelhead, although there is a typically a resident subset within steelhead populations and some small populations may be isolated by natural or anthropogenic barriers. Rainbow trout in the Columbia Basin east of the Cascades are generally referred to as redband trout only where natural or anthropogenic barriers are present on a subbasin or similarly large scale (such as the populations behind Dworshak Dam on the North Fork Clearwater River (May, et al., 2012), so all rainbow trout in the South Fork of the Clearwater River subbasin, whether individually anadromous or resident, are considered steelhead, while all rainbow trout upstream of Dworshak Dam (such as those in the Orogrande Creek drainage) are considered to be redband trout. The MIS designation for the Nez Perce N.F. (USDA Forest Service, 1987) is “summer” steelhead, a life history descriptor of meaningless distinction in Idaho, where “winter” steelhead do not occur.

Snake River Basin steelhead trout (steelhead) are summer steelhead, as are most inland steelhead, and comprise two groups, A-run and B-run, based on migration timing, ocean-age, and adult size.

Distribution and Biology: Adult steelhead trout generally arrive at the mouth of the Clearwater River from September through November, and migrate to tributary streams from January through May. Spawning occurs from mid-March through early June, on a rising hydrograph and prior to peak stream flows (Thurow, 1987; Columbia River DART, 2013). Surviving adults typically move downstream toward the Pacific Ocean shortly after spawning.

Within the mainstem of the South Fork of the Clearwater River, steelhead are thought to migrate to or in proximity to spawning sites starting in February and continuing into May (IDEQ and EPA, 2003); spawning could occur during this same period, depending on flow levels, individual instinct, etc. Preliminary radio-telemetry data from the Nez Perce Tribe (Dan Kenney personal communication with Peter Cleary NPT, 15 May 2015) from 2013 and 2014 showed that few tracked steelhead were last detected (and assumed to spawn) upstream from the Newsome Creek confluence with the South Fork of the Clearwater River (1 of 58 of all tracked steelhead and 1of 23 non-hatchery origin in 2013, with corresponding numbers for 2014 of 7 of 60 and 0 of 10). As of early April 2015, none of the 120 tracked steelhead in the Nez Perce Tribe study had ascended above the Newsome Creek (Nez Perce Tribe, 2015). The proportion of radio-tagged steelhead ascending into the upper mainstem the South Fork of the Clearwater River was likely somewhat higher a month later (Dan Kenney personal communication with Peter Cleary NPT, 15 May 2015), but this is somewhat speculative.

After reaching spawning grounds, steelhead typically select spawning gravels at the downstream end of pools, in gravels ranging in size from 0.5 to 4.5 inches in diameter (Pauley, et al., 1986). These spawning areas must meet species-specific requirements of flow, water quality, substrate size, and groundwater upwelling. Embryo survival and fry emergence depend on substrate conditions (e.g. gravel size, porosity, permeability, and oxygen concentrations), substrate stability during high flows, and water temperatures of 13°C or less. The eggs hatch in about 35-50 days, dependent upon water temperature. The alevins remain in the gravel 2 to 3 weeks until the yolk sac is absorbed, then emerge as fry in late spring, and begin to actively feed; egg to fry survival is usually near 15%. National Marine Fisheries Service (NOAA Fisheries, 2006) analyzed temperature data from Lolo Creek and steelhead emergence timing from applicable studies and found that in typical spring water temperature years Lolo Creek steelhead trout would start emerging between July 1 and 6 and finish emerging by July 17; the South Fork of the Clearwater River water temperatures are likely higher than those of Lolo Creek on the same date, so emergence from redds in the South Fork of the Clearwater River should typically be similar or earlier. Highest rates of mortality typically occur during the fry stage and during the first winter. Snake River Basin steelhead trout usually smolt as 2 or 3 year olds and migrate to the ocean.

Productive steelhead trout habitat is characterized by complexity, primarily in the form of large and small wood and/or boulders and rock. Juveniles would take advantage of microhabitats to seek refuge from high water velocity and/or temperatures. Juveniles may move around in a basin to take advantage of favorable habitat. Fry prefer protected and complex edge habitat with low velocity (<0.3 ft/s). They are seldom observed in water over 15 inches deep. Summer rearing takes place primarily in the faster parts of small and deep scour pools with some form of surface cover and wood or medium to large substrate (cobble or boulders). Other important habitat components for juveniles are pools with "bubble curtains," undercut/scoured areas, and pocket water in deep riffles and rapids. Winter rearing occurs more uniformly at lower densities across a wide range of fast and slow habitat types. Small tributaries and lakes are probably important winter habitat. As juveniles get older, some tend to move downstream to rear in larger tributaries and mainstem rivers.

Redband trout are the non-anadromous form of rainbow trout in the Columbia River Basin west of

the Cascade Mountains and, in the South Fork of the Clearwater River subbasin, have evolved in sympatry with the anadromous population. Resident redband trout are morphologically indistinguishable from juvenile steelhead trout.

Presence in the Action Area: Historic steelhead spawning and early rearing habitat in the South Fork of the Clearwater River subbasin included the lower reaches of mainstem tributaries and their accessible higher order tributaries. The canyon reaches of tributaries such as Johns Creek, Newsome Creek, Tenmile Creek, and Crooked River provided the most optimal spawning and rearing habitat for this species (USDA Forest Service, 1998). The American and Red Rivers, along with lower Meadow and Mill Creeks also provided habitat with high potential, although somewhat less than the previously listed areas. The upper reaches of Meadow Creek, Mill Creek, Newsome Creek, Crooked River, Red River, and American River provide moderate habitat potential. The mainstem of the South Fork of the Clearwater River also provides spawning habitat, although this habitat was probably not widespread nor randomly distributed and occurred in specific lower gradient reaches, such near the mouth of Johns Creek and near the mouth of Newsome Creek and Crooked River (USDA Forest Service, 1998).

Populations of rainbow trout (anadromous or resident) require relatively require cold water and relatively low levels of fine sediment to breed and survive, so the presence of individuals of the species, especially juveniles, indicates relatively high water quality. The abundance of wild anadromous steelhead in the South Fork of the Clearwater River basin is also highly affected by migratory conditions in the Snake and Columbia rivers, and by forage abundance and other rearing conditions in the Pacific Ocean.

Spring Chinook salmon

Chinook salmon are distributed widely throughout the Columbia River basin, with both spring/summer and fall types found in the Clearwater River basin. Spring Chinook salmon are present in the South Fork of the Clearwater River subbasin, but are currently absent from the North Fork of the Clearwater River basin, except for the mile or so between Dworshak Dam and the confluence of the North Fork with the mainstem Clearwater River. Spring Chinook salmon cross Bonneville Dam from March through May, typically spawning in relatively small streams in late summer, and are characterized by juveniles which migrate to the ocean as yearlings. Spring Chinook salmon in the Clearwater River (no “summer” Chinook occur here) were exempted from the 1992 ESA listing because of uncertainty associated with the genetic integrity of this stock. The species is both a Nez Perce-Clearwater National Forest MIS species, a USFS Region 1 sensitive fish species, and a BLM Idaho sensitive species in the Clearwater River basin. “Pacific salmon” also have designated Essential Fish Habitat in the South Fork of the Clearwater River subbasin, and spring Chinook are included in this designation. Habitat requirements of Chinook salmon vary by season and life stage, and the fish occupy a diverse range of habitats.

The following descriptions of spring Chinook distribution and habitat in the South Fork of the Clearwater River subbasin are from the South Fork Clearwater Landscape Assessment (USDA Forest Service, 1999): The South Fork of the Clearwater River is believed to have has a very high inherent capability to support spring Chinook salmon, especially upper basin tributaries such as Red River,

American River, Newsome Creek, and Crooked River. Historic spawning and early rearing habitat in the South Fork of the Clearwater River subbasin included the lower reaches of most mainstem tributaries but did not generally extend into smaller tributaries. The unconfined, alluvial, mostly meadow reaches of Crooked River, Red River, and American River provided the most optimal habitat conditions for production of this species, offering large contiguous areas of appropriately sized spawning gravels as well as preferred low gradient rearing habitat for juveniles. Newsome Creek also provided high quality spawning and rearing habitat. Chinook were found in higher gradient tributaries such as Tenmile, Johns, and Mill creeks, but at lower numbers.

Spring Chinook salmon distribution in the South Fork of the Clearwater River subbasin is probably similar to historic distribution, but abundance is extremely depressed. Abundance of juvenile Chinook salmon is correlated with numbers of returning adults and hatchery supplementation, which has been and is widespread across the subbasin. The mainstem of the South Fork of the Clearwater River probably supported spawning and rearing as well, but currently functions as nodal habitat; it provides adult migration and limited juvenile rearing only because water temperatures in the mainstem typically exceed acceptable levels during the late summer spawning period for this species (IDEQ and EPA, 2003). Spring Chinook spawning activity has been documented in the upper lower gradient reaches of the South Fork of the Clearwater River, primarily above Crooked River. Periodic redd monitoring conducted by the BLM during the past 10-years have ranged from 1 to 13 redds for the upper 3-miles of the South Fork of the Clearwater River, and averaged 6 redds per year (Craig Johnson, BLM, 2016 personal communication).

Currently, two adult spring Chinook salmon traps in the South Fork subbasin itself (located on the Red River and Crooked River) collect adults and eggs, these eggs are reared at the Clearwater Hatchery in Ahsahka, Idaho and juveniles are released into South Fork tributaries. Some adults are permitted to pass the hatchery weirs to spawn naturally and streams other than the Red and Crooked rivers have received outplants of adult salmon in several previous years.

Spring Chinook salmon generally not known to spawn in the mainstem of the South Fork of the Clearwater River under current conditions, and most adults migrating into and through the main-stem of the South Fork of the Clearwater River would have migrated into cooler holding habitat in spawning tributaries by the start of the dredging season. During the last several decades, however, a few spawning spring Chinook salmon and redds have been observed in the South Fork Clearwater River reach between the Crooked River confluence and the head of the river at the American/Red River confluence (Craig Johnson, BLM Cottonwood Field Office, 18 February 2016, personal communication). The BLM conducted formal spawning surveys in this river reach in 2006-2008 and 2010-2011, from August 15 through September 15. The average number of redds counted during the BLM surveys was 6 per year (range 1-13), and the observed peak spawning period was the last week in August through the first week in September (Johnson, personal communication).

Any adult spring Chinook salmon in the mainstem of the South Fork of the Clearwater River during the dredging season would likely be concentrated in deep pools that would be largely inaccessible to dredgers. Johnson (personal communication) observed some adult spring Chinook salmon in small pools and behind large boulders, but predominantly in deeper pools and runs. Dobos (2015) observed about 200 juvenile Chinook salmon in the South Fork of the Clearwater River project area

in August 2014, so at least a few juvenile spring Chinook salmon are likely present in the project reach of the South Fork of the Clearwater River year-around.

Like other members of the *Oncorhynchus* genus, populations of Chinook salmon require relatively cold water and relatively low levels of fine sediment to breed and survive, so the presence of individuals of the species, especially juveniles, indicates relatively high water quality. The abundance of wild Chinook salmon in the South Fork of the Clearwater River basin is also highly affected by migratory conditions in the Snake and Columbia Rivers, and by forage abundance and other rearing conditions in the Pacific Ocean.

b. Aquatic Threatened, Endangered, Proposed, and Candidate Species

Section 7 of the ESA of 1973, as amended, requires federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened, endangered, or proposed species, or cause the destruction or adverse modification of their critical habitats. In addition, the USFS has established direction in Forest Service Manual (FSM) 2670 to guide habitat management for threatened, endangered, proposed, and sensitive species. This analysis and the Biological Assessment were prepared in accordance with legal requirements set forth under section 7 of the ESA and follows standards established in FSM direction (2672.42) and the Code of Federal Regulations (50 CFR 402).

The USFWS no longer posts ESA species list for specific counties in Idaho. When seeking a species list, the Federal agencies (and the public) is currently directed to employ the "planning tool" IPaC (http://ecos.fws.gov/ipac/). When accessed on January 20, 2015, IPaC yielded the partially correct result that ESA-threatened bull trout may be present in both the project areas and that bull trout Critical Habitat (CH) is also present in both project areas. It also correctly states that Snake River steelhead CH has been designated in the South Fork of the Clearwater River project area, but neglects to mention the presence of Snake River steelhead and fall Chinook salmon. No evidence exists that any other listed, proposed, or candidate aquatic species administered by the USFWS or NMFS may occur in the project area (See Table 3-2).

Table 3-2: Summary of bull trout observation data depicting the presence/absence via snorkel or electrofishing surverys in streams within the Orogrande Creek drainage (Moffitt and Bjornn, 1984; Cochnauer, et. al., 2001, 2003; CBS, 1992, 1996, 1998; IDEQ on-line database, 2014; Hanson, et al., 2014).

Stream	Sampling entity	Number of Fish Population Stations	Number of Stations with Bull Trout	Bull Trout Individuals and Size
Orogrande Creek (mainstem)	U of I IDFG ('94-'98) CNF IDFG ('03-'05) IDEQ	3 15 18 9 4	0 2 0 1 0	n/a 2 @ unknown size n/a 2 @ >350 mm n/a
Orogrande Creek lower tributaries (below French Creek confluence)	CNF IDEQ	53 6	0 0	n/a n/a
Orogrande Creek upper tributaries (above French Creek confluence)	CNF IDEQ	6 1	0 0	n/a n/a
French Creek (mainstem)	U of I IDFG ('94-'98) CNF IDFG ('03-'05) IDEQ	3 15 12 91	0 0 0 0	n/a n/a n/a n/a
French Creek tributaries	CNF IDEQ	37 5	0 0	n/a n/a
Total		**197**	**3**	**4**

Snake River steelhead trout

The characteristics of this species in the project area are discussed under "MIS" in A.4.a., but in addition to its MIS status on the Nez Perce-Clearwater National Forests, steelhead trout in the Snake River basin were listed as threatened under the ESA with an effective listing date of October 17, 1997 (62 FR 43937) and proposed for revision on June 14, 2004, (69 FR 33102). The revised Snake River steelhead ESU proposed for relisting as the Snake River Basin *O. mykiss* ESU, which includes both resident and anadromous forms within the range of the existing steelhead ESU, and also includes the North Fork of the Clearwater River drainage upstream of Dworshak Dam. The ESA listed status for Snake River Basin steelhead trout was finalized on January 5, 2006 via final rule in the Federal Register (71 FR 834). The final rule was consistent with the initial ruling (August 18, 1997) in that the listed Snake River Basin steelhead ESU included all anadromous forms in the Clearwater River subbasin excluding the resident forms upstream of Dworshak Dam in the North Fork of the Clearwater River subbasin.

On September 2, 2005, CH for the Snake River Basin steelhead trout was designated via final rule (70 FR 52630). Streams designated for critical habitat designation are identified in the September 2, 2005 Federal Register by their corresponding fifth-field hydrologic unit codes. The mainstem of the South Fork of the Clearwater River has CH designated from its mouth through the length of the project reach (Figure 2-2). Several tributaries of the South Fork of the Clearwater River, including the American and Red rivers, the South Fork of the Clearwater River's parent streams, were also designated.

Columbia Basin bull trout

Bull trout were listed as threatened under the Endangered Species Act on June 10, 1998 by the U.S. Fish and Wildlife Service (USFWS, 63 FR 31693). The USFWS designated CH for Columbia River Basin bull trout on November 17, 2010 (75 FR 63898); this designation includes all of the mainstem of the South Fork of the Clearwater River and the mainstem Clearwater River about 15.5 miles downstream of the lower boundary of the proposed activities, as well as the mainstem of the North Fork Clearwater River and many tributaries including Orogrande Creek from its mouth up to the French Creek confluence.

Designated bull trout CH in the mainstem of the South Fork of the Clearwater River and the lower reaches of several of the South Fork of the Clearwater River tributaries is foraging, migrating, and overwintering (FMO) habitat, and does not support spawning or early rearing of bull trout (Figure 2-2). The upper reaches of a five South Fork of the Clearwater River tributaries have designated spawning and rearing (SR) or an unknown (UK) type of CH, and therefore may have some potential for bull trout reproduction in these streams. The CH type in Orogrande Creek is “spawning and rearing” (SR), but no spawning or juvenile bull trout have been observed in the watershed.

Historically, reproductive success maintained resident, fluvial and adfluvial populations of bull trout throughout its former range. Causes for decline in the range of bull trout include competition with and predation by non-native fish, overfishing, habitat loss and fragmentation, habitat degradation, and loss of productivity associated with depressed populations of other salmonid fishes. Reproductive success has likely been reduced through competition, predation and/or hybridization

with non-native, introduced populations of brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*) and coastal rainbow trout (*O. m. irideus*). Spawning success is very difficult to confirm in much of the bull trout range because a considerable amount of the best remaining habitat occurs in areas difficult to access, numbers of fish are few, and redds are difficult to locate.

Distribution and Life History. Resident, fluvial and adfluvial populations of bull trout were historically distributed throughout the Pacific Northwest in the United States and western Canada. Resident and fluvial populations occurred throughout the Snake River basin including tributaries of the mainstem Clearwater River. Bull trout co-evolved with redband trout (*O. m. gairdneri*), westslope cutthroat trout (*O. clarki lewisi*), Chinook salmon (*O. tshawytscha*), and mountain whitefish (*Prosopium wouldiamsoni*). Recent surveys in the known range of bull trout in Idaho have shown metapopulations in widely scattered segments of river basins (Rieman and McIntyre, 1993), as well as in isolated catchments.

In relationship to the proposed action, bull trout presently occur in the Clearwater River drainage, spawn and young rear in tributaries within the North Fork, South Fork, Selway, and Lochsa core areas, and possibly Lolo and Clear Creek in the Mainstem/Middle Fork core areas (USFWS, 2002), but the mainstems of these rivers and the lower reaches of many of the tributaries are not considered to be spawning or early (i.e., first year) rearing habitat. The mainstem of most or all of these streams are thought to harbor adult and advanced juvenile fluvial (i.e., large-river dwelling) bull trout year-around and are known to serve as migratory corridors for adult and advanced juvenile fluvial and adfluvial (lake-dwelling) bull trout during the spring and fall. In addition, some subadult fluvial and adfluvial bull trout (typically 175-300 mm in length) are known to "wander" into habitat which may not be suitable for spawning or early rearing (as opposed to migration to or from spawning and/or early rearing habitat) and may exist for short or long periods in streams reaches that otherwise would be unoccupied or used only as a migratory corridor (Swanberg, 1997). Full-time residents of the tributary streams where fluvial and adfluvial fish spawn and conduct early rearing are the third bull trout life history type known to occur in the Clearwater River drainage.

Presence in the South Fork of the Clearwater River Action Area. The project reach of the South Fork of the Clearwater River is part of the South Fork of the Clearwater River subbasin. Native fish species in the South Fork of the Clearwater River drainage (i.e., potentially accessible to the project area) include westslope cutthroat trout, redband rainbow trout (in its anadromous and fluvial/resident forms), spring and fall Chinook salmon (and possibly coho salmon *O. kisutch)*, bull trout, mountain whitefish, suckers (*Catostomus* spp.), sculpin (*Cottus* spp.), and redside shiners (*Richardsonius balteatus*).

Five breeding populations of bull trout occur or recently occurred in the South Fork of the Clearwater River drainage (USFWS, 2002). In its draft Recovery Plan (2002), the USFWS determined that local populations of bull trout in the South Fork of the Clearwater River core area currently exist in the Red River (including Upper and West Fork of South Fork Red River), Crooked River, Newsome Creek, Tenmile Creek, and Johns Creek. Potential local populations include American River, Meadow Creek, and Mill Creek. Regarding the Clearwater River recovery unit, the USFWS

(2002) defines for bull trout a North Fork Clearwater core area which includes the Orogrande Creek watershed among 5 potential (i.e., not currently existing) populations.

The mainstem South Fork of the Clearwater River provides subadult and adult rearing habitat and foraging, migrating, and overwintering habitat for bull trout, but the current abundance and distribution of bull trout in the core area is considered lower than historic levels, with extremely low incidence of fluvial migratory adults (USFWS, 2002). The Idaho Department of Fish and Game (High, et al., 2005) summarized 1985-2003 snorkel survey data from 113 sites on the mainstem South Fork of the Clearwater River and detected subadult or adult bull trout at 12 of these sites (~11%); the average density for bull trout at all of the sites was 0.17 individuals per 100 meters^2, while density at sites where any bull trout were detected was 1.15 individuals per 100 meters^2.

Additionally, Dobos (2015, and personal communication with Dan Kenney) detected 5 bull trout during snorkeling surveys of 63 sites on the South Fork of the Clearwater River in August 2014 (47 were in the project reach). Four of the bull trout (all apparently subadults between 200 and 250 mm in length) were observed a short distance downstream of the Tenmile Creek confluence, and the fifth (also a subadult) was observed about two miles upstream. As a comparison of density, more than 1,400 juvenile steelhead/rainbow trout were also observed during these surveys.

So, although there appear to be a few adult or subadult bull trout present in the project reach of the South Fork of the Clearwater River during the proposed suction dredging season, conditions within the mainstem of the South Fork of the Clearwater River generally do not appear to be favorable for this species. In particular, water quality (especially high concentrations of fine sediment and high summer/fall water temperatures) exist within the South Fork of the Clearwater River mainstem. Nevertheless, the presence of subadult or adult bull trout in a project activity reach (a small proportion of the 40-mile project reach) during the dredging season is possible.

Presence in the Orogrande/French Creek Action Area. The bull trout draft recovery plan (USFWS, 2002) discusses sampling efforts and professional judgments of knowledgeable biologists regarding presence and distribution of bull trout in streams and drainages in the North Fork Clearwater subbasins, but does not document the species' presence in the project watershed. As noted above, the Orogrande Creek watershed was not considered by the USFWS (2002) as supporting a local population of bull trout, but rather as an area that had some potential to support a reproducing population. The watershed was actually identified as a "second priority" potential population because "although still important to recovery…they currently have degraded habitat or threats present such that support of bull trout may not be currently possible."

Historical and recent information regarding the physical and biological characteristics of the Orogrande Creek watershed are also presented in the Section 7 Watershed Biological Assessment for the North Fork Clearwater River Drainage, Clearwater River Subbasin, dated January 31, 2000 (CNF, 2000). This Biological Assessment also summarized the overall presence/absence, relative abundance, habitat conditions and current trends for bull trout in the Orogrande Creek drainage.

Bull trout sampling information available to the Nez Perce-Clearwater National Forests is shown in Table 3-2 and Figure 2-1. The earliest sampling in the Orogrande Creek watershed of which the Forests is aware was by University of Idaho researchers in 1983 (Moffitt and Bjornn, 1984). They

snorkeled 3 transects in French and Orogrande Creeks; the French Creek sites were within the subject project area, while the Orogrande Creek sites were well upstream of the project area portion of that stream. IDFG followed up the University of Idaho surveys at the same sites in each of 1994-1998 (Cochnauer, et al., 2001, 2003) and the total of 18 transects in Orogrande Creek revealed 2 bull trout (of unstated size, one each at two transects) in 1994, while none of the 18 transects on French Creek detected bull trout.

The most comprehensive sampling of the watershed was a part of the habitat and fish surveys commissioned by the CNF during the 1990's (CBS 1992, 1996, and 1998). Snorkel surveys were performed at 127 sites in the watershed, but no bull trout were observed. The IDEQ electrofished at 17 sites in the watershed from 1997 through 2008 and also observed no bull trout. IDFG snorkeled three transects in French Creek in each of 2004 and 2005 and two in Orogrande Creek in 2004 and did not detect any bull trout, but did observe two >350 mm bull trout at one of the four sites snorkeled in 2005 (Hanson, et al., 2014).

The snorkel survey that recorded the two adult bull trout in Orogrande Creek in 2005 was apparently prompted by IDFG's tracking of an adult bull trout into that stream; Hanson, et al., (2014) notes that the farthest upstream one particular adult bull trout was tracked (on August 3, 2005) was to a location in French Creek. Because of the location of the radio-tagged fish, a spawning survey conducted by IDFG in Orogrande Creek in later that summer, but no redds were detected (Hanson, et al., 2014). IDFG determined that the radio-tagged bull trout "presumably spawned" (or it at least survived the spawning period) because it was detected migrating passed a fixed radio antenna in or just upstream of Dworshak Reservoir in November 2005 (Hanson, et al., 2014).

Most recently, the Forests filtered and had tested for bull trout environmental DNA (eDNA) water samples collected from sites in the French Creek subwatershed (including French, East French, Sylvan, and Hem creeks) in October 2015. The samples came from 24 sites within the project area. No bull trout DNA was detected in any of the samples (personal communication from Michael Young, Rocky Mountain Research Station, to Dan Kenney, 29 January 2016).

The radio-tagged bull trout discussed above is apparently the only one (out of >200 tracked as migrating into the North Fork of the Clearwater River) identified as entering the Orogrande Creek drainage over the IDFG study period of 2000-2005 (Hanson, et al., 2014). Figures in the IDFG's final report on the study (Hanson, et al., 2014) show what appear to be two detections of the same single radio-tagged bull trout in July and then four detections of this fish in the August-October period. Four or five of these detections are definitely in the mainstem of Orogrande Creek, with one or two in the lowermost portion of French Creek (the scale of the figure prevents a definitive count).

It seems possible to likely that the adult bull trout tracked/observed by the IDFG were stray adults and that no genetically-coherent population exists. It is also possible that one or more small reproducing populations exist in the watershed. The location of spawning within the watershed, to the extent that it exists, is unknown, but may be in drainages that drain relatively high elevation terrain and have been relatively undisturbed by human influence; upper Sylvan Creek tributaries

and EF French Creek would be the mostly likely candidates, but these streams were surveyed fairly recently (CBS, 1998, IDEQ on-line data), without detection of juvenile bull trout. It is known (Thurow, et al., 2006), however, that the predominant form of sampling in these streams, daylight snorkeling, is not particularly efficient in detection of juvenile bull trout.

The current water temperature regime in the project area is an indirect measure of the potential for bull trout presence. As noted above, the IDEQ considers the mainstem of Orogrande Creek to be impaired by high water temperature (IDEQ, 2003). In addition, the Forests have monitored water temperature at several locations in the Orogrande Creek watershed since 1994. The data show that all of Orogrande Creek and at least the lower portion of French Creek are inhospitable to lethal for all life stages of bull trout during portions of nearly all summers, based on the USFWS Matrix of Pathways and Indicators which defines rearing and spawning temperatures as "functioning at unacceptable risk" if MWMT exceeds 15 and 10°C, respectively (USFWS, 1998). The portion of French Creek above the Sylvan Creek confluence (“upper French Creek”) has not been monitored for temperature by the Forests, but the Sylvan and Hem Creek thermographs are probably reasonable representatives of upper French Creek at similar elevations and catchment areas. Using the Sylvan and Hem Creek thermographs as surrogates, portions of upper French Creek likely have a marginally suitable water temperature regime for bull trout spawning and early rearing in some years. The close proximity of FR 250 and associated anthropogenic influences may negatively influence upper French Creek water temperature compared to the Sylvan and Hem creeks, however.

Most recently, the Forests filtered and had tested for bull trout environmental DNA (eDNA) water samples collected from sites in the French Creek subwatershed (including French, East French, Sylvan, and Hem creeks) in October 2015. The samples came from 24 sites within the project area. No bull trout DNA was detected in any of the samples (personal communication from Michael Young, Rocky Mountain Research Station, to Dan Kenney, 29 January 2016).

Aside from the apparent infrequent occurrence of individual bull trout in the Orogrande Creek drainage, conditions within the mainstem of Orogrande and French creeks (at least downstream of the Sylvan Creek confluence) are not suitable for spawning or early rearing habitat for this species, primarily because of high summer/fall water temperatures. Nevertheless, while no bull trout appear to spawn or rear in these project reaches (and so bull trout spawning or early rearing could not be affected by the proposed actions), at least occasional stray individuals appear to enter the drainage, so the presence of subadult or adult bull trout in any particular project activity reach cannot be ruled out.

Snake River fall Chinook salmon

Snake River fall Chinook salmon (fall Chinook) were listed as threatened on April 22, 1992 (57 FR 14653); and the listing was reissued on June 28, 2005 (70 FR 37160). Critical habitat was designated for the ESU on December 28, 1993 (58 FR 68543); in the Clearwater River drainage critical habitat extends up the mainstem Clearwater River to the confluence of Lolo Creek, about 20 miles downstream from the confluence of the South Fork of the Clearwater River and the Middle Fork Clearwater River.

Fall Chinook salmon historically spawned primarily in the mainstem Snake River from Shoshone Falls in southern Idaho downstream in appropriate habitat to locations downstream of the Clearwater River confluence, and in the lower portions of larger tributaries. Since construction of dams on the Snake River, current distribution is more limited, but includes the lower Clearwater River. Primarily because of Nez Perce Tribal efforts to expand the spawning habitat of the species through hatchery outplants, spawning has recently been recorded in areas of the Clearwater River basin previously without recorded presence for decades.

Fall Chinook typically spawn in late fall (typically no earlier than late October), and fry emerge in early to mid-spring. Juveniles typically rear for a few weeks or months in proximity to their hatching site, but move downstream during the late spring and summer of their first year of life (as subyearlings) to enter the Pacific Ocean. Based on observations on other local streams and known water temperature condition in the South Fork of the Clearwater River, juvenile fall Chinook salmon should migrate out of the South Fork of the Clearwater River by the end of June (Bill Arnsberg, NPT, personal communication, 12 March 2015). Some juvenile fall Chinook are known to winter in the lower Snake River reservoirs and not enter the ocean until after their first full year of life (as yearlings).

Only recently has documentation of fall Chinook spawning or rearing within the South Fork of the Clearwater River watershed existed. While the large majority of the fall Chinook spawning in the Clearwater River drainage documented since listing has occurred downstream of the North Fork Clearwater River, recent surveys (Adult Technical Team 2008, 2009, 2010, 2011; Arnsberg, et al. 2012, 2013, 2014, 2015, 2016) show that fall Chinook spawn at least sporadically in the area between the North Fork to the South Fork of the Clearwater River confluence, and beyond the critical habitat area in the Middle Fork, Selway, and South Fork Clearwater rivers. In fact, detections of redds in the South Fork of the Clearwater River have increased from 0 in 2007 to 119 in 2015.

Specifically, aerial redd surveys for fall Chinook salmon have been conducted from the mouth of the South Fork of the Clearwater River to about the town of Harpster, about 1.5 miles downstream of the lower boundary of the project reach (at about RM 15.5) for a number of years; the reach of the South Fork of the Clearwater River above Harpster to the junction of Highway 14 and the Mt. Idaho Grade road (at about RM 24.4) was added in 2015. The largest redd count, in 2015, was a total of 119 redds from just upstream of the South Fork of the Clearwater River 's confluence with the Middle Fork Clearwater River to the Mt. Idaho Grade bridge about 24.4 miles upstream. Nearly half (53) of all of the redds counted in 2015 were between Harpster and the Mt. Idaho Grade road, and so were near or within the proposed South Fork of the Clearwater River suction dredging reach.

c. Aquatic Sensitive Species

The USFS established direction in FSM 2670 to guide habitat management for proposed, endangered, threatened, and sensitive species. For sensitive species, a biological evaluation (BE, a separate document) is prepared in accordance with FSM 2672.42 and the Code of Federal Regulations (50 CFR 402). The BE meets the objectives set forth in FSM 2672.41, which include: Ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-

native plant or animal species; ensure that activities do not cause the status of any species to move toward federal listing; and incorporate concerns for sensitive species throughout the planning process, reducing negative impacts to species and enhancing opportunities for mitigation.

To accomplish these objectives, the BE reviews the proposed action and any alternative in sufficient detail to determine the level of effect that would occur to each species evaluated. The BE considers the best available scientific literature, a thorough analysis of the potential effects of the project, and the professional judgment of the biologists who completed the evaluation. This document incorporates the effects on terrestrial sensitive species), per direction pertaining to streamlining (USDA Forest Service, 1995). The streamlined process for doing biological evaluations for sensitive species focuses on two areas:

1. Incorporating the Effects on Sensitive Species into the NEPA Document

2. Summarizing the Conclusions of Effects of the Biological Evaluations for Sensitive Species (BA Appendix A)

The analysis area for sensitive species is the entire South Fork of the Clearwater River and Orogrande and French creeks project areas because the direct and indirect effects of the project would occur in this area.

Westslope cutthroat trout, redband (rainbow) trout, and spring Chinook salmon

These species are discussed under "MIS".

Yellowstone cutthroat trout

As noted, documented and discussed in Table 3-1 and MIS, this species is not historically native to the project area and would not be carried over to effects analysis.

Pacific lamprey

Pacific lamprey adults enter freshwater between July and September and may migrate several hundred kilometers inland. They do not mature until the following March. They spawn in sandy gravel immediately upstream from riffles between April and July and die soon after. Eggs hatch in two to three weeks and the ammocoetes (juvenile lamprey) spend up to the next six years in soft substrate as filter-feeders before emigrating to the ocean. They remain in the ocean for 12 to 20 months before returning to freshwater to spawn.

The total distribution and abundance of lampreys in the South Fork of the Clearwater River subbasin is not fully known, but the distribution and abundance are severely reduced from historic conditions. Ammocoetes (one form of juvenile lamprey) have been sampled within the last two decades in the mainstem South Fork of the Clearwater River and in the Red River, and in Newsome Creek near its mouth (Cochnauer and Claire, 2009). The Nez Perce Tribe translocated adult lampreys into Newsome Creek in 2007-2010 and observed successful spawning and juvenile recruitment in this stream (Ward, et al., 2012); this translocation continues to occur each year. The

current presence of lampreys in the project area is limited to the mainstem South Fork of the Clearwater River, probably mostly below the Newson Creek confluence. Pacific lamprey was extirpated from Orogrande and French creeks with the construction of Dworshak Dam.

Western pearlshell mussel

The western pearlshell mussel is present in many western states and is relatively common in the Pacific Northwest, including in Idaho (Nedeau, et al., 2009). It requires fish hosts to complete its lifecycles and brook trout have been documented as hosts (Nedeau, et al., 2009). This species is a sedentary filter feeder and so is vulnerable to changes in streambed habitat, especially high levels of fine sediment accumulation (Jepsen, et al., undated). The South Fork of the Clearwater River drainage of the Forests has not been formally surveyed in for this species, but the Upper South Fork of the Clearwater River drainage is thought to generally support this species (Lysne and Krouse, 2011) and populations exist in the mainstem of the South Fork of the Clearwater River within the project area (Kenney, personal observation, 7 October 2015). No formal surveys have been performed in Orogrande or French creeks or other portions of the North Fork of the Clearwater River drainage for this species and no individuals have been documented to occur in the project area, although populations have been observed in the mainstem of the North Fork and in Kelly Creek.

d. Essential Fish Habitat

In accordance with applicable requirements of section 305(b) of the Magnuson-Stevens Act and it implementing regulations (50 CFR Part 600.920), the Forests need to evaluate potential effects of the activities proposed under the project in the South Fork of the Clearwater River drainage on Essential Fish Habitat (EFH).

NOAA Fisheries designates the freshwater habitat of Pacific salmon species by subbasin (i.e., HUC 4). EFH includes all streams and other water bodies occupied or historically accessible to these species (with certain exceptions), but does not otherwise distinguish individual streams within the subbasins. The project would be implemented in the Clearwater subbasin (17060306), where both Chinook (both spring/summer and fall run types) and coho salmon have EFH designated. The project area is historically accessible to both salmon species.

Spring Chinook salmon, fall Chinook salmon

These species and their habitat are discussed under "MIS" or “TEPC”.

Coho salmon

Historically, coho most likely inhabited tributaries in the lower Clearwater River Basin including some in the lower South Fork of the Clearwater River subbasin. Re-introduction of coho salmon has been undertaken by the Nez Perce Tribe in tributaries of the mainstem Clearwater River, including the Lapwai, Clear, and Lolo Creek drainages (Everett, et al., 2006) and some parr releases were made in the South Fork of the Clearwater River tributary of Meadow Creek in 2000-2003 (NPT, 2004). Natural spawning has also recently been observed in the Potlatch River, Catholic Creek, and

in the North Fork of the Clearwater River below Dworshak Dam. The Forests has no recent records of coho salmon in the South Fork of the Clearwater River, but the smolt releases (and any natural production) in Clear Creek could certainly produce stray adults that could spawn or attempt to spawn in the South Fork of the Clearwater River or suitable tributaries. No coho salmon can access the Orogrande/French creek project area because of the presence of Dworshak Dam. Coho salmon are a BLM Idaho designated sensitive species.

e. Wildlife MIS Analysis

Management Indicator Species (MIS) were identified in the Forest Plans to allow assessment of the effects of planned management activities on viable populations of fish and wildlife, including those that are socially or economically important, via habitat monitoring. Some of the MIS have specific habitat requirements that allow MIS monitoring to represent impacts on some non-MIS species with similar habitat requirements.

Table 3-3 displays the MIS and other special status species evaluated.

As noted and documented in Table 3-3, some of the Forests' MIS species are either not historically native to or have been extirpated from the project area, or may not be plausibly affected by the proposed action. These species would not be carried over to effects analysis in Section B. Information on the single wildlife MIS species likely to occur in the project areas for which an effect mechanism can be identified is provided below.

Belted kingfisher

Kingfishers are predators of small fish and other aquatic organisms and hunt by perching over or along major stream courses. Streams must be sufficiently wide and open to allow unrestricted flight above the stream. Kingfishers nest in streambank burrows. They are common inhabitants of both project areas and are not particularly sensitive to human disturbance.

f. Wildlife Threatened, Endangered, Proposed, and Candidate Species

As noted above, Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened, endangered, or proposed species, or cause the destruction or adverse modification of their critical habitats. In addition, the USFS has established direction in Forest Service Manual (FSM) 2670 and the BLM has established direction in BLM Manual 6840 to guide habitat management for threatened, endangered, proposed, candidate, and sensitive species. This analysis and the Biological Assessment were prepared in accordance with legal requirements set forth under section 7 of the ESA and follows standards established in FSM direction (2672.42), BLM Manual 6840 direction (6840.04) and the Code of Federal Regulations (50 CFR 402).

