UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NMFS No: 2007/07476

January 22, 2008

RECEIVED
JAN 24 2008
BLM Cottonwood
Idaho 83522

Stephanie Connolly
Bureau of Land Management
Cottonwood Field Office
1 Butte Drive
Cottonwood, Idaho 83522-5200

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Reinitiation of Eastside Township Fuels Project, American River, 1706030505, Idaho County, Idaho (four projects)

Dear Mrs. Connolly:

The enclosed document contains a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the revised Eastside Township Fuels Project proposed by the Bureau of Land Management (BLM). In this Opinion, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River Basin steelhead or result in the destruction or adverse modification of designated critical habitat for Snake River Basin steelhead.

As required by section 7 of the ESA, NMFS provided an incidental take statement with the Opinion. The incidental take statement describes reasonable and prudent measures NMFS considers necessary or appropriate to minimize incidental take associated with this action. The take statement sets forth nondiscretionary terms and conditions, including reporting requirements, that the Federal agency and any person who performs the action must comply with to carry out the reasonable and prudent measures. Incidental take from actions that meet these terms and conditions will be exempt from the ESA take prohibition.

This document also includes the results of our analysis of the action's likely effects on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes four conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. These conservation recommendations are a non-identical set of the ESA Terms and Conditions. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NMFS within 30 days after receiving these recommendations.

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If the response is inconsistent with the EFH conservation recommendations, the BLM must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations. In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, in your statutory reply to the EFH portion of this consultation, we ask that you clearly identify the number of conservation recommendations accepted.

If you have questions regarding this consultation, please contact Jenifer Harris, Fish Biologist, at (208) 983-4063 or Dale Brege, Branch Chief, at (208) 983-4060.

Sincerely,

For D. Robert Lohn
Regional Administrator

Enclosure

cc: R. Hennekey – IDFG
C. Johnson – BLM
J. Foss – USFWS
I. Jones – NPT

Endangered Species Act – Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Eastside Township Fuels Project, American River,
1706030505, Idaho County, Idaho

Lead Action Agency:	Bureau of Land Management
Consultation Conducted by:	National Marine Fisheries Service Northwest Region
Date Issued:	January 22, 2008
Issued by:	for D. Robert Lohn Regional Administrator

NMFS No.: 2007/07476

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Acronyms

ATV	All Terrain Vehicle
BA	Biological Assessment
BLM	Bureau of Land Management
cfs	cubic feet per second
DQA	Data Quality Act
Eastside Project	Eastside Township Fuels Project
ECA	Equivalent Clearcut Area
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ft^2	square feet
IDFG	Idaho Department of Fish and Game
Level 1 Team	North Idaho Level 1 Team
LSP	Landslide Prone Terrain
LWD	Large Woody Debris
mi	Mile
MIST	Minimum Impact Suppression Tactics
MMBF	Million Board Feet of Timber
MPG	Major Population Group
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEZSED	Nez Perce National Forest Sediment Model
NMFS	National Marine Fisheries Service
NPNF	Nez Perce National Forest
NTUs	Nephelometric Turbidity Units
Opinion	Biological Opinion
PCE	Primary Constituent Elements
PFMC	Pacific Fishery Management Council
RHCA	Riparian Habitat Conservation Area
RM	River Mile
RMOs	Riparian Management Objectives
RPMs	Reasonable and Prudent Measures
SM	Stream Mile
SRC	Summer Rearing Capacity
Tribe	Nez Perce Tribe
USFS	U.S. Forest Service
VSP	Viable Salmonid Population
WUI	Wildland Urban Interface
%	Percent

1. INTRODUCTION

The biological opinion (Opinion) and incidental take statement portions of this consultation were prepared by the National Marine Fisheries Service (NMFS) in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531, *et seq.*), and implementing regulations at 50 CFR 402. However, consistent with a decision rendered by the Ninth Circuit Court of Appeals on August 6, 2004,[1] we did not apply the regulatory definition of "destruction or adverse modification of critical habitat" at 50 CFR 402.02 to complete the following analysis with respect to critical habitat, and instead relied on statutory provisions of the ESA.

The essential fish habitat (EFH) consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801, *et seq.*) and implementing regulations at 50 CFR 600. The administrative record for this consultation is on file at the Idaho State Habitat Office.