The USFWS no longer posts ESA species list for specific counties in Idaho. When seeking a species list, the Federal agencies (and the public) is currently directed to employ the "planning tool" IPaC (http://ecos.fws.gov/ipac/). When accessed on January 20, 2015, IPaC yielded the partially correct

result that ESA-threatened Canada lynx may be present in the South Fork of the Clearwater River project area, but neglects to mention that the presence of this species is equally or more likely within the Orogrande/French Creek project area. No evidence exists that any listed, proposed, or candidate wildlife species administered by the USFWS or NMFS may occur in the project area (See Table 2).

Canada lynx

Canada lynx is the only ESA-listed wildlife species potentially found within either project analysis area. Canada lynx in the contiguous United States were listed as threatened under the ESA in 2000 (65 FR 16052) with critical habitat designated in 2006 (71 FR 66008). The 2007 Northern Rockies Lynx Management Direction (NRLMD) for the Forest Service (USDA FS 2007) applies to mapped lynx habitat on National Forest System land presently occupied by Canada lynx, as defined by the *Amended Lynx Conservation Agreement between the Forest Service and the FWS* (USDA FS and USDI FWS 2006).

When National Forests are designing management actions in unoccupied mapped lynx habitat they should consider the lynx direction, especially the direction regarding linkage habitat.

Although portions of the Federally-managed land in proximity to the South Fork of the Clearwater River project area are considered to be secondary lynx habitat, no portions of the Agencies'-managed land in the South Fork of the Clearwater River subbasin are considered occupied habitat, the project area is outside of any Lynx Analysis Unit (LAU) and so there is no modeled lynx habitat in the project area.

Much of the upland areas of the North Fork Ranger District are considered to be an occupied secondary area. Part of the subject watershed is within the existing Lynx Analysis Unit (LAU) 38 and within the updated, revised lynx mapping. However, none of the project reaches and riparian areas are within any LAU because they are either too low in elevation (i.e., under 4,000 feet msl—all but about the upper 2.3 miles of the project area) or are otherwise modeled as not lynx habitat.

g. Wildlife Sensitive Species

The USFS established direction in FSM 2670 to guide habitat management for proposed, endangered, threatened, and sensitive species. For sensitive species, a biological evaluation (BE, a separate document) is prepared in accordance with FSM 2672.42 and the Code of Federal Regulations (50 CFR 402). The BE meets the objectives set forth in FSM 2672.41, which include: Ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species; ensure that activities do not cause the status of any species to move toward federal listing; and incorporate concerns for sensitive species throughout the planning process, reducing negative impacts to species and enhancing opportunities for mitigation.

The BLM's national Special Status Status Species (SSS) policy (6840.04 section D.4 and D.6), provide that State Directors are responsive for "designating Bureau sensitive species within their respective jurisdictions, and at least once every five years, reviewing and updating the Bureau sensitive species list…". On BLM-administered lands, all offices are to "…manage Bureau sensitive species

and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat" (6840.2.C). The BLM Manual 6840 further describes Bureau sensitive species as species that require special management consideration to avoid potential future listing under the ESA.

To accomplish these objectives, the BE reviews the proposed action and any alternative in sufficient detail to determine the level of effect that would occur to each species evaluated. The BE considers the best available scientific literature, a thorough analysis of the potential effects of the project, and the professional judgment of the biologists who completed the evaluation. This document incorporates the effects on terrestrial sensitive species), per direction pertaining to streamlining (USDA Forest Service, 1995). The streamlined process for doing biological evaluations for sensitive species focuses on two areas:

1. Incorporating the Effects on Sensitive Species into the NEPA Document

2. Summarizing the Conclusions of Effects of the Biological Evaluations for Sensitive Species (BA Appendix A)

The analysis area for sensitive species is the entire South Fork of the Clearwater River and Orogrande and French creeks project areas because the direct and indirect effects of the project would occur in this area.

Harlequin duck

The Harlequin duck is a Forest Service and BLM sensitive species. Harlequin ducks live most of their lives in marine areas off the coast of eastern and western North America, but adults migrate inland to nest and care for young. In Idaho, these ducks nest directly adjacent to or a short distance away from streams, typically along relatively large streams with high gradient reaches (i.e., riffles, runs, and rapids) and cobble/boulder substrate (Cassirer and Groves, 1991). When inland, adult and juvenile harlequin ducks feed primarily on stream aquatic macroinvertebrates.

The nesting and brooding habitat typical for these ducks in north Idaho are canyons with riparian mature to old growth timber and woody debris remote from roads and other human disturbance (Cassirer and Groves, 1991).

Based on habitat availability and occurrence records, harlequin ducks would possibly, but not likely occur in the project areas during the dredging season.

Western Toad

The western toad is a Forest Service and BLM sensitive species. Western toads use moist areas such as streams, ponds and lakes for breeding, foraging and overwintering habitat. They prefer shallow areas with mud bottoms and high temperature areas, often in sites with vegetation present for breeding. A wide variety of upland habitats are used during non-breeding times. Riparian areas serve as migratory or dispersal corridors. Important upland habitat structure needed includes down woody debris where individuals can access moist microhabitats during the hot daytime summer hours to avoid desiccation.

Suitable western toad habitats occur in the project areas, primarily in shallow pools and slow-moving portions of streams, although toads can also be found in upland habitats away from permanent water. Primary risk factors for boreal toads are those that affect breeding habitat through reductions in size and quality of riparian areas.

Idaho Giant Salamander

The Idaho giant salamander is a BLM sensitive species which occurs in the project area and the species preferred habitats include cold streams and adjacent riparian habitats. The species has been documented as occurring in the general project area, with primary occurrence probably in tributary streams. Adults are found under rocks and logs or on rocky streambanks. It may be expected to find the species occupying preferred habitats within the project area. Primary risk factors for Idaho giant salamander are actions that affect preferred riparian and aquatic habitats through degradation of riparian and aquatic habitats.

Coeur d'Alene Salamander

The Coeur d'Alene salamander is a Forest Service and BLM sensitive species. This salamander often lives in or near springs and seeps below about 5,000 feet elevation, but may also be found in waterfall spray zones and stream edges in coniferous forests. The animals usually shelter in continuously wet interstices of bedrock or in talus where there is a coniferous canopy and typically only emerge to the surface under damp conditions and at night (Cassirer, et al., 1994).

Coeur d'Alene salamanders have been recorded on the North Fork Ranger District at numerous locations, primarily along the mainstem of the North Fork of the Clearwater River and along some of the larger North Fork tributaries, including lower Orogrande Creek, so they may occur near dredging activities in or along Orogrande or French Creeks, but are not known to exist in the South Fork of the Clearwater River subbasin.

Table 3-3: MIS, ESA-Listed, and Sensitive Wildlife Species Considered

Species	General Habitat	Status*	Considered in Detail?	Rationale
Birds				
American peregrine falcon *(Falco peregrinus anatum)*	This species uses many types of habitat, although not typically in heavy timber, but typically nests on cliffs or other rock faces.	S	No	Little to no suitable nesting habitat exists in the project area, and there is no mechanism for effects.
Bald eagle *Haliaeetus leucocephalus*	Uses larger fish-bearing streams, rivers, and lakes for foraging, nests nearby.	MIS, S	No	Occasionally present in project areas, but prey/forage species would not be adversely affected by proposed actions.
Northern Goshawk *Accipiter gentilis*	Nests in mature timber stands with high canopy cover and open understory.	MIS, S	No	Little to no suitable nesting habitat exists in the project area, and there is no mechanism for effects.
Belted kingfisher *Ceryle alcyon*	Primarily along water, including lakes, wooded creeks and rivers, forages primarily on fish.	MIS	Yes	Present to common in project areas.
Yellow-billed cuckoo (*Coccyzus americanus)*	Low-elevation, dense deciduous riparian forests (usually cottonwood)	C	No	Not present in project areas, so no potential for effects
Common loon *(Gavia immer)*	Loons nest and feed in lakes.	S	No	Not present in project areas, so no potential for effects
Mountain quail *(Oreortyx pictus)*	Habitat is typically warm/dry shrub.	S	No	Not present in project areas, so no potential for effects

Species	General Habitat	Status*	Considered in Detail?	Rationale
Black swift *(Cypseloides niger)*	Neotropical migratory bird which nests in moist cliff environments, typically near or behind waterfalls or in shallow caves.	S	No	Not present in project areas, so no potential for effects
Pileated woodpecker *Dryocopus pileatus*	Large snags and down logs, mature forest, dense canopy for nesting. Inhabits second growth of sufficient size and maturity and forages in some mid-seral habitat.	MIS	No	May occasionally be present in project areas, but no mechanism for effects.
Black-backed woodpecker *Picoides arcticus*	Abundant in recently burned landscapes or other areas of epidemic bark beetle infestation, uncommon but widespread elsewhere.	S[1]	No	May occasionally be present in project areas, but no mechanism for effects.
White-headed woodpecker *(Picoides albolarvatus)*	Open canopy mature to old growth ponderosa pine forests.	S	No	Not present in project areas, so no potential for effects
Flammulated owl *Otus flammeolus*	Mature or old growth ponderosa pine and Douglas-fir with open understory, favors south aspects below 4,500 feet in elevation.	S	No	No or very limited habitat in the project area, and no mechanism for effects.
Harlequin duck *Histrionicus histrionicus*	Forested mountain streams with gradient less than three percent, shrub cover greater than 50 percent, and minimal human disturbance.	S	Yes	Harlequin nesting habitat is made up of second to fifth order stream with substantial reaches of relatively high gradient, which is present in the project areas in varying amounts.
Pygmy nuthatch *Sitta pygmaea*	Mid- to late-seral ponderosa pine.	S	No	No or very limited habitat in the project area, and no mechanism for effects.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Golden Eagle *Aquila chrysaetos*	Found in open country, especially in mountainous regions.	S[2]	No	May occasionally be present in project areas and overall occurrence not common. No adverse effects expected to prey/forage species by proposed action.
Short-eared Owl *Asio flammeus*	Usually found in grasslands, shrublands, and other open habitats with low vegetation height.	S[2]	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Willow flycatcher *(Empidonax traillii)*	Willow flycatcher utilizes riparian habitats where they nest and feed.	S[2]	Yes	Present in project areas and critical habitat niche is riparian habitats.
Black Tern *Chilodonias niger*	Uses lakes, ponds, rivers, islands, or sloughs.	S[2]	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Brewer's Sparrow *Spizella breweri*	Lowest elevations to highest (8,000 feet or more) in sagebrush valleys, dry grassy ridges of foothills, brushy plains to tree line, cultivated areas with brushy fence rows or patches.	S[2]	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Cassin's Finch *Carpodacus cassinii*	Occupies a variety of coniferous forest types over a broad elevation ranges. Often found in mature forests of lodgepole pine and ponderosa pine. Occasionally breeds in open sagebrush shrubsteppe with scattered western junipers.	S^2	No	Present in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Grasshopper Sparrow *Ammodramus savannarum*	Occupies prairies, old fields, open grasslands, cultivated fields, and savannas.	S^2	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Green-tailed Towhee *Pipilo chlorurus*	Uses thickets, chaparral, shrublands, riparian scrub, and especially sagebrush. In pinyon-juniper, associated with sagebrush dominated openings with high shrub species richness.	S^2	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Lewis Woodpecker *Melanerpes lewis*	Open or logged forests, river groves in mountains.	S^2	No	Present in general project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Long-billed Curlew *Numenius americanus*	Found in open short-grass or mixed-prairie habitat.	S^2	No	Not expected to occur in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Olive-sided Flycatcher *Contopus borealis*	Open timber at meadow margins in sparse timber, burns, partially logged areas.	S[2]	No	Present in general project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Vaux's Swift *Chaetura vauxi*	Prefers late seral stages of coniferous and mixed deciduous/coniferous forests; more abundant in old-growth forests than in younger stands.	S[2]	No	Limited suitable habitat in project area. No adverse effects to preferred habitats or prey/forage species by proposed action.
Mammals				
Canada lynx *(Lynx canadensis*)	Uses mature forests for denning and early seral stages (especially dense lodgepole pine); snowshoe hares primary prey.	T	Yes	Secondary occupied habitat present in project area, relatively recent unverified sightings on Forests.
Northern Idaho ground squirrel *Urocitellus brunneus brunneus*	Grasslands. Southern portion of the Salmon River Ranger District and southern portion of BLM Cottonwood Field Office management area. Not a listed species for Idaho County.	T	No	Not present in project areas, so no potential for effects
Gray wolf *Canis lupus*	Present mostly in forest areas in Idaho, but adapted too many habitat types.	MIS, S	No	May occasionally be present in project areas, but no mechanism for effects.
Grizzly bear *Ursus horribilis*	Remote areas where human disturbance is minimal.	MIS	No	Not present in project areas, so no potential for effects

Species	General Habitat	Status*	Considered in Detail?	Rationale
North American wolverine *Gulo gulo*	Remote areas where human disturbance is minimal, often in timber near rockslides, avalanche areas, cliffs, swamps, and meadows.	S	No	May occasionally be present in project areas, but no mechanism for effects.
Pine marten *Martes Americana*	Dense mid- and late seral mixed and coniferous forests, which usually include abundant fallen logs, stumps, and shrubs. Modeled stands >4,000' elevation.	MIS	No	May occasionally be present in project areas, but no mechanism for effects.
Fisher *Martes pennant*	Diverse, moist, mature forests at low to moderate elevations, with high canopy cover, often along riparian areas, and abundant large diameter woody debris.	S	No	May occasionally be present in project areas, but no mechanism for effects.
Bighorn sheep *(Ovis canadensis)*	Found in a variety of open habitats, but not typically in heavy timber	S	No	Not present in project areas, so no potential for effects
Elk *Cervus elaphus*	Open grasslands, brush fields, and riparian areas for foraging, dense forests for cover.	MIS	No	Often present in project areas, but no mechanism for effects
Moose *Alces alces*	A mosaic of second-growth forests, openings, lakes, and wetlands	MIS	No	May occasionally be present in project areas, but no mechanism for effects.
White-tailed deer *Odocoileus virginianus*	Various habitats from forests to fields with adjacent cover, especially in riparian areas and bottomlands.	MIS	No	Often present in project areas, but no mechanism for effects
Long-eared myotis (*Myotis evotis*)	Found in diverse habitats from semiarid shrublands, agricultulral, but prefer coniferous forest. Individuals roost under exfoliating bark, hollow trees, caves, mines, and rock outcrops.	S	No	No or very limited habitat in the project area, and no mechanism for effects.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Long-legged myotis (*Myotis volans*)	Primarily found in coniferous forest but seasonally found in riparian areas. Summer day roost include buildings, caves, mines exfoliating tree bark, and hollows within snags. Hibernacula are usually caves of mines.	S	No	No or very limited habitat in the project area, and no mechanism for effects.
Fringed myotis *Myotis thysanodes*	Open areas (grassland and shrublands) interspersed with mature forest habitats (pinyon-juniper, ponderosa pine, mixed oak and pine, Douglas-fir) in a mosaic pattern with ample edges and abundant snags. Large snags, hollow trees, buildings, mines, rock crevices, and bridges used for roosting.	S	No	No or very limited habitat in the project area, and no mechanism for effects.
Townsend's big-eared bat *Plecotus townsendii*	Distribution is strongly correlated with the availability of caves, cave like roost and abandon mines typically at lower elevations. Major threats include disturbance from recreational caving, mine reclamation, and renewed mining in historic mines	S	No	No or very limited habitat in the project area, and no mechanism for effects.
Big Brown Bat *Eptesicus fuscus*	Found in virtually every American habitat ranging from timberline meadows to lowland deserts, though it is most abundant in deciduous forest areas.	S^2	No	Habitat in general project area, however, no adverse effects expected to occur to preferred habitats or the species.
California Myotis *Myotis californicus*	Uses a variety of habitats, such as canyons, riparian areas, and grasslands. Within Idaho, primarily found in Adams county.	S^2	No	Not expected to occur in project area. No adverse effects expected to occur to preferred habitats or the species.
Canyon Bat *Parastrellus hesperus*	Uses deserts and lowlands, desert mountain ranges, desert scrub flats, and rocky canyons.	S^2	No	None or very limited habitat in the project area, and no adverse effects expected to occur to preferred habitats or the species.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Hoary Bat *Lasiurus cinereus*	Habitat includes deciduous and coniferous forests and woodlands.	S[2]	No	Habitat occurs in general project area, however, no adverse effects expected to occur to preferred habitats or the species.
Little Brown Bat *Myotis lucifugusns*	Found mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests.	S[2]	No	Habitat occurs in general project area, however, no adverse effects expected to occur to preferred habitats or the species.
Pallid Bat *Antrozous pallidus*	Found in arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland.	S[2]	No	None or very limited habitat in the project area, however, no adverse effects expected to occur to preferred habitats or the species.
Silver-haired Bat *Lasioncycteris noctivagans*	Habitat is primarily coniferous forested areas adjacent to lakes, ponds, or streams.	S[2]	No	Habitat occurs in general project area, however, no adverse effects expected to occur to preferred habitats or the species.
Western Small-footed Myotis *Myotis cillolabrum*	Generally inhabits desert, badland, and semiarid habitats; more mesic habitats in southern part of range.	S[2]	No	None or very limited habitat in the project area, and no adverse effects expected to occur to preferred habitats or the species.

Species	General Habitat	Status*	Considered in Detail?	Rationale
Yuma Myotis *Myotis yumanensis*	Found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands and forests, but usually found near open water.	S^2	No	Habitat occurs in general project area, however, no adverse effects expected to occur to preferred habitats or the species.
Amphibians				
Coeur d'Alene salamander *Plethodon idahoensis*	At spring seeps, waterfall spray zones, and banks of small cascading creeks associated with disjunct coastal biota, below 5,000 feet elevation.	S	Yes	May occur in suitable habitats, but not known to occur in the South Fork of the Clearwater River.
Idaho Giant Salamander *(Dicamptodon aterrimus)*	Larvae usually inhabit clear, cold streams, but are also found in mountain lakes and ponds. Adults are found under rocks and logs in humid forests, near mountain streams, or on rocky shores of mountain lakes. Larvae feed on wide variety of aquatic invertebrates as well as some small vertebrates (e.g., fishes, tadpoles, or other larval salamanders). Adults eat terrestrial invertebrates, small snakes, shrews, and salamanders.	S^2	Yes	May occur in suitable habitats.
Western toad *Bufo boreas*	A diversity of aquatic and moist terrestrial habitats, prefers ponds, pools, and slow-moving streams.	S	Yes	May occur in suitable habitats.
Reptiles				
Ringneck snake *Diadophis punctatus*	Dry forest and shrub habitats; open hillsides with rocks or other debris.	S	No	No or very limited habitat in the project area, and no mechanism for effects.

*Status Abbreviations: T = ESA Threatened, C = ESA Candidate, S = Region 1 Sensitive and present in Idaho and BLM Idaho designated sensitive species, S^1 = Region 1 Sensitive only, S^2 = BLM Idaho sensitive only, MIS = Forest Service Management Indicator

Migratory Bird Species

All migratory birds are protected under the 1918 Migratory Bird Treaty Act (16 USC 703), as well as the Neotropical Migratory Bird Conservation Act (16 USC Chapter 80). Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds requires the BLM and other federal agencies to work with the U.S. Fish and Wildlife Service (USFWS) to improve protection for migratory birds. Migratory birds occur within the project area and analysis area. Idaho Partners in Flight (IPIF) has identified 243 species of birds that breed in the State of Idaho. Of these species, 119 are considered Neotropical migrants.

Neotropical migrant birds utilize habitats in the U.S. during the spring and summer breeding seasons, but migrate to southern latitudes to spend winters as far south as Mexico and South America.

Idaho Partners in Flight (2000) identified four high-priority habitats in Idaho that are also important habitats for migratory birds and include riparian, low-elevation mixed conifer, grasslands, and ponderosa pine. The habitats most likely to be impacted by the proposed action include riparian and aquatic habitats. The project area occurs along Orogrande Creek, French Creek, and the South Fork of the Clearwater River.

Riparian and aquatic habitats provide a critical habitat niche for many migratory birds. Consequently, analysis would focus on potential impacts to riparian and aquatic habitats and migratory birds that utilize these habitats. The Harlequin Duck (Forest Service and BLM sensitive species) and Willow Flycatcher (BLM sensitive species) are highly dependent on riparian habitats for breeding, rearing, and foraging. For additional information and analysis regarding the Harlequin Duck and Willow Flycatcher refer to analysis for these sensitive species in this document.

h. Water quality.

Water quality, especially that associated with sediment, turbidity, and water temperature is discussed in several portions of Section A.4., above, particularly in the project area descriptions.

To elaborate on the issue of sediment in the South Fork of the Clearwater River, the IDEQ has provided the following statement (personal communication, John Cardwell, IDEQ to Dan Kenney; 1 February 2015):

> The Clean Water Act requires a Total Maximum Daily Load (TMDL) be established for waters that do not meet state water quality standards. TMDLs quantify allowable pollutant loads and allocate portions of the allowable loads to contributing sources. In October 2003, the South Fork Clearwater River Subbasin Assessment and TMDL established sediment load allocations for the South Fork Clearwater and its tributaries. The South Fork and its tributaries were identified in Idaho's Clean Water Act Integrated Report as exceeding Idaho's water quality sediment criteria based partly on information from the 1987 Nez Perce National Forest plan. Idaho's water quality standard for sediment is both numeric and narrative. The numeric standard requires that turbidity must not increase more

than 5 NTUs or more than 10% when background is greater than 50 NTU measured below a mixing zone. The narrative standard requires increases in sediment load, including bedload, not impair aquatic life beneficial uses. In 2003, the DEQ collected sediment data and evaluated bedload and turbidity downstream from dredges operating under IDWR recreational dredge permits. The evaluation showed turbidity exceedances limited to within 500 feet of the discharge and minimal downstream increases in bedload. The number of active claims operating under a recreational suction dredge permit was 15 in 2000, 7 in 2001, and 8 in 2002. Based on this evaluation, the TMDL provides a 314 tons/per day waste load allocation for fifteen active recreational suction dredges, assuming recreational dredges can be expected to move up to 2 cubic yards of material an hour and operate for 8 hours. A five hundred foot mixing zone was authorized below each dredge as allowed by Idaho's water quality standards.

A water quality concern with suction dredging not discussed in A.4., above, is the potential for elemental mercury currently buried within the stream channel substrate to be brought to the surface through suction dredges and dispersed into the water column. Because of its density, mercury excavated or otherwise uncovered by suction dredgers mostly remains within stream substrate or is suctioned into and trapped within the dredge sluicebox, along with gold, lead, and other dense materials. Placer miners historically used mercury to recover fine gold (with which mercury forms an amalgam), and it is thought that mercury was used in the mining districts which included both the South Fork of the Clearwater River and tributaries and Orogrande Creek and tributaries (McGowan, 2001 and IDEQ, 2007). It is possible, then, that some elemental mercury is present in the South Fork of the Clearwater River or Orogrande/French Creek stream channels, and that small amounts of elemental mercury could be released into the water column if entrained through suction dredges. Although there does not appear to be any recent data on water column, sediment, or fish tissue testing for mercury in the mainstem South Fork of the Clearwater River or Orogrande/French creeks (Essig, 2010), the IDEQ does not include either of the project area streams on its list of Idaho streams impaired by mercury.

i. Soils.

For the purpose of this report, there are no soils present within the project area active channels of the South Fork of the Clearwater River and Orogrande/French Creeks. This is because the components of soil (silt, organic matter, sand, etc.) become stream channel substrate within the channel, and are discussed in the project area descriptions, above. The soil within the project areas, but outside of the active channels, is that within riparian zones, and has little relevance to the proposed project.

3.1.1.1 Methodology

a. Management Indicator Species.

Table 3-1 lists each of the aquatic species that have been selected as MIS in the Forest Plans (NPNF 1987, CNF 1987). Each species was evaluated for its potential to be affected by the proposed project. The MIS analyzed in this document are primarily evaluated qualitatively.

b. Endangered Species Act-listed, Proposed, Candidate Species and Sensitive Species

c. Sensitive Species

Species considered in this section include listed species under the ESA as well as proposed and candidate species for Federal listing and those on the Northern Region Sensitive Species List and BLM Idaho sensitive species list. For most species, suitable habitats were described based on physical presence and access to the project area.

d. Clean Water Act

The Clean Water Act (33 U.S.C. 1251 *et seq.*) sets goals to eliminate discharges of pollutants into navigable water, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. Sections 303 (d), 313, 401, 402, and 404 of the Clean Water Act, are potentially applicable to the suction dredging operations that might be approved.

e. Soil

The Clearwater and Nez Perce National Forest Plans (CNF 1987 and NPNF 1987) as amended guides all natural resource management activities by providing a foundation and framework of standards and guidelines for National Forest System lands administered by the CNF. The Suction Dredging EIS is tiered to the CNF Plan, and the Forest Plan FEIS and Record of Decision. Forest-wide goals and standards for soils are found in Chapter II (pages II-3 through II-30. These goals, objectives and standards discuss the need to facilitate the orderly development of mineral commodities while providing environmental protections to ensure that Forest water quality goals are met.

3.1.1.2 Regulations

Management Indicator Species (includes both fish and wildlife)

The 1982 planning rule, which implements the National Forest Management Act (NFMA), requires the Forest Service to manage fish and wildlife habitat "to maintain viable populations of existing native and desired non-native vertebrate species in the planning area" (36 CFR 219.19). Management indicator species (MIS) are designated as surrogates for other species with similar life histories or habitat requirements in order to assess the effects of management activities. The Forest Plan(s) identify four potential fish MIS, and ten potential wildlife MIS. From this list, species were selected for detailed evaluation if they occur in the analysis area and had potential to be affected by the proposed action.

Issue Indicator: For all species, a qualitative discussion of population and habitat trend based primarily on:

- Increases in terrestrial sediment input to stream
- Increases in turbidity effects on the risk of displacing of aquatic species
- Changes to pool frequency and quality based on filling by dredge activities or removal of large instream woody material

- Stream bank stability based on disturbance of stream bank
- Degradation to spawning gravels by direct disturbance and infiltration by fine sediments
- Direct mortality or injury to aquatic species Issue Indicator: For species without modeled habitats: qualitative discussion of habitat trend.

Threatened, Endangered, Candidate, and Proposed Species (includes both fish and wildlife)

Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires Federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of threatened, endangered, candidate, or proposed species, or cause the destruction or adverse modification of their critical habitats. All aquatic and wildlife species on the current U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) list for the project areas were evaluated.

Issue Indicator: For all species, a qualitative discussion of population and habitat trend based primarily on:

- Increases in terrestrial sediment input to stream
- Increases in turbidity effects on the risk of displacing of aquatic species
- Changes to pool frequency and quality based on filling by dredge activities or removal of large instream woody material
- Stream bank stability based on disturbance of stream bank
- Degradation to spawning gravels by direct disturbance and infiltration by fine sediments
- Direct mortality or injury to aquatic species
- Disturbance or displacement of species

Sensitive Species (Includes fish, other aquatic animals, and terrestrial/avian wildlife)

The USFS established direction in FSM 2670 to guide habitat management for proposed, endangered, threatened, and sensitive species. Objectives for management of sensitive species include: 1) ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species; 2) ensure that activities do not cause the status of any species to move toward federal listing; and 3) incorporate concerns for sensitive species throughout the planning process, reducing negative effects to species and enhancing opportunities for mitigation. Species on the current Northern Region Sensitive Species List that are known or suspected to occur on the Forests were selected for detailed evaluation if they may occur in the analysis area.

On BLM-administered lands, all offices are to "…manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat" (6840.2.C). The BLM Manual 6840 further describes Bureau sensitive species as species that require special management consideration to avoid potential future listing under the ESA.

Issue Indicator: For all species, a qualitative discussion of population and habitat trend based primarily on:

- Increases in terrestrial sediment input to stream
- Increases in turbidity effects on the risk of displacing of aquatic species
- Changes to pool frequency and quality based on filling by dredge activities or removal of large instream woody material
- Stream bank stability based on disturbance of stream bank and riparian habitats
- Degradation to spawning gravels by direct disturbance and infiltration by fine sediments
- Direct mortality or injury to aquatic species
- Disturbance or displacement of species

Water Quality

The Clean Water Act (33 U.S.C. 1251 *et seq.*) sets goals to eliminate discharges of pollutants into navigable water, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. Sections 303 (d), 313, 401, 402, and 404 of the Clean Water Act, are potentially applicable to the suction dredging operations that might be approved. The potential for terrestrial soil input into the project area streams is also addressed.

Issue Indicator: Increases in terrestrial sediment input to stream: qualitative discussion of habitat trend.

Issue Indicator: Increase in turbidity based on meeting State water quality standards: qualitative discussion of habitat trend.

3.1.2 Environmental Effects

3.1.2.1 Alternative 1: No Action

The No Action Alternative is defined as not approving the proposed Plans of Operation (POOs) for suction dredging in the project areas. Under this alternative, miners who submit POOs for suction dredging in Orogrande and French creeks and the South Fork of the Clearwater River would not receive approval for their POOs.

3.1.2.2 Alternative 2: Proposed Action

Alternative 2 would allow for the approval of proposed POOs in specified reaches of Orogrande and French creeks and the South Fork of the Clearwater River. The POOs would include specified, design criteria which were derived from public comments, government-to-government consultation with the Nez Perce Tribe, and consultation with other governmental agencies. The maximum number of operations approved in any year under this alternative would be 35: 20 for the Orogrande and French creeks and 15 for the South Fork of the Clearwater River. The areas in which POOs may be approved are shown in Figures 2-1 and 2-2.

The action alternatives would include the following operating conditions, design criteria, mitigation measures, monitoring, and reporting for the South Fork of the Clearwater River suction dredging proposal; the Orogrande/French Creek conditions would be similar. These measures include Idaho Department of Water Resources (2015) BMPs for suction dredging, EPA NPDES permitting BMPs, and Forest Service and BLM measures to avoid or minimize the take of ESA species.

A. Mining Operations

The act of placer mining inherently modifies some portion of the stream channel or riparian zone, because substrate, sediment, or soil is moved from one place to another and sorted. As described above, the Agencies do not have the authority to deny this basic activity, but do have the ability to place conditions on the methods, timing, and (to some extent) location of this movement and sorting. Site-specific operating conditions, design features, terms and conditions, and mitigation measures which are required, as applicable, for mining operations and associated activities covered by this consultation include:

1. The relevant Forests or BLM Field Office would require each operator to sign a written statement listing and accepting all mitigation and terms and conditions as part of their NOI/POO prior to acknowledging/approving implementation of their placer mining operation. The operator would also be required to provide the Forests and BLM a description of the specific location(s) of the operation within the delineated operating reach, the surface areas and estimated volume of substrate dredged/disturbed, the number of days/hours per day operated, length/breadth of maximum turbidity plume each day, any sightings of ESA-listed species, and descriptions of unusual events. Field forms would be provided to each operator to facilitate recording of this information.

2. Suction dredging operations would occur only within the wetted perimeter below the ordinary high water line during the IDWR dredge season, and activities which would expand the wetted perimeter (such as streambank alteration) would not be permitted.

3. Prior to dredging or other "may affect" activities, operators must meet with the relevant FS/BLM unit fisheries biologist and/or other relevant staff who will inspect the proposed operation sites. No dredging or other movement or modification of substrate will be allowed in localized areas where ESA-listed salmonids are known to spawn or otherwise concentrate or in likely spawning/early rearing habitat. Miners will also be required to avoid known localized, preferred, and uncommon habitat of salmonid fry, Pacific lamprey larvae, and western pearlshell mussel, including low-velocity backwaters, alcoves, and side channels (as indicated by clay, silt, or sand substrate). The areas that would be required to be avoided during dredging reach delineation would be specific locations within the proposed operation areas rather than extensive stream reaches.

4. Suction dredges would have a nozzle diameter of 5 inches or less and a horsepower rating of 15 horsepower or less.

5. Pump intakes (but not dredge nozzles) must be covered with 3/32-inch mesh screen or other appropriate size.

6. Dredging operations and other instream activities must take place only during daylight hours.

7. Any cobble or small boulders moved from their initial location in the channel (in order to reach bedrock) would be repositioned into its approximate original configuration in elevation and stream channel morphology and all dredge or other spoil piles must be dispersed by the end of the dredging season. In particular, the operator would not move cobbles or small boulders in the stream course to the extent that substantial alterations of the deepest and fastest portion of the stream channel (i.e., the thalweg) persist beyond the end of the dredging season.

8. Operations must not constrict or dam the stream channel or otherwise cause a potential structural barrier to upstream or downstream fish movement; any such substrate arrangements must be dispersed on a daily basis. Dredged or other excavated holes must be backfilled before any new dredge holes are excavated.

   Operations must not constrict or dam the stream channel or otherwise cause a potential structural barrier to upstream or downstream fish movement; any such substrate arrangements must be dispersed on a daily basis. Dredged or other excavated holes must be backfilled before any new dredge holes are excavated.

   Dredging would be excluded from mainstem SFCR areas within 15 feet laterally and 30 feet downstream of fish-bearing tributary mouths, and daily operations would not be permitted to hinder fish access to fish-bearing tributary mouths through disturbance, turbidity, or modifications of channel depth or substrate arrangement.

   For the five SFCR tributaries known or thought to currently support bull trout spawning/ rearing (Johns Creek, Tenmile Creek, Newsome Creek, Crooked River, and Red River) and for American River, dredging would be excluded within 50 feet laterally (up to half the width of the SFCR), and 50 feet upstream and 150 feet downstream of the tributary mouths.

   If miners desire to dredge between 150 and 300 feet downstream of the subject tributary mouths (and on the tributary entrance side of the river), FS/BLM biologists would survey stream habitat quality in these areas prior to delineation of dredging reaches. Based on the combination of tributary “plumes” and high quality stream habitat type (in the form of substantial pools, LWD and boulder cover, etc.) FS/BLM and Level 1 Team biologists would then come to agreement on whether and where additional exclusion areas should be recognized during dredging reach delineation.

9. Dredging would be excluded from mainstem of the South Fork of the Clearwater River areas within 15 feet laterally and 30 feet downstream of fish-bearing tributary mouths, and daily operations would not be permitted to hinder fish access to fish-bearing tributary mouths through disturbance, turbidity, or modifications of channel depth or substrate arrangement.

10. For the five of the South Fork of the Clearwater River tributaries known or thought to currently support bull trout spawning/ rearing (Johns Creek, Tenmile Creek, Newsome

Creek, Crooked River, and Red River) and for American River, dredging would be excluded within 50 feet laterally (up to half the width of the South Fork of the Clearwater River), 50 feet upstream, and 150 feet downstream of the tributary mouths.

11. If miners desire to dredge between 150 and 300 feet downstream of the subject tributary mouths (and on the tributary entrance side of the river), FS/BLM biologists would survey stream habitat quality in these areas prior to delineation of dredging reaches. Based on the combination of tributary "plumes" and high quality stream habitat type (in the form of substantial pools, LWD and boulder cover, etc.) FS/BLM and Level 1 Team biologists would then come to agreement on whether and where additional exclusion areas should be recognized during dredging reach delineation.

12. Per IDWR "letter permit" instructions, dredges must not operate in the gravel bar areas at the tails of pools. Dredges or other types of operation cannot be conducted in such a way that fine sediment (sand or silt) covers portions of gravel bars to a depth of more than 0.5 inch, but fine sediment mixed as a minority component with larger substrate is acceptable.

13. Dredging or other mining activities would not occur within 2 feet of stream banks. Operators must prevent the undercutting and destabilization of stream banks and woody debris or boulders that extend from the bank into the channel and may not otherwise disturb streambanks. If streambanks are inadvertently disturbed in any way, they must be restored to the original contour and re-vegetated with native species at the end of the operating season.

14. Dredges and sluices must not operate in such a way that the current or the discharge from the sluice is directed into the bank in a way that causes disturbance to the bank and associated habitat, deposits sediment against the bank, causes erosion or destruction of the natural form of the channel, undercuts the bank, or widens the channel.

15. Operators may not remove, relocate, break apart, or lessen the stability of substantial in-channel woody debris or instream boulders (>12 inches median diameter) unless it was determined by the appropriate Forests or BLM minerals and fisheries staff that such wood or substrate particles are common enough that re-arrangement would not affect habitat availability or Forests or BLM staff agree that the wood or boulder can be temporarily moved, but re-installed at the same location and elevation by the end of the operating season. The operator would not remove any large down or standing woody debris or trees for firewood within 150 feet of the stream.

16. Operators must visually monitor the stream for 150 feet downstream of the dredging or sluicing operation (this is a condition of the general NPDES permit). If noticeable turbidity is observed downstream, the operation must cease immediately or decrease in intensity until no increase in turbidity is observed 150 feet downstream.

17. No mechanized equipment would be operated below the mean high water mark except for the suction dredge, sluice, or pump itself and any life support system necessary to operate a

suction dredge. No mechanized equipment would be used for conducting operations, including, unless specifically acknowledged or approved in an NOI or POO.

18. Operators must maintain a minimum spacing of at least 800 linear feet of stream channel between active mining operations (i.e., any operating within the same year), or the minimum distance between suction dredges required by the relevant NPDES general permit (whichever is greater).

19. To avoid reducing the quality of critical migratory and holding habitat for adult listed salmonids (as determined by the appropriate Forests/BLM minerals and fisheries staff and discussed with the Level 1 team), operators would be required to avoid operating dredges within 150 linear feet upstream and 50 feet downstream of the highest quality pool within each ¼ mile of the relevant stream channel so that adult bull trout and other salmonids seeking cover and thermal refuge are not disturbed and so that a turbidity plume produced by the dredge does not reduce water quality or deposit sediment in the pool.

20. The suction dredge and other motorized equipment must be checked for leaks, and all leaks repaired, prior to the start of operations each day. The fuel container used for refueling equipment within the active stream channel must contain less fuel than the amount needed to fill the tank. Unless the dredge or other motorized equipment has a detachable fuel tank, operators may transfer no more than one gallon of fuel at a time during refilling. Operators must use a funnel while pouring, and place an absorbent material such as a towel under the fuel tank to catch any spillage from refueling operations. A spill kit must be available in case of accidental spills. Soil contaminated by spilled petroleum products, must be excavated to the depth of saturation and removed from Federal lands for proper disposal.

21. Except for the 1-gallon or smaller container used for frequent refueling of the dredge or other equipment, gasoline and other petroleum products must be stored in spill-proof containers at least 100 feet from any stream channel and at a location that minimizes the opportunity for accidental spillage to reach the a stream channel.

22. Operators would not entrain, mobilize, or disperse any mercury discovered during mining operations. Operators must cease operations and notify the Forests/BLM if mercury is encountered in dredged material. Operators must not use mercury, cyanide, or any other hazardous or refined substance to recover or concentrate gold.

23. Mining operations must shut down immediately if any sick, injured, or dead specimen of a threatened or endangered species is found within 100 linear stream feet of a dredge operation, and the operator must notify the appropriate Forests/BLM minerals and fisheries staff member within 24 hours of the sighting or discovery of an ESA-listed individual in any condition. The relevant Forests/BLM unit would contact the Level 1 Team or FWS Division of Law Enforcement at (208) 378-5333 for the discovery of any dead or moribund individual of an ESA-listed species. Operators and FWS/BLM staff must record the date, time, and location of the sighting or discovery, and, if practical, the cause of fish injury or death. A temporary suspension of operations would allow the FWS/NMFS to investigate whether any

take of ESA-listed species is related to suction dredging operations, and whether any modifications of operations is necessary to minimize take.

24. Operators must also comply with all additional conditions or measures stipulated in all necessary permits, and must comply with the State of Idaho's Placer Mining - Best Management Practices (IDWR, 2004).

25. To prevent the threat of aquatic invasive species, suction dredges, tools used while dredging, and associated equipment must be thoroughly cleaned and dried at least 5 days prior to use on National Forests or BLM-managed land.

B. Mining-Associated Activities

Mining operation sites are typically remote from residential areas, so many operators would need to establish camping and equipment/supply sites in relatively close proximity to the proposed mining site. Camp site, staging areas, and access routes would be proposed by the miner and approved by the appropriate Forests/BLM minerals and fisheries staff /Level 1 team in order to minimize disturbance, reduce impacts to riparian vegetation, minimize the potential erosion into stream channels, and minimize the potential for toxic or sanitary contamination of operational areas.

Site specificity and the level of protection necessary would be evaluated by the Forests/BLM fisheries and minerals staff and would take into account, but may not be limited to the following: presence of listed species, flow regime, floodplain width, riparian characteristics, stream size, and valley shape.

1. Boundaries of camping, equipment and materials storage areas, locations where motorized vehicle use is authorized, and other locations where impacts might be anticipated would be designated and recorded by the appropriate Forests/BLM minerals and fisheries staff and described in the pre-project checklist. Because of the close proximity of many roads and dispersed campsites to stream channels, these proposed camping and activity sites would often be within RHCA default buffers, so the presence of the RHCA is not, in and of itself, a reason to disapprove a miner's proposed site.

2. Existing disturbed areas, such as existing dispersed campsites, road pull-offs, and prisms, would be utilized whenever possible for miner camping and equipment/supply storage, and areas of minimally sufficient size could be cleared outside of default RHCAs if staging or stockpile areas do not exist.

3. Camping areas, paths, and other disturbed sites that are located within RHCAs and that are created or expanded by mining operations or associated activities must be re-vegetated or otherwise restored to their pre-project condition at the end of the mining season.

4. All human waste and gray water must be kept more than 200 feet away from any live water, unless deposited in an appropriate Forests/BLM waste disposal facility. All refuse from

dredging activities must be packed out and disposed of properly. No burning of human waste or garbage is permitted.

5. Proposed motorized vehicle access to mining sites via roads or trails not currently open to the general public must be detailed in NOIs or POOs, but the Agencies would not allow or approve the construction of any new roads or trails. The Agencies may allow motor vehicle access necessary for transportation of equipment or temporary housing on existing roads/trails which are closed to the general public, but only such access that is possible through hand brushing or light road surface maintenance/repair. Any brushing, repair, or maintenance proposed by the claimant that would occur within any RHCA or which has the potential to transmit sediment to stream channels must be specifically approved by the appropriate Agencies' minerals and fisheries staff and Level 1 team and would be inspected by the Agencies during the dredging season.

6. Operators must cease impactive activities during wet periods when project activities are causing excessive ground disturbance (visible ground disturbance due to soil saturation) or excessive damage (muddying/rutting) to roads.

C. Permitting and NOI/POO Processing

Prospective placer miners on Forests' managed public land are required to submit an NOI if they believe that their proposed operation might cause a "significant disturbance of surface resources" and a POO is required if the Forests conclude that "significant disturbance" is a likely outcome. For BLM managed land, a POO is required for any proposed operations in any waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat (CH). In order to allow the proposed operation to conform with NEPA guidance and the conditions of this consultation, the Agencies would:

1. Require the prospective miner to provide sufficient information (in the form of a complete NOI or POO) to allow the appropriate Agencies' unit to determine whether the proposed operation has the potential to affect individuals of an ESA-listed species and, if so, whether the proposed operation is potentially consistent with the BA. In particular, the mining must specify the location, approximate amount of surface area they plan to dredge, and likely dates of operation as well as any operating conditions, design features, and mitigation measures proposed.

2. To facilitate the processing of NOI/POO submissions, the appropriate Agencies' minerals and fisheries staff for each Agency would develop and publicize, with the input of the relevant Level 1 team, its proposed schedule for submission of NOIs or POO applications. The application for a proposed operation would be submitted on a schedule that would allow the Agencies' staff and Level 1 team sufficient time to review and suggest modifications to the operation to ensure that effects to ESA-listed species are minimized, but the NOI/POO must be made at least 2 months prior to the beginning of the IDWR dredge mining season for the relevant proposed operating site. The information in a NOI/POO would be used to delineate operational reaches, establish appropriate monitoring

protocols, and determine appropriate mitigation measures, and is not intended to constrain the timing and location of operations.

3. Require the prospective miner to demonstrate the actual or likely relevant permission/approval of the IDWR, US EPA, and IDEQ of their proposed mining operations, and agree to adhere to the relevant requirements/terms/conditions of this permission/approval prior to POO approval/NOI acknowledgment. To the extent that conditions for a specific activity conflict among the agency rules (e.g., dredge spacing), the most stringent condition would be applied to the POO approval/NOI acknowledgment.

4. If the rules or conditions associated with the relevant IDWR/EPA/IDEQ permits are modified in a manner which could affect ESA-listed species in manner or magnitude not anticipated in this consultation, the Agency would reinitiate consultation with the NMFS and/or FWS.

5. Each of the appropriate Agencies' minerals and fisheries staff would provide the local Level 1 team with a completed pre-project checklist for each proposed mining operation no later than one month prior to the proposed commencement of each operation. The pre-project checklist would describe mining site locations, operational timing, and operational methods proposed in the POOs/NOIs (and potentially modified, with the consent of the prospective miner, to ensure consistency with the consultation conditions).

6. After review of each pre-project checklist, the Level 1 Team may suggest additions or modifications of operation-specific mitigation measures necessary to ensure that anticipated effects to ESA-listed species or CH are no greater than anticipated in this consultation. These additions or modifications would be made a condition of the relevant POO, assuming they are consistent with Agencies' interpretation of regulatory authority.

D. Mining Monitoring and Reporting

To ensure that the South Fork of the Clearwater mining operations are conducted in a manner consistent with the operational conditions associated with the consultation, Agencies would be required to conduct some level of implementation and effectiveness monitoring. In addition, the Agencies' unit would be required to communicate the results of this monitoring to the Level 1 team, FWS/NMFS staff, and other appropriate agencies and entities.

1. Annually, the Level 1 team, after reviewing each pre-project checklist and considering the likelihood of effect on ESA-listed species and CH and the staffing and other resources available to the Agencies' unit, would determine in discussion with the relevant and appropriate Agencies' minerals and fisheries staff the appropriate type and amount of monitoring and reporting necessary for each mining operation and for the Agencies' unit as a whole.

2. As minimum annual site preparation and monitoring activities by the Forests for each mining operation, the appropriate Agencies' minerals and fisheries staff or other Agencies' unit staff would fully delineate (by 15-m reach), photograph, and sketch suction dredging or other placer mining sections after receiving Level 1 team approval of the pre-project

checklist. The photographs and sketches would clearly document the condition of the active channel of each operational site at the upper and lower boundaries of the delineated site, and at least three cross sections within or in proximity to the site which are likely to be modified by the mining operation.

3. The initial maximum length of a delineated mining operation site would be 45 meters (3 reaches or approximately 150 feet). To the extent that the miner demonstrates that a site is of an insufficient size for the operation the appropriate Agencies' minerals and fisheries staff may add additional reaches up to a maximum site length of 90 meters per season. (If the miner proposes to mine more than 90 linear meters of the South Fork of the Clearwater River in a season, then this programmatic consultation would not be valid and individual consultation for the operation would be required).

4. The appropriate Agencies' minerals and fisheries staff or Agencies' staff would coordinate closely with operators to either conduct full-site delineation and any additional pre-project data collection prior to initiation of placer mining at the site or to initially direct operators to specific areas within their dredging sections that would have little or no potential for direct effects on individual ESA-listed fish or enduring habitat effects. The appropriate Agencies' minerals and fisheries staff would also be required to make site visits at all active mining operations during the dredging season to record site information and ensure that miners are complying with NOI/POO conditions. The frequency of these visits would be determined by the Level 1 team, and could depend on the scale of the operation, sensitivity of the operation site, perceived discrepancies between action agency observations and miner reporting, local density of operations, or other logistical, physical, or biological reasons; a minimum of weekly action agency inspections would be the default frequency.

5. The specifics of any additional operation site monitoring would vary with each FS/BLM unit with the location, number, and likelihood of effect of individual mining operations, as well as FS/BLM staff and resources availability and would be determined in discussions between the appropriate Forests/BLM minerals and fisheries staff and Level 1 Team. Common additional monitoring procedures at placer mining sites could include documentation of potential changes in channel morphology, turbidity, or riparian condition as a result of mining, and spawning or fish presence surveys. Common channel morphology monitoring protocols at the mining site and/or in the pool/riffle sequences immediately upstream and downstream from the mined area, before and after mining: (1) Cobble embeddedness estimates and Wolman pebble counts (or other substrate categorization/enumeration methods) at appropriate cross-sections; (2) channel elevation cross-sections; and (3) a longitudinal elevation profile in the stream thalweg. The timing of the pre- or intra-season data full delineation/data collection would depend on streamflow levels, operator readiness, and Forests/BLM staff availability, and may not begin until after the commencement of the IDWR suction dredging season.

6. A post-project monitoring visit of each mining site would also be annually required of the Agencies' unit within 1 month of the end of the IDWR dredging season. At a minimum, post-project photographs would be sufficient in location and number to allow the Agencies' unit

to document any substantial changes in stream channel and riparian conditions when compared with pre-project photos. In particular, project area modifications which are likely to persist into the next steelhead spawning season should be noted.

7. With timing determined by the Level 1 team (but typically early in the dredging season) an interagency field trip would be held annually to review one or more mining operations on each of the Agencies' unit (ideally with the permitted miners present) to inform Level 1 team discussions and determine if any additional mitigation or monitoring measures would be needed to minimize impacts to listed species. In addition to the Level 1 team members, representatives from the IDFG, IDWR, Tribes, and other interested parties would be invited to attend.

8. With timing determined by the Level 1 team (but typically no later than November 30 of each calendar year) each Agencies' unit with active placer mining operations covered by this programmatic consultation would provide annual draft post-project checklists to the relevant Level 1 team and to the State NMFS/FWS office. A final version of these checklists, with any requested supplemental information, would be provided to the Level 1 team and State NMFS/FWS office by December 31 of each year that dredging occurs that describes operator compliance with suction dredging rules, the amount of stream area mined at each site, relevant photos of the mining sites, details about stream bank disturbance and re-vegetation other types of persistent alterations, if any.

9. In particular, as supplemental information provided with the annual checklists, the FS and BLM units would coordinate and calculate the total stream channel area dredged each year and cumulatively under this consultation. Cumulative disturbance area must not exceed 0.2% of the calculated area of the project reach for a period longer than two consecutive years or as an average by program's end.

E. Enforcement of the Agencies' Mining Regulations

The Biological Assessment has been developed to complement a NEPA document in development by the Agencies that would identify and analyze the effects of the BA-specified level and type of suction dredging in the South Fork of the Clearwater River; POOs would be authorized by the Agencies' decision document that would follow from the NEPA document. In 2015 (and to some extent in several previous years) suction dredgers operated in the South Fork of the Clearwater River without benefit of a POO, and so without ESA Section 7 scrutiny of the effects of their activities on ESA-listed species. The development of the NEPA/decision documents and BA necessarily assumes that the Agencies would attempt to block or stop any suction dredging in the South Fork of the Clearwater River that is not consistent with an approved POO.

1. The Agencies would complete NEPA documentation and decisions in 2016 in a timely and sufficient manner to allow the approval of POOs which would conform with the terms of this ESA consultation.

2. Concurrent with monitoring of approved-POO miners (See D.4., above), Agencies' aquatics/minerals staff would attempt to detect and describe non-approved mining in the

South Fork of the Clearwater River. Any such non-approved mining would be reported to the Agencies' law enforcement personnel for disposition.

3. The Agencies, with the potential assistance of the NMFS, FWS, EPA, and Idaho Departments of Water Resources and Fish and Game, would take necessary and prudent enforcement actions to block or stop any suction dredging in the South Fork of the Clearwater River which is not consistent with approved POOs or state permits.

4. As an activity separate from any law enforcement, Forests/BLM aquatics/minerals staff would gather information about the potential effects on ESA-listed individuals and habitat from any non-approved South Fork of the Clearwater River suction dredging. This information would include photographs, measurements, and qualitative observations of the mining site.

As an activity separate from any law enforcement, the Agencies' aquatics/minerals staff would gather information about the potential effects on ESA-listed species and habitat from any non-approved South Fork of the Clearwater River suction dredging. This information would include photographs, measurements, and qualitative observations of the mining site.

3.1.2.3 Direct and Indirect Effects

a. Aquatic MIS Analysis

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all species discussed in this section. Effects on MIS aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on MIS aquatic species of Alternative 2, the Proposed Action, are described below.

Westslope cutthroat trout

See Sensitive Species Analysis, below.

Summer steelhead/Snake River steelhead trout

As discussed above, steelhead in the Clearwater River basin are all summer steelhead, and currently exist within the project area of the mainstem of the South Fork of the Clearwater River, but not in the project area of Orogrande and French creeks. The effects of the project on juvenile steelhead should also generally apply to WCT (in all project areas) and redband rainbow trout (in the Orogrande/French creek project area). Also see the analysis of potential effects of the proposed project on bull trout, Section B.1.b., below.

Potential Project Impacts. Potential adverse effects to steelhead can be direct, for example, redd disturbance or excavation, or indirect, as in increases in fine sediment due to ground disturbance. For this specific proposed project, activities proposed within the stream channel that have the

potential for direct injury to individual steelhead include operation of suction dredges (which can entrain eggs and fish), and changes to stream channel, water quality, and riparian habitat characteristics. The requirements of IDWR and EPA permits, as well as the mitigation and monitoring measures described in the BA, have the potential to substantially reduce impacts on individual eggs, steelhead, and steelhead habitat.

Direct effects. The proposed mining season is July 15 through August 15. As discussed above, adult steelhead are not likely to be present in upper South Fork of the Clearwater River during this period, while eggs are likely to have hatched and sac fry emerged from redds by the beginning of the season. As described above, however, juvenile steelhead rear in their natal streams (or in suitable lotic habitat connected to natal streams) for at least one year before migrating to the ocean, so it appears likely that juvenile steelhead (both recently-emerged fry and older juveniles) have the potential to exist in proximity to every suction dredging operation during the mining season on the mainstem of the South Fork of the Clearwater River. As such, all project activities have the potential to directly affect individuals of the species.

There are several proposed activities that could potentially directly affect individual juvenile steelhead. The suction dredges have an intake and a nozzle that draw in water and discharge it over a sluice before discharge below the dredge. Suction dredging appears to have little entrainment-related effect on adult and parr-sized salmonids because these individuals are alert and rapidly mobile and so are usually capable of avoiding the dredge. If entrained by a suction dredge, though, most larger salmonids are unlikely to be visibly harmed: Griffith and Andrews (1981) intentionally passed 20 juvenile brook trout and 10 juvenile rainbow trout through a 2.5" dredge and observed no mortality during the following 48 hours. Harvey (1986) found juvenile rainbow trout observed after passage through a suction dredge showed no immediate ill effects. Entrainment-induced mortality is more pronounced for salmonid sac fry. Griffith and Andrews (1981) reported an 83% mortality rate of sac fry after entrainment. Of all life-stages, un-eyed eggs are probably the most susceptible to damage from entrainment through dredges. Griffith and Andrews (1981) reported 100% mortality of un-eyed cutthroat trout eggs after entrainment. The intake of the dredge would be required to be screened to prevent entrainment and impingement of steelhead fry, but the nozzle could not be screened and so it is possible that fry may be entrained through the dredge.

So, while advanced (1+ and older) juvenile steelhead would not be likely to be entrained by suction dredges and would be likely to survive even if entrained, recently-emerged steelhead fry would be less likely to be able to avoid suction dredge entrainment and could potentially be more vulnerable to injury if entrained. As noted above, mobile fry tend to prefer shallow stream margins where water velocity is low. These areas are most likely to be either excluded from dredging via mitigation and Forests or BLM instructions or are generally unlikely to harbor much gold, so few fry are likely to be injured by the proposed activities.

Another mechanism for the potential direct injury or mortality to steelhead would be the transmission of toxic substances (gasoline, oil, grease, etc.) into South Fork of the Clearwater River from fuel spills or leaky or dirty equipment, or the generation and downstream transmission of very high levels of fine sediment from disturbed streambed or riparian areas (Muck, 2010). Because of

the mitigation measures, etc. in Section A. 3.5 and the large dilution effect of the flow volume of South Fork of the Clearwater River, contaminants should have little potential to enter the South Fork of the Clearwater River at concentrations that would be harmful to any project area or downstream steelhead that might be present. Fine sediment in the South Fork of the Clearwater River is typically sand and so the generation of directly harmful concentrations of suspended solids or high turbidity should not occur. In addition, dredgers would be required to cease operations if turbidity persists for more than 150 feet below the dredge. Further, South Fork of the Clearwater River in the project reach is wide enough that individual juvenile steelhead should be easily able to avoid harmful sediment plumes if they do occur.

Indirect Effects. Potential indirect effects of the proposed activities on steelhead include fine sediment (i.e., silt and sand) disturbance and re-suspension in stream channels, sediment (gravel and larger) disturbance and mobilization within stream channels, changes in water temperature, and changes in channel morphology. Fine sediment, whether transmitted from outside stream channels or mobilized within stream channels, has the potential to decrease steelhead feeding efficiency, decrease spawning and early rearing habitat quality, reduce macroinvertebrate production, fill in pools, modify hydrologic processes, and have other adverse effects on steelhead habitat.

Reviews of suction dredging studies (Harvey and Lisle 1998, CDFG 2009) note that bank erosion can occur if dredging is too close to the bank, that removal or manipulation of large boulders and large woody debris by miners can affect channel morphology, that substrate entrained or manipulated at a dredging site (particularly at riffle crest/pool tailouts) is relatively mobile in subsequent high-flow events.

While the changes in channel morphology reported in these studies can occur if suction dredging is insufficiently regulated, the mitigation measures proposed for suction dredging in the project areas are intended to eliminate or greatly reduce these effects. For example, Mining Operations Mitigation Measures A. 13 and 14 require miners to avoid dredging in proximity of and to otherwise prevent changes to streambanks.

Additionally, reviews of suction dredging studies (Harvey and Lisle 1998, CDFG 2009) note that scour holes or tailings piles are generally removed by subsequent high-flow events. Observations of suction dredging sites on the NP-CNF (Kenney 2014, 2016) show that high instream flows between the annual dredging operations tend to mobilize sediments so as to “reset” the channel morphology. Because mitigation measures should eliminate or greatly reduce many potential effects on steelhead habitat and because streams are dynamic systems in which stream channels are subject to much greater forces than small-scale dredgers are capable of wielding, long term effects on instream habitat should be minimal.

Some indirect effects of suction dredging on steelhead, if present, however, would be unavoidable. Operation of a suction dredge would temporarily increase turbidity immediately downstream of the dredge (up to about 150 feet) but this plume would typically not span the entire stream. Dredges usually float in the main flow of the stream (thalweg) which causes the sediment plume to also stay within that area. This could reduce the visual capability of the larger fish who typically

occupy the thalweg. This could lead to reduced feeding and growth rates. This would not likely affect the smaller steelhead that occupy the lower velocity areas near the stream margins where turbidity levels would likely be much lower. Research has found the feeding ability and health of salmonids are not significantly impaired by the increased turbidity of suction dredging (Hassler, et al., 1986). While significant increases in turbidity can stress juvenile salmonids, especially through gill irritation, it would not likely cause mortality (Bash, et al., 2001). The duration of effects is also expected to be low because miners typically do not dredge more than about 5 hours per day (Kenney, 2014). The effects to juvenile steelhead are expected to be low and very localized as the fish can move away from the turbid areas to clear water adjacent to or just upstream from the dredge. Royer, et al., (1999) evaluated effects from both 8-inch and 10-inch commercial suction dredge operations. They found that although turbidity and total filterable solids increased downstream of the dredge, the values returned to upstream levels within 80-160 m downstream of the dredge. Turbidity values for the 8-inch dredge were approximately 25 NTUs in the immediate area of suction dredging operations, but fell to less than 5 NTUs within 40 m downstream. IDEQ measured turbidity generation of small-scale suction dredges immediately behind the sluice outlet in the South Fork of the Clearwater River, and noted turbidity increases, but the levels did not exceed the state acute standard of 50 NTU (Stewart and Sharpe, 2003).

Due to the limited number of dredging operations operating at any one time, the small areas being disturbed, and the mitigation and conservation measures mandated under the permit process, the re-suspension of fine sediment by suction dredging would be localized in the affected stream reaches, would not be measurable in South Fork of the Clearwater River below the project reach, and would be nonexistent in the mainstem Clearwater River. Suction dredging activities would cause a short-term increase in fine sediment suspended in project area streams but should have minimal effects on juvenile steelhead trout because suspended sediments and turbidity generated by the dredging operations should be evident only immediately downstream of each operation.

The South Fork of the Clearwater River is relatively wide compared to a suction dredging plume, so the highest levels of suspended solids/turbidity should not affect the full width of the stream channel, providing easy avoidance of these plumes by juvenile steelhead. The major effect to steelhead trout during suction dredging would be site-specific displacement during operations and possible delays in fish movement through the dredge area. Proposed mitigation and conservation measures (Section A. 3.5), especially dredge spacing, would minimize or avoid adverse effects on steelhead.

Fines that would be mobilized in the stream channel would likely stay in place during and for a few weeks or months after the dredging season, because of the annual low-flow period in the South Fork of the Clearwater River. In the long term (i.e., more than a few months after the mining season), hydrologic events would mobilize deposited surface (and some depth fines) within a dredging reach and distribute them downstream as determined by the prevailing hydraulic forces. This mobilization would occur when fines from off-site are already being carried by the river so no biologically significant increase in turbidity or fine bedload should occur.

With the exception of very fine sediments (<1 mm) that would float (mostly as turbidity) downstream of each suction dredge, the majority of the fine sediments (<6.4 mm) would be

deposited as tailings immediately (within about 10 meters, see BA Appendix B and Moose/Lolo Creek reports (Kenney, 2013, 2014 and 2016) downstream of the suction dredge. The fine sediments and other larger substrate materials (<~125 mm) processed by the suction dredge would be mixed in the tailing piles. Several mitigation and conservation measures would require the claimants to return the dredging areas to near pre-project condition via re-processing the tailings through the suction dredge or manually placing boulders and tailings back into the depressions caused by dredging. As noted above, high flows would re-sort stream substrate such that areas in proximity to steelhead spawning areas would likely retain no evidence of suction dredging, although depending on year, location, and individual spawn timing, it is possible that some steelhead may encounter remnants of the previous season's mining efforts. It should be noted, however, that IDWR permit rules and a specific condition of POO approval is that suction dredging is not permitted in gravel bars on pool tailouts, which should minimize the potential for alteration of optimum steelhead spawning habitat.

Aquatic insects and other invertebrates are a primary food source of juvenile steelhead trout and other fish in all streams where they occur, and the presence, distribution, and abundance of aquatic insects are dependent upon water temperature, water quality and chemistry, substrate, and flow. Some aquatic invertebrates in the substrate would be dislodged or otherwise disrupted by dredging operations. Displacement of these invertebrates can create a short-term feeding opportunity immediately downstream for juvenile steelhead and other fish. Over the course of the operating season, dredging may locally deplete some invertebrates that are used as a food source by a variety of fish species. This would occur in the immediate vicinity of the dredged areas. Royer, et al., (1999) evaluated the impacts of small-scale recreational suction dredging on invertebrates approximately five weeks after dredging operations. They found that aquatic invertebrate density and richness were not significantly different between the dredged areas, 35 meters downstream, and upstream reference sites. Aquatic insects in both project areas are expected to fully recover on a site and reach scale after each mining season ends.

Another effective provision entails the prohibition of dredging, processing, or other disturbance of stream banks, which avoids the introduction of terrestrial-based sediments in the streams and retains existing stream morphology. Disturbance or movement of substantial woody debris or streamside tree harvest would also be prohibited by the terms of the POO approvals, as would disturbance of significant boulders. Proposed mitigation and conservation measures designed for these suction dredging operations would minimize or avoid adverse effects of the proposed suction dredging activities on steelhead trout populations.

Regarding water temperature, data described above in Section V documents that desired temperatures are currently exceeded in the South Fork of the Clearwater River during at least some years. The proposed activities should have minimal effect on water temperature because the miners would be prohibited from harming streamside vegetation (i.e., shade) and no other significant source of warming (i.e., dam construction) would be permitted or envisioned. Because miners usually try to excavate down to bedrock, it is possible that interstitial/hyporheic water flow could be intercepted by dredge holes, but the effect of this interception should be to cool the South Fork of the Clearwater River streamflow, rather than warm it.

Summary. Project activities would not benefit steelhead habitat, but project design features, mitigation measures, and associated permit conditions would minimize temporary and short-term sediment transmission and suspension, modifications to stream channel morphology, and effects to stream banks and riparian areas, so potential adverse impacts to South Fork of the Clearwater River steelhead habitat from projects activities would be minor and temporary.

In conclusion, while short-term and localized changes in steelhead habitat would occur, potential long-term effects on steelhead habitat have been eliminated or minimized to biological insignificance through project location, design, and the mitigation measures that would be implemented. The timing of the project, as well as specific mitigation measures regarding project implementation and specific identification by the Forests of areas within the South Fork of the Clearwater River stream channel that would be allowed to be dredged, should eliminate or minimize the potential for individual steelhead to be injured or killed by the proposed activities.

Steelhead Critical Habitat: The designation of all of the South Fork of the Clearwater River project area as critical steelhead trout habitat requires the Forests to consult with the NOAA Fisheries on any agency action which is likely to result in a may affect determination. Of the six primary constituent elements listed in the proposed rule, three elements pertain to the project area (freshwater spawning sites, freshwater rearing sites, and freshwater migration corridors). The potential impacts for the POO approvals on these three elements are summarized below:

- "*Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning; incubation and larval development.*" As noted in the effects analysis above, the proposed suction dredging activities would have localized noticeable effects, but overall these effects are expected to have minimal impacts to the designated habitat in the South Fork of the Clearwater River. Due to various mitigation measures, (i.e. PACFISH riparian buffers, negligible disturbance of stream banks, no introduction of sediments from the stream banks or terrestrial sources, avoidance of spawning areas, and timing of instream activities until after fry emergence), no direct impacts to steelhead redds are expected. In addition, several mitigation measures are geared to minimize effects to areas that may have potential substrate for spawning. Besides the guiding measure to avoid spawning areas, substrate materials moved and/or relocated from the streambed during the mining operation would be placed back into the original location. In addition, gravels would not be sorted and deposited in one area; gravels need to be re-distributed with existing larger substrate materials to avoid creating artificial spawning areas.

- *"Freshwater rearing sites with: i. Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; ii. Water quality and forage supporting juvenile development; and iii. Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks."* The changes to the riparian zone along the mainstem South Fork of the Clearwater River in the project area are considered negligible in relation to the effects on rearing habitat. Some minor trampling of riparian vegetation (via trails) may occur, but these would be infrequent and similar to angler access. No changes in water quantity and floodplain connectivity are expected. As noted above, sediment impacts from suction dredging activities would localized and primarily involve the re-distribution of substrate materials through the re-suspension of

sediments already in the stream bottom; additional sediments from the stream banks or terrestrial sources would not be introduced into the stream. Another mitigation measure minimizes the potential of creating artificial spawning gravels by requiring the claimants to not sort and deposit gravels in one area; gravels need to be re-distributed with existing larger substrate materials to avoid creating artificial spawning areas. While some redistribution of substrate materials are expected, several mitigation measures (i.e. provide adequate water depth in the primary stream channel to allow for fish migration, processed gravels would be re-distributed with existing larger substrate materials to avoid creating artificial spawning areas, boulders and large woody debris would be retained in the stream channel) would minimize the effects to instream cover. No changes to streamside cover (i.e. undercut banks, large woody debris along banks and overhanging the stream) should occur.

- *"Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival."* Suction dredging activities would not create any impediments to steelhead trout migration due to the mitigation measures. Although short-term displacement of fish during dredging operations and possible delays in fish movement through the dredge area are expected, the maintenance of stream flows to allow for fish passage is required (i.e., the operations would provide adequate water depth in the primary stream channel to allow for fish migration, no damming, restoration of substrate conditions). No changes in natural cover and shade are expected within the mainstem of the South Fork of the Clearwater River.

Spring Chinook salmon

As discussed in Section A.4.a, the presence of spring Chinook salmon in the mainstem South Fork of the Clearwater River is likely during the proposed dredging season (and not present in the French/Orogrande Creek project area). Although some adult spring Chinook salmon would be present in the South Fork of the Clearwater River during the dredging season (as they migrate to hatchery traps/natural spawning areas in South Fork of the Clearwater River tributaries), numerically the individual salmon would be predominantly parr, therefore, the discussions in the preceding sections on steelhead trout would inform the majority of likely effects of the project alternatives on individuals of this species and on spring Chinook salmon habitat. Spring Chinook spawning activity has been documented in the upper South Fork Clearwater River and primarily includes the low gradient reach from the mouth of Crooked River to the confluence of American River and Red River. This reach is approximately 3 miles in length and redd counts have varied from 1 to 13 over the past 10 years; the average was 6 redds per year (Craig Johnson, BLM, personal communication 2016). As discussed above, primary spring Chinook spawning occurs in South Fork Clearwater River tributary drainages providing suitable habitat.

The relatively few adult spring Chinook salmon in the South Fork of the Clearwater River during the dredging season would likely find shelter in the deepest pools and so would not likely be directly or substantially disturbed by dredgers, who would tend to avoid these sites. No dredging or other movement or modification of substrate would be allowed in localized areas of suitable spawning substrate or within known spawning/early rearing habitat, which would minimize potential adverse

impacts to spring Chinook salmon spawning habitats. In addition primary spawning periods for spring Chinook salmon would occur after the dredging season (August 15). As described above for steelhead, slight to moderate turbidity could be transmitted to such pools, but not at a concentration that would be harmful to individual fish. Other forms of indirect effect should be minor or transient, and adult Chinook salmon would have the ability (and motivation) to migrate upstream to trapping/spawning tributaries, whether dredging is occurring in proximity to holding pools or not.

As described in Section V.A., for steelhead, the proposed action would cause short-term turbidity and mobilization of fine sediment in the project reach of South Fork of the Clearwater River, and would affect the arrangement of larger substrate, but should not adversely affect habitat for this species in the long-term.

b. Aquatic Threatened, Endangered, Proposed, and Candidate Species

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all TEPC species discussed in this section. Effects on aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on TEPC species of Alternative 2, the Proposed Action, are described below.

The Forest Service and BLM have cooperatively consulted with NOAA Fisheries and USFWS and have prepared a draft-Biological Assessment (Draft BA) for suction dredging on the South Fork of the Clearwater River to assess the effects to ESA-listed fish, designated critical habitat, and Essential Fish Habitat (EFH). Following is a summary of the determinations concluded from this consultation and the draft-BA.

Support analysis and rationale for the above determinations is summarized in the following sections.

Snake River steelhead trout

See discussion above.

Bull trout

Potential Project Impacts. Potential adverse effects to bull trout can be direct, as in redd disturbance by heavy equipment, or indirect, as in increases in fine sediment due to ground disturbance. No activities are proposed within spawning or early rearing habitat in the proposed action, so proposed activities that have the potential for direct injury to individual migrating or rearing subadult or adult bull trout include operation of suction dredges (which can entrain fish), and changes to stream channel, water quality, and riparian habitat characteristics. The requirements of IDWR and EPA permits, as well as the mitigation and monitoring measures described in Section V, have the potential to substantially reduce impacts on individual bull trout and bull trout habitat. See also the steelhead trout discussion above.

Direct effects. As discussed above, and based on sampling data, it appears likely that bull trout would exist in the South Fork of the Clearwater River channel in the project stream reach during the suction dredging season, and possible that bull trout would be rearing in or migrating through a suction dredging reach. Any individual adult or subadult bull trout that would exist in the South Fork of the Clearwater River channel in the project stream reach, and in proximity to a dredging operation during the dredging season could interact with a dredger or dredging operation, so project activities may directly affect individuals of the species, but these individuals are likely to be sparse, as well as alert and highly mobile. As discussed above, daily peak water temperatures in the subject reach of South Fork of the Clearwater River can exceed the desired rearing temperature of 15°C (75 FR 63898) by mid-July (i.e., the start of the dredging season, IDEQ and EPA, 2003), so rearing subadult and adult bull trout in the project area are likely to seek isolated areas of cool water in the mainstem South Fork of the Clearwater River or seek colder tributaries if they are to thrive or survive.

There are several proposed activities that could potentially directly affect individual adult and subadult bull trout. The suction dredges have an intake and a nozzle that draw in water and discharge it over a sluice before discharge below the dredge. Suction dredging appears to have little entrainment-related effect on adult and parr-sized salmonids because these individuals are alert and rapidly mobile and so are capable of avoiding the dredge. Further, Griffith and Andrews (1981) intentionally passed 20 juvenile brook trout and 10 juvenile rainbow trout through a 2.5" dredge and observed no mortality during the following 48 hours. Harvey (1986) found juvenile rainbow trout observed after passage through a suction dredge showed no immediate ill effects. Entrainment-induced mortality is more pronounced for salmonid sac fry. Griffith and Andrews (1981) reported an 83% mortality rate of sac fry after entrainment. Of all life-stages, un-eyed eggs are probably the most susceptible to damage from entrainment through dredges. Griffith and Andrews (1981) reported 100% mortality of un-eyed cutthroat trout eggs after entrainment. Even though no bull trout eggs or fry would be present in the mainstem South Fork of the Clearwater River during the dredging season, the intake of the dredge would be required to be screened to prevent entrainment and impingement of any fish.

Any adult or subadult bull trout present in proximity to an operating dredge, but not actually entrained into the dredge would have the potential for disturbance of normal behavior, but there is no reason to suspect that any actual harm would be associated with the operation of a dredge in typical (and delineated) dredging areas. Mitigation measures (A.8. and A.16.) would prevent dredging from occurring in close proximity to the mouths of bull trout spawning tributaries (although only Tenmile Creek appears to be substantially cooler than the mainstem, Dobos 2015) and high quality pools where adult or subadult bull trout might find shelter, and no dredging would be permitted at night, so little delay in upstream or downstream passage of could be caused by the proposed activities.

Another mechanism for the potential direct injury or mortality to bull trout would be the transmission of toxic substances (gasoline, oil, grease, etc.) into the South Fork of the Clearwater River from fuel spills or leaky or dirty equipment, or the generation and downstream transmission of very high levels of fine sediment from disturbed streambed or riparian areas (Muck, 2010). Because of the Design Features, etc. in Section IV and the large dilution effect of the flow volume of

South Fork of the Clearwater River, contaminants should have little potential to enter South Fork of the Clearwater River at concentrations that would be harmful to any project area or downstream bull trout that might be present. Fine sediment in South Fork of the Clearwater River is typically sand and so the generation of directly harmful concentrations of suspended solids or high turbidity should not occur. In addition, dredgers would be required to cease operations if turbidity persists for more than 150 feet below the dredge. Further, the South Fork of the Clearwater River in the project reach is wide enough that individual juvenile bull trout should be easily able to avoid harmful sediment plumes.

Indirect Effects. Potential indirect effects of the proposed activities on bull trout include fine sediment (i.e., silt and sand) disturbance and re-suspension in stream channels, sediment (gravel and larger) disturbance and mobilization within stream channels, changes in water temperature, and changes in channel morphology. Fine sediment, whether transmitted from outside stream channels or mobilized within stream channels, has the potential to decrease bull trout feeding efficiency, decrease spawning and early rearing habitat quality, reduce macroinvertebrate production, fill in pools, modify hydrologic processes, and have other adverse effects on bull trout habitat.