1.1. Background and Consultation History

The Bureau of Land Management (BLM) introduced the Eastside Township Fuels Project (Eastside Project) by hosting field trips on August 30, 2005, and October 18, 2005. NMFS received the first draft biological assessment (BA) on April 12, 2006. The project was discussed at the North-Central Idaho Level 1 Team (Level 1 Team) meeting on May 17, 2006. NMFS provided the BLM with comments on the draft BA on June 13, 2006. A draft BA was received on February 26, 2007, and conference calls were held on March 6, 2007, March 15, 2007, and March 23, 2007, with NMFS, the BLM, and U.S. Fish and Wildlife Service (USFWS), to review final details of the project and provide comments on the BA. The Level 1 Team reached closure on March 28, 2007. The final BA was received on April 3, 2007. NMFS sent a draft copy of the original Opinion to the Nez Perce Tribe (Tribe) on April 25, 2007. The Tribe, however, did not respond. NMFS issued a biological opinion for the original Eastside Project on July 16, 2007, (NMFS No. 2007/02215).

The BLM contacted NMFS on June 12, 2007, to discuss changing the proposed project. The BLM, NMFS, and USFWS held a conference call on June 28, 2007, to discuss the new actions. NMFS received a draft BA on October 4, 2007, and provided comments to the BLM. The BLM held a conference call with NMFS and the USFWS on October 11, 2007, and again on November 13, 2007, to discuss the project. A final BA was received from the BLM on November 19, 2007. NMFS electronically mailed a draft copy of the Opinion to the Tribe on December 11, 2007. The Tribe did not respond.

[1] Gifford Pinchot Task Force et al. v. U.S. Fish and Wildlife Service, 378 F.3d 1059 (9th Cir. 2004).

1.2. Proposed Action

The purpose of the project is to: (1) Reduce the risk of high-intensity wildland fire to life, property, and natural resources in Elk City and the surrounding wildland urban interface (WUI); (2) manage forest stands to create conditions that will contribute to sustaining long-lived fire tolerant tree species; (3) design a public transportation system that provides safe travel routes for the public, while meeting watershed and fisheries management goals; (4) create an upward trend in fish habitat condition; (5) contribute to the economic and social well being of area users; and (6) implement intensive forest management decisions.

For purposes of this consultation, the proposed action includes timber harvest, prescribed burning, road construction and improvement, and watershed restoration activities. The proposed activities and treatment areas for the revised project are shown in Figure 1 and Table 1 along with the proposed actions from the original Eastside project dated April 3, 2007. The project will begin in 2008 and continue for 5 to 10 years. Restoration work will take place concurrently with vegetation and fuels treatments. The majority of work is expected to take place within 1 to 3 years after the start of the project.

Proposed Timber Harvest and Prescribed Burning. Timber harvest activities include treating approximately 1,155 acres of public land through a combination of commercial timber harvest, understory thinning, prescribed burning, hand or machine piling and burning, and biomass utilization. Specific harvest methods and acres treated are shown in Table 2 and harvest prescriptions by subwatershed are shown in Table 3. To access timber harvest units, 10 miles of temporary roads will be constructed and 2.4 miles of road will be improved. Road improvement activities include adding drainage structures, shaping the road, and adding rock surfacing where needed. To access two of the tractor units, the BLM will walk an excavator up two ridges. The access routes will begin at an existing road along the riparian habitat conservation area (RHCA) along American River. The BLM will not cut trees or construct roads to access the two units. Five helicopter landing sites will be constructed for the project.