Reviews of suction dredging studies (Harvey and Lisle 1998, CDFG 2009) note that bank erosion can occur if dredging is too close to the bank, that removal or manipulation of large boulders and large woody debris by miners can affect channel morphology, that substrate entrained or manipulated at a dredging site (particularly at riffle crest/pool tailouts) is relatively mobile in subsequent high-flow events.

While the changes in channel morphology reported in these studies can occur if suction dredging is insufficiently regulated, the mitigation measures proposed for suction dredging in the project areas are intended to eliminate or greatly reduce these effects. For example, Mining Operations Mitigation Measures A. 13 and 14 require miners to avoid dredging in proximity of and to otherwise prevent changes to streambanks.

Additionally reviews of suction dredging studies (Harvey and Lisle 1998, CDFG 2009) note that scour holes or tailings piles are generally removed by subsequent high-flow events. Observations of suction dredging sites on the NP-CNF (Kenney 2014, 2016) show that high instream flows between the annual dredging operations tend to mobilize sediments so as to “reset” the channel morphology.

Because mitigation measures should eliminate or greatly reduce many potential effects on bull trout habitat and because streams are dynamic systems in which stream channels are subject to much greater forces than small-scale dredgers are capable of wielding, long term effects on instream habitat should be minimal.

Some indirect effects of suction dredging on bull trout, if present, however, would be unavoidable. Suction dredging activities would cause a short-term increase in fine sediment suspended in project area streams but should have minimal effects on juvenile bull trout because suspended sediments and turbidity generated by the dredging operations should be evident only immediately downstream of each operation. The South Fork of the Clearwater River is relatively wide [a mean of

67 feet in the project reach (Dobos, 2015)] compared to a typical suction dredging plume (which is limited to 150 in length A.13.), so the highest levels of suspended solids/turbidity should not affect the full width of the stream channel, providing avoidance of these plumes by juvenile bull trout.

Due to the limited number of dredging operations operating at any one time, the small areas being disturbed, and the mitigation and conservation measures mandated under the permit process, the re-suspension of fine sediment by suction dredging would be localized in the affected stream reach, would not be measurable in the South Fork of the Clearwater River downstream of the project reach, and would be nonexistent in the Clearwater River. Suction dredging activities would cause a short-term increase in fine sediment suspended in project area streams but should have minimal effects on juvenile bull trout because suspended sediments and turbidity generated by the dredging operations should be evident only immediately downstream of each operation. The South Fork of the Clearwater River is relatively wide [a mean of 67 feet in the project reach (Dobos, 2015)] compared to a typical suction dredging plume (which is limited to 150 in length A.13.), so the highest levels of suspended solids/turbidity should not affect the full width of the stream channel, providing avoidance of these plumes by juvenile bull trout.

In addition, although not as potentially persistent as changes in channel morphology, turbidity is important from a biological perspective because in extreme cases it can substantially reduce sunlight penetration in the water column enough to reduce photosynthesis of benthic algae, which is the food base for many aquatic insects. Extreme levels of suspended sediment have also been shown to adversely affect salmonids by abrading and clogging gills, reducing feeding and growth, and causing avoidance of turbid areas.

Van Nieuwenhuyse and LaPerreire (1986) reported that primary production was reduced to essentially zero during heavy placer mining (with turbidity in the ~2,000 NTU range) in Birch Creek, Alaska, but that substantial primary productivity persisted at moderate levels of turbidity (up to ~170 NTUs) in other streams. In a related study in Birch Creek, Reynolds et al. (1989) found that Arctic grayling avoided the stream. When placed in holding cages for up to 9 days in Birch Creek, grayling suffered chronic gill hyperplasia and hypertrophy, starvation, and slowed maturation, conditions that would cause delayed mortality. Sigler, et al., (1984) found that salmonids subjected to continuous exposure of turbidities of 25 NTU grew more slowly than controls. Similarly, Cordone and Kelley (1961) and Crouse, et al. (1981) reported reduced growth where sedimentation and turbidity were high.

On the other hand, however, fish were observed feeding in turbid plumes created by suction dredging. Stern (1988) observed young steelhead actively feeding on dislodged invertebrates in turbid dredge plumes, even though clear water was available nearby. Thomas (1985) observed cutthroat trout feeding on insects dislodged during dredging. During underwater snorkeling surveys in Canyon Creek, Hassler, et al., (1986) observed rainbow trout and juvenile steelhead congregating and selectively feeding on benthic invertebrates that were displaced during suction dredging. Harvey (1986) noted that turbidity increases of 25 to 30 NTU did not appear to affect rainbow trout feeding activity in Butte Creek. Brusven and Rose (1981) found no effect of increased suspended sediment on feeding by torrent sculpins. Although turbidity and sedimentation may make it more

difficult for fish to locate food, these effects may be offset by suction dredging exposing or mobilizing invertebrates, which are then readily consumed by fish.

The major effect to bull trout during suction dredging would be site-specific displacement during operations and possible delays in fish movement through the dredge area. On the other hand the noise and on-site activity of small-scale dredging operations does not appear to substantially displace fish. Harvey (1982) stated that dredging apparently did not affect the in-season distribution of adult rainbow trout in the North Fork American River because the numbers of these fish remained virtually constant irrespective of dredging activity. He found no significant differences in the movement of rainbow trout between un-dredged areas and dredged areas. Increased feeding activity downstream of operating dredges (noted above) would also support Harvey's observations. Proposed mitigation and conservation measures (Section V), especially dredge spacing, would minimize or avoid adverse effects on bull trout.

Fines that would be mobilized in the stream channel would likely stay in place during and for a few weeks or months after the dredging season, because of the annual low-flow period in the South Fork of the Clearwater River. In the long term (i.e., more than a few months after the mining season), hydrologic events would mobilize deposited fines out of the project area. This mobilization would occur when fines from off-site are already being carried by the creek, so no biologically significant increase in turbidity or fine bedload should occur.

With the exception of very fine sediments (<1 mm) that would float (mostly as turbidity) downstream of each suction dredge, the majority of the fine sediments (<6.4 mm) would be deposited as tailings immediately (within about 10 meters, see Appendix B and Moose/Lolo Creek reports (Kenney, 2013, 2014 and 2016) downstream of the suction dredge. The fine sediments and other larger substrate materials (~<125 mm) processed by the suction dredge would be mixed in the tailing piles. Several mitigation and conservation measures would require the claimants to return the dredging areas to near pre-project condition via re-processing the tailings through the suction dredge or manually placing boulders and tailings back into the depressions caused by dredging. As noted above, high flows would re-sort stream substrate such that bull trout spawning areas should retain no evidence of suction dredging during the following spring.

The impacts of dredging on aquatic insect populations and other prey sources for bull trout are a concern because the size and vigor of populations is highly contingent upon food supplies, although the generally unsuitable conditions in the South Fork of the Clearwater River likely make this factor less important than in some other streams in the Clearwater River basin. Benthic (i.e., stream bottom) invertebrates are affected by placer mining because the process dislodges or displaces individuals from a dredge site, potentially causing direct mortality through dredge entrainment and through modification of habitat conditions at and immediately below the dredge site. Dredging can, at least temporarily, alter the distribution and abundance of some types of aquatic insects by increasing embeddedness of large substrate and by clogging the interstitial spaces of substrate which the insects inhabit (Harvey, 1982). Dredging can also cause entrainment-induced mortality and increase the vulnerability of invertebrates to predation (Hassler, et al., 1986). The consensus among researchers seems to be that the effects of suction dredging on populations of aquatic insects are highly localized and temporary, especially in streams with highly variable seasonal flows

(Hassler et al. 1986, Griffith and Andrews, 1981, Harvey, et al., 1982, Somer and Hassler, 1992, Thomas, 1985). Hassler, et al., (1986) and Harvey, (1986) concluded that the overall impacts of suction dredging on benthic invertebrates were minimal.

Regarding forage fish, the discussion above regarding potential direct effects to bull trout applies—eggs, and sac fry would likely suffer high levels of mortality, but larger individuals would be less-likely to be harmed. With the small total amount of suction dredging proposed for a 47-mile project reach, the high natural mortality associated with most fish populations, and the likelihood that few bull trout would be present in the mainstem South Fork of the Clearwater River at any time of year, there is no reason to suspect that any likely level of mortality associated with forage fish entrainment would affect bull trout growth or survival.

Another effective provision entails the prohibition of dredging, processing, or other disturbance of stream banks, which avoids the introduction of terrestrial-based sediments in the streams and retains existing stream morphology. Disturbance or movement of substantial woody debris or streamside tree harvest would also be prohibited by the terms of the POO approvals, as would disturbance of significant boulders. Proposed mitigation and conservation measures designed for these suction dredging operations would minimize or avoid adverse effects of the proposed suction dredging activities on bull trout populations.

Regarding water temperature, data described above in Section V documents that desired temperatures are currently exceeded in the South Fork of the Clearwater River during at least some years. The proposed activities should have minimal effect on water temperature because the miners would be prohibited from harming streamside vegetation (i.e., shade) and no other significant source of warming (i.e., dam construction) would be permitted or envisioned. Because miners usually try to excavate down to bedrock, it is possible that interstitial/hyporheic water flow could be intercepted by dredge holes, but the effect of this interception should be to cool the South Fork of the Clearwater River streamflow, rather than warm it.

Summary. Project activities would not benefit bull trout habitat, but project design features, mitigation measures, and associated permit conditions would minimize temporary and short-term sediment transmission and suspension, modifications to stream channel morphology, and effects to stream banks and riparian areas, so potential adverse impacts to South Fork of the Clearwater River bull trout habitat from projects activities should be minor and temporary.

In conclusion, while short-term and localized changes in bull trout habitat would occur, potential long-term effects on bull trout habitat have been eliminated or minimized to biological insignificance through project location, design, and the mitigation measures that would be implemented. Based on sampling and habitat conditions, relative few bull trout are likely to occur in the project stream reaches during the dredging season. Further, the timing of the project, as well as specific identification by the Agencies of areas within the South Fork of the Clearwater River stream channel that would be allowed to be dredged, should eliminate or minimize the potential for individual bull trout to be injured or killed by the proposed activities to a negligible level.

Bull Trout Critical Habitat: The final rule for bull trout critical habitat (CH) includes Orogrande Creek and the South Fork of the Clearwater River and so the proposed activities require the Forest

to consult with the USFWS on any agency action which is likely to result in a may affect determination. The Primary Constituent Elements of bull trout CH follow:

1. *Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.* The conservation and mitigation measures would avoid/minimize impacts to spring, seeps, and groundwater sources through protection of riparian areas adjacent to the project area streams which is considered to be part of project area CH. It is likely that hyporheic flow would be encountered by some of the placer miners within the subject stream channels because dredgers would often remove substrate all the way to bedrock. The miners would be required to refill all depressions in alluvium in the stream channel, however, before excavating depression at other locations in the stream channel, so long-term hyporheic flow should not be adversely affected. Because of minimal to no effects in the CH of project area streams, no impacts would be transmitted to CH in the South Fork of the Clearwater River downstream of the project reach or in mainstem of the Clearwater River, or transmitted from Orogrande Creek to CH in the mainstem of the North Fork of the Clearwater River.

2. *Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including, but not limited to, permanent, partial, intermittent, or seasonal barriers.* Suction dredging activities are expected to have negligible impacts in localized areas regarding effects to migration habitat (see discussion above). The conservation and mitigation measures would minimize impacts to migrating bull trout by limiting the concentration of suction dredges within the project reach of the project area CH, and by prohibiting suction dredging in the vicinity of high-quality holding pools and at the mouths of spawning tributaries. There would also be no night operation of suction dredges, so upstream migrating adults should find unhindered passage for most of the diel period. It is possible, however, that in rare circumstances a turbidity plume could coincide with the presence of a bull trout and cause its exclusion from preferred habitat for a portion of a day.

3. *An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.* Suction dredging activities are expected to have no impacts to terrestrial sources, and negligible impacts in except in localized areas and in the short term regarding macroinvertebrates and forage fish (see discussion above). The conservation and mitigation measures (along with the annual hydrologic cycle) are expected to essentially eliminate long-term adverse changes to CH in the South Fork of the Clearwater River and no impacts would be evident in CH in the South Fork of the Clearwater River downstream of the project reach and in the mainstem of the Clearwater River, nor would effects be transmitted from Orogrande Creek to CH in the mainstem of the North Fork of the Clearwater River.

4. *Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.* Suction dredging activities are

expected to have essentially no long-term adverse impacts to this element in the project area CH. Although conservation and mitigation measures prohibit stream bank disturbance and movement of large LWD and boulders, dredging is expected to have short-term effects to localized pool habitats and substrate conditions which would be erased with the following spring's high flows. Additionally, transmission of any effects to CH in the South Fork of the Clearwater River downstream of the project reach and in the mainstem of the Clearwater River should not occur because of the attenuating effects of distance and dilution, and similarly no effects transmitted from Orogrande Creek to CH in the mainstem of the North Fork of the Clearwater River.

5. *Water temperatures ranging from 2 to 15 C (36 to 59 F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range would depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.* The suction dredging activities proposed would not alter the streamside shade in the project area CH or elsewhere within the project area drainages. The conservation and mitigation measures would avoid/minimize impacts to riparian areas and subsequent changes in shade and water temperatures. Further, transmission of any temperature effects to in the South Fork of the Clearwater River downstream of the project reach and in the mainstem of the Clearwater River should not occur because of the attenuating effects of distance and dilution or transmitted from Orogrande Creek to the mainstem of the North Fork of the Clearwater River.

6. *In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable to bull trout would likely vary from system to system.* Even though water temperatures in the project area CH would likely make spawning attempt by bull trout futile, the project conservation and mitigation measures are intended to be comprehensive and would also prohibit suction dredging in pool tail-outs and other obvious areas with apparently suitable spawning substrate for westslope cutthroat trout and other salmonid species. Where dredging is allowed, sediment impacts in the project area CH would be localized and primarily involve the re-distribution of substrate materials through the re-suspension of sediments already in the stream channel; additional sediments from the stream banks or terrestrial sources would not be introduced into the stream. Nevertheless, surface fine distribution would increase for a few dozen feet below the dredged areas, at least until the next high flow event. Another mitigation measure minimizes the potential of creating artificial spawning gravels by requiring the claimants to not sort and deposit gravels in one area; gravels need to be re-distributed with existing larger substrate materials to avoid creating artificial spawning areas. Other than localized, short-term changes to water quality (turbidity) and substrate conditions (sediment levels) in the vicinity of suction dredging activities, no long-term changes in substrate conditions are expected. Once again, transmission of any effects to CH in the South Fork of the Clearwater River downstream of the project reach and in the mainstem of the Clearwater River should

not occur because of the attenuating effects of distance and dilution, and the these areas downstream of the project reach are also not bull trout spawning habitat. Transmission of effects from Orogrande Creek to the mainstem of the North Fork of the Clearwater River would similarly not occur, and the North Fork of the Clearwater River is also not bull trout spawning habitat.

7. *A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departures from a natural hydrograph.* The hydrographs of all project area streams are un-regulated and natural, except for the effects of roads and timber harvest on water yield and routing. Therefore the project area streams and their tributaries that have or potentially have the ability to support bull trout populations would maintain relatively favorable hydrographs and in any event, the proposed actions would have no effect on flow volume or timing.

8. *Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.* As noted in the effects analysis above, suction dredging effects on water quality in project area CH would typically be short term and minimal in scope, although local increases in turbidity and suspended solids would occur. While the proposed activities would have short-term and localized effects on water quantity which individual bull trout may experience or react to, the conservation and mitigation measures are expected to minimize to biological insignificance any adverse changes to stream habitat conditions, and transmission of any effects to CH in the South Fork of the Clearwater River downstream of the project reach and in the mainstem of the Clearwater River should not occur because of the attenuating effects of distance and dilution transmitted from Orogrande Creek to the mainstem of the North Fork of the Clearwater River.

9. *Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from bull trout.* With the exception of a few brook trout and, possibly, a few smallmouth bass, no non-native fish species are known to occur in the project area. The presence of a few individuals of these species in the mainstem of the South Fork of the Clearwater River or in Orogrande Creek should have little to no effect on bull trout survival or reproduction, and in any event, the proposed activities would not promote the survival or increased distribution of these fish.

Snake River fall Chinook salmon.

As discussed above, fall Chinook salmon can be seasonally present in the South Fork of the Clearwater River project area, but not in the Orogrande/French Creek project area.

Suction dredging and associated activities would be unlikely to cause direct effects to fall Chinook salmon because no individuals of any lifestage should be present in the South Fork of the Clearwater River within the project reach during the mining period. As described above, fall Chinook salmon would not enter the South Fork of the Clearwater River until a month or more after the end of the dredging season, so suction dredging would not have any direct effect on

individual salmon that might enter the project reach. Young-of-the-year fall Chinook salmon should migrate out of the South Fork of the Clearwater River by the end of June, and so would not be present in the project reach during the dredging season.

As described in this document for steelhead and bull trout, the potential indirect effects of suction dredging within the project reach of the South Fork of the Clearwater River primarily involve changes in substrate conditions and instream cover, turbidity, and suspended sediment levels. These changes could affect spawning and rearing habitat for salmonids, including any fall Chinook present in the South Fork of the Clearwater River in the months following the dredging season. Any substrate changes and redistribution of fine sediment produced by suction dredging would be localized and should not be measurable in stream reaches immediately downstream of the project area. Changes in water quality conditions may also occur in localized areas during project operations. Although some dredge tailings may superficially appear to be potentially suitable spawning substrate for fall Chinook salmon, miners would be required to ensure that substrate affected by mining is in a condition similar to that of undisturbed adjacent substrate and so should not be substantially more attractive, less stable, or more susceptible to scour or movement during subsequent high flow events. Effects to the project reach of the South Fork of the Clearwater River, the remainder of the South Fork of the Clearwater River, and the mainstem Clearwater River would be discountable to nonexistent because of lack of temporal coincidence with active mining and because the quality of spawning habitat should not be affected (see discussions for steelhead trout and bull trout), so biologically significant effects should not be transmitted to individuals or critical habitat in the Clearwater River.

a. Aquatic Sensitive Species

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all Sensitive species discussed in this section. Effects on aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on Sensitive species of Alternative 2, the Proposed Action, are described below.

Westslope cutthroat trout and redband (rainbow) trout

As noted in A.4.c., above, the habitat requirements of WCT and redband trout are quite similar to those of juvenile steelhead, although in large-scale sympatry redband trout seem to prefer higher-order streams than do WCT, or perhaps WCT are competitively excluding redband trout from low-order streams. In any event, potential effects on WCT and WCT habitat in both project areas and the effects on redband trout and redband trout habitat in the Orogrande/French creeks project area would be similar to those on juvenile steelhead and juvenile steelhead habitat. For westslope cutthroat trout and redband trout (sensitive species) it was concluded from the above analysis that implementation of the proposed action would result in a determination of “may impact individuals or habitat, but would not likely lead to a trend toward federal listing or cause a loss of viability of the population or species”.

Pacific lamprey, Western pearlshell mussel

As noted in section A.4.d, western pearlshell mussels are present in some abundance in at least some of the South Fork of the Clearwater River project area; for the Orogrande/French project area, the presence of the species has not been confirmed, but is possible based on presence in the North Fork of the Clearwater River. Pacific lamprey may be present in the South Fork of the Clearwater River, but would not occur in the Orogrande/French project area.

Direct effects to western pearlshell mussels in the project areas, if present, should be relatively rare and limited in spatial and temporal scope, while indirect adverse effects should be eliminated or minimized by project design features and effects of peak streamflows. There is some risk that mussels may be displaced by dredging activities, but this should be infrequent because individuals of the species tend to prefer sandy substrates that are not preferred by miners. Individual mussels that are entrained through dredges should be sturdy enough not be to be directly injured, but this entrainment would displace these sessile animals from their existing micro-habitat. Any mussels entrained would typically be free floating until they are deposited in a location where they should be able to re-anchor themselves or move (or be moved by subsequent high streamflows) to such a location; during the interim, they may be more susceptible to predation by birds and mammals. There is also some risk that entrained individuals might be buried in dredge tailings to a depth where they may be unable to move and would eventually perish. There is no survey data available to assess potential impacts to mussel populations as a result of suction dredging operations, but because the areas where mussels are most likely to occur would be excluded from dredging.

The potential effects to Pacific lamprey should be similar to those on mussels, and should also be considered low because miners prefer to dredge in areas with large substrate and because likely juvenile lamprey habitat would be largely excluded from dredging reaches. Suction dredges are sometimes used to sample juvenile lampreys (Steeves, et al., 2003), and a recent study assessed the effects of using electrofishing gear in conjunction with a suction dredge on larval Pacific lamprey (Uh, et al., 2015) showed no short-term mortality or other adverse effects attributable to the collection. Although this sampling technique is not completely analogous to suction dredge mining, the results of this study complements the results of entrainment studies of salmonids (described above in Section B.1.a) and demonstrates that lampreys entrained through dredge equipment would not necessarily be directly harmed.

For Pacific lamprey and pearlshell mussels (sensitive species) it was concluded that implementation of the proposed action based on the above analysis would result in a determination of “may impact individuals or habitat, but would not likely lead to a trend toward federal listing or cause a loss of viability of the population or species”.

Coho Salmon

Coho salmon are a BLM Idaho designated sensitive species. Refer to following for effects analysis for this species in the following section (Essential Fish Habitat).

b. Essential Fish Habitat

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years).

The direct and indirect effects of the project would potentially occur for all species discussed in this section. Effects on EFH of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service, BLM, and EPA regulations. Effects on EFH of Alternative 2, the Proposed Action, are described below.

Spring Chinook salmon, fall Chinook salmon

Potential effects of the project alternatives on these species are discussed under "MIS" or “TEPC”. There should be limited to no effects on EFH in the South Fork of the Clearwater River for these species under either alternative.

Coho salmon

The presence of this species in the project area is more unlikely than that of fall Chinook salmon, while the potential for effects on individuals (if present) or habitat is similar to that of spring Chinook salmon. See the discussions for these species, above, but neither of the project alternatives is likely to have an appreciable effect on EFH for this species in the South Fork of the Clearwater River.

c. Wildlife MIS Analysis

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all species discussed in this section. Effects on MIS aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on MIS aquatic species of Alternative 2, the Proposed Action, are described below.

Belted kingfisher

Foraging kingfishers could potentially be disturbed by dredging operations. Nesting should not be affected since brood rearing is complete by the time the dredging season begins. Suction dredging should have no effect on local populations because nearly all of the project reaches would not be the subject of mining attention, and because foraging kingfishers would be are likely to use areas of mining operations in the majority of hours when no mining would occur.

d. Wildlife Threatened, Endangered, Proposed, and Candidate Species

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all TEPC species discussed in this section. Effects on aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on TEPC species of Alternative 2, the Proposed Action, are described below.

Canada lynx

Analysis of the effects of the planned actions on Canada lynx habitat indicated the project complies with the NRLMD Record of Decision of March 2007 (USDA Forest Service, 2007) in that it would not affect habitat within a lynx habitat analysis unit. In terms of potential effects on lynx, even if the project were within an LAU, there would be no timber harvest and little mature vegetation or woody debris disturbance, so lynx denning or foraging habitat would not be adversely affected.

No change to lynx foraging or denning habitat, prey species, or probability of occurrence would likely occur as a result of the proposed project. The proposed project would have no adverse impacts on lynx connectivity between suitable habitats occurring within LAUs or between LAUs. While there may be an increase in human activity in the project area for the duration of the project implementation, because the dredging area flows next to a state highway and heavily-used recreation areas any such increase would likely be within the range of annual variation, and it is unlikely that any nominal increase in human activity would be significant in terms of disturbance of any individual lynx in the unlikely of occurrence in or near the project area during the summer-fall implementation period. No snow plowing is being authorized and no snow compacting activities are proposed. No change to migratory or dispersal corridors would occur. In summary, the proposed project should biologically insignificant to individual lynx and to lynx habitat.

e. Wildlife Sensitive Species

The period for this analysis includes temporary effects (e.g., those occurring during the one-month dredging season of any one year), the short-term (one to ten years), and the long-term (>10 years). The direct and indirect effects of the project would potentially occur for all Sensitive species discussed in this section. Effects on aquatic species of Alternative 1, the No Action Alternative, should be non-existent, assuming enforcement of Forest Service and EPA regulations. Effects on Sensitive species of Alternative 2, the Proposed Action, are described below.

Harlequin Duck and Willow Flycatchers

Nesting and rearing harlequin ducks could be disturbed by dredging operations and nesting, rearing, and foraging could extend into the dredging seasons for both project areas. It is also likely that suction dredging operations would be more disruptive of harlequin duck behavior than other common human activities in these areas because of the extended and noisy nature of mining activities. Although harlequin ducks could move their nesting/rearing site in response to mining disruption, there is some potential for reduced survival of ducklings as the result of such a move. However, because the project areas are in areas of relatively high human disturbance (which the ducks would avoid when selecting a nesting site) and because miners are unlikely to dredge in the harlequin duck-preferred high gradient stream reaches (because of the large size of substrate in these areas of the South Fork of the Clearwater River and Orogrande and French creeks), the likelihood of the proposed activities affecting harlequin ducks is low.

Willow Flycatchers could be disturbed or displaced by dredging operations. Critical habitat niches for this species includes riparian habitats (e.g., nesting, rearing, and foraging). Disturbance and displacement of species occupying riparian habitats for rearing and foraging would be the primary effect. Dredging operations would occur after the nesting season and no adverse disturbances to

occupied nest sites are expected to occur. Discountable effects would be expected to occur to riparian habitats from dredging activities.

For Harlequin Duck and Willow Flycatcher it was concluded from the above rationale that implementation of the proposed action would result in a determination of "may impact individuals or habitat, but would not likely lead to a trend toward federal listing or cause a loss of viability of the population or species".

Western Toad, Idaho Giant Salamander, and Coeur d'Alene Salamander

Western toads, Idaho giant salamander and adult Coeur d'Alene salamanders (the latter only in the Orogrande and French creeks project area), could be inadvertently killed by miners moving equipment through the riparian area. Juvenile toads and salamanders in the stream may be killed or injured by dredging activities. Although toads are common in riparian areas, they are also relatively wary and mobile and likely could avoid trampling or other sources of mechanical injury. The likelihood of injury to toad eggs or tadpoles is low because the habitat favored by these lifestages (standing water or quiet backwaters) would be placed off-limits to dredging (and would not be desirable dredge sites, anyway). In addition, toad eggs would already be hatched prior the beginning of the dredging season. Although adult and juvenile Idaho giant salamander and Coeur d'Alene salamander would potentially be harmed, because of their preference for large substrate or bedrock areas, and mostly out of mainstem streams, they would be very unlikely to occur in areas that would be desirable for dredging or other mining activities. Idaho giant salamanders may potentially be harmed or killed by dredging activities, overall, impacts are expected to be negligible.

For western toad, Idaho giant salamander, and Coeur d'Alene salamander (sensitive species) it was concluded from the above rationale that implementation of the proposed action would result in a determination of "may impact individuals or habitat, but would not likely lead to a trend toward federal listing or cause a loss of viability of the population or species".

Migratory Birds

No adverse effects to migratory birds or preferred habitats would occur from implementation of Alternative 1. Existing conditions and trends would continue for migratory birds and suitable habitats.

Implementation of the Proposed Action would have varying levels of direct and indirect effects on migratory species, with primary effects to species that are riparian and aquatic habitat dependent. Overall, dredging activity would avoid nesting periods for migratory birds, however, potential does exist for some late nesting activity but such is expected to be limited. Primary effects to migratory bird species would occur from short term disturbance or displacement from associated suction dredging activity. The majority of the stream and river reaches within the analysis area would not have suction dredging activity. Disturbed or displaced migratory bird species could utilize available suitable habitat that does not have suction dredging activity. Project design measures would avoid or minimize potential adverse impacts to migratory birds preferred aquatic and riparian habitats. Riparian habitat effects from the proposed action are expected to be discountable.

Water quality and soils

For Alternative 1, there would be no direct effects to the South Fork of the Clearwater River or the Orogrande and French project areas resulting from a lack of dredging activities. The mainstem of the South Fork of the Clearwater River would continue to be listed as impaired for sediment and water temperature from its mouth upstream to the confluence of Red and American Rivers, while the mainstem of Orogrande Creek would also continue to be listed as impaired for temperature.

For Alternative 2, through approval of POOs, no terrestrial sediment would be disturbed from streambanks or other sources outside the stream channel with this alternative. Therefore there would be no direct or indirect increase in instream sediment into the South Fork of the Clearwater River or Orogrande and French creeks study areas. Dredging approved under this alternative would be limited to the wetted perimeter of the stream channel. Dredging would only relocate existing instream sediment by pulling it from the substrate, passing it through the suction dredge, and replacing it into the creek. It would then settle out to a visibly-undetectable level within 150 feet from the dredge. No new sediment would be added. This alternative would comply with the Clearwater National Forest Plan Stipulation Agreement and the Nez Perce National Forest Plan "upward trend" requirement, even though this agreement and plan do not directly apply to suction dredging. Cobble embeddedness levels would decrease where dredges operate and may increase slightly downstream from dredge holes as sediment is moved from one location to the other. Decreases and increases would be localized and therefore overall cobble embeddedness levels are not expected to change on a larger scale.

Turbidity levels would increase slightly downstream while the dredges are working in all project activity areas. Idaho turbidity standards require that background turbidity levels not be increased by more than 50 NTUs instantaneously or 25 NTU for more than 10 days (IDEQ and EPA, 2003). The degree that turbidity is increased by dredging is variable and dependent on the amount of very fine streambed sediments and the velocity of the stream flow. Small dredges typically do not create long plumes of turbidity. Suction dredges operate primarily in areas with larger substrate where heavier particles and gold are typically found. The larger particles tend to settle rapidly, which limits sediment plumes to short distances from the sluice outlet. Thomas (1985) found that suspended sediment concentration returned to background levels 35 feet downstream from the dredge. IDEQ measured turbidity generation of small-scale suction dredges immediately behind the sluice outlet in the South Fork of the Clearwater River, and noted turbidity increases, but the levels did not exceed the state acute standard of 50 NTU (Stewart and Sharp, 2003). Although sporadic plumes were sometimes visible 150 feet downstream, samples collected around 150 feet downstream of the suction dredge all met Idaho State standards and were below the 5 NTU over background turbidity requirement (Stewart and Sharpe, 2003). As a result of the above, 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). They are not expected to exceed State standards based on past monitoring and the fact that even during the high flows of spring when turbidity highest, standards were not exceeded. Operators must cease dredging if visible turbidity extends more than 150 downstream of the dredge. As noted above, the limit of 15 suction dredge operations within the mainstem South Fork of the Clearwater River proposed in Alternative 2 is

based on the limit imposed for the EPA's NPDES General Permit, which itself was derived from the sediment TMDL for the mainstem South Fork of the Clearwater River (IDEQ and EPA, 2003).

As discussed above, it is possible that elemental mercury (from natural sources or as the result of historic placer mining activities) currently buried in stream channel substrate could be excavated or entrained through suction dredges with Alternative 2. Mining operations mitigation measure #19 (Section A.3.5), however, requires miners to stop dredging and notify the Agencies if they discover mercury in their excavations. Agencies' staff would investigate any mercury discovery and apply or require the application of IDEQ Best Management Practices (IDEQ, undated) to recover the mercury. It is possible that some mercury may be inadvertently dispersed into the water column by dredge miners, but the IDEQ, in their Section 401 Clean Water Act review of the EPA's General NPDES permit (in 2013) certified that there is "reasonable assurance" that suction dredging following the terms and conditions of the NPDES permit and conditions of the 401 certification would comply with the applicable Clean Water Act requirements and Idaho Water Quality Standards.

Kenney (2014, 2015, and 2016) reviewed Nez Perce-Clearwater National Forest-regulated suction dredging operations in three streams, with the exception of some obvious movement of substrate materials at various mining sites, no riparian or stream bank alterations were observed and the mining sites were substantially restored during the dredging season and nearly completely by peak flows in succeeding years. Kenney (2016a) also reported on dredging holes and tailings piles left by unauthorized miners in the South Fork of the Clearwater River from the summer of 2015, follow-up observations of these sites in 2016 should be instructive regarding channel "reset" in this relatively large and powerful stream.

There would be no measurable project related change to the listed State water quality parameters of bacteria, nutrients, sediment, or temperature in either project area stream. All human waste must be at least 200 feet from the stream channel which would minimize bacteria or nutrient input. Sediment levels would not be increased as mentioned above. Impacts to soil in existing dispersed and developed camping areas would not be noticeable. Dredging activities would not affect stream temperature as they function no differently than the flowing water in the stream. Flowing streams typically have relatively constant temperatures throughout the water column unless there are large ground water inputs into the system. Both the South Fork of the Clearwater River and Orogrande and French creeks are relatively shallow during the summer and are not expected to have stratified layers of temperature due to the constant movement of the stream. Dredge holes would be substantially refilled as operations progress, so penetration of interstitial or hyporheic flows in either project area would be temporary and very site-specific.

3.1.2.4 Cumulative Effects

The past, present, and reasonable foreseeable activities in an analysis area and surrounding non-Federal lands are used to assess the potential cumulative effects of the proposed action and alternative on each of the resources assessed in this report. As noted above, the area for cumulative effects analysis would be the project reaches and riparian zones of the South Fork of the Clearwater River, and Orogrande and French creeks (Figure 2-2), because effects are not

expected to extend beyond the project areas. Cumulative effects particularly relevant to this analysis include for the South Fork of the Clearwater River:

- Gold has been placer-mined in the South Fork of the Clearwater River since its discovery in the 1860s. Early mining operations primarily involved shovels and sluice boxes, but, according to the Idaho Department of Environmental Quality's (IDEQ) Subbasin Assessment (2003), large-scale hydraulic and dredge mining began around 1900 in the South Fork of the Clearwater River and its tributaries (primarily Newsome Creek, American River, Red River, and Crooked River). The IDEQ (2003) noted that a lull in large-scale mining in the South Fork drainage occurred between about 1910 and 1930, but in 1930, large-scale mining projects resumed and continued through the late 1950s. Gravel tailings/spoil areas are present and obvious along the north side of the South Fork of the Clearwater River in portions of the upper end the project area. More recent (authorized and unauthorized) mining has generally been with suction dredges, which have left no or less-obvious remnants.

- As mentioned in A.4.a, above, IDFG and the Nez Perce Tribe have adult capture/spawning and juvenile rearing/acclimation facilities in the South Fork of the Clearwater River drainage for steelhead and Chinook salmon, and have stocked coho salmon and Pacific lamprey at points in the past. The IDFG Red River facility is upstream of the cumulative effects area, and the IDFG Crooked River facility is essentially opposite the cumulative effects area, so migrating adults and juveniles associated with these facilities would be present in the South Fork of the Clearwater River for portions of each year. Ongoing and foreseeable activities that might have the potential to affect aquatic species within the analysis area include primarily timber harvest and associated road construction, road decommissioning and other rehabilitation, motorized recreational activities, and firewood gathering. Game species are subject to angling under State regulations.

- Extensive stream and riparian habitat restoration activities are on-going or planned for the lower Crooked River, American River, and Newsome Creek, each of which contributes to the project area.

- Ongoing and foreseeable activities that might have the potential to affect aquatic species within the analysis area include primarily include timber harvest and associated road construction, road obliteration and other rehabilitation, motorized recreational activities, and firewood gathering. Game species (including steelhead, salmon, cutthroat, and rainbow trout) are subject to angling under State regulations, and it would be possible for bull trout to be caught inadvertently in the South Fork of the Clearwater River.

Cumulative effects particularly relevant to this analysis include for Orogrande and French creeks:

- Placer mining was common in most to the North Fork of the Clearwater River basin in the late 19th and early 20th century, and such mining occurred with high intensity in French Creek, upper Orogrande Creek, and some tributaries. Some suction dredging (authorized or unauthorized) in the mainstems of French and Orogrande creeks continues in the present day.

- As described in A.4.a, IDFG has no public records of fish stocking the cumulative effects area, although some rainbow trout were stocked into lower Orogrande Creek up until the 1969. There was likely unrecorded stocking of rainbow trout in French Creek in the mid-20th century, and the ubiquity of brook trout in the upper Orogrande Creek subwatershed makes it very likely that this species was directly introduced to the drainage.

- Ongoing and foreseeable activities that might have the potential to affect aquatic species within the analysis area include primarily include timber harvest and associated road construction, road decommissioning and other rehabilitation, motorized recreational activities, and firewood gathering. Game species (WCT and redband trout) are subject to angling under State regulations and it would be possible for bull trout to be caught inadvertently in the project streams.

a. Aquatic MIS

Westslope cutthroat trout, summer steelhead trout/Snake River steelhead, spring Chinook salmon

Alternative 1 would have no cumulative effects on WCT and other aquatic MIS species because there would be no direct or indirect effects to these species from this alternative. Local or regional populations would not be affected.

The area considered for cumulative effects of Alternative 2 are the mainstems of the South Fork of the Clearwater River and Orogrande/French Creeks and their riparian zones within the project areas. These areas were selected because most fish within these streams during the dredging season are likely to remain there throughout the season, so activities outside these areas would not directly or indirectly affect individual fish and therefore would not contribute to cumulative effects, although activities on private lands within the project areas would potentially affect these species. The time frame considered is the 78 days for Orogrande and French Creek and 32 days for South Fork of the Clearwater River during the dredging season.

Past, on-going, and foreseeable activities have or would continue to adversely affect aquatic MIS species in the cumulative effects areas and the populations of all of these species and their habitats have been and likely would continue to be compromised, although current and future adverse effects are likely much reduced from that in the past. However, there would be minimal cumulative effects to aquatic species from implementation of Alternative 2 on injury, displacement, and turbidity in the South Fork of the Clearwater River and Orogrande and French creeks. Dredging is expected to annually affect a maximum of up to about 0.2% of the South Fork of the Clearwater River and 1.5% of the Orogrande and French Creek mainstems for an average about 5 hours each day during the dredging season, although not all dredging operations would be active during any day or hour. Dredging also implements design features to minimize effects to fish species, although the potential for adverse effects to individuals exists.

b. Aquatic Threatened, Endangered, Proposed, and Candidate Species

Snake River steelhead trout, bull trout, Snake River fall Chinook salmon.

Alternative 1 would have no cumulative effects on Snake River steelhead trout, and other aquatic threatened species because there would be no direct or indirect effects to these species from this alternative. Local or regional populations would not be affected.

The area considered for cumulative effects of Alternative 2 are the mainstems of the South Fork of the Clearwater River and Orogrande/French Creeks and their riparian zones within the project areas. These areas were selected because most fish within these streams during the dredging season are likely to remain there throughout the season, so activities outside these areas would not directly or indirectly affect individual fish and therefore would not contribute to cumulative effects, although activities on private lands within the project areas would potentially affect these species. The time frame considered is the 78 days for Orogrande and French Creek and 32 days for South Fork of the Clearwater River during the dredging season.

Past, on-going, and foreseeable activities have or would continue to adversely affect aquatic MIS species in the cumulative effects areas and the populations of all of these species and their habitats have been and likely would continue to be compromised, although current and future adverse effects are likely much reduced from that in the past. However, there would be minimal cumulative effects to aquatic species from implementation of Alternative 2 on injury, displacement, and turbidity in the South Fork of the Clearwater River and Orogrande and French creeks. Dredging is expected to annually affect a maximum of up to about 0.2% of the South Fork of the Clearwater River and 1.5% of the Orogrande and French Creek mainstems for an average about 5 hours each day during the dredging season, although not all dredging operations would be active during any day or hour. Dredging also implements design features to minimize effects to fish species, although the potential for adverse effects to individuals exists.

c. Aquatic Sensitive Species

Westslope cutthroat trout and redband (rainbow) trout

See MIS analysis above.

Pacific Lamprey and western pearlshell mussel

Alternative 1 would have no cumulative effects on Sensitive Pacific lamprey and western pearlshell mussels because there would be no direct or indirect effects to these species from this alternative. Local or regional populations would not be affected.

The area considered for cumulative effects of Alternative 2 are the mainstems of the South Fork of the Clearwater River and Orogrande/French Creeks and their riparian zones within the project areas. These areas were selected because most lampreys and mussels within these streams during the dredging season are likely to remain there throughout the season, so activities outside these areas would not directly or indirectly affect individual fish and therefore would not contribute to cumulative effects, although activities on private lands within the project areas would potentially affect these species. The time frame considered is the 78 days for Orogrande and French Creek and 32 days for South Fork of the Clearwater River during the dredging season.

Past, on-going, and foreseeable activities have or would continue to adversely affect Pacific lamprey and western pearlshell mussel in the cumulative effects areas and the populations of all of these species and their habitats have been and likely would continue to be compromised, although current and future adverse effects are likely much reduced from that in the past. However, there would be minimal cumulative effects to aquatic species from implementation of Alternative 2 on injury, displacement, and turbidity in the South Fork of the Clearwater River and Orogrande and French creeks. Dredging is expected to annually affect a maximum of up to about 0.2% of the South Fork of the Clearwater River and 1.5% of the Orogrande and French Creek mainstems for an average about 5 hours each day during the dredging season, although not all dredging operations would be active during any day or hour. Dredging also implements design features to minimize effects to fish species, although the potential for adverse effects to individuals exists.

d. Essential Fish Habitat

See MIS and TEPC analyses for Chinook salmon in B.2.a. and b., above. Effects on EFH for coho salmon would be similar to those described for Chinook salmon.

e. Wildlife MIS, Threatened, Endangered, Proposed, and Candidate, and Sensitive Species

Alternative 1 would have no cumulative effects on the subject birds, mammals, and amphibians because there would be no direct or indirect effects to these species from this alternative. Local or regional populations would not be affected.

The area considered for cumulative effects of Alternative 2 are the riparian zones along the mainstems of the South Fork of the Clearwater River and Orogrande/French Creeks. Activities outside these areas may directly or indirectly affect individual special-status wildlife and therefore contribute to cumulative effects, and activities on private lands within the project areas would potentially affect these species, but all of these animals are protected by law and should be at minimal risk during the time frame considered: 78 days for Orogrande and French Creek and 32 days for South Fork of the Clearwater River during the dredging season.

The area considered for riparian wildlife cumulative effects is all areas within 300 feet (i.e., the default RHCA buffer width) of the dredging activities in the streams. This area was chosen as most human activities such as dredging, camping and fishing would occur in this area. Wildlife and humans would not generally be visible to one another because of trees, shrubs and other vegetation, minimizing disturbance. The risk of wildlife being inadvertently killed by project activities outside the riparian zone is non-existent. As described above, direct effects are minimal and of short duration. There would be no indirect effects. Considering minimal direct and no indirect effects, cumulative effects would not occur. There are no other activities within the project areas that contribute to cumulative effects.

Migratory Birds

Alternative 1 would have no cumulative effects on migratory birds in the project areas because no activities are proposed to take place.

Alternative 2 (Proposed Action): The analysis area evaluated for migratory birds cumulative effects includes the areas occurring within 300 feet (default RHCA buffer) of the project area reaches of the South Fork Clearwater River, and Orogrande and French Creek. Past, on-going, and foreseeable future activities would have varying levels of impact on migratory birds and preferred habitats within the project area (i.e., riparian and aquatic habitats and adjacent areas). The proposed action alternative, in combination with past, present, and reasonably foreseeable future actions would have negligible effects to migratory birds and habitats within the cumulative effects analysis area; which includes the project area and associated river and stream segments.

f. Water quality and soils

Alternative 1 would have no cumulative effects on water quality or soils in the project areas because there would be no direct or indirect effects to these aspects of the environment from this alternative. Downstream reaches of rivers below the project areas would not be affected.

The area considered for cumulative effects of Alternative 2 are the mainstems of the South Fork of the Clearwater River and Orogrande and French creeks and their riparian zones within the project areas. These areas were selected because effects of the project activities are not expected to be detectable below the project reaches, and therefore would not contribute to cumulative effects, although activities on private lands within the project areas would potentially affect these environmental attributes. The time frame considered is the 78 days for Orogrande and French creeks and 32 days for South Fork of the Clearwater River during the dredging season.

Past, on-going, and foreseeable activities have or would continue to adversely affect water quality and soils in the project stream reaches or riparian zones and these environmental attributes are likely to continue to be compromised, although current and future adverse effects are likely much reduced from that in the past. However, there would be minimal cumulative effects from implementation of Alternative 2 on turbidity, mercury, and other water quality attributes in the South Fork of the Clearwater River and Orogrande and French creeks or on soils attributes in the project area riparian zones. Dredging is expected to annually affect a maximum of up to about 0.2% of the South Fork of the Clearwater River and 1.5% of the Orogrande and French creeks mainstems for an average about 5 hours each day during the dredging season, although not all dredging operations would be active during any day or hour. Dredging also implements design features to minimize effects to water, although the potential for short-term, localized adverse effects exist. Effects to soils in riparian zones should be indistinguishable from other Forests activities such as camping and fishing.

3.2 Botany

3.2.1 Affected Environment

The immediate riparian area along the South Fork Clearwater River is predominantly a mix of forested and shrub wetlands, with drier upland species predominating on southern aspects and as vertical distance from the floodplain increases. The lower canyon has conifers (primarily ponderosa pine and Douglas fir) in predominantly 2-story stands, with large and frequent grassy openings. The upper canyon, because of its higher elevation, is mixed conifers, including some large lodgepole

pine. The immediate riparian areas along Orogrande and French creeks are similar to the upper South Fork Clearwater River canyon, although the project area is of a higher elevation and wetter and the forest communities being dominated by grand fir and western red cedar.

There is no suitable habitat and no documentation of Macfarlane's four-o'clock and Spalding's catchfly in the project areas. On the Nez Perce – Clearwater National Forest these ESA-listed species are limited to the Salmon River basin. These species occur on BLM managed lands in the Snake River and Salmon River drainages. Similarly, the ESA-listed water howellia may be found in some locations in Latah and Clearwater Counties, but is not known to occur in the project area nor does any potential habitat exist. Whitebark pine generally does not occur below approximately 6,800 feet on the forest. This elevation is well above the proposed activities. Because these species do not occur in the project area, they would not be considered further in this analysis.

There is a low chance of occurrence of Forest Service sensitive plant species in the immediate stream channel that may be affected by the proposed activities. Occasionally this area may support low occurrence of Idaho barren strawberry, green-bug-on-a-stick, light moss, naked rhizomnium, and Constances' bittercress; however, these species are generally limited to areas of forested vegetation above and outside of the immediate channel area. Short style toefieldia prefers cobbles within and along the edge of the stream channel of larger rivers in our area. It is not known from any of the streams involved in this project; however it does occur intermittently along the North Fork Clearwater, which collects Orogrande Creek. There is a possibility that this species might extend into the lower reaches this stream and there could also be undiscovered occurrences along the South Fork Clearwater.

In addition to the above listed species, various adjacent upland habitats potentially providing access and camping for miners may support Payson's milkvetch (upper south fork only), moonworts, deerfern and clustered lady's-slipper.

Washington monkeyflower, is the only BLM sensitive plant (Type 2) that may potentially occur in the project area and prefers seepy outcrops that are moist and shaded. BLM Type 3 plants, which include species that have range-wide or state-wide imperilment with moderate endangerment. BLM Type 3 plants which may occur in the general project area include Payson's milkvetch, Case's corydalis, Hall's orthotrichum moss, goldback fern, western ladies' tresses, and Idaho barren strawberry. Discussion above for Forest Service sensitive plant species, is also applicable for Type 2 sensitive species and Type 3 plant species. Overall, expected impacts to BLM sensitive plant species is none to low potential from the proposed activities.

3.2.1.1 Methodology

Botanists have reviewed this project, used available information on species distributions and habitat (using one or more of the following: topo maps, aerial photos, field reconnaissance, previous surveys, habitat modeling), and then assessed the potential for impacts for all federal listed and Region 1 sensitive species. The species potentially affected are discussed in the effects section above. If the project was determined to have no effect or no impact, this determination was based on one or more of these criteria:

- Habitat for the species is not present in the project area.
- Habitat for the species is present but the species does not occur in this area.
- Habitat for the species is present, the species occurs or may occur in the project area, but the project would not have any direct, indirect or cumulative effects on this species.

3.2.1.2 Regulations

The Biological Evaluation process (FSM 2672.43) is intended to conduct and document activities necessary to ensure proposed management actions would not jeopardize the continued existence or cause adverse modification of habitat for species that are listed or proposed to be listed as Endangered or Threatened by the U.S. Fish and Wildlife Service and species listed as Sensitive by the U.S. Forest Service, Region 1. Direction in FSM 2670.5 states, "Biological Evaluation, A documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed or sensitive species."

Threatened and endangered species are designated under the Endangered Species Act. It is the policy of Congress that all Federal departments shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of this purpose (ESA 1531.2b). Threatened and endangered species included in this analysis are consistent with the current U.S. Fish and Wildlife Service species list. The only federally listed species known or suspected to occur on the Forest are Spalding's catchfly (*Silene spaldingii*) and MacFarlane's four-o'clock (*Mirabilis macfarlanei*); both limited to parts of the Salmon River basin and water howellia (*Howellia aquatilis*), which is limited to the lower Palouse River basin. Populations of Spalding's catchfly and MacFarlane's four-o'clock have documented occurrences on BLM manged lands in the Snake and Salmon River drainages, no documented occurences are known to occur in the South Fork of the Clearwater River subbasin. Whitebark pine (*Pinus albicaulis*) is a candidate for federal listing and is also addressed in the biological assessment.

Sensitive species are defined in the Forest Service Manual (FSM 2670.5) as "those plant and animal species identified by the Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers, density, or habitat capability that reduce a species/existing distribution." In FSM 2670.22, management direction for sensitive species is in part, to ensure that species do not become threatened or endangered, because of Forest Service actions and to maintain viable populations of all native species. The most recent update to the sensitive species list was recently released and is effective in May 2011. The Forest Service must evaluate impacts to sensitive species through a biological evaluation.

The BLM's national Special Status Status Species (SSS) policy (6840.04 section D.4 and D.6), provide that State Directors are responsive for "designating Bureau sensitive species within their respective jurisdictions, and at least once every five years, reviewing and updating the Bureau sensitive species list…". On BLM-administered lands, all offices are to "…manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat" (6840.2.C). The BLM Manual 6840 further describes Bureau

sensitive species as species that require special management consideration to avoid potential future listing under the ESA.

This specialist report contains the necessary determinations section and discussion of effects for sensitive plant species to serve as the Biological Evaluation for rare plants as directed by the streamlined BE processes outlined in the FSM. This report also discloses and documents the effects to the threatened plant species that potentially occurs on the Nez Perce-Clearwater National Forest, thus this report also serves as the Biological Assessment for this project.

3.2.2 Environmental Effects

3.2.2.1 Alternative 1: No Action

There would be no impacts to any sensitive plant species under this alternative because there would be no activities. There would be continued direct localized and minor impacts on habitats and sensitive plants should they occur from streamside campers, berry-pickers, fishermen and others. There would be no cumulative effects since they can only arise from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. There are no actions associated with this alternative.

3.2.2.2 Alternative 2: Proposed Action

Foot traffic from miners in riparian areas may trample individual sensitive plants as they move their equipment to and from the stream channel. The risk would be low since the area potentially disturbed would likely be limited to a few trails along the creeks and to existing camp sites. Since miners would typically move their dredges in and out of the stream once or a few times during the season, the majority of effects would be related to foot traffic and not to the movement of equipment. Most of the sensitive riparian plant species do not occur on disturbed sites. The risk would also be low due to the limited numbers of occurrences and potential habitat in the project areas.

Idaho strawberry, Payson's milkvetch and Constances' bittercress generally do well with some disturbance and often occur in edge habitats and intermittent conditions such as dispersed camping sites and trails (Crawford, 1980; Lorain, 1990). So effects for these species can be mixed. For the other species, the potential effects at the site would generally be negative if present, though impacts would generally be uncommon or small. At the population level within these large basins there would be no threats to overall species viability.

If short style toefieldia should be present along these streams it could be impacted or displaced by the proposed mining activities. Currently there are no known occurrences in these areas. Also since this species prefers habitats of transition between or just above high and low water line it can be assumed its biology is adapted to alterations and changes to the habitat. The majority of suitable habitat for this species is protected along and within riparian areas of the Clearwater basins larger branches.

3.2.2.3 Cumulative Effects

The area considered for all aquatic cumulative effects analyses include the streamside areas where dredgers camp and access their claims with their equipment. Other forest visitors also use these areas for camping and fishing. These areas are the most likely to contain mesic forest and riparian sensitive plants that could be disturbed by their activities. The time frame considered is the suction dredging season.

The grazing of cattle potentially occurs along a portion of the South Fork Clearwater River where stream exclosures are not in place. While this activity potentially overlaps in time and space with the mining season and the cumulative effects area, mitigations have greatly lessoned impacts. Livestock use could result in trampling or disturbance of sensitive plant species. Due to safety concerns livestock are let out and collected each season at points far above the river bottom and highway 14. When cows do occasionally wander to the bottoms the permittee moves them back upslope. Thus, the impacts from cattle grazing are very low.

After potential grazing, recreational uses such as camping, fishing, hiking, berry picking among others along the streams included in this project are the only other activities that overlap in time and space with the mining season and the cumulative effects area. These activities could result in trampling or disturbance of sensitive plant species should they occur. The potential for cumulative effects would be slightly increased due to these activities, but due to low occurrence and lack of significant use off of existing trails or camping areas, the threats to habitats and species in these areas are expected to be low. Cumulatively, livestock and recreational uses in combination with the proposed activities is not expected to lead toward overall viability threat or the listing of any of the sensitive plant species.

3.3 Recreation Resources

3.3.1 Affected Environment

Roaded Natural includes any area within ½ mile of “better than primitive” roads (100% of project area). They are natural-appearing settings that may have modifications that range from being easily noticed to strongly dominant to the observers within the area. Highly designed roads or highways may be common. Encounters with other people are frequent.

The South Fork of the Clearwater River attracts recreationist year-long and due to its Roaded Natural setting and easy access along Highway 14; motorized use dominates the river corridor. The area also serves as a jumping off point for many trails near the project area, dispersed and developed campgrounds along Highway 14, and numerous hunting and fishing opportunities along the 60 miles of river. The area is also popular for summer swimming and spring kayaking.

French and Orogrande creeks are tributaries of the North Fork of the Clearwater River and also within a Roaded setting with paralleling roads along the creek corridors. Orogrande and French creeks have similar recreation activities as the South Fork of the Clearwater River, however, with a shorter season of use due to elevation and snow fall.

3.3.1.1 Methodology

The Recreation Opportunity Spectrum describes recreation settings and opportunities, and is used to evaluate recreation potential for an area. The Nez Perce National Forest ROS inventory is described in the Forest Plan FEIS (1987), Chapter III, p. 8-9. Forest Plan Management direction for this area is to manage for "Roaded Natural" recreation opportunities.

3.3.1.2 Regulations

No known regulatory requirements pertaining to recreation and visual qualities pertinent to this project.

3.3.2 Environmental Effects

3.3.2.1 Alternative 1: No Action

Existing recreation opportunities would not be affected.

3.3.2.2 Alternative 2: Proposed Action

There should be minimal or no impacts to total recreation visitation and no change in the ROS in either watershed under this alternative. Most people camping in the immediate vicinity of current suction dredging operations are miners, so the impacts of noise from the suction dredge pumps and/or compressors would not be expected to be annoying, or not as annoying as they would be to non-miners. Because non-mining campers generally prefer other areas for camping while mining is occurring, and authorizing a limited number of suction dredge operations it is likely there would be no increase or decrease in campsite concentration in the project area, and thus no overall change in the number of recreational visitors.

The physical presence of suction dredges and associated noise during operation may detract from the recreational fishing experience during the mining season for some fisherman. However, due to the paralleling roads and highways, recreational solitude is typically not experienced in the South Fork of the Clearwater River, Orogrande, and French creeks drainages.

3.3.2.3 Cumulative Effects

Existing recreation opportunities would not be affected.

3.4 Wild and Scenic River Eligibility

3.4.1 Affected Environment

The South Fork Clearwater River extends 60 miles with the project reach extending approximately 47 miles starting near the junction of Idaho Highways 13 and 14 and ending at the head of that stream at the confluence of the Red and American rivers. About 6 miles of this reach flows through private land and is not a part of the project.

3.4.1.1 Methodology

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.

3.4.1.2 Regulations

Eligibility - Nez Perce Forest Plan

The Nez Perce Forest Plan (Specialist Report Appendix P-1) identified the South Fork of the Clearwater River as being an eligible waterway for inclusion into the National Wild and Scenic Rivers System. Nez Perce Forest Plan identified Fisheries, Geologic, Recreation and Scenic as the Outstandingly Remarkable Values (ORVS) deserving protection. It also classifies the eligibility of the South Fork of the Clearwater River under the "recreation" classification along the 60-mile river corridor. "Recreation" river areas are those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The Nez Perce Forest Plan (Amendment No.1, October1988) states that no management activities would be carried out that would alter the eligibility or potential classification of study waterways. The Plan amendment also states that eligible rivers are subject to mineral exploration and claim location. Mitigation and reclamation measures would be included in approved plans to minimize surface disturbance, sedimentation, and visual impairment to the extent possible under 36 CFR 228. To date, the Nez Perce-Clearwater National Forest has not conducted a suitability study of the South Fork of the Clearwater River and only identified the reach as eligible.

Eligibility - Forest Service Regulations

Forest Service Regulations (USDA Forest Service, 2006) addressing the management of eligible Wild and Scenic Rivers include those within the Forest Service Handbook 1909.12 Section 80. Only those directives related to eligible rivers, mining and its associated activities on recreation rivers are included below.

The following protection measures apply to interim management of Forest Service-identified eligible or suitable rivers (sec. 5(d)(1) of the Act). The Act does not provide these eligible rivers any protections until such time they are accepted by Congress and legislatively added to the National System. The August 2, 1979, Presidental Directive stated that "all agencies must "take care to avoid or mitigate adverse effects" to rivers identified in the Nationwide Rivers Inventory." Eligible rivers are therefore afforded protections under individual Land Management Plans and agency authorities.

This direction applies until a decision is made on the future use of the river and adjacent lands through an Act of Congress or a change in eligibility or suitability status from a future study. Forest Service-identified eligible and suitable rivers must be protected sufficiently to maintain free flow and outstandingly remarkable values unless a determination of ineligibility or non-suitability is made.

A Responsible Official may authorize site-specific projects and activities on National Forest System lands within identified eligible or suitable river corridors when the project and activities are consistent with the following interim protection measures. These interim protection measures that apply to this project are included below:

1. Water Resources Projects. A water resources project is defined in 36 CFR part 297 as the construction or development of water supply dams, diversions, flood control works, and other water resources projects that affect the river's free-flowing characteristics.

   For Forest Service-identified (sec. 5(d)(1)) eligible or suitable rivers, water resources projects proposed on these segments are not subject to section 7(b) of the Act; however, these projects shall be analyzed as to their effect on a river's free-flow, water quality, and outstandingly remarkable values, with adverse effects to be prevented to the extent of existing agency authorities (such as special-use authority).

2. Minerals.

   Locatable Minerals. Forest Service-identified eligible or suitable river are subject to regulations in 36 CFR part 228 and must be conducted in a manner that minimizes surface disturbance, sedimentation, pollution, and visual impairment.

3.4.2 Environmental Effects

Outstandingly Remarkable Values, Water Quality and Free Flow

Suction dredging along the South Fork of the Clearwater River would not eliminate all of the outstandingly remarkable values throughout the 60 mile river corridor. Impacts would be site specific to an individual or group of claims. There may be site-specific impacts to the Fisheries, Geologic, Recreation, and Scenic ORVs, but the entire 60 miles of river would not be affected. Surface use and occupancy and surface and in-stream alterations may impact ORVS and water quality in the following ways:

NOTE: more detailed analysis on water quality, free flow characteristics and fisheries can be found in the hydrology and fisheries report within this EA.

- Interference with existing recreation patterns and uses at established campsites and dispersed recreation sites may be affected.

- The presence of the miner may have the potential to affect the navigation of watercraft floating the river. South Fork of the Clearwater River in the dredging reach has a mean width of 60-70

feet, however, the dredging activities would occur during a low-flow period, so there should be few boaters on the South Fork of the Clearwater River while the miner and dredge are present.

- Activities outside of the active channel (riparian/floodplain) continue to occur as recreationist access dispersed and developed campsites and fishing spots. The increased effects by miners would be minimal and temporary as foot access and dredge transportation to the wetted channel increase by up to 15 POOs. Any observable effects on vegetation, soil properties, and floodplain properties stemming from POOs approval would be minor and passively reversible.

- Alteration of Scenic ORV from ground disturbance and the presence of mining equipment. Because of required spacing of the operations, the 300-ft linear dredging limit for each operation, and the substantial length of the South Fork of the Clearwater River project area, visible effects of the dredging would not be significant at the river reach scale.

- Miners generally attempt to excavate stream channel substrate down to bedrock, so, during the dredging season there would be pits created in the substrate up to 6-10 feet deep and tailings piles created that would potentially reach to the river surface. Miners would be required to replace most substrate by the end of the season, so pits and tailings piles would be substantially reduced from the end of the dredging season until rearranged by peak flow forces. On a project reach scale, annual modifications of the stream channel would likely account for < 1% of stream channel area, and no more than 2%. There would be no expected long-term changes in stream channel geometry, slope, or form as it relates to the Geologic ORV.

- The only form of water quality modification likely resulting from the proposed POO approval would be generation of slight to moderate amounts of turbidity during dredging operations. There would be strict restrictions on the amount and extent of turbidity allowed, and the spacing of the relatively few dredgers should prevent cumulative or extended visible turbidity plumes.

- There may be site-specific effects to free-flow characteristics with moderate scale suction dredging, however the definition of a “recreation” river classification under Wild and Scenic definition recognizes that some impoundment or diversion may be present. Therefore, free flow characteristics should not alter the eligibility of the South Fork of the Clearwater River.

In order for a river to qualify as an eligible Wild and Scenic River it must possess at least one ORV and be free-flowing. Mining at any scale within the identified claims would not affect eligibility of the entire South Fork of the Clearwater River. The Nez Perce Plan states that eligible rivers are subject to mineral exploration and claim location. Mitigation and reclamation measures would be included in approved plans to minimize surface disturbance, sedimentation, and visual impairment to the extent possible under 36 CFR 228.

Additionally the following terms, conditions, monitoring, and reporting associated with the proposed project include the following:

- Restriction of suction dredging operations to 15 annually, and only within the IDWR window

- Restrictions on the amount and location of the dredging; no excavation into streambanks, or outside of the wetted channel
- Weekly or more-frequent inspections to ensure adherence to terms and conditions
- Stream channel reclamation requirements and restrictions on dredge spacing and turbidity generation

3.5 Cultural Resources

3.5.1 Affected Environment

There are several recorded heritage resource sites in these areas. Effects to traditional resources, which may or may not be eligible for the National Register of Historic Places (NRHP), are identified during consultation with the affected groups, such as Native American tribes. Until a formal determination of National Register eligibility is made, all recorded and unrecorded heritage resource sites are treated as eligible for nomination to the NRHP. In addition, the Cottonwood RMP designated the BLM lands in the vicinity of the easternmost segment of the South Fork of the Clearwater River, near Elk City, as an area of critical environmental concern to protect cultural resources – specifically historical mining sites.

Compliance with Section 106 of the NHPA, including survey and eligibility evaluation of potentially affected resources, is being completed. Mitigation measures would require involvement during the planning and monitoring of activities by an Agency archaeologist. Other measures would 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 ensure compliance with POOs, including avoidance of historic properties. The Agencies' regulations and policy require that discovery of any potential heritage resource be left alone and reported to the District Ranger, BLM Field Manager and the Agency archaeologist. Should a suction dredge operator uncover a resource while working, work would be stopped immediately, pending inspection by the Agency archaeologist. If the Agency archaeologist identifies NRHP-eligible resources, mitigation measures would be identified during consultation with the Idaho SHPO and, if Native American resources are potentially affected, Tribes.

In summary, project operating conditions, design criteria and mitigation measures would minimize potential effects to heritage resources. If any resources were discovered during project implementations, project activities would cease pending inspection by an Agency archaeologist. Mining POOs include regulations found in 36 CFR 228.4e and 36 CFR 800 to protect cultural resources.

Twelve (12) known cultural resource sites are presently located within the bounds of the suction dredging project area of potential effect (APE) within the lands administered by the Nez Perce-Clearwater National Forest.

Potential cultural sites within the project area:

- 12 sites total
- 5 historic mining sites, 3 prehistoric sites, 2 historic camps, 1 cabin, 1 ranger station (includes a prehistoric site component)
- 2 NRHP eligible sites
- 7 NRHP not eligible sites
- 3 unevaluated site (treated as eligible until determined otherwise)

All 12 of these sites are present within the suction dredging APE. Only the 2 NRHP eligible and 3 NRHP unevaluated cultural sites would be discussed further in this document.

Based on the background research reviews performed for this project, twelve (12) previous archaeological surveys have been performed within the APE for the currently proposed suction dredging project. These investigations were completed between 1979 and 2014 and were performed by the US Forest Service (n = 11) and by Interior West Consulting (n = 1). These projects include recreation improvements (n = 4), mineral exploration (n = 1), range improvements (n = 1), analysis area review (n = 1), vegetation treatment (including timber sales, n = 4), and engineering (n =1). These investigations have resulted in the documentation of 5 newly identified cultural resource site locations. The Idaho SHPO concurred with findings of No Effect for the submitted projects.

Four known cultural resources are recorded on BLM administered lands within the project area. All consist of historic dredge tailings that are eligible to the National Register of Historic Places. Complete intensive cultural resource inventories have not been previously conducted in the area of potential effect for the proposed action.

3.5.1.1 Methodology

The data presented here is a result of reviewing existing information available for the proposed project located on Forest Service Managed Lands on the Salmon River and Red River Ranger Districts, South Zone, as well as the North Fork Ranger District, North Zone, Nez Perce-Clearwater National Forests. Documents reviewed include previously completed Heritage Resource Inventory reports for the project area, historic property site records, and historic forest maps. All of this background reference material is on file at the Nez Perce-Clearwater National Forest's Office in Grangeville and the Supervisor's Office in Kamiah, ID.

Data on BLM administered lands were collected through a review of a background research of site records, cultural inventory reports, and other reports. All BLM data is located at the Cottonwood Field Office in Cottonwood, Idaho.

The Suction Dredging Project area has seen numerous changes in land use patterns through human involvement. From its earliest Native American inhabitants who lived in and traveled through this vicinity utilizing its resources, to the families who homesteaded and settled in the area, to the minerals exploration from the mid-1800s into the early 1900s, the region witnessed several waves of occupation through time. Each group interacted with the environment in their own way, extracting various products and manipulating it to their benefit when possible.

3.5.1.2 Regulations

The proposed action has been reviewed and is determined to be in compliance with the management framework applicable to this resource. The laws, regulations, policies and Forest Plan and BLM Resource Management Plan provide direction applicable to this project and cultural resources are as follows:

The USDA Forest Service and BLM are mandated to comply with the National Historic Preservation Act (NHPA) of 1966 [Public Law 89-665] and its amendments. Section 106 of the NHPA requires that Federal agencies with direct or indirect jurisdiction over Federal, federally assisted, or federally licensed undertakings afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity for comment on such undertakings that affect properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) prior to the agency's approval of any such undertaking: [36 CFR 800.1]. Historic properties are identified by a cultural resource inventory and are determined to be either eligible or not eligible by the cultural resource specialist in consultation with the State Historic Preservation Office (SHPO). Sites that are determined to be eligible are then either protected in-place or adverse impacts must be mitigated.

Each cultural site is evaluated against four strict standards in a process to determine that properties historical significance for possible inclusion in the National Register of Historic Places. These criteria address specific elements that may be contained within that specific property. The quality of significance is judged using the four following evaluation criteria as defined by the U.S. Department of the Interior, National Park Service Bulletin 15 (1995:2). These criteria are also found in the Code of Federal Regulations, 36 Part 60.

Criteria A: The quality of significance is associated with events that have made a significant contribution to the broad patterns of our history; or

Criteria B: That are associated with the lives of persons significant in our past; or

Criteria C: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criteria D: That have yielded, or may be likely to yield, information important in prehistory or history.

The previously completed field inventory and subsequent consultation with the Idaho SHPO for those projects highlighted above as occurring within the currently proposed project area have met the requirements of the regulatory framework, namely compliance with NHPA.

3.5.2 Environmental Effects

3.5.2.1 Alternative 1: No Action

Under this alternative, current land management plans would continue to guide management of the project area.

Twelve known cultural resource sites on USFS administered land are present within this no action alternative. Two of these sites have been determined to be eligible for inclusion in the NRHP. Three sites have not yet been evaluated as to their historical significance and are treated as NRHP eligible (significant) until such time the historical significance is determined. Seven NRHP not eligible (not significant) sites are also present within the project area. On BLM administered lands there are four known sites which are all considered eligible to the National Register of Historic Places. All of the sites within the project area would continue to exist in their present location. There would be no known direct, indirect, or cumulative effects upon cultural resources if this alternative was implemented other than the natural deterioration through environmental processes.

3.5.2.2 Alternative 2: Proposed Action

Under this alternative, current land management plans would continue to guide management of the project area. This alternative would perform the following proposed actions within the Suction Dredging Project area.

Proposed project activities include the approval of proposed Plans of Operations (POOs) in specified reaches of Orogrande Creek, French Creek, and the South Fork of the Clearwater River. These POOs would include specific design criteria which were derived from public comments, government to government consultation with the Nez Perce Tribe and consultation with other government agencies. The maximum number of operations approved in any year under this proposed action is 35. The active mining claims and areas where POOs may be approved are shown in Figure 2-1 and 2-2 for Orogrande and French creeks and the South Fork of the Clearwater River.

Twelve known cultural resource sites are present within the proposed project area. Two of these sites have been determined to be eligible for inclusion in the NRHP. Three sites have not yet been evaluated as to their historical significance and are treated as NRHP eligible (significant) until such time their historical significance is determined. Seven NRHP not eligible (not significant) are also present within the project area. On BLM administered lands there are four known sites which are all considered eligible to the National Register of Historic Places.

All of these sites have been impacted in the past to varying degrees through road construction and continued maintenance, recreation improvements and use of those locations, and natural environmental impacts. By following the protection measures/design criteria identified below, implementing the proposed action alternative would result in a “no adverse effect” upon the five cultural resource sites.

Protection Measures and Design Criteria

There are a total of twelve known cultural sites on USFS administered lands within the proposed action alternative for this project. Five known cultural resource sites needing protection are present within proposed project areas. Protection from proposed action activities for these five sites in the form of avoidance is recommended for these resources. Additional protection measures are listed in the table below. There are no mitigation or protection measures required for the seven sites that are NRHP not eligible.

The cultural resources located on BLM administered lands would be evaluated for impacts and appropriate design measures developed based on the nature of the proposal described in the submitted POO. The review includes the actual suction dredging as well potential associated activities such as camping. The currently known resources were created by historic dredge mining that has previously and extensively disturbed these areas.

Table 3-4: Protection measures and design criteria for the five historically significant sites within the proposed action alternative.

Site #	Site components	Protection measures/design criteria
10CW28	Prehistoric lithics and historic ranger station	Avoid mining activity of the stream banks at this location, avoid any historic structures that may be present, avoid ground disturbance not associated with instream suction dredging
10CW196	Historic mining	Avoid mining activity of the stream banks at this location
10CW198	Historic cabin	Avoid mining activity of the stream banks at this location, avoid any historic structures that may be present, avoid ground disturbance not associated with instream suction dredging
10IH721	Prehistoric, lithic scatter	Avoid mining activity of the stream banks at this location within a currently developed recreation site and avoid ground disturbance not associated with instream suction dredging
10IH868	Prehistoric camp	Avoid mining activity of the stream banks at this location

By adhering to the recommended protection measures/design criteria noted above for these cultural sites, implementing the proposed action activities shall result in *no adverse effects* to these resources.

The following design criteria are included here in the event that additional cultural materials or artifacts are discovered during project implementation activities on the USFS or BLM Administered lands.

Project Design Criteria	Implementation Method	Effectiveness	Applicable Alternative(s)
Halt ground-disturbing activities if cultural resources are discovered until an Archaeologist can properly evaluate and document the resources in compliance with 36 CFR 800.	Contract and contract administration/ inspection.	Moderate, recognition of resources and contact with Heritage personnel	Proposed Action (all components)

3.6 Native American Treaty Rights and Traditional Uses

3.6.1 Affected Environment

The Nez Perce Tribe has retained fishing rights at all "usual and accustomed places" and hunting, gathering and pasturing rights on "open and unclaimed land' as per the terms of the 1855 Treaty with the United States. The Nez Perce Tribe historically used the entire Clearwater River basin for such uses. These rights are thus reserved within the Agencies-managed lands and specifically within the project areas. In addition, the South Fork of the Clearwater River analysis area lies within the 1855 Treaty boundary.

The project areas are important to the Nez Perce Tribe as areas rich in tribal tradition for gathering of cultural plants, hunting, fishing, camping and religious activities. The areas are important to the Nez Perce people who value access to their traditional land use areas.

Campers could occupy traditional fishing, hunting or gathering areas or create noise that could displace game species. Fishermen could occupy tribal fishing areas. Berry-pickers could occupy traditional gathering areas. The likelihood is low as there are few berry patches in the areas near the suction dredgers. Most occur in more upland habitats.

3.6.1.1 Regulations

Historical, cultural, and traditional properties in the Clearwater River Basin are regulated by a number of federal laws and regulations, including the National Historic Preservation Act, 36 CFR 800 – Protection of Historical and Cultural Properties, the American Indian Religious Freedom Act, the Archaeological Resource Protection Act, and the Native American Graves Protection and Repatriation Act.

Clearwater and Nez Perce National Forest Plans, BLM LRMP

Forest Plan direction is to protect Tribal rights as retained in treaties and other agreements, and to protect religious ceremonial sites, and hunting, gathering and fishing rights. Other agency plans direct the Agencies to work closely with area Native American Tribes to achieve mutual goals and objectives, and to ensure that trust responsibilities of treaties are honored.

The Nez Perce Tribe has identified salmon and steelhead as an integral part of tribal religion, culture, and physical sustenance, and has indicated that the annual return of the salmon, steelhead, and lamprey allows the transfer of traditional values from generation to generation (CRITFC, 2002). The Tribe has further indicated that the South Fork of the Clearwater River is an important stream in restoration efforts for these species.

3.6.2 Environmental Effects

3.6.2.1 Alternative 1: No Action

Water quality trends would continue for sediment and turbidity. Existing roads and camping would continue to contribute low levels of sediment and turbidity.

Aquatic habitats would be maintained or improve over time. Stream habitat building processes, such as large wood input and riparian vegetation growth, would continue. Aquatic species dependent on the habitat would continue to occupy the available habitat.

Direct mortality of fish species would continue to occur from fisherman and the Tribal hatchery program (adult removal only).

3.6.2.2 Alternative 2: Proposed Action

During the 78 day- mining season (32 days for the South Fork of the Clearwater River), Agencies' visitors would use the campsites previously used by recreational suction dredge miners. Recreational visitors, vehicles, generators and aircraft would continue to produce background noise. Recreational activities, such as hunting, fishing, camping and hiking, would continue. Agencies' visitors would continue minor trampling of riparian vegetation. Dispersed campers and other Forest visitors would continue to potentially disturb riparian wildlife and plant species.