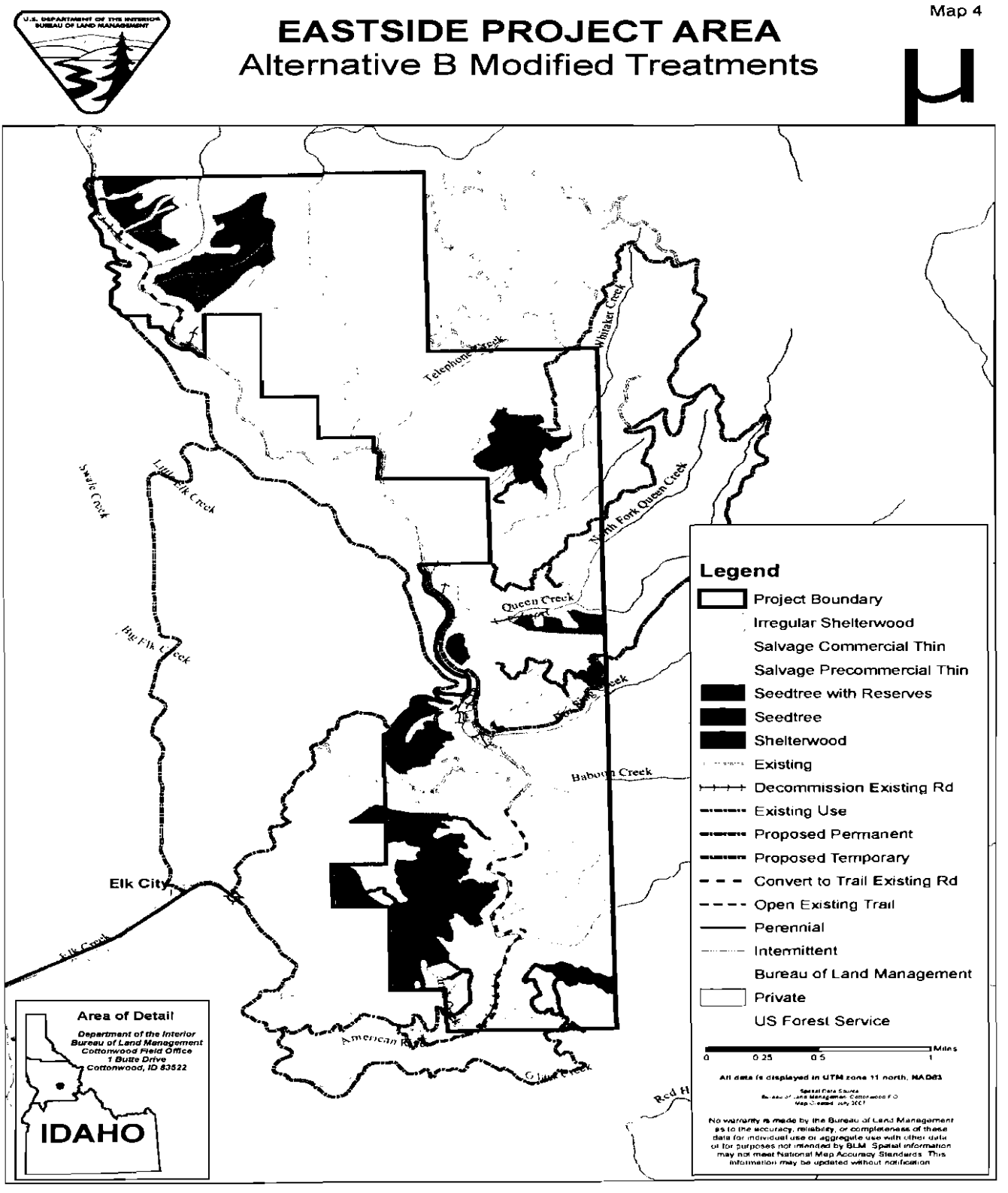

Figure 1. Eastside Project area and project activities.

Table 1. Proposed activities showing the activities for the original Eastside Project and the revised Eastside Project.

Proposed Activity–Vegetation/Fuels		Proposed Action April 3, 2007	Proposed Action Nov. 19, 2007
Acres of Treatment	Tractor Yard/Excavator Pile or Biomass Utilization	721	559
	Tractor Yard/Burn	27	0
	Cable Yard/Burn	240	200
	Helicopter Yard/Burn	172	238
	Helicopter Yard/Hand Pile	58	58
	Helicopter Yard/ Excavator Pile	29	100
	Total Acres Treated	1,247	1,155
	Regeneration	82%	87%
	Partial Cut/Thin	18%	13%
Temporary road construction (miles)		12.6	10
Road improvement (for timber harvest) (miles)		2.4	2.4
Estimated Green Volume Harvested (MMBF)		10.8	10
Estimated Dead Volume Harvested (MMBF)		4.0	3.4
Proposed Activity–Restoration			
Miles of decommissioned roads		2.9	1.5
Miles of American River Streambank Re-contour		1.2	1.2
ATV Bridge Replacement and Ford Decommissioning		2	2
Miles of New Permanent Road		1.1	0
New Permanent Vehicle Bridge		1	0
Ford Decommissioning		1	1
Miles of Riparian Vegetation Planting		4.8	4.8
Miles of Recreation and Trail improvements		0.2	0.2
Miles Queen Creek re-connect to American River		1.35	1.35
Miles of Road to ATV Trail Conversion		1.6	2.5
Acres of Mine Site Reclamation		0.5	0.5
Miles of New ATV Trails		0	0.3

Table 2. Proposed vegetation treatments by subwatershed.