There would be no effects to Nez Perce Tribal Treaty Rights or traditional uses related to fish. Tribal hunting, gathering and fishing would continue as it presently does.

There would be no effects to roadless area characteristics because there are no roadless areas within the project area.

3.6.2.3 Cumulative Effects

There would be no cumulative effects to any resources as a result of the Proposed Action alternative.

4.0 Consultation and Coordination

The Agencies consulted with the following individuals, Federal, State, and local agencies, Tribes, and non-Forest Service and non-BLM persons during the development of this EA:

Interdisciplinary Team (IDT)

Cheryl Probert – Forest Supervisor

Robbin B. Boyce – BLM Acting Field Manager

Andrew Skowlund –North Fork District Ranger

Terry Nevius – Red River District Ranger

Jeff Shinn – Salmon River District Ranger

Rebecca Anderson – Forest Service Project Lead, Minerals Geologist

Steve Armstrong – Forest Service Cultural Resources

Judy Culver – BLM Outdoor Recreation Planner

Jeremy Harris - Forest Service Recreation

Mike Hays - Forest Service Botany

Craig Johnson – BLM Fisheries and Wildlife Biologist

Sheila Lehman – Forest Service NEPA Planner

Dan Kenney – Forest Service Fisheries Biologist

Scott Pavey – BLM Planning and Environmental Coordinator

Scott Sanner – BLM Mining Engineer

David Sisson – BLM Cultural Resources

Federal, State, and Local Agencies

Tribes

Nez Perce Tribe

5.0 Glossary

affected environment - The biological and physical environment that would or may be changed by actions proposed and the relationship of people to that environment.

alternative - One of several policies, plans, or projects proposed for decisionmaking.

anadromous fish – Fish which spend much of their adult life in the ocean, returning to inland waters to spawn; eg., salmon, steelhead.

aquatic ecosystem – a stream channel, lake, or estuary bed, the water itself, and the biotic communities that occur therein.

biological assessment – An assessment done to determine whether a given alternative (usually on the preferred) would affect threatened, endangered or 'proposed' animal or plant species.

biological evaluation - An assessment done to determine whether a given alternative (usually on the preferred) would affect sensitive animal or plant species.

camas – plant with showy cluster of blue or white flowers and edible bulb traditionally harvested by Nez Perce Tribal members.

channel type - A system developed by hydrologist Dave Rosgen To classify and characterize similar stream channels. Water surface gradient and substrate particle size are the primary stream features used. Other features include bankfull width, width to depth ratio, entrenchment ratio, and floodprone width.

Council on Environmental Quality (CEQ) - an advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

critical habitat - Under the Endangered Species Act, (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a listed species when it is determined that such areas are essential for the conservation of the species.

cultural resources - The physical remains of human activities, such as artifacts, ruins, burial mounds, petroglyphs, etc., and the conceptual content or context, such as a setting for legendary, historic, or prehistoric events as a sacred area of native peoples, etc., of an area.

cumulative effect - The impact which results from identified actions when they are added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

direct effects - effects on the environment that occur at the same time and place as the initial cause or action.

dispersed recreation - that type of recreation that requires few if any improvements and may occur over a wide area. Examples of such activities include hunting, fishing, berrypicking, off-road vehicle use, hiking, horseback riding, picnicking, camping, viewing scenery, and snowmobiling.

effects (or impacts) - Physical, biological, social, and economic results (expected or experienced) resulting from natural events or management activities. Effects can be direct, indirect, and/or cumulative.

embeddedness – Degree that gravel and larger sizes if particles are surrounded or covered by fine sediment (e.g., less than 2mm) (Armantrout 1998).

endangered species - Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register. (Endangered Species Act of 1973).

entrainment – accumulation or drawing in of substrate material and aquatic organisms by current, such as at a nozzle intake.

environmental baseline conditions – The existing condition for all environmental factors affecting fish and fish habitat in relation to their natural condition. The Matrix of Pathways and Indicators can be used to describe environmental baseline conditions at the watershed or sub-watershed scale.

Essential habitat - Areas with essentially the same characteristics as critical habitat but not declared as such. These habitats are necessary to meet recovery objectives for endangered, threatened, and proposed species.

fine sediment – Fine-grained particles (2mm or less in diameter) in stream banks and substrate.

floodplain - Low land and relatively flat areas joining streams, rivers, and lakes which are periodically inundated by overbank flows of water.

Forest Plan - Clearwater National Forest Land and Resource Management Plan, September 1987.

habitat - Areas or features of the forest that are important for maintaining healthy, productive wildlife, fish or plant populations. Special features may include riparian areas; old forest conditions; hiding or security cover; critical breeding and rearing areas; and/or space to establish territories or home ranges.

high banking – mining for minerals outside the wetted width of a stream from which water is removed and used to separate gold and other minerals with the aid of a sluice box and hopper. Water is supplied by hand or pumping. Material to be mined is supplied to the processing site by means other than suction dredging.

IDT, ID Team – interdisciplinary team. A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view to bear on the problem.

Indicator Species – Species of fish, wildlife, or plants which reflect ecological changes caused by land management activities.

indirect effects - Secondary effects which occur in locations other than the initial action or significantly later in time.

invasive aquatic species – all aquatic invasive species pose a threat to waterways, fisheries and recreation in Idaho. Common invasive aquatic species include: Brazilian Elodea, Parrotfeather Milfoil, Water Hyacinth, Erasian water milfoil, Hydrilla, Zebra/Quagga Mussel, New Zealand Mudsnails, and Feathered Mosquito Fern.

impact - A spatial or temporal change in the environment caused by human activity.

issue - a subject or question of widespread public discussion or interest regarding management of National Forest System lands.

large woody debris – Trees and tree parts including root wads within the ordinary high water line that are large enough to function in the channel forming processes of a stream. Pieces of trees that meet a size criterion based on the region and stream size in which they are located. For example, within a region, size criterion for wood located in medium to large stream is greater than for small streams. Refer to the Matrix of Pathways and Indicators for specific size criterion (National Marine Fisheries Service 2009).

macroinvertebrate – An invertebrate (without backbone) animal that large enough to be seen without magnification; mostly aquatic insects.

Management Indicator Species - A species selected because its welfare is presumed to be an indicator of the welfare of other species sharing similar habitat requirements. A species of fish, wildlife, or plant, which reflect ecological changes caused by land management activities.

mining claim - A geographic area of the public lands held under the general mining laws in which the right of exclusive possession is vested in the locator of a valuable mineral deposit. Includes lode claims, placer claims, mill sites and tunnel sites.

mitigation - avoiding or minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact by preservation and maintenance operations during the life of the action.

noxious weed - plants that have been designated by federal, state, or county officials and defined as, “A plant that interferes with management objectives for a given area of land at a given point in time." The Idaho Noxious Weed Law defines a "noxious weed" as any exotic plant species that is established or that may be introduced in the State, which may render land unsuitable for agriculture, forestry, livestock, wildlife, or other beneficial, uses and is further designated as either a State-wide or County-wide noxious weed (Idaho Code 24 chapter 22). Primary concerns are generally expressed as losses in commodity yield or interferences of land use. However, impacts of these invasive, non-native plants to ecosystem function and health are becoming increasingly important.

mineral withdrawal - an action taken by Congress or the Secretary of the Interior that withdraws, or closes, a specified area from activities under the mining law. In its most common application, new

mining claims are prohibited and proposed operations on existing claims are allowed to proceed only after a valid existing rights determination has been made.

PACFISH/INFISH - The Decision Notice/Decision Record, Finding of No Significant Impact, and Environmental Assessment for the interim strategies for managing anadromous fish producing watersheds in eastern Oregon and Washington, Idaho, and portions of California. Published by the USDA Agencies and USDI Bureau of Land Management in 1995.

preferred alternative - the agencies preferred alternative, one or more, that is identified in the impact statement.

peak flow– Highest discharge recorded within a specified period of time that is often related to spring snowmelt, summer, fall, or winter flows successional patterns, and species composition.

pool – a depression in the stream channel with a gradient less than 1% that is normally wider and deeper than the channel above or below.

proposed threatened or endangered species - Plant or animal species proposed by the U.S. Fish & Wildlife Service or National Marine Fisheries Service to be biologically appropriate for listing as threatened or endangered, and published in the Federal Register. It is not a final designation.

Ranger District - Administrative subdivision of the Forest supervised by a District Ranger.

reach –Any specified length of stream.

rearing habitat – Areas where larval and juvenile fish find food and shelter to live and grow.

Record of Decision (ROD) - A document separate from but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision about an alternative assessed in the environmental impact statement chosen for implementation.

redd – Nest excavated in the substrate by fish for spawning where fertilized eggs are deposited and develop until the eggs hatch and larvae emerge from the substrate.

reference landscape – landscapes, generally roadless areas, with minimal human disturbance that are used as a barometer for measuring the effects of development on other parts of the landscape.

refugia – Habitat that sustains fish and other organisms during periods when ecological conditions are not suitable elsewhere.

resident fish – Fish species that remain in one stream or river system.

revegetation – the reestablishment and development of plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of man; e.g., reforestation, range reseeding.

RHCA – Riparian Habitat Conservation Area – are areas delineated according to PACFISH/INFISH in every watershed within the Nez Perce-Clearwater National Forests. RHCAs are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines.

Roadless Area - An area of National Forest which (1) is larger than 5,000 acres or, if smaller, is contiguous to a designated wilderness area or primitive area, 92) contains no roads, and (3) has been inventoried by the Agencies for possible inclusion into the wilderness preservation system.

scoping - The procedures by which the Agencies determines the extent of analysis necessary for a proposed action; i.e., the range of actions, alternatives and impacts to be addressed, identification of significant issues related to a proposed action, and establishing the depth of environmental analysis, data, and task assignments needed.

Sensitive Species - Those species identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trends in population numbers or density, or habitat capability that would reduce a species' existing distribution.

sediment – Fragmented from weathered rocks and organic material that is suspended in, transported by, and eventually deposited by water or air.

soil displacement - The removal and horizontal movement of soil from one place to another by mechanical forces such as a blade.

stream bank stability – Index of firmness or resistance to disintegration of a bank based on the percentage of the bank showing active erosion and the presence of protective vegetation, woody material, or rock.

substrate – Mineral and organic material forming the bottom of rivers and streams.

threatened species - Any species defined through the Endangered Species Act as likely to become endangered within the foreseeable future throughout all or a significant portion of its range and published in the Federal Register.

turbidity – Measure of the extent to which light penetration in water is reduced from suspended materials such as clay, mud, organic material, color, or plankton. Measured by several nonequivalent systems including nephelometric turbidity units (NTU).

viable population - A wildlife or plant population that contains an adequate number of reproductive individuals to appropriately ensure the long-term existence of the species.

wetted perimeter – The areas of a watercourse covered with water, flowing or nonflowing.

width:depth ratio – An index of the cross section shape of a stream channel at bankfull level.

References

Adult Technical Team. 2012. Nez Perce Tribe Nacó'x (Chinook salmon) and Héeyey (steelhead) adult escapement and spawning ground survey. 2011 summary report, April 2012. Nez Perce Tribe, Department of Fisheries Resources Management, Lapwai, ID. 29pp. (later reports also cited)

Arnsberg, B., P. Groves, F. Mullins, D. Milks. 2015 Snake River fall Chinook salmon spawning summary. Nez Perce Tribe, Idaho Power Company, U.S. Fish and Wildlife Service, and Washington Department of Fish and Wildlife. January 2016, 6 pp. (earlier reports also cited).

Bash, J., C. Berman, and S. Bolton. 2001. Effects of turbidity and suspended solids on salmonids. Center for Streamside Studies, University of Washington, Seattle, WA.

Bear, E.A., T.E. McMahon, and A.V. Zale. 2007. Comparative thermal requirements of westslope cutthroat trout and rainbow trout: implications for species interactions and development of thermal protection standards. Transactions of the American Fisheries Society, 136:4, 1113-1121.

Behnke, R. J. 1992. Native trout of western North America. American Fisheries Society Monograph 6.

Brusven, M.A. and S.T. Rose. 1981. Influence of substrate composition and suspended sediment on insect predation by the torrent sculpin, *Cottus rhotheus*. Canadian Journal of Fisheries and Aquatic Sciences 38:1444-1448.

Bureau of Land Management (BLM). 2008. Proposed Cottonwood resource management plan and final environmental impact statement. U.S. Department of the Interior, Bureau of Land Management, Cottonwood Field Office, Cottonwood, Idaho.

Bureau of Land Management (BLM). 2009. Record of decision and approved Cottonwood resource management plan. U.S. Department of the Interior, Bureau of Land Management, Cotton-wood Field Office, Cottonwood, Idaho.

Cassirer, E.F. and C.R. Groves. 1991. Harlequin duck ecology in Idaho, 1987-1990. Idaho Department of Fish and Game. February 1991.

Cassirer, E.F., C.R. Groves, and D.L. Genter. 1994. Coeur d'Alene salamander conservation assessment. U.S.D.A. Forest Service, Region 1. August 1994.

Clearwater BioStudies, Inc. (CBS). 1992. Stream conditions and salmonid abundance in Orogrande Creek, Pierce Ranger District, summer 1991. Contract report no. 53-0276-1-46, prepared for U.S.D.A. Forest Service, Clearwater National Forest, Orofino, Idaho.

Clearwater BioStudies, Inc. (CBS). 1998. Habitat conditions and salmonid abundance in selected streams within the Orogrande Creek drainage, Pierce Ranger District, summer 1997.

Contract report no. 53-0276-7-88, prepared for U.S.D.A. Forest Service, Clearwater National Forest, Orofino, Idaho.

Cochnauer, T. and C. Claire. 2009. Evaluate status of Pacific lamprey in the Clearwater River and Salmon River drainages, Idaho. Report by Idaho Department of Fish and Game to Bonneville Power Administration, Portland, OR.

Cochnauer, T., E. Schriever, J. Brostrom, and L.T. Barrett. 2001. Idaho Department of Fish and Game, Regional Fisheries Management Investigations, Clearwater Region, IDFG 01-17. October 2001. Lewiston, ID.

Cochnauer, T., P.D. Murphy, E. Schriever, and J. Brostrom. 2003. Idaho Department of Fish and Game, Regional Fisheries Management Investigations, Clearwater Region, IDFG 01-19. May 2003. Lewiston, ID.

Columbia River DART, Columbia Basin Research, University of Washington. (2013). Available from http://www.cbr.washington.edu/dart

Cordone, A.J., and D.W. Kelley. 1961. The influences of inorganic sediment on the aquatic life of streams. California Fish and Game. 47(2):189-223.

Crawford, R. C. (1980). *Ecological investigations and management implications of six northern Idaho endemic plants on the proposed endangered and threatened lists*. Unpublished MS Thesis. University of Idaho, Moscow ID.

Crouse, M.R., C.A. Callahan, K.W. Malueg, and S.E. Dominguez. 1981. Effects of fine sediments on growth of juvenile coho salmon in laboratory streams. Transactions of the American Fisheries Society 110:281-286.

Dobos, M.E. 2015. Movement, distribution, and resource use of westslope cutthroat trout in the South Fork Clearwater River Basin. Master's Thesis, University of Idaho, Moscow. April 2015. 55 pp + appendices.

Essig, D.A. 2010. Arsenic, Mercury, and Selenium in Fish Tissue and Water from Idaho's Major Rivers: A Statewide Assessment. Idaho Department of Environmental Quality and the U.S. Environmental Protection Agency. April 2010. 64 pp + appendices.

Everett, Scott, C. Beasley, R. Johnson, C. Davenport, R. Larson, and FishPro Division of HDR Engineering, "Nez Perce Tribal Hatchery Project; Coho Salmon Master Plan,Clearwater River Basin", 2003-2004 Annual Report, Project No. 198335000, 134 electronic pages, (BPA Report DOE/BP-00004035-1)

Griffith, J.S. and D.A. Andrews. 1981. Effects of a small suction dredge on fishes and aquatic invertebrates in Idaho streams. North American Journal of Fisheries Management 1:21-28.

Hanson, J., E. Schriever, and J. Erhardt, J. 2014. Bull trout life history investigations in the North Fork Clearwater River basin. Final Report 2000-2006. Prepared for: U.S. Army Corps of

Engineers. Contract No. DACW68-96-D-0003. Delivery Order 0002. Normandeau Associates, Drumore, PA.

Harvey, B.C. 1982. Effects of suction dredge mining on fish and invertebrates in California foothill streams. M.S. Thesis. University of California, Davis. 34 pp. As cited in: Shuler, S. 2001. Golden Sphinx Placer Claim Aquatics Technical Report. Gallatin National Forest, Montana. April 15, 2001. 40 pp.

Harvey, B.C. 1986. Effects of suction gold dredging on fish and invertebrates in two California streams. North American Journal of Fisheries Management 6:401-409.

Harvey, B.C., K. McCleneghan, J.D. Linn, and C.L. Langley. 1982. Some physical and biological effects of suction dredge mining. California Department of Fish and Game Laboratory Report 82-3, Rancho Cordova.

Harvey, B.C. and T.E. Lisle. 1998. Effects of suction dredging on streams: a review and an evaluation strategy. Fisheries 23(8):8-17.

Hassler, T.J., W.L. Somer, and G.R. Stern. 1986. Impacts of suction dredge mining on anadromous fish, invertebrates, and habitat in Canyon Creek, California. California Cooperative Fishery Research Unit, Humboldt State University. 125 pp.

High, B., Meyer, K., Schill, D., and Mamer, E. 2005. Bull trout status review and assessment in the state of Idaho. IDFG Report #05-24. Idaho Department of Fish and Game, December 2005. 39 pp + Appendices.

Horizon Water and Environment (CDFG). 2009. Suction Dredge Permitting Program, Draft Subsequent Environmental Impact Report (February 2011), Appendix D. Literature Review. Prepared for California Department of Fish and Game. Oakland, CA, September 2009. 123 pp.

IDEQ (Idaho Department of Environmental Quality). Undated. Best management practices for mercury collection from suction dredging activities. Online at: http://www.deq.idaho.gov/media/638458-mercury_BMP_dredging_fs_0411.pdf.

IDEQ (Idaho Department of Environmental Quality). 2003. Upper North Fork Clearwater River subbasin assessment and total maximum daily load. Lewiston Regional Office, October 2003. 384 pp.

IDEQ (Idaho Department of Environmental Quality). 2007. Orofino Creek Mercury Monitoring Project. Final Report. Lewiston Regional Office, February 2007. 11 pp.

IDEQ (Idaho Department of Environmental Quality). 2013. Revised FINAL §401 Water Quality Certification, NPDES Permit: Modified small suction dredge placer miners General Permit for Idaho (IDG-37-0000). IDEQ State Office, Boise, ID. December 4, 2013. 8 pp.

IDEQ and EPA (Idaho Department of Environmental Quality and U.S. EPA). 2003. South Fork Clearwater River subbasin assessment and total maximum daily loads. October 2003. Lewiston and Boise, ID. 303 pp + Appendices.

Idaho Partners in Flight. 2000. Idaho bird conservation plan, version 1.0. Idaho Partners in Flight, compiled by S. Ritter, Hamilton, MT. 166 pp.

Idaho Department of Fish and Game. 2014. Idaho Fish and Wildlife Information System (aka Idaho Conservation Data Center and Natural Heritage Database). GIS dataset on the Clearwater National Forest, received in 2014 and stored at: T:\FS\Reference\GIS\USA_ID\Data\Restricted\NaturalHeritage_Aug2014.

IDWR (Idaho Department of Water Resources). 2016. Stream channel alteration by recreational mining activities, IDWR program instructions for 2016. IDWR State Office, Boise, ID. April 1, 2016. 5 pp. + Attachments.

Jepsen, S., C. LaBar, and J. Zarnoch. Undated. Freshwater mussels: western pearlshell (*Margaritifera falcata*). Located at the Xerces Society for Invertebrate Conservation website, November 2011.

Kenney, D. 2013. Post-season suction dredging report for Moose Creek project areas Nez Perce-Clearwater National Forests. December 12, 2013. 6 pp. + Appendices.

Kenney, D. 2014. Post-season suction dredging report for Moose Creek, Lolo Creek, and Orogrande Creek project areas. Nez Perce-Clearwater National Forests. December 31, 2014. 6 pp. + Appendices.

Kenney, D. 2016. Post-season suction dredging report for Moose, Lolo, and Orogrande Creek project areas, 2015. Nez Perce-Clearwater National Forests. February 2, 2016. 6 pp. + Appendices.

Kenney, D. 2016a. An investigation of stream channel modifications at unauthorized suction dredging sites on the South Fork Clearwater River, October 7 and 8, 2015. Nez Perce-Clearwater National Forests. February 3, 2016. 5 pp. + Appendices.

Lorain, C. 1990. Field investigations of Astragalus paysonii (Payson's milkvetch). Idaho Dept. of Fish and Game Conservation Data Center, Boise.

Lysne, S.J. and B.R. Krouse. 2011. Margaritifera falcate in Idaho using museum collections and GIS to demonstrate a declining trend in regional distribution. Journal of the Idaho Academy of Science 47(2) 33-39.

May, B.E., B.J. Writer, and S. Albeke. 2012. Redband trout status update summary. Prepared by Wild Trout Enterprises, LLC. Bozeman, Montana.

McIntyre, J. D. and B.E. Rieman. 1995. Westslope cutthroat trout. Pages 1-15 *in* Young, M. K., editor. Conservation assessment for inland cutthroat trout. USDA, Forest Service, Rocky

Mountain Forest and Range Experiment Station General Technical Report RM-256, Fort Collins, Colorado.

Moffitt, C.M. and T.C. Bjornn. 1984. Fish abundance upstream from Dworshak Dam following exclusion of steelhead trout. Idaho Cooperative Fishery Research Unit, Department of Fish and Wildlife Resources, University of Idaho. June 1984. Moscow, Idaho.

Muck, J. 2010. Biological effects of sediment on bull trout and their habitat—Guidance for evaluating effects. U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, Lacey, WA.

Nedeau, E.J., A.K. Smith, J. Stone, and S. Jepsen. 2009. Freshwater mussels of the Pacific Northwest, Second edition. The Xerces Society, Portland, Oregon.

Nez Perce Treaty, 1855, World Wide Web: http://www.ccrh.org/comm/river.treaties.nezperce.htm. Site accessed March 14, 2011.

Nez Perce Tribe (NPT, Arnsberg, B.) 2015. Letter to providing Nez Perce Tribe fish data to Wouldiam C. Schrader, Boise Office of the National Marine Fisheries Service. April 7, 2015. Orofino, ID. 2 pp.

NOAA Fisheries (NMFS). 2009. Endangered Species Act Section 7 formal consultation and Magnuson-Stevens Fishery Conservation and Management Act essential fish habitat consultation for the 2009 and 2010 Lolo Creek suction dredging, 1706030616 and1706030618, Idaho County, Idaho (one project). Date issued: January 14, 2009. NOAA Fisheries, Northwest Region, Seattle, Washington.

Pauley, G.B., B.M. Bortz and M.F. Shepard. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest) steelhead trout. US Fish and Wildlife Service Biological Report 82(11.62). 24p. US Army Corps of Engineers, TR EL-81-4.

Peterson, D.P., Fausch, K.D., and White, G.C. 2004. Population ecology of an invasion: effects of brook trout on native cutthroat trout. Ecol. Appl. 14(3): 754–772.

Reynolds, J. B.; Simmons, R. C.; Burkholder, A. R. 1989: Effects of placer mining discharge on health and food of Arctic Grayling. Water resources bulletin 25: 625-635.

Rieman, B.E. and J.D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. Gen. Tech. Rep. INT-302. Ogden, UT: U.S. Dep. of Agriculture, Forest Service, Intermountain Research Station. 38 pp.

Rosgen, D. 1994. A classification of natural rivers. CATENA 22: 169-199.

Royer, T.V., A. M. Prussian, and G. W. Minshall. 1999. Impact of suction dredging on water quality, benthic habitat, and biota in the Fortymile River and Resurrection Creek, Alaska. Prepared for the U.S. Environmental Protection Agency, Region 10, Seattle, Washington by:

Department of Biological Sciences, Idaho State University, Pocatello. Final Report April 1999.

Sigler, J.W., T.C. Bjornn, and F. H. Everest. 1984. Effects of chronic turbidity on density and growth of steelheads and coho salmon. Transactions of the American Fisheries Society 113:142-150.

Somer, W.L. and T.J. Hassler. 1992. Effects of suction-dredge gold mining on benthic invertebrates in a northern California stream. North American Journal of Fisheries Management 12:244-252.

Steeves, T.B., Slade, J.W., Fodale, M.F., Cuddy, D.W., and Jones, M. L. 2003. Effectiveness of using backpack electrofishing gear for collecting sea lamprey (*Petromyzon marinus*) larvae in Great Lakes tributaries. J. Great Lakes Res. 29 (Suppl. 1):161–173.

Stern, G.R. 1988. Effects of suction dredging mining on anadromous salmonid habitat in Canyon Creek, Trinity County, California. M.S. Thesis, Humboldt State University, Arcata, CA. 80 pp.

Stewart, D. and D. Sharp. 2003. A recreational suction dredge mining water quality study on South Fork Clearwater River, Idaho County, Idaho, Water quality summary report 34. Idaho Department of Environmental Quality, Lewiston Regional Office, October 2003. 14 pp + Appendix.

Swanberg, T.R. 1997. Movements of and habitat use by fluvial bull trout in the Blackfoot River, Montana. Transactions of the American Fisheries Society 126:735-746.

Thomas, V.G. 1985. Experimentally determined impacts of a small, suction gold dredge on a Montana stream. North American Journal of Fisheries Management 5:480-488.

Thurow, R. 1987. Evaluation of the South Fork Salmon River Steelhead Trout Fishery Restoration Program. Lower Snake River Fish and Wildlife Compensation Plan. Job Completion Report, Contract No 14-16-0001-86505. Idaho Department of Fish and Game.

Thurow, R.F., J.T. Peterson, and J.W. Guzevich. 2006. Utility and validation of day and night snorkel counts for estimating bull trout abundance in first- to third-order streams. North American Journal of Fisheries Management 26: 217-232.

Uh, C.T., J. Jolley, G. Silver, and T. Whitesel. 2015. Survival of larval lamprey to electrofishing, suction dredging, anesthesia, and handling in the PNW. U.S. Fish and Wildlife Service and Portland State University. Powerpoint presentation, August 18, 2015.

USDA Forest Service. 1995. Per FSM File Code 2670/1950, August 17, 1995; Streamlining Biological Evaluations and Conclusions for Determining Effects to Listed, Proposed and Sensitive Species.

USDA Forest Service. 1995. Decision notice and finding of no significant impact for the inland native fish strategy (INFISH). July 1995. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_033158.pdf.

USDA Forest Service. 2007. Northern Rockies Lynx Management Direction Record of Decision. National Forests in Montana, and parts of Idaho, Wyoming, and Utah. March 2007.

USDA Forest Service - Clearwater National Forest (CNF). 1987. Forest Plan. September 1987, Orofino, ID. 189 pp. + appendices.

USDA Forest Service - Clearwater National Forest. (CNF). 2000. Section 7 watershed biological assessment of the North Fork Clearwater River drainage. Determination of effects of ongoing and proposed activities based on the matrix of pathways and indicators of watershed condition for bull trout. CNF, Orofino, Idaho.

USDA Forest Service - Clearwater National Forest (CNF). 2009. Small-scale suction dredging in Lolo Creek and Moose Creek—Draft Supplemental Environmental Impact Statement. August 2009, Orofino, ID. 71 pp. + Appendices.

USDA Forest Service - Clearwater National Forest (CNF). 2010. Small-scale suction dredging in Lolo Creek and Moose Creek—Final Supplemental Environmental Impact Statement. March 2010, Orofino, ID. 24 pp. + Appendix.

USDA Forest Service – Nez Perce-Clearwater National Forests (USDA FS). 2013. Biological assessment for suction dredging on USFS-managed lands in the Lolo Creek drainage. April 9, 2013. Kamiah, Idaho. 34 pp. + Appendices.

USDA Forest Service – Nez Perce-Clearwater National Forests (USDA FS). 2013a. Biological assessment for suction dredging on USFS-managed lands in the Moose Creek drainage. May 2, 2013. North Fork Ranger District, Orofino, Idaho. 32 pp. + Appendices.

USDA Forest Service – Nez Perce-Clearwater National Forests (USDA FS). 2014. Biological assessment for suction dredging on USFS-managed lands in the Orogrande Creek drainage. June 25, 2014. North Fork Ranger District, Orofino, Idaho. 30 pp. + Appendices.

USDA Forest Service - Nez Perce National Forest (NPNF). 1987. Forest Plan. September 1987, Grangeville, ID. 174 pp. + appendices.

USDA Forest Service – Nez Perce National Forest (NPNF). 1998. South Fork Clearwater River Landscape Assessment. Volume 1. Narrative. Nez Perce National Forest, Idaho County, Idaho.

USDA Forest Service – Nez Perce National Forest (NPNF). 1999. South Fork Clearwater biological assessment Nez Perce National Forest, Grangeville, Idaho.

USDA Forest Service. 1995. Per FSM File Code 2670/1950, August 17, 1995; Streamlining Biological Evaluations and Conclusions for Determining Effects to Listed, Proposed and Sensitive Species.

USDA FS and USDI BLM (U.S. Department of Agriculture and U.S. Department of Interior). 2016. Biological assessment for suction dredging on USFS and BLM-managed lands on the South Fork Clearwater River. April 6, 2016. Nez Perce-Clearwater National Forests and Coeur d'Alene District, Cottonwood Field Office, Kamiah and Cottonwood, Idaho. 40 pp. + Appendices.

USDA/USDI (U.S. Department of Agriculture and U.S. Department of Interior). 1995. Decision Notice and Finding of No Significant Impact; Environmental Assessment for the interim strategies for managing anadromous fish producing waters in eastern Oregon and Washington, Idaho, and portions of California (PACFISH). Available at: www.fs.fed.us/r6/fi sh/9502-pacfi sh.pdf.

USDA Forest Service and USDI USFWS. 2006. Canada lynx conservation agreement. October 2006.

US Environmental Protection Agency (EPA). 2014. Modified authorization to discharge under the National Pollutant Discharge Elimination System for Small Suction Dredge Placer Miners in Idaho (General Permit No. IDG370000). March 5, 2014. Seattle, WA. 27 pp. + Appendices.

U.S. Department of the Interior (USDI), 1995. How to Apply the National Register Criteria for Evaluation. Bulletin 15, National Park Service, Washington, DC.

U.S. Fish and Wildlife Service (USFWS). 1998. A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale. Region 1, Portland, USFWS.

U.S. Fish and Wildlife Service (USFWS). 2002. Bull Trout (*Salvelinus confluentus*) Draft Recovery Plan. Portland, Oregon.

Van Nieuwenhuyse, E., and J.D. LaPerriere. 1986. Effects of placer gold mining on primary production in subarctic streams of Alaska. Wat. Res. Bull. 22(1):91-99.

Ward, D.L., B.J. Clemens, D. Clugston, A.D. Jackson, M.L. Moser, C. Peery, and D.P. Statler. 2012. Translocating adult Pacific lamprey within the Columbia River basin: state of the science. Fisheries 37(8): 351-361.

Weigel, D.E., Peterson, J.T., Spruell, P. 2003. Introgressive hybridization between native cutthroat trout and introduced rainbow trout. Ecological Applications. 13: 38-50.

Zilka, N. T., Benjamin, D. A., Causey, D. J., and Esparza, L. E., 1985, Draft Mineral Inventory of Lands Administered by the Clearwater National Forest, Benewah, Clearwater, Idaho, Latah, and Shoshone Counties, Idaho: U. S. Bureau of Mines Mineral Land Assessment Open-File Report MLA 70-87, 60 p.

Appendix A: Past, Present and Foreseeable Actions

Cumulative effects arise from the incremental impact of an action when added to other past, present and reasonably foreseeable actions. Past, present and reasonably foreseeable future actions were considered for each resource to determine the cumulative effects associated with implementing the Small-scale Suction Dredging Project. The spatial extent of the cumulative effects analysis area and the activities considered can differ for each resource analyzed. A description of the areas used to determine cumulative effects and the rationale for their boundaries are discussed in Chapter 3 under each resource. Existing conditions are a result of past and current activities in the analysis area.

Summary – Past, Present and Proposed Activities and Effects

A variety of past, present, and foreseeable actions are identified for the analysis area subwatersheds and levels of direct and indirect effects vary by subwatersheds. Human caused activities include: historic, current and planned mining; road use, construction and maintenance; timber harvest; prescribed burning; livestock grazing; agriculture; stream and watershed restoration projects; invasive species/weed control; recreation; and urban and rural development/residences. Natural events such as floods, landslides, and wildfire also have had varying levels of impact for the analysis area subwatersheds. Effects include both short term and long term adverse and beneficial.

Effects vary by activity and primary short term and long term impacts have occurred to water quality from riparian and stream channel impacts, erosion, sediment, turbidity, and water yield. Varying levels of impact have occurred to riparian habitat, channel morphology, aquatic habitat, watershed condition, and vegetation. Short term and long term impacts have occurred to wildlife and aquatic species. Restoration actions may have short term adverse impacts to resources. However, long term beneficial impacts to watershed condition, water quality, aquatic and terrestrial habitats, and special status species have occurred.

Timber sales have occurred in the subwatersheds analyzed. Timber sales conducted in 1960s through the 1990s involved many miles of new road construction, little to no tree retention in regeneration harvest areas, and dozer piling of slash. These activities resulted in widespread impacts on the sub-watersheds and have likely temporarily increased sedimentation rates and increased water yields. The Forest Service manages the majority of each of the subwatersheds. GIS data was used to determine the amount of past timber harvesting in each basin.

Past Timber Harvesting

Watershed	Estimated Treatment Acres	Year Completed
Orogrande Watershed	10,299	1960-2014
Orofino Watershed	28	1983
Upper South Fork of the Clearwater River Watershed	5,606	1954-2015
Middle South Fork of the Clearwater River Watershed	3,380	1954-2010
Newsome Creek Watershed	153	1960-1985
Red River Watershed	28	2013
Crooked River Watershed	23	1992
Johns Creek Watershed	154	1987-1989
	19,671	

* Total acres treated are the cumulative result of multiple entries.

Past, present and reasonably foreseeable activities that may occur in the cumulative effects areas considered for the various resources are shown below.

Other Past, Present and Reasonably Foreseeable Projects				
Location	**Project**	**Project Area**	**Proposed Completion**	**Acres or Miles Treated**
T29N, R8E, Sec. 30, 31, and 33	American River/Crooked River EIS	South Fork of the Clearwater River	2005	39,000 ac.
T29N, R8E, Sec. 7, 21, and 28	Buffalo Gulch Culvert Replacements	South Fork of the Clearwater River	2005	N/A
T29N, R8E, Sec. 2, 11, 12, 24, and 25	American River Restoration Projects	South Fork of the Clearwater River	2006-2011	4.3 mi
T29N, R8E, Sec. 21 and 28	Buffalo Gulch 2 – Fuel Treatments	South Fork of the Clearwater River	2008	28 ac.

T29N, R8E, Sec. 2, 3, 12, 13, 24, 25, and 26	Eastside Township Fuels and Vegetation Project	South Fork of the Clearwater River	2008-2014	1,155 ac
T29N, R8E, Sec. 21	Sweeny Hill Buffalo Gulch – Salvage Harvest and Thinning Activities	South Fork of the Clearwater River	2009	80 ac
T29N, R8E, Sec. 33-36 T28N, R8E, Sec. 1-4 T28N, R9E, Sec. 6	South Township Hazardous Fuels Reduction	South Fork of the Clearwater River	2011	556 ac
T38N, R7E T38N, R8E T37N, R6E T37N, R7E	Orogrande OHV Trail Project	Orogrande and French creeks	2012	60 mi
T29N, R8E, Sec. 29 and 30	Elk City Southwest Pre-Commercial Thin	South Fork of the Clearwater River	2012	51 ac
T29N, R8E, Sec. 33	American River Culvert Replacement Project	American River	2014	N/A
T29N, R8E, Sec. 28	Buffalo Gulch Road and Stream Crossing Stabilization Project	South Fork of the Clearwater River	2015	< 1 ac
T29N, R8E, Sec. 12	Telephone Creek Rehabilitation Project	South Fork of the Clearwater River	2015	0.1 mi
T29N, R8E, Sec. 27	Elk Creek Culvert Replacement Project	Elk Creek	2015	N/A
T29N, R6E, Sec. 30	Leggett Creek Culvert Replacement	South Fork of the Clearwater River	2016	N/A
T29N, R8E, Sec. 25 and 36	Old Powerline Road – Trail Project	American River	2016	1 mi

T29N, R7E, Sec. 25 and 36 T28N, R7E, Sec. 1	Crooked River Valley Rehabilitation Project	Crooked River	2016	115 ac 2 mi
T29E, R7E, Sec. 1, 2, 10-16, 21-28	Dutch Oven Vegetation Management Project	South Fork of the Clearwater River	2016+	2,000 ac.
T29N, R8E, Sec. 33	Elk City Mill Site Sale	South Fork of the Clearwater River	2016-2017	22 ac
T37N, T38N R6E, R7E, R8E	Lower Orogrande EIS	Orogrande and French creeks	2016+	21,560 ac
T37N, R6E, Sec. 25-27, 33-36 T37N, R7E, Sec. 7, 8, 14, 17-23, 27-33	French Larch EA	Orogrande and French creeks	2017	18,000 ac
T29N, R7E, Sec. 22	Moose Creek Culvert Replacement	South Fork of the Clearwater River	2017/2018	N/A
T29N, R5E, Sec. 27	Peasley Creek Culvert Replacement	South Fork of the Clearwater River	2017/2018	N/A

Past, Present & Foreseeable Mining Activities in Orogrande and French creeks

Placer Mining History

- Discovery of gold at Pierce in 1860 and the Pierce mining district was formed and 250,000 to 500,000 ounces of gold was extracted between 1860 and 1875 (Zilka, et al., 1985). None of this gold is documented as coming from French or Orogrande Creeks.

- Oxford mining district produced 487 ounces of gold between 1902 and 1959 all of which came from Orogrande Creek. Deposit was determined to be sub-economic (Zilka, et al., 1985).

Suction Dredge Mining History

- Prospectors and miners started using suction dredges in the early 1970's to mine instream gravels for gold. As gold prices rose so did the popularity of suction dredges.

- By the late 1980's impacts from small dredges (nozzle diameters less than 5 inches) were not considered significant and were thought to have little affect on water quality or fish if dredgers complied with State BMPs.

- Suction dredge operators were required to buy an Idaho recreational suction dredge permit and if on NF lands, submit a notice of intent to the local FS District Ranger.

- There has been a significant number of placer mining claims on Orogrande and French Creeks since the 1980's and there are currently 20 active claims according to the BLM's LR2000 Mining Claims Database.

- In late 1990's steelhead and bull trout were listed as threatened species under the Endangered Species Act (ESA).

- French and Orofino Creeks were kept open under Idaho recreational suction dredge permit.

- EPA comes out with National Pollutant Discharge Elimination System (NPDES) General Permit in 2013.

- Forest determined in in a 2014 Biological Assessment that suction dredging was "not likely to adversely affect" bull trout in Orogrande and French Creeks.

- Forest Service initiated ESA consultation with US Fish and Wildlife Service (USFWS).

- Due to the "not likely to adversely affect" call and the FWS requirement for before, during and after monitoring the District Ranger concluded that suction dredging could be done under a Forest Service Notice of Intent (NOI) and that operations that were proposing long term occupancy would need to submit a Plan of Operations.

- Since 2007 there has been an average of seven dredges on the Orogrande/French Creeks with 2009 having an unusually high number of 24 NOI's received.

There is potential for up to 20 plans of operation (POOs) on Orogrande and French creeks.

Past, Present & Foreseeable Mining Activities in the South Fork of the Clearwater River

Historic Mining Activities:

- Gold discovered in Elk City 1861. Activities included: placer mining and hardrock mining.

- In the South Fork of the Clearwater River Dredging area: Intermittent extensive dredge mining during the late 1930s to the early 1950s in and along South Fork Clearwater River. There are approximately 13 patented mining claims along the South Fork of the Clearwater River.

- Within the South Fork of the Clearwater River watershed: There have been significant historic mining activities and there are numerous patented and unpatented mining claims in and around the South Fork of the Clearwater River area.

Suction Dredge Mining History

- Suction dredging is closed in all of the tributaries to the South Fork Clearwater River by the EPA and IDWR and the South Fork of the Clearwater River is closed to dredging under EPA permitting until consultation is complete.

- The South Fork of the Clearwater River is open under Idaho recreational suction dredge permit.

- There are approximately 37 unpatented placer mining claims in the project area and approximately 25 unpatented lode mining claims within the sections next to the river according to the BLM's LR2000 Mining Claims Database. There are no proposed POO's for dredging in this area at this time.

- In the South Fork of the Clearwater River watershed there are several hundred unpatented mining claims but there are only 8 proposed plans of operations that have been or are being processed through the small NEPA process since 2010.

- Forest Service has initiated ESA consultation with US Fish and Wildlife Service (USFWS) and with National Marine Fisheries Service (NMFS).

- Due to advice from resource specialists, FWS/NMFS requirement for before, during and after monitoring and the POO requirement for mining on the South Fork of the Clearwater River in the Forest Plan, the District Ranger's confirmed that suction dredging in the South Fork of the Clearwater River is a significant disturbance that requires a Plan of Operations.

- Between 2007 and 2013 there was an average of six dredges on the South Fork of the Clearwater River during the dredge season but in 2014 and 2015 the number of dredges increased significantly. In 2015 IDWR issued approximately 40 Letter Permits for recreational suction dredging. This increase is due to increased interest from local and national mining groups that have been protesting Laws and Acts of the United States as they apply to suction dredging.

- There is potential for up to 15 plans of operation (POOs) on the South Fork of the Clearwater River.

Appendix B: Comments and Responses

On April 17, 2015, the Agencies mailed scoping letters to 560 interested parties or individuals and the Nez Perce Tribe. The legal notice and request for public scoping comments was published in the *Lewiston Tribune* on April 22, 2015. In addition, the Forests submitted the proposal to Nez Perce tribal staff members on May 4, 2015 for comment and discussion. Comments were received from a total of 147 individuals and organizations. Comments ranged from criticism of the Forest Service and BLM for suggesting that any conditions could or should be placed on small-scale suction dredge operations, to support for the proposal, to opposition to all suction dredging.

This appendix identifies the commenters; presents comments received by the public; agencies and organizations; and describes the Agencies' responses to these comments. These comments were used to make changes into the EA.

The Agencies carefully reviewed each comment received on the scoping and organized them by 1) agency, and 2) individuals, alphabetically. Then, the Agencies reviewed the letters for content to capture the public's concern and assigned a comment number to facilitate the organization of responses. Table B-1 identifies the individuals, organizations, or agencies that provided oral or written comments. This table also lists the number assigned to each separate comment. Table B-2 presents each of the individual comments and responses to these comments.

Following Table B-2, comment letters and e-mails received are presented.

Table B-1. Individual and Organizational Commenters on the Draft EA

Commenter	*Name of individual / organization submitting comments*
1	Shannon Poe, American Mining Rights Association (email dated April 22, 2015)
2	Kevin Colburn, American Whitewater (email dated May 22, 2015)
3	James, A. Chmelik, Mark Frei and R. Skipper Brandt, Board of Idaho County Commissioners (letter dated May 19, 2015)
4	Guy Moura, Confederated Tribes of the Colville Reservation (email dated April 21, 2015)
5	Gary McFarlane, Friends of the Clearwater (letter dated May 19, 2015)
6	Jonathan Oppenheimer, Idaho Conservation League (letter via e-mail dated May 20, 2015)
7	Daniel D. Stewart, Idaho Department of Environmental Quality (letter dated May 5, 2015)
8	David B. Johnson, Nez Perce Tribe (letter dated May 12, 2015)
9	Larry Ruthruff, Northwest Gold Prospectors Association (letter dated May 13, 2015)
10	Ron Miller, Rocky Mountain Mining Rights (letter dated May 19, 2015)
11	Gary Barnhart (email dated April 27, 2015)
12	Wesley Bauerle (email dated April 22, 2015)
13	Wouldiam E. Chetwood (email dated May 7, 2015)
14	Landon Christensen (email dated April 24, 2015)

Table B-1. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
15	Jere Clements (email dated April 22, 2015)
16	Joe Davis (email dated April 26, 2015)
17	Steve Drinovsky (email dated April 22, 2015)
18	Jamie Edmondson (email dated May 21, 2015)
19	Joseph C. Greene (email dated May 14, 2015)
20	Steve Gregor (email dated April 23, 2015)
21	Gary Hacker (email dated April 22, 2015)
22	Jim Hamilton (email dated May 12, 2015)
23	Paul Hoyle (email dated April 23, 2015)
24	Jerry Jayne (email dated May 15, 2015)
25	James Karl (email dated April 22, 2015)
26	Paul Kirkeminde (email dated April 22, 2015)
27	JN Perlot (email dated May 12, 2015)
28	Gay Richardson (email dated April 22, 2015)
29	Steve Rinehart (email dated May 16, 2015)
30	Muriel Roberts (email dated May 18, 2015)
31	Richard Servatius (email dated May 18, 2015)
32	David Seyer (email dated May 20, 2015)
33	Don Smith (email dated May 22, 2015)
34	Thomas Lee Turner (email dated April 23, 2015)
35	Chris Yoder (email dated May 16, 2015)
36	George and Frances Alderson (email dated May 16, 2015)
37	Don Anderson (email dated May 16, 2015)
38	Janie Anderson (email dated May 15, 2015)
39	Tanya Anderson (email dated May 17, 2015)
40	Lisa Barclay (email dated May 14, 2015)
41	Susan Bistline (email dated May 18, 2015)
42	Frank Blake (email dated May 15, 2015)
43	Russell Blalack (email dated May 15, 2015)
44	Alida Bockino (email dated May 15, 2015)
45	Annette Bottaro-Walklet (email dated May 15, 2015)
46	Clarence Bolin (email dated May 15, 2015)
47	Sue Bowser (email dated May 16, 2015)
48	Helen Carpenter (email dated May 15, 2015)
49	Janet Carter (email dated May 17, 2015)
50	Ed Cisek (email dated May 16, 2015)
51	Matt Clark (email dated May 20, 2015)
52	Kyle Collins (email dated May 15, 2015)
53	Leslie Conner-Maiyo (email dated May 19, 2015)
54	Joann Crane (email dated May 17, 2015)

Table B-1. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
55	Joshua Davis (email dated May 15, 2015)
56	Todd Davis (email dated May 15, 2015)
57	Susan Deemer (email dated May 15, 2015)
58	Bill DiLenge (email dated May 15, 2015)
59	Richard J Downing (email dated May 16, 2015)
60	Travis Dryden (email dated May 15, 2015)
61	David Dudley (email dated May 16, 2015)
62	Kirk Ebertz (email dated May 24, 2015)
63	Sylvia Eisele (email dated May 16, 2015)
64	Amber Fisher (email dated May 15, 2015)
65	Stephan Flint (email dated May 16, 2015)
66	James Flocchini (email dated May 15, 2015)
67	Lynn Franck (email dated May 24, 2015)
68	Elaine French (email dated May 19, 2015)
69	Archie George (email dated May 23, 2015)
70	Rachel Gibeault (email dated May 15, 2015)
71	Ina Rae Gillies (email dated May 15, 2015)
72	Hattie Goodman (email dated May 15, 2015)
73	Kay Goyden (email dated May 15, 2015)
74	Bill Graham (email dated May 15, 2015)
75	Shirley Harris (email dated May 17, 2015)
76	Michael Haseltine (email dated May 16, 2015)
77	Roy Heberger (email dated May 15, 2015)
78	Ken Helms (email dated May 17, 2015)
79	John Holup (email dated May 15, 2015)
80	Nancy Hunphrey (email dated May 15, 2015)
81	Mike Ihli (email dated May 18, 2015)
82	John Jefimoff (email dated May 15, 2015)
83	Chris Johnson (email dated May 18, 2015)
84	Darcy Joslun (email dated May 15, 2015)
85	Bruce Kaufman (email dated May 16, 2015)
86	Andrew Kennaly (email dated May 16, 2015)
87	Shawna Kennaly (email dated May 16, 2015)
88	Dawn Keur (email dated May 16, 2015)
89	Raine Kidder (email dated May 17, 2015)
90	Douglas Lawrence (email dated May 18, 2015)
91	Jim Loy (email dated May 15, 2015)
92	Sheelagh Lynn (email dated May 15, 2015)
93	Theresa Madrid (email dated May 15, 2015)
94	Deborah Mahler (email dated May 15, 2015)

Table B-1. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
95	Bob Marsh (email dated May 15, 2015)
96	Mark Masselli (email dated May 16, 2015)
97	Jennifer Montgomery (email dated May 17, 2015)
98	Ryan Moore (email dated May 15, 2015)
99	Mary Mosley (email dated May 15, 2015)
100	Chris Munro (email dated May 15, 2015)
101	Carol Muzik (email dated May 15, 2015)
102	John O'Connor (email dated May 19, 2015)
103	Andrea Olsen (email dated May 15, 2015)
104	Susan Olson (email dated May 16, 2015)
105	Nancy Oppenheimer (email dated May 15, 2015)
106	Phyllis Osborn (email dated May 15, 2015)
107	David Pahlas (email dated May 17, 2015)
108	Tim Patton (email dated May 16, 2015)
109	Mary Peterman (email dated May 12, 2015)
110	Elaine Phillips (email dated May 15, 2015)
111	Roger Pritiken (email dated May 16, 2015)
112	Dennis and Margo Proksa (email dated May 16, 2015)
113	Elizabeth Prusha-Parlor (email dated May 12, 2015)
114	Roger Rasmussen (email dated May 16, 2015)
115	Carol Rees (email dated May 15, 2015)
116	Jima Rice (email dated May 15, 2015)
117	Diane Ringler (email dated May 15, 2015)
118	Jack Rogers (email dated May 15, 2015)
119	Nathaniel Role (email dated May 26, 2015)
120	Roger Rosentreter (email dated May 15, 2015)
121	Jeff and Judy Ruprecht (email dated May 16, 2015)
122	Richard A Rusnak Jr (email dated May 15, 2015)
123	Randy Sailer (email dated May 15, 2015)
124	Robert Sandberg (email dated May 15, 2015)
125	Richard H Sanders (email dated May 19, 2015)
126	Kelly Schnebly (email dated May 15, 2015)
127	Wouldiam Schneider (email dated May 15, 2015)
128	John Schott (email dated May 18, 2015)
129	Michael Seaman (email dated May 15, 2015)
130	Katharine Sheldon (email dated May 15, 2015)
131	Jon Siptrott (email dated May 12, 2015)
132	Anne Spencer (email dated May 16, 2015)
133	Viki Smith (email dated May 15, 2015)
134	Anna Stark (email dated May 15, 2015)

Table B-1. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
135	Bob Swandby (email dated May 17, 2015)
136	Cliff Swanson (email dated May 15, 2015)
137	Michael Todd (email dated May 16, 2015)
138	Suzanne Troje (email dated May 13, 2015)
139	Chuck Trost (email dated May 15, 2015)
140	Mark Utting (email dated May 16, 2015)
141	James Van Dinter (email dated May 15, 2015)
142	Bill Ventre (email dated May 15, 2015)
143	Robert Vestal (email dated May 19, 2015)
144	Karen Ward (email dated May 15, 2015)
145	Barbara Warner (email dated May 15, 2015)
146	Bruce Whittaker (email dated May 19, 2015)
147	Denise Zembryki (email dated May 15, 2015)

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
Proposed Action and Alternatives		
1-1	A plan of operations (aptly named PoO) is not required for any suction dredge under 5” on the SF of the Clearwater.	This is already decided by the IDWR Letter Permit and the EPA’s NPDES general permit. BLM’s regulations at 43 CFR 3809.11(c)(6) state that an operator must submit a POO for "Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan." In addition, the eastern-most section of the South Fork of the Clearwater River is within a BLM area of critical environmental concern (ACEC), and 43 CFR 3809.11(c)(3) requires operators to submit a POO for operations within designated ACECs.
1-2	Under the CWA, the USFS and the EPA does not have the authority to require and NPDES permit, which is also another scheme by the Federal Government to further restrict this activity.	EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
1-3	By what authority does the USFS have to restrict the number of miners who can, and cannot mine their validly held mining claims?	Idaho Department of the Environment states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
1-4	What specific science, data, studies or facts does the USFS have that has magically appeared which shows suction dredging is harmful to hany fisheries?	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document along with references to any related scientific research.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
2-1	Suction mining activities may also impact the paddling experience through water quality impacts, by placing dangerous cables and equipment in the streams, and by industrializing the scenery enjoyed by paddlers, fishermen and other visitors	Any proposed actions would be in compliance with applicable laws, regulations, rules, and applicable Forests and BLM land use plans. Effects from the proposed action on recreation are disclosed in the EA.
2-2	The South Fork of the Clearwater has been found eligible for Wild and Scenic designation, requiring the agencies to protect and enhance the values that could cause the river to be designated. In this case we feel that the direct and cumulative impacts of the proposed action could diminish those values, and ask for additional consideration of how values would be protected.	Any proposed actions would be in compliance with applicable laws, regulations and rules. Effects of the proposed action on Wild and Scenic River status are disclosed in the EA.
3-1	We strongly object to requiring a plan of operations for dredges under five inches (5”) on the South Fork of the Clearwater River, requirement of an NPDES permit, and restricting the number of permits to 35.	This is already decided by the IDWR Letter Permit and the EPA’s NPDES general permit and is therefore not within the scope of the EA.
3-2	It is our understanding that requirement of a plan of operations for a suction dredge under 5 “ is not required on the South Fork of the Clearwater	A Plan of Operation is required on the South Fork of the Clearwater according to PACFISH. Also, BLM's regulations at 43 CFR 3809.11(c)(6) state that an operator must submit a POO for "Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan." In addition, the eastern-most section of the South Fork of the Clearwater River is within a BLM area of critical environmental concern (ACEC), and 43 CFR 3809.11(c)(3) requires operators to submit a POO for operations within designated ACECs.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
3-3	Based on our discussion with the American Mining Rights Association (AMRA), it is questionable that the USFS and the EPA have the authority to require and NPDES permit	EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
3-4	We object to restricting the number of potential permits to 35	Idaho Department of the Environment states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15. A maximum of 20 dredge operations on Orogrande and French creeks would be authorized during the season of June 30-September 15.
4-1	As a federal undertaking, not only are there concerns for endangered species and water quality, but for cultural resources as well.	Effects to cultural resources are disclosed in the EA.
4-2	Damage to archaeological and traditional sites must be considered in any assessment.	Effects to cultural resources are disclosed in the EA.
5-1	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. This is a major question as the proposal for “recreational” mining is at odds with the mining law and the claims the agency itself made in front of an administrative law judge concerning suction dredge claims on he (sic) North Fork Clearwater. Simply put, recreational mining has no rights.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
5-2	The Forest Service and the BLM are required to determine and disclose the site specific, project level impacts of each proposed mining operation and determine whether each POO is reasonable. This cannot be done with the blanket approval of some 5 to 30 POOs.	The EA is addressing the impacts to the environment that could be caused by the specified number of suction dredges and is not a blanket approval for dredging. Each suction dredging operation would need to be approved under a POO that has met all of the criteria of the consultation with FWS and/or NMFS and would also need to obtain a NPDES General Permit from the EPA and a Letter Permit from the Idaho Department of Water Resources.
5-3	Cumulative impacts cannot be ignored.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
5-4	None of the three streams – Orogrande Creek, French Creek and the South Fork Clearwater – meet the respective forest plan objectives or standards for water quality or fish habitat.	No streams within the project area are listed as water quality limited by IDEQ. The activities would not violate water quality standards for temperature or sediment. Implementing the design features found in the EA would minimize the risk of other pollutants (gasoline) entering the stream.
5-5	As such, if all the proposals are analyzed together, an EIS is needed. Separate EISs may be more appropriate to look at site-specific impacts from each POO.	An EIS is required if the effects are significant. If the EA determines that the effects are significant an EIS would be completed.
5-6	Therefore the agency must meet the analysis requirements of the site-apecific projects as well as the cumulative impacts from dredge mining.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
5-7	Reasonable alternatives: 1. Develop and analyze an alternative that would recommend the withdrawal of, at the very least, all RHCAs	1. This type of alternative was not considered in detail because it is more appropriately considered in the current Forest Plan revision effort than at a project level and is therefore outside the scope of the project. 2. The impacts to the environment for an individual dredging operation is very consistent and is practically identical, by requiring each individual dredging

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	2. Develop and analyze an alternative in which each POO is subject to public notice and individual, site specific NEPA documents. 3. Develop and analyze an alternative in which the approval and initiation of mining is contigent on the claimant being able to demonstrate a valid right to mine under the 1872 Mining Law.	operation to comply with the consultation stipulations and other permitting requirements from other agencies there is no need to process each POO separately at a much higher cost to the US taxpayer. 3. Claim validity examinations are not required under the General Mining Law and the regulations promulgated thereunder for mineral exploration or development, therefore the BLM and FS cannot require that a dredger demonstrate a valid right to mine.
5-8	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.	Monitoring would be a part of the EA, before, during and after mining season.
5-9	Since the proposed project would discharge pollutants into the river and due to the fact these streams don't meet all fishery and water quiality standards, the activity should not proceed.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
5-10	It appears very unlikely, even impossible, for the proposed operation to comply with the ESA, the NFMA, and other aquatic life protective measures.	Any proposed actions would be in compliance with applicable laws, regulations and rules.
5-11	It is law that the mining "rights" relied upon by the agency can only be based on the discovery of a "valuable mineral deposit" on each claim to be used by the applicants. The Forest Service and BLM cannot presume that the filing of a mining claim means that the claim is valid.	The Agencies do not presume that the filing of a mining claim means that the claim is valid. A validity examination is a process whereby the federal government verifies whether the claimant has discovered a valuable mineral deposit and, otherwise, has a valid mining claim. The Agencies normally conduct validity examinations only in the context of a mineral patent application or to resolve a conflict between the claim

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		and some other use of the land. If a conflict can be resolved through an approved POO then there is no need for additional actions. Additionally, a suction dredger is not required to be on an active claim to dredge.
5-12	Since the federal government can review and challenge the validity of any mining claim at any time, it must inquire into these issues at the outset as part of its NEPA and 36 CFR 228 review processes. This inquiry is also required to the Forest Service's duty under the Organic Act, prior to the approval of an operation.	See 6-11 above. It is not a requirement under the Organic Act to determine validity prior to the approval of a plan of operation.
5-13	In this case, it is highly doubtful that the revenues from recreational suction dredging activities sufficiently outweigh all of the necessary costs so as to have sufficiently profitable operations.	Suction dredging activities under federal regulations are not considered recreational. To determine if an operation is sufficiently profitable is basically equivalent to determining if a claim is valid. The government (or the Agencies) retains the right to examine any mining claim at any time for any reason. But because public funds are not plentiful, mining claim validity examinations are completed only in certain priority circumstances. Those are, in priority order, patent applications, plan of operation or notice in a withdrawn area (segregated area is different), plan or notice for what we think may be a common variety, or in cases of flagrant trespass.
5-14	We question whether this can proceed on the South Fork, given the status as a potential wild and scenic river.	Any proposed actions would be in compliance with applicable laws, regulations and rules. The river is eligible but no sections have been proposed for Wild and Scenic River designation. Effects to Wild and Scenic River status are disclosed in the EA.
6-1	We are concerned that the direct impacts to streams and the proposed mitigation measures are insufficient to	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	provide protection for water quality and other sensitive riparian resources.	
6-2	We do not feel that the proposed activity is consistent with the protection of these values and encourage you to develop a range of alternatives that ensures compliance with this direction.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
6-3	We also question the basis for the proposal to consider up to 35 separate operations. With 35 operators engaged over the course of several months, the direct impacts associated with these operations are significant.	An EIS is required if the effects are significant. If the EA determines that the effects are significant an EIS would be completed.
6-4	We question whether the interest from the dredge mining community is sufficient to warrant further analysis of this proposal.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering National Forests and applicable laws passed since 1872 that have placed additional requirements upon miners.
6-5	Analysis should be based on the site-specific applications from miners, associated with valid mining claims, and the cost of analysis and compliance should be borne by the miners.	Each individual POO would be required to follow site-specific stipulations based on the consultation with FWS and/or NMFS, which would be discussed and determined during an on-site visit by a fisheries biologist. A suction dredge operation does not have to be associated with a valid mining claim and the BLM and FS cannot require that the cost of analysis and compliance be borne by the miner.
6-6	We are especially concerned with the potential impacts to Fall Chinook salmon, Spring Chinook salmon, steelhead, bull	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	trout, Pacific lamprey and other aquatic species within, and downstream of the project area	
6-7	Sediment loads and turbidity increase from the direct vicinity of the dredging operation.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
6-8	Suction dredge mining also creates unstable spawning habitat through the deposition of tailings below mined areas.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
6-9	In-stream dredging equipment, materials and disturbance may inhibit movement of fish.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
6-10	The EIS should also detail consistency with the South Fork Clearwater Biological Assessment (USDA, 1999), PACFISH, INFISH, Nez Perce and Clearwater Forest Plans (USDA, 1987), Cottonwood RMP (2009) and the Cottonwood RMP Aquatic and Riparian Management Strategy. In particular, these plans and regulations require: • Avoidance of adverse effects in designated critical habitat • Development of reclamation plans • Bonding sufficient to meet the reclamation described aboce, and to stabilize, rehabilitate and reclaim the areas of operation • Prohibition of solid and sanitary wast disposal within RHCAs • Prohibition of storage of fuels and other toxicants within RHCAs and prohibition of refueling within RHCAs, unless there are no alternative • Compliance with RMOs	Any proposed actions would be in compliance with applicable laws, regulations and rules.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
6-11	The EIS for this project (Crooked River) should discuss and disclose how dredge mining may affect that ongoing restoration work and whether recolonization of resotred areas in the Crooked River may impede the as a result of dredge mining (sic).	This proposal is not the Crooked River project. Any effects, including cumulative effects, would be disclosed in the NEPA analysis.
6-12	We are concerned that the proposed mining has the potential to impact habitat utilized by lamprey and to negatively impact this sensitive species.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
7-1	The South Fork Clearwater River Subbasin is currently listed in Category 4a and 4c of the 2012 Idaho Integrated Report as not supporting designated beneficial uses of cold water aquatic life and salmonid spawning due to temperature, sediment and habitat impairment.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
7-2	As the cold water aquatic life and salmonid spawning beneficial uses are impaired due to temperature not seidment. This activity cannot result in an increasein stream temperature in Orogrande Creek.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
9-1	DFRM would be very concerned about any proposed activity that may degrade watershed/aquatic ecosystem conditions.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-2	Disturbing stream bottom in ESA-listed stream habitats constitutes extraordinary circumstances; thus we believe this analysis should warrant the study of an EIS.	An EIS is required if the effects are significant. If the EA determines that the effects are significant an EIA would be completed.
8-3	Would the Biological Assessment (BA) written for this project be considered programmatic? If so, how long would it be in place?	The BA prepared for this project covers suction dredging through the 2024 mining season.
8-4	• Not allow suction dredging in the South Fork Clearwater	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	• Reduce the reach open for dredging in the South Fork based on the location of steelhead, spring Chinook, summer Chinook, fall Chinook, and potential spawning areas for coho and Pacific lamprey. The information for the spring/summer Chinook, steelhead and fall Chinook needs to be based on actual historic data in the South Fork Clearwater River. The hatchery programs for summer Chinook and coho are relatively new with little redd data available therefore this should be based on potential existing habitat. • Limit the number of suction dredgers by half and limit the number of entries in the South Fork Clearwater • Limit the duration of the suction dredging season (14 days vs 30 days). • Not allow suction dredging in the years with high fish returns (i.e. administrative closures when the runs for steelhead and chinook runs are projected to be high) • Provide an adaptive management plan for each of the alternatives that address monitoring and enforcement on a yearly basis, along with a decision tree on how to address unforeseen impacts and/or adverse impacts.	
8-5	The scoping letter calls this small-scale placer mining rather than recreation suction dredgining. Does this fit under a non-recreation special use permit for commercial activities?	Small-scale placer mining falls under the Forest Service's 36 CFR 228 and BLM's 43 CFR 3809 regulations.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
8-6	We recommend that the analysis provide information about historic mining and disturbance in the watershed as well.	Cumulative affects looks at past, present, and reasonably foreseeable future activities.
8-7	Fully analyze recreation and fishing impacts, including camping limits (14 days; whereas the areas are open for 30 days), enforcement of camping limits, displacement of tribal and non-tribal fishermen, displacement of other recreationsists, and enforcement of waste management.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-8	Turbidity/suspended sediment and bed load effects of suction dredging, including the effects to fish and macroinvertebrates needs to be monitored.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-9	Analyze the effects of unearthing mercury in the water column.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-10	Sediment monitoring has occurred in the past and needs to be disclosed in the analysis and shown to be improving.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-11	Fully analyze the impacts to spawning habitat.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-12	Please analyze the impacts to Pacific lamprey, as well as western pearlshell mussels.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-13	Fully analyze impacts the potential bedload movement would have on downstream fisheries spawning areas and habitat features such as channel shape and function.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-14	Fully analyze the effects to the South Fork based on the current hydrograph, substrate composition, and terrestrial impacts on bedload movement (longitudinal profiles) from suction dredging.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
8-15	Please consider the cost of enforecement and waste management from camping.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
8-16	How is the forest going to ensure that conservation measures are followed AND enforced?	To ensure that mining operations are conducted in a manner consistent with the operational conditions associated with consultation and approved POOs, the sites would be monitored by Agency staff before, during, and after operations.
9-1	This proposal is an underuse of the resource, only 1/100 of the area is permitted under the 150 foot rule permit.	This is set by the operational conditions associated with Section 7 (Endangered Species Act) consultation with NMFS and USFWS.
9-2	Permit numbers should increase after the study.	Idaho Department of the Environment states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
10-1	The first point to be addressed is the 150 foot rule which is totally unrealistic!	This is set by the operational conditions associated with Section 7 (Endangered Species Act) consultation with NMFS and USFWS.
10-2	15 permits on the South Fork of the Clearwater River is another bad idea.	Idaho Department of the Environment states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
10-3	One of the questions I have and needs to be addressed is where have you come up with the idea a small suctions dredge with a nozzle size of 5" or less can do (in your words) significan disturbance?	This is already decided by the IDWR Letter Permit and the EPA's NPDES general permit.
10-4	As for the Plan of Operations that needs to be filed, if this plan has been in place since 1987 why has it not been used until now?	It is unknown why this requirement has not been implemented prior to the current requirement but it has now come to our attention and is being addressed through this EA, consultation and the requirement of a POO.
10-5	On the fisheries issue, how can a species that has been decimated (your own words) and reintroduced from foreign sources (other rivers and hatcheries) be considered native and the large native run is due to not clipping more fish?	The spring run of Chinook salmon are native to the Clearwater River, but were extirpated from the Clearwater River basin in the early 20th century because of a faulty fish ladder on Lewiston Dam. The current hatchery and naturally-spawned components of this run were re-introduced from other Columbia River basin stocks. This is why the current spring Chinook salmon in the South Fork of the Clearwater River are not listed under the Endangered Species Act (ESA), but whether the current run can be considered "native" or not is more a matter of semantics than biology. Snake River steelhead were able to continue to pass Lewiston Dam in at least small numbers, and their progeny are both native to the South Fork of the Clearwater River and listed under the ESA. Fall Chinook salmon spawn in the Snake and Clearwater rivers and are considered to be of the same native stock. The recently increasing number of fall Chinook salmon spawning in the Clearwater River mainstem and even more-recent records of spawning in the South Fork of the Clearwater River is partly due to an aggressive hatchery program by the Nez Perce Tribe.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		Any hatchery or wild fall Chinook salmon spawning or hatching in the South Fork of the Clearwater River is of the native stock, however, and protected under the ESA.
11-1	There are plenty of studies that do show the benefits of small scale suction dredging such as 98% removal of mercury, 100% of lead not to mention the removal of everyone else's trash from the waterways and public lands.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
11-2	All these studies have already been done in the past and there is no proof that small scale dredge mining does any harm to the fish or to any other life form in the water way.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
12-1	Dredge tailings are called "incidental fallback" and it is precisely the opposite of what these regulatory and management agencies are stating.	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
12-2	This is a scheme which has been decided by the Supreme Court of the United States and specifically states they DO NOT have the authority to require a "pollutant discharge permit".	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
13-1	The effect of the Suction dredging on these small streams is much larger than is being projected by the applicants for the permits.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
13-2	There is clearly no public benefit to allowing this type of recreational use of our streams of the Clearwater drainage.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners.
14-1	Your job is to keep people safe and protect the rights of Americans, not take special attention to one group and impede their way of making a living, affecting the families of thousands of people and hundreds of business (sic) that rely on their survival.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document
15-1	The regulations proposed have already been ruled upon by the United States Supreme Court.	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
15-2	Please represent the best interest of your constituents, not just the special interest groups that rely on lies to promote there cause.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
16-1	As stated in Mr. Poe's letter the U.S. Supreme court has ruled. Please stop trying to get around this ruling by using endangered species act or water quality. Miners should be protected from extinction.	This is out of the scope of this EA.
17-1	I strongly oppose your new permitting and regulatory scheme to restrict environmentally sound methods of mining such as those practiced by myself and thousands of like-minded small scale recreational prospectors.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
18-1	The proposed project would take away/abridge/diminish legal rights (1872 Mining Law, etc.) of individual miners to mine on their own claims(s). With these abridgements and restrictions, this project constitutes a "takings" without compensation. Each layer of regulations that are heaped upon the individual miner adds costs to him/her as well as to the taxpayer. The implementing regulations are not set forth.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners.
18-2	The agencies involved do not have authority under the Clean Water Act.	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
18-3	No evidence of jurisduction established by the USFS in this action. Proposal infringes on the State of Idaho jurisdiction.	The South Fork of the Clearwater River, Orogrande Creek and French Creek have not been determined to be navigable in Federal Court, therefore these waterbodies are not managed by the State and remain in the jurisdiction of the Federal Government. The lands being reviewed for this EA are managed by the USFS or BLM. The Organic Administration Act of June 4, 1897 (30 Stat. 11, as amended; 16 U.S.C. 473-475, 477-482, 551) provides the Secretary of Agriculture the authority to regulate the occupancy and use of NFS lands. It provides for the continuing right to conduct mining activities under the general mining laws if the rules and regulations covering NFS lands are complied with. The Forest Service regulations for mining

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		activities are Title 36, Code of Federal Regulations, Part 228 Subpart A. FLPMA provides the Secretary of Interior the authority to regulate the occupancy and use of BLM lands.
18-4	Historic issues are at play	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
19-1	The State of California concluded that the impact on the environment from these operations would be less-than-significant.	The EA discloses the significance of impacts specific to the location of the proposed action.
19-2	The project that you are proposing is redundant. If you use the available science your conclusion must be the same. The only way in which you could possibly arrive at different results would have to be determined from political positioning rather than available published scientific data.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document along with references to any related scientific research.
19-3	There are no scientific conclusions that support interference with small-scale gold suction dredge mining activities.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document along with references to any related scientific research.
20-1	You cannot suggest permits are necessary for purposes of limiting dredge's pollution risks. There are none. Suction dredging CLEANS UP pollutants in the waterways. When it comes to habitat, small scale suction dredging is a great friend and brings BENEFIT to the river system.	Thank you for your comment. All effects, including positive ones, would be analyzed and disclosed in the NEPA document along with references to any related scientific research.
21-1	The Forest Service is obligated under the law to follow supreme court decisions. Please see that the Idaho Forest service does so. Your anti-mining scheme is illegal.	This is outside the scope of the EA.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
22-1	I urge you to approve the proposal to open the South Fork Clearwater River and French and Orogrande Creeks to suction dredge mining.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
23-1	This is a scheme which as (sic) been decided by the Supreme Court of the United States and specifically states the DO NOT have the authroity to require a "pollutant discharge permit."	This is outside the scope of the EA.
23-2	Suction dredges remove 98% of the mercury and almost 100% of the lead from our waterways.	Thank you for your comment. All effects, including positive ones, would be analyzed and disclosed in the NEPA document along with references to any related scientific research.
24-1	You should not open these streams to dredge mining.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
25-1	Small scale suction dreding is not deleterious to anadramous fish and that small scale suction dredging actually removes 98% of the mercury from the streams, rivers and waterways.	Thank you for your comment. All effects, including positive ones, would be analyzed and disclosed in the NEPA document.
25-2	Plan of Operations (PoO) is not required for any suction dredge under 5" on the South Fork of the Clearwater.	This is already decided by the IDWR Letter Permit and the EPA's NPDES general permit.
25-3	I do not understand why USFS believes it has the authority to restrict the number of miners who can and cannot mine their validly held mining claims. Mining claims are recognized as "real property in every sense of the word" by the United States Supreme Court.	Idaho Department of Environmental Quality states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
25-4	If there is one thing that I would like to see the USFS focus on (that would be helpful to everyone and also supported by all environmental groups too…it would be to implement a statewide process for miners to effectively, safely, and profitably hand over all of the mercury and lead that suction dredge mining pulls out of the Idaho waterways each year.	This is outside the scope of the EA.
26-1	Under the CWA, the USFS and the EPA does not have the authority to require an NPDES permit, which is also another scheme by the Federal Government to further restrict this activity.	This is outside the scope of the EA. This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
27-1	I urge you to approve the proposal to open the South Fork Clearwater River and French and Orogrande Creeks to suction dredge mining.	Thank you for your comment.
28-1	Any rules/regulations you come up with cannot endanger or materially interfere with the right to prospect or mine.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners.
28-2	You say you are going to use EPA Cindy Godsey's and her biologists rules and regulations and IDWR regulations as is and in place. If so this would perform a taking of mining claims and lands open to prospecting and mining out here	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	which would be unlawful as it already is, so some of us out here would have to hold you liable.	Idaho Department of Environmental Quality states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
29-1	Proposals to allow duction dredging on SF Clearwater River and French and Orogrande Creeks should be denied.	Thank you for your comment.
29-2	Surely you can see that sucking holes in the river bed may be some kind of fun for a few people but would come at the expense of wildlife and outdoor values important to many, many people.	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners.
29-3	If you have some time and energy to spend on this issue, how about using some of those resources to stop the illegal dredging that already occurs.	This is outside the scope of the EA.
30-1	I urge you to reject the proposal to open the South Fork Clearwater River and French and Orogrande Creeks to suction dredge mining. Instead, please control ongoing illegal mining activity under your jurisdiction before opening any additional streams to this harmful recreational activity.	This EA and the permitting process is all in an effort to get the miners out there legally as long as environmental concerns are being addressed and all of the laws and regulations that the BLM and FS are required to uphold. This action would allow for stronger enforcement for those dredgers that are not in compliance with federal laws.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
31-1	The forest service should be considering curtailing fishing instead of suction dredging.	This is outside the scope of the EA.
31-2	Suction dredging would suck up lead and mercury as wll as gold; thus cleaning the stream and making it better for all animals.	Thank you for your comment. All effects, including positive ones, would be analyzed and disclosed in the NEPA document.
32-1	Who came up with an exact 1 mile of dredged distance with 35 dredges peryear on 3 different streams?	Idaho Department of Environmental Quality states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
32-2	Army Corps of Engineers state that any operation of less than significant disturbance does not need a plan of operation (POO).	A Plan of Operation is required on the South Fork of the Clearwater according to PACFISH. BLM's regulations at 43 CFR 3809.11(c)(6) state that an operator must submit a POO for "Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan." In addition, the eastern-most section of the South Fork of the Clearwater River is within a BLM area of critical environmental concern (ACEC), and 43 CFR 3809.11(c)(3) requires operators to submit a POO for operations within designated ACECs.
32-4	Rule to limit the number of dredges on a stream, if the "number of permits" are already issued, this rule would be used to stop a miner from using the most effective way of	Idaho Department of Environmental Quality states: The South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Load provides a 314 tons/day total sediment

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	mining on a valid claim, you cannot stop a miner from using a valid claim.	waste load allocation for suction dredges operating in the river assessment units listed above. Assuming dredges can move up to 2 cubic yards of material per hour and operate for 8 hours a day, the TMDL allows up to 15 dredges a day to operate during the critical season of July 15 – August 15.
32-5	In reality there are no native salmon or steelhead.	The spring run of Chinook salmon are native to the Clearwater River, but were extirpated from the Clearwater River basin in the early 20th century because of a faulty fish ladder on Lewiston Dam. The current hatchery and naturally-spawned components of this run were re-introduced from other Columbia River basin stocks. This is why the current spring Chinook salmon in the South Fork of the Clearwater River are not listed under the Endangered Species Act (ESA), but whether the current run can be considered "native" or not is more a matter of semantics than biology. Snake River steelhead were able to continue to pass Lewiston Dam in at least small numbers, and their progeny are both native to the South Fork of the Clearwater River and listed under the ESA. Fall Chinook salmon spawn in the Snake and Clearwater rivers and are considered to be of the same native stock. The recently increasing number of fall Chinook salmon spawning in the Clearwater River mainstem and even more-recent records of spawning in the South Fork of the Clearwater River is partly due to an aggressive hatchery program by the Nez Perce Tribe. Any hatchery or wild fall Chinook salmon spawning or hatching in the South Fork of the Clearwater River is of the native stock, however, and protected under the ESA.
33-1	The claim owners have congressionally granted rights to prospect and remove mineral deposits and this proposal	The Mining Law of 1872 provides citizens of the United States the opportunity to prospect, explore, develop and extract

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
	would materially interfere with the mining rights of said claim owners.	certain valuable mineral deposits on Federal lands that remain open for that purpose. Forest Service and BLM compliance with the 1872 Mining Law is non-discretionary. While miners have rights under the 1872 Mining Law, they are legally required to comply with the rules and regulations covering public lands and applicable laws passed since 1872 that have placed additional requirements upon miners.
33-2	I consider the EPA NPDES General Permit for Small Scale Suction Dredge Mining in Idaho to be invalid and no longer to be enforced.	This is out of the scope of this study. EPA issued an NPDES general permit in 2013 for small suction dredge operations in Idaho. To comply with the Clean Water Act, operators of small suction dredges must obtain NPDES permit coverage prior to operation.
33-3	A Plan of Operations is completely un-necessary in this instance, because no “significan surface disturbance” can be anticipated in suction dredge mining.	A Plan of Operation is required on the South Fork of the Clearwater according to PACFISH. BLM's regulations at 43 CFR 3809.11(c)(6) state that an operator must submit a POO for "Any lands or waters known to contain Federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the BLM allows for other action under a formal land-use plan or threatened or endangered species recovery plan." In addition, the eastern-most section of the South Fork of the Clearwater River is within a BLM area of critical environmental concern (ACEC), and 43 CFR 3809.11(c)(3) requires operators to submit a POO for operations within designated ACECs.
34-1	I wish to submit my opposition to the Small Scale Placer Mining Project regulations proposed and believe it would cause a hardship on not only the miners involved but those that rely on their business when doing their mining.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

Table B-2. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
35-1	Suction dredge mining is nothing short of pointless destructive vandalism of a fragile resource.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.
35-2	Please withdraw this proposal and instead enforce rules prohibiting the illegal mining that is damaging the fragile and valuable public resource embodied in the rivers and streams entrusted to your stewardship by the American people.	Thank you for your comment. All effects would be analyzed and disclosed in the NEPA document.

On December 17, 2015, the Agencies mailed a notice to 138 parties or individuals and the Nez Perce Tribe. The legal notice and request for public comments was published in the *Lewiston Tribune* on December 18, 2015. Comments ranged from criticism of the Agencies for suggesting that any conditions could or should be placed on small-scale suction dredge operations, to support for the proposal, to opposition to all suction dredging.

This appendix identifies the commenters; presents comments received by the public, agencies, and organizations; and describes the Forest Service responses to these comments. These comments were used to make changes to the EA.

The Agencies carefully reviewed each comment received on the Draft EA and organized them by 1) agency, and 2) individuals, in the order they were received. Then, the Agencies reviewed the letters for content to capture the public's concern and assigned a comment number to facilitate the organization of responses. Table B-3 identifies the individuals, organizations, or agencies that provided oral or written comments. This table also lists the number assigned to each separate comment. Table B-4 presents each of the comments and responses to these comments.

Following Table B-3, comment letters and e-mails received are presented.

Table B-3. Individual and Organizational Commenters on the Draft EA

Commenter	*Name of individual / organization submitting comments*
1	Amber Fisher (email dated December 26, 2015)
2	Richard Servatius (email dated December 27, 2015)
3	Richard Servatius (email dated December 28, 2015)
4	Greg Voisard (email dated December 29, 2015)
5	Shannon Poe, AMRA (email dated December 29, 2015)
6	Paul Kirkeminde (email dated December 29, 2015)
7	David M. Van Selow (email dated December 29, 2015)
8	Roger Sleight (email dated December 29, 2015)
9	Joel Grothe (email dated December 29, 2015)
10	Thomas Mitchell (email dated December 29, 2015)
11	David Shackleton (email dated December 29, 2015)
12	Michael Dahl (email dated December 29, 2015)
13	Jeff McAuliff (email dated December 29, 2015)
14	Calvin Courtnier (email dated December 29, 2015)
15	Douglas Mastri (email dated December 29, 2015)
16	Tom Chambers (email dated December 29, 2015)
17	Jere and Connie Clements (email dated December 29, 2015)
18	Aaron Klapka (email dated December 29, 2015)
19	Bob VH (email dated December 29, 2015)
20	Steve Drinovsky (email dated December 30, 2015)
21	Ron Decker (email dated December 30, 2015)
22	Dennis Swart (email dated December 30, 2015)
23	Kelly Taylor (email dated December 30, 2015)
24	Nicole Carlson (email dated December 30, 2015)

Table B-3. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
25	James Karl, Tumbling Dice, LLC, (email dated December 30, 2015)
26	Albert Jacoboni (email dated December 30, 2015)
27	Landon Christensen (email dated December 30, 2015)
28	Brian Wells (email dated December 31, 2015)
29	Robert Waldrip (email dated January 1, 2016)
30	Jeremiah J. Osgood (email dated January 1, 2016)
31	Steve Rinehart (email dated January 2, 2016)
32	Robert Harrison (email dated January 3, 2016)
33	Dale Myer, East Bay Prospectors (email dated January 2, 2016)
34	Nathaniel Role (email dated January 4, 2016)
35	Holly Endersby, Backcountry Hunters & Anglers (email dated January 6, 2016)
36	Scott Ploger (email dated January 6, 2016)
37	Stacie Albright (email dated January 8, 2016)
38	Dale Mahoney (email dated January 8, 2016)
39	Ron Holt (email dated January 10, 2016)
40	David Seyer (email dated January 10, 2016)
41	Jeff Black (email dated January 11, 2016)
42	John Vladimiroff (email dated January 12, 2016)
43	Shannan Lyman (email dated January 12, 2016)
44	Boots Allen (email dated January 13, 2016)
45	Brad Smith, Idaho Conservation League (email dated January 14, 2016)
46	Kevin Landon (email dated January 14, 2016)
47	Cassi Wood, Trout Unlimited (email dated January 15, 2016)
48	Clifford Robinson (email dated January 16, 2016)
49	Kip Dieringer (letter dated January 12, 2016)
50	Ron Miller (email dated January 13, 2016)
51	Don Smith (email dated January 17, 2016)
52	Tim Hoskins (email dated January 18, 2016)
53	Michael Edmonson (email dated January 18, 2016)
54	Gary Macfarlane, Friends of the Clearwater (email dated January 18, 2016)
55	Jon Menough (email dated January 18, 2016)
56	Jamie Edmonson (email dated January 18, 2016)
57	John Anderson (email dated January 18, 2016)
58	Anthony D. Johnson (letter dated January 19, 2016)
59	Gay Richardson (letter dated January 9, 2016)
60	Dave Erlandson (letter dated January 13, 2016)
61	Jon Siptrott (email dated December 29, 2015)
62	Jim Burrage (email dated December 29, 2015)
63	Morgan Monahan (email dated December 29, 2015)
64	Jeff and Reb Baraglia (email dated December 29, 2015)

Table B-3. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
65	Brant Monahan (email dated December 29, 2015)
66	Joe Waldhaus (email dated December 29, 2015)
67	Douglas Ferguson (email dated December 29, 2015)
68	Lattana Vimongkhon (email dated December 29, 2015)
69	Bret Felter (email dated December 29, 2015)
70	Jim Hamilton (email dated December 29, 2015)
71	Stone G. McLeod (email dated December 29, 2015)
72	Larry W. Bowen (email dated December 29, 2015)
73	Vance Goss (email dated December 29, 2015)
74	Ken Swenson (email dated December 29, 2015)
75	Russell E. Grau (email dated December 29, 2015)
76	Nolan Sauerbreit (email dated December 29, 2015)
77	Wade Wilson (email dated December 29, 2015)
78	Ken Miller (email dated December 29, 2015)
79	Steve Hicks (email dated December 29, 2015)
80	Wouldiam M. Gardunia (email dated December 29, 2015)
81	Stacy Serrato (email dated December 29, 2015)
82	David Frickelton (email dated December 29, 2015)
83	John M. Beisner (email dated December 29, 2015)
84	John Stickley (email dated December 29, 2015)
85	Michele Stickley (email dated December 29, 2015)
86	Bryan Munday (email dated December 29, 2015)
87	Cynthia Hammer (email dated December 29, 2015)
88	Brandon Cox (email dated December 29, 2015)
89	Ron Hamilton (email dated December 29, 2015)
90	Jay Bromley (email dated December 29, 2015)
91	Douglas Murray (email dated December 29, 2015)
92	Janice Mitchell (email dated December 29, 2015)
93	Linda Bradburn (email dated December 29, 2015)
94	Michael Mahoney (email dated December 29, 2015)
95	Roland T. Harris (email dated December 29, 2015)
96	Donovan Schuyler (email dated December 29, 2015)
97	Steve Hill (email dated December 29, 2015)
98	Larry Robbins (email dated December 30, 2015)
99	Rick Dozier (email dated December 30, 2015)
100	Kevin Roth (email dated December 30, 2015)
101	Richard Stocking (email dated December 30, 2015)
102	Vic Janda (email dated December 30, 2015)
103	Jim Moir (email dated December 30, 2015)
104	Evan Crook (email dated December 30, 2015)

Table B-3. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
105	Suzanne Page (email dated December 30, 2015)
106	Mike Brock (email dated December 30, 2015)
107	David Irwin (email dated December 30, 2015)
108	Wesley Bauerle (email dated December 30, 2015)
109	Rick Marvel (email dated December 31, 2015)
110	Mel Jones (email dated December 31, 2015)
111	Chad Mendenhall (email dated December 31, 2015)
112	Roger Carlson (email dated January 1, 2016)
113	Tom Cullen (email dated January 2, 2016)
114	Wade Stolworthy (email dated January 2, 2016)
115	Melvin L. Ketchum (email dated January 2, 2016)
116	Amee L. Ketchum (email dated January 2, 2016)
117	Jason Sherman (email dated January 2, 2016)
118	Jeremie Kaufman (email dated January 3, 2016)
119	Michael O'Rourke (email dated January 4, 2016)
120	Robert Sulatycky (email dated January 5, 2016)
121	Chuck Trost (email dated January 6, 2016)
122	Alisa McGowan (email dated January 6, 2016)
123	Dennis Gann (email dated January 6, 2016)
124	Brandon Fitzpatrick (email dated January 6, 2016)
125	Glen Albertson (email dated January 6, 2016)
126	Muriel Roberts (email dated January 6, 2016)
127	Richard Downing (email dated January 6, 2016)
128	Mary DuPree (email dated January 6, 2016)
129	Diane Ringler (email dated January 6, 2016)
130	Marc Fleisher (email dated January 6, 2016)
131	Patricia Matejcek (email dated January 6, 2016)
132	James Van Dinter (email dated January 6, 2016)
133	Susan Norton (email dated January 6, 2016)
134	Susan Deemer (email dated January 6, 2016)
135	Matt Clark (email dated January 6, 2016)
136	James Loy (email dated January 6, 2016)
137	Lawrence Dawson (email dated January 6, 2016)
138	Carmen Northen (email dated January 6, 2016)
139	John McKee (email dated January 6, 2016)
140	John O'Connor (email dated January 6, 2016)
141	Linda Erdmann (email dated January 6, 2016)
142	Bill Graham (email dated January 6, 2016)
143	Kenneth Winer (email dated January 6, 2016)
144	Jerry Jayne (email dated January 6, 2016)

Table B-3. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
145	Todd Davis (email dated January 6, 2016)
146	David Dudley (email dated January 6, 2016)
147	Richard Ostrogorsky (email dated January 6, 2016)
148	Sue Bowser (email dated January 6, 2016)
149	Rhea Verbanic (email dated January 6, 2016)
150	Kay Goyden (email dated January 6, 2016)
151	Janet Carter (email dated January 6, 2016)
152	Frank Blake (email dated January 6, 2016)
153	Ted McManus (email dated January 6, 2016)
154	Roy Heberger (email dated January 6, 2016)
155	Max Walker (email dated January 6, 2016)
156	Al McGlinsky (email dated January 7, 2016)
157	Nathaniel Role (email dated January 7, 2016)
158	Samantha Everett, Armadillo Mining Shop (email dated January 7, 2016)
159	Fred Rabe (email dated January 7, 2016)
160	James Norton (email dated January 7, 2016)
161	Susan Bistline (email dated January 7, 2016)
162	Nancy Benson (email dated January 7, 2016)
163	Martin and Patricial Huebner (email dated January 7, 2016)
164	Kathryn Kolberg (email dated January 7, 2016)
165	Alida Bockino (email dated January 7, 2016)
166	Annette Botaro-Walklet (email dated January 7, 2016)
167	Stephan Flint (email dated January 8, 2016)
168	Karen Wouldiams (email dated January 8, 2016)
169	Joe Allenby (email dated January 9, 2016)
170	Jesse Feathers (email dated January 9, 2016)
171	Mike Bordenkircher (email dated January 10, 2016)
172	Bernard Friedlander (email dated January 10, 2016)
173	Yevelle Nelson (email dated January 10, 2016)
174	Frank Matyus (email dated January 10, 2016)
175	David Fauset (email dated January 10, 2016)
176	Peter Keigher (email dated January 10, 2016)
177	Brian Lamar Smith (email dated January 11, 2016)
178	John Brezzo (email dated January 11, 2016)
179	Greg Loomis (email dated January 11, 2016)
180	Daniel Roper (email dated January 11, 2016)
181	Jason Kelleher (email dated January 11, 2016)
182	Kent Hall (email dated January 11, 2016)
183	Robert Waldrip (email dated January 11, 2016)
184	Candi Pillow (email dated January 11, 2016)

Table B-3. Individual and Organizational Commenters on the Draft EA	
Commenter	*Name of individual / organization submitting comments*
185	Glenn Grisso (email dated January 12, 2016)
186	Cathy Tyson-Foster (email dated January 12, 2016)
187	Michael Wells (email dated January 12, 2016)
188	Matt Woodard (email dated January 12, 2016)
189	Jim Hill (email dated January 12, 2016)
190	Mark Gosling (email dated January 12, 2016)
191	Randy DonCarlos (email dated January 12, 2016)
192	Shirley Hooker (email dated January 12, 2016)
193	Everett Hooker (email dated January 12, 2016)
194	Alan Richardson (email dated January 13, 2016)
195	Matt Green (email dated January 13, 2016)
196	Gold Dawg (email dated January 13, 2016)
197	James Myers (email dated January 13, 2016)
198	Gary and Alberta Zumwalt (email dated January 13, 2016)
199	Rusty Creed (email dated January 13, 2016)
200	Bryan Durham (email dated January 13, 2016)
201	David B. Rieck (email dated January 13, 2016)
202	Thomas Fowlkes (email dated January 13, 2016)
203	Edward Northen (email dated January 14, 2016)
204	Don Dishman (email dated January 14, 2016)
205	Melvin Altis (email dated January 14, 2016)
206	Mike Swenson (email dated January 15, 2016)
207	Scott Dunn (email dated January 15, 2016)
208	Greg Voisard (email dated January 18, 2016)

Comments have been paraphrased.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
Proposed Action and Alternatives		
2-5, 8-10, 13-15, 26, 27, 29, 30, 32, 33, 37, 38, 40, 46, 48, 50, 52, 53, 55-57, 59, 60	Limiting the number of permits issued is like telling a claim holder that they cannot mine on their claim. The excuse for excluding rightful claim owners to dredge their claims is due to the supposed inability to process the permits. If the Forest Service does not have the time to process permits, contract the job out to public bid or hire volunteers to help. Permits do not need to be regulated or excessive because the public pays taxes to fund the USFS and the BLM. Allowing 15 permits on the South Fork of the Clearwater River and a stream reach of 300 feet limits proper sampling and is arbitrary and without foundation.	The number of permits allowed is based on the Idaho Department of Environmental Quality's (IDEQ) stipulation, which is used to monitor and control Total Maximum Daily Loads (TMDL) in the South Fork of the Clearwater River (South Fork of the Clearwater River). The limit of 15 permits on the South Fork of the Clearwater River is not associated in any way with the Forest Service or BLM's ability to process permits. The stream reach of the permits would be in line with what is allowed under the dredgers permits from the Idaho Department of Water Resources (IDWR) Letter Permit and the EPAs National Pollutant Discharge Elimination System (NPDES) General Permit.
4, 5, 10-12, 19, 23, 25, 28, 30, 40, 46, 48-50, 52, 56-57, 59, 60	There is no scientific proof that suction dredging harms fish or fish habitat. Dredgers do the fish and river aquatics a favor. Suction dredging does not discharge any pollutants and recovers mercury, lead and trash in waterways and is not allowed during spawning season. It is the responsibility of the miner to determine if he/she is creating a "significant disturbance" and it does not create a significant surface disturbance since it is conducted in the active water way and any evidence of suction dredging is swiftly replaced by high water and seasonal weather. The South Fork of the Clearwater River is not spawning ground, it is a passageway as there are no decent cobbles for them to spawn in.	The scale and duration of effects on fish and fish habitat caused by suction dredging can be a subject of reasonable debate, but the idea that the activity is wholly benign is fallacious. Research shows that fish eggs and fry, and aquatic invertebrates, can be killed or injured from entrainment through a suction dredge. Suction dredging alters instream habitat because stream substrate is actively manipulated and moved from its existing position, so fish habitat is modified from its baseline condition at least until the next peak flow event, which in the proposed action would typically be several months after each dredging season. Suction dredging often produces turbidity during periods when this turbidity would not otherwise occur, and can sometimes redistribute mercury. Finally, spawning, rearing, foraging, and passage by many species of fish and other aquatic organisms in the mainstem of the South Fork of the Clearwater River is a documented fact.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
6, 16	Decisions made to manage public lands should be made based on scientific fact, not the unverified claims of special interest groups. The Forest Service and groups promoting these new regulations have an agenda in opposition to mining. The Forest Supervisor should uphold the rights of the miners operating on Forest lands. You cannot develop policy that undermines the rights of citizens.	The decision on managing suction dredging would be made using the best available science from several areas of expertise and not on unverified claims of special interest groups. The Forest Supervisor and BLM Field Office Manager has an obligation to uphold the rights of miners and all other users of the Forests/BLM along with all laws that are relevant to mining and all uses of Forests and BLM lands. This decision does not develop policy but it does follow Forest Service and BLM policy, which does not undermine the rights of citizens.
1	Given the unfortunate state of current laws regarding mining that do not allow a no-action proposal, I would like to express my conditional support for the preferred Alternative 3, requiring appropriate precautions and reparations, as stated in the assessment. I would implore the Responsible Official to hold the mining operators and all of their employees to the strictest standards allowed in this Alternative and ensure that all Terms and Conditions are consistently adhered to throughout operations. I also ask that the number of mining operations allowed through this project be kept to an absolute minimum.	This comment was in regards to the Moose Creek and Lolo Creek EIS, this project is for Orogrande and French creeks and the South Fork of the Clearwater River.
46, 49-51, 53, 56	Where do you get your authority to permit miners? Where is it determined we need a Notice of Intent or a Plan of Operations to operate? Under the 1872 Mining Act, the claimant is acting under the right to self-initiation and is in no way obligated to ask for permission to mine. The USFS should not be allowed to regulate suction dredging as this has been done for many years by the State of Idaho.	The statutory authorities for the Forest Service to regulate the use of surface resources for mining operations include: 1. Organic Administration Act of June 4, 1897 (30 Stat. 11, as amended; 16 U.S.C. 473-475, 477-482, 551). This act provides the Secretary of Agriculture the authority to regulate the occupancy and use of NFS lands. It provides for the continuing right to conduct mining activities under the general mining laws if the rules and regulations

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		covering NFS lands are complied with. The Forest Service regulations for mining activities are Title 36, Code of Federal Regulations, Part 228 Subpart A. 2. The 1955 Multiple Use Mining Act (30 U.S.C. 612) restricts mining operators to using reasonable methods of surface disturbance that are appropriate to their stage of operation (*United States v. Richardson*, 599 F. 2d 290 (1979); cert. denied, 444 U.S. 1014 (1980)). This legal principle is reinforced by the Forest Service in 36 CFR part 228, which provide procedures for authorizing operations on the National Forests which are reasonably incidental to mining, but requires that such operations be conducted so as to minimize adverse environmental impacts. **BLM:** Under the Constitution, Congress has the authority and responsibility to manage public land. See U.S. Const. art. IV, Sec. 3, cl. 2. Through statute, Congress has delegated this authority to executive-branch agencies, including the Bureau of Land Management (BLM). The Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. 1701 et seq., directs the Secretary of the Interior, by regulation or otherwise, to take any action necessary to prevent unnecessary or undue degradation of the public lands. See 43 U.S.C. 1732(b). FLPMA also directs the Secretary of the Interior, with respect to public lands, to promulgate rules and regulations to carry out the purposes of FLPMA and of other laws applicable to the public

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		lands. See 43 U.S.C. 1740. The 43 CFR 3809 regulations were developed and approved to fulfill this directive with regard to mining operations on BLM managed land. The Red River District Ranger determined that suction dredging on the South Fork of the Clearwater River was a significant disturbance based on specialists input and due to Amendment #20 of the Nez Perce Forest Plan, which states that a Plan of Operations is required. The North Fork District Ranger also determined that suction dredging on French and Orogrande Creeks was a significant disturbance based on specialists input and the need for consultation with Fish and Wildlife Service as required by recent case law (*Karuk Tribe of California v. U.S. Forest Service*, 681 F.3d 1006 (9th Cir. 2012); 16 U.S.C § 1536(a)(2)), which decided that allowing a miner to operate under an NOI also counts as authorization under Section 7 of the ESA. Organic Administration Act of 1897 and subsequent legislation gives Forest Service (FS) authority to regulate, but not prohibit mining on National Forest System land assuming the miner has complied with all other applicable Acts/laws and not just the 1872 Mining Act. Under the Organic Administration Act of 1897 and subsequent legislation and as is described in 36 CFR 228.4(a)(4): If the District Ranger determines that any operation is causing or would likely cause significant disturbance of surface resources, the District Ranger shall notify the operator that the operator must submit a proposed plan of operations for approval and that the operations cannot be conducted until a plan of operations is approved. Self-

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		initiation of mining is not a term used in the Forest Service Mining Regulations. As mentioned in the authorities above, the Forest Service and BLM has the authority to manage the surface resources of which suction dredging falls under. The State of Idaho's Letter permit "authorizes the Permit Holder to operate recreational mining equipment to alter a stream channel in accordance with the Stream Channel Alteration Rules (IDAPA 37.03.07 – Rule 64) and the IDWR Instructions for "Stream Channel Alteration by Recreational Mining Activities" (IDWR Instructions)" and "does not serve in lieu of other permits that may be required by federal or other state government agencies or in any way constitute an exemption of other permit requirements."
34-36, 41, 44	Last summer the USFS declined to cite any miners or stop the illegal dredging. As a federal agency, you can't choose to ignore the law. Allowing miners the ability to ignore critical requirements for permits to safeguard public resources, such as water quality, is unacceptable. You need to control any ongoing illegal mining activity.	This EA and the Plans of Operation that with be authorized as a result would give the Forest Service/BLM and other Federal and State Agencies the opportunity to inspect and monitor the authorized operations and to address any unauthorized operations with a collaborative State and Federal enforcement.
41	The impacts of historic and ongoing in-stream mining must be closely scrutinized.	This EA and the Plans of Operation that with be authorized as a result would give the Forest Service/BLM and other Federal and State Agencies the opportunity to monitor and evaluate the impacts of past and ongoing in-stream mining and a before, during and after report would be required from the miner and from the Forest Service, which would be submitted to the interested Federal and State Agencies.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
41, 44-45, 122-153, 154-158, 160-169, 171-173, 177-181, 183, 187-190, 195-196, 204, 208	Due to potential impacts to threatened, endangered and sensitive species, as well as water quality and other resources, you should develop an environmental impact statement that would disclose how dredge mining can harm fish, wildlife, recreationists, downstream users and other values.	The development of an EA does not preclude the preparation of an EIS should any effects be determined to be significant. Effects to resources are analyzed and disclosed regardless of the level of analysis. In the event any effects to resources be significant then an EIS would be developed; however, at this time it is anticipated that a FONSI can be reached.
18	Increase the dredge season because it would be helpful to the claim owners and the local community.	The length of the dredge season is not an alternative within this EA. The EPA and IDWR are the agencies responsible for the length of the dredging season. Section 7 consultation (Endangered Species Act) with National Marine Fisheries Service and U.S. Fish and Wildlife Service has identified the identified dredge season as appropriate for avoiding or minimizing adverse effects to ESA-listed fish.
35, 122-153, 154-158, 160-169, 171-173, 177-181, 183, 187-190, 195-196, 204, 208	Suction dredge mining has the potential to smother fish eggs through discharge, create unstable spawning beds, create holes changing river hydrology causing downstream erosion, and stir up stable deposits of mercury.	Suction dredging is a method of excavation and sorting of stream channel substrate which the Agencies cannot legally prohibit. We propose, however, to reduce the scale and duration of the potential adverse effects of the practice through conditions associated with the approval of Plans of Operation. These conditions would reduce or eliminate potential adverse effects.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
58, 122-153, 154-158, 160-169, 171-173, 177-181, 183, 187-190, 195-196, 204, 208	Closely evaluate how past illegal mining and foreseeable future actions may contribute to the cumulative effects associated with this proposal.	NEPA requires that direct, indirect, and cumulative effects be analyzed as a result of a proposed action. Cumulative effects includes any past, present and reasonably foreseeable future activities. Cumulative effects have been disclosed in the NEPA analysis.
61-121, 159, 170, 174-176, 182, 184-186, 191-194, 197-203, 205-207, 209	I oppose this proposal.	Thank you for your comment.
31	I object to the conclusion that the increased turbidity would have no effect or low effect because the water would still meet IDEQ standards. 1) those standards are not defined in the review document and cannot be assessed by the reviewer; 2) those standards can be (and have been) changed over time by the Idaho legislature and government agencies, so this assurance is hollow.	The basis for the IDEQ standards is described in the full EA text. Future changes in water quality standards (or any other laws or regulations) are entirely speculative and so cannot be analyzed in this (or any other) analysis or disclosure document.
31, 45, 54	The bonding requirements are undefined. Bonding costs need to be detailed in the environmental analysis for each alternative.	Bonding is done on a case-by-case basis based on the amount of disturbance described in the Plan of Operations.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
35, 42, 45	This proposal is a violation of the Endangered Species Act and the Clean Water Act. Millions of dollars have been spent on restoration and further disruption should not be allowed. All operations must comply with the protective standards and regulations of INFISH. No Forest Plan amendments to suspend these requirements should be considered.	The proposed limits and conditions on suction dredging associated with approval of Plans of Operation are consistent with existing Forest Plan amendments (including INFISH/PACFISH), BLM Resource Management Plan and Aquatic and Riparian Management Plan (BLM, 2009) and the regulations implementing the Clean Water Act. Endangered Species Act consultation has been initiated and would be completed prior to approval of any Plans of Operation.
45	Based on the lack of interest and significant cost to taxpayers, we question why the Forest Service and the BLM would authorize nearly three dozen more operations.	This is a right under the 1872 Mining Act, the Organic Administration Act of 1897 and subsequent legislation and the miners rights are backed up with a substantial amount of case law.
45	The Agencies should process each Plan of Operation as a site-specific.	The programmatic EA analyzes the effects of approving up to 35 POOs; however, it does not approve any specific POOs. Each POO would continue to be processed at a site specific level.
45	The Forest Service and the BLM have improperly limited the scope of the project so as to limit other reasonable alternatives.	NEPA does not require that all possible alternatives be analyzed, but rather that a reasonable range. In accordance with applicable laws, regulations, policies, and guidelines all reasonable alternatives have been analyzed and those not being analyzed in detail have been disclosed in the EA along with the rationale as to why they are not being analyzed in detail.
45, 47, 54, 55	There is no baseline information on impacted resources and the EA's analyses are incomplete or entirely omitted.	The complete EA would be available prior to the objections process. NEPA and Forest Service guidelines does not specify when the analysis needs to be provided to the public in the event of an EA.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
45	The Agencies cannot avoid meeting their statutory and regulatory obligations due to making a mining operation "too expensive". The Agencies cannot approve an operation unless all feasible measures have been taken to protect wildlife and habitat.	The Forest Service and BLM through the EA and the associated Plans of Operations intend to meet their statutory and regulatory obligations, which would not put an unnecessary constraint on the miner such as excessive costs for requirements that are not necessary by law. The Forest Service and BLM plan on addressing all feasible measures in an effort to protect wildlife and habitat.
45	The Forest Service must also ensure compliance with the Forest Plan and other standards pursuant to the National Forest Management Act (NFMA) when determining whether to approve mining.	Any proposed actions would be in compliance with applicable laws, regulations and rules.
45	The Federal Lands Policy and Management Act (FLPMA) requires that the BLM "take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 732(b). In addition, BLM must ensure that all operations comply with the Performance Standards found at §3809.420. *See* 43 C.F.R. §3809.5 (definition of UUD, specifying that failing to comply with the Performance Standards set forth at §3809.420 constitutes UUD). BLM review and approval of mining operations also requires compliance with all provisions of the applicable Resource Management Plans (RMPs) under FLPMA.	The BLM would be following all laws, regulations and applicable management plans as is required by FLPMA.
45	The Forest Service may limit the scope of a Plan of Operations to match the appropriate step in the normal development of a mine by a prudent person.	The 1955 Multiple Use Mining Act (30 U.S.C. 612) restricts mining operators to using reasonable methods of surface disturbance that are appropriate to their stage of operation (*United States v. Richardson*, 599 F. 2d 290 (1979); cert. denied, 444 U.S. 1014 (1980)). This legal principle is reinforced by the Forest Service in 36 CFR part 228, which provides procedures

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		for authorizing operations on the National Forests which are reasonably incidental to mining, but requires that such operations be conducted so as to minimize adverse environmental impacts.
45	If the proposed Plan of Operations is unnecessarily and unreasonably destructive to surface resources and damaging to the environment, the Forest Service should seek to modify the Plan of Operations to minimize effects to National Forest System Resources as required by 36 CFR § 228.1.	If a miner is not in compliance with their Plan of Operations they would be required to come back into compliance, which could entail a modification to their existing Plan of Operations.
45	We are especially concerned about the potential effects of suction dredge mining operations to fall chinook salmon, spring chinook salmon, steelhead, bull trout, Pacific lamprey and other aquatic species within, and downstream of the project area.	The Agencies are also concerned about the potential effects of suction dredging on these species and have developed conditions on the Plans of Operation which should reduce or eliminate these effects. An analysis of the project design measures and mitigation effects of these conditions is presented in the EA, BA, and associated supporting documents.
45	The EA either fails to adequately discuss mitigation at all even for the impacts it does recognize, or if it does, fails to analyze the effectiveness of each mitigation measure.	The final EA would disclose effects analysis.
45, 47, 59	A detailed, formal monitoring plan should be developed in relation to each of these projects. The EA does not describe the action that the Agencies would take if sediment levels exceed Forest Plan standards concurrently or after suction dredging occurs. Specific monitoring requirements – such as surveying channel morphology, turbidity measurements, macroinvertebrate density variations, and quantifying surface fine sediments – are needed to determine effects and minimize ecosystem-damaging activities.	The proposed action does identify specific monitoring requirements that would be conducted for each suction dredging operation which is dependent on annual POOs. The Forest conducts monitoring across the Forest rather than on a project specific basis.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
47, 56	Small-scale suction dredging and "recreational" dredging have not been defined by the agencies in question. The proposed suction-dredging activities are not pursued for economic reasons, but for recreational reasons.	Small scale suction dredging is considered placer mining under the federal mining laws. "Recreational" dredging is a term used by IDWR and is not recognized by federal mining laws. The suction dredging that is being addressed in this EA is being done under the federal mining laws and we are not evaluating these operations for recreational content.
47	The proposed action adversely modifies and destroys critical habitat, it is therefore unlawful and can be denied. Dredging must have no effect on listed fish or sensitive fish and their habitats in order for the activity to occur.	The degree to which the proposed action would affect designated critical habitat for ESA-listed species is ultimately a determination made through Section 7 consultation between the action agencies and the National Marine Fisheries Service and U.S. Fish and Wildlife Service. "No effect" to ESA-listed or Forest Service Region 1 "Sensitive" species is not the standard necessary for the Agencies to implement the proposed action.
54	We request that you conduct sufficient NEPA analyses and document them in an updated EA, and then repeat this EA comment process.	The complete EA would be available prior to the objections process. NEPA and Forest Service guidelines does not specify when the analysis needs to be provided to the public in the event of an EA.
54	Is it correct to interpret the EA as stating that dredge operators would still have title to the minerals without a claim – which is the document that locates potential mineral sites? Does this mean that some locations are "claimed" by multiple parties? If a claim turns out to be invalid, what effect would that fact have on the POO processing or operations?	A dredge operator is not required to have a claim and only those that own a claim have the Rights to the minerals but a claimant can allow others to mine or prospect on their claim and a miner or prospector does not need a claim to have a Plan of Operations but if the area of interest is at a later date claimed by another party the miner would not have a continuing right to the minerals. A claim can be owned by multiple parties such as an Association Placer Claim that can have up to eight claimants for a maximum of 160 acres. If a claim is determined to be invalid it does not remove it from mineral entry and it could be "claimed" again. The effect that

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
		validity would have on the processing or operations of a POO would depend on what is in the POO and would be looked at on a case-by-case basis. A POO for exploration would likely be acceptable whereas a full scale long term operation would most likely not be acceptable on a claim that was determined to be invalid.
54	As the EA states, "an 'upward trend' requirement is a condition of the Nez Perce Forest Plan." The EA does not demonstrate that there is an upward trend on the SF.	The text in the EA is misleading, because an "upward trend" is a condition of the Nez Perce Forest Plan relevant only for timber harvest and road construction projects, and the text of the EA would be revised to reflect this. In any event, the proposed activities would not affect the quantity of fine sediment in the mainstem South Fork of the Clearwater River.
54	Formal consultation should proceed for salmon trout and steelhead.	The Agencies have initiated ESA Section 7 consultation with the National Marine Fisheries Service for fall Chinook salmon and steelhead, and with the U.S. Fish and Wildlife Service for bull trout. The level of consultation for these species has not yet been finalized.
54	What is the cumulative effect of new routes being pioneered to drive dredge equipment down to streams?	No "new routes" (in the sense of constructed roads or trails) would be authorized as a part of the proposed action. Dredges or other equipment associated with dredging would be hand-carried or dragged to the stream channel (with minor, localized, or temporary effects on vegetation and soil) where road or trail access does not currently exist.
55	Why is the Lewiston Tribune considered the paper of record for this project?	The Lewiston Tribune is considered the newspaper of record for the Forest. NEPA does not state exactly which newspapers notification must be made in rather that it be made in a newspaper in the local project area.

Table B-4. Comments on the Draft EA and Forest Service Responses		
Commenter #	**Comment**	**Response**
55	The EA states that you have a responsibility to approve POO's if the surface resource protection requirements are reasonable, yet you never define what 'reasonable' means in this context.	The District Ranger or Field Office Manager determines if the surface resource protection requirements are reasonable based on input from resource specialists and what is required by regulation and law. Reasonableness does not have a one size fits all definition and is determined on a case by case basis.
55	You have identified the eastern-most section of the SF that is within the BLM overseen area as having critical environmental concern, yet this same area has been identified for extensive remediation in your Crooked River Project.	As discussed in the EA, the Agencies do not have the discretion to prohibit suction dredging in the South Fork of the Clearwater River, but are proposing conditions which would reduce or eliminate adverse effects.
59	Channel stability would be affected since suction dredging involves moving the substrate.	The effects of the proposed suction dredging, as conditioned, are expected to have minor and temporary effects on channel stability.