Subwatershed	Shelterwood Cut	Irregular Shelterwood	Seed Tree Cut With Reserves	Thinning	Sanitation (Salvage)	Total Acres
Middle American R.	51.7	0	96.84	29.53	24.23	202.3
East Fk. American R.	0	0	4.03	0	8.15	12.13
Whitaker Cr.	13.46	24.14	0	66.49	0	104.09
Queen Cr.	0	37.75	23.88	11.66	0	73.29
Box Sing Cr.	0	39.47	7.48	0	0	46.95
Kirks Fork	0	39.43	17.41	0	0	56.84
Little Elk Cr.	7.41	0	0	0	0	7.41
Lower Elk. Cr.	37.34	0	60.18	0	0	97.52
Lower American R.	159.91	313.39	55.75	25.28	0	554.33
TOTAL ACRES	269.82	454.18	265.57	132.96	37.38	1155.02

Table 3. Proposed timber harvest methods by subwatershed.

Subwatershed	Tractor Yard (Excavator Pile)	Cable (Underburn)	Helicopter (Underburn)	Helicopter (Hand Pile)	Helicopter (Excavator Pile)	Total Acres
Middle Amer. R.	0	0	103.57	10.63	88.1	202.3
E. Fk. Amer. R.	0	0	0.62	0	11.51	12.13
Whitaker Cr.	59.54	21.13	0	23.58	0	104.25
Queen Cr.	26.76	23.01	0	23.52	0	73.29
Box Sing Cr.	33.13	13.79	0	0.03	0	46.95
Kirks Fork	8.78	17.41	30.65	0	0	56.84
Little Elk Cr.	7.41	0	0	0	0	7.41
Lower Elk. Cr.	97.52	0	0	0	0	97.52
Lower Amer. R.	326.34	124.55	103.44	0	0	554.33
TOTAL ACRES	559.48	199.89	238.28	57.76	99.61	1155.02

Proposed Watershed Restoration Activities. Restoration activities include reconnecting Queen Creek with American River and installing a culvert, rock weirs, and large woody debris (LWD), decommissioning roads in various locations, converting roads adjacent to American River to All Terrain Vehicle (ATV) trails and constructing 0.3 miles of road around a wet meadow, decommissioning fords, converting fords to ATV bridges, recontouring the streambank along American River, planting riparian vegetation, and restoring a mine site.

Reconnecting Queen Creek to American River includes constructing approximately 100 feet of new channel and installing a 7-foot diameter culvert. To provide habitat complexity, the BLM will install LWD and rock weirs in Queen Creek before the stream is reconnected.

Decommissioning roads includes appropriate blockage and restriction of motorized vehicle access, de-compaction of the road surface, seeding, mulching, and placement of woody debris and/or rocks. Restriction of vehicle access may be accomplished by a variety of methods, such as full or partial obliteration of the road, placement of logs, or strategic location of boulders. Abandoned roads will be inspected to determine if the road is stable and no further restoration is required.

To convert existing vehicle roads to ATV trails, the BLM will rip the outside slope of the road so the total trail is 60-inches wide. The road tread will be located on the upslope side of the road and rock or slash will be placed to limit the trail to ATV use and provide micro-sites for vegetation. The BLM will replace the ATV bridges on American River and Kirks Fork with new ATV bridges. The ATV bridges will be 50-feet long and 6-feet wide, and will span the streams from high bank to high bank with concrete footings above mean high flow level. The bridge deck will be constructed on top of two metal beams. The bridge deck and curb will be pre-treated with penachlorophenol or copper naphthenate. The BLM will remove the existing ATV bridges and obliterate the existing downstream fords.

Streambank recontouring includes the creation of a small terrace or floodplain, approximately 8- to 10-feet wide, immediately adjacent to or above the mean high flow line. Over-steepened banks may be excavated and contoured, and up to 6 inches of topsoil may be placed on gravel/cobble dredge tailing to facilitate seeding. The BLM will plant approximately 4.8 miles of streambank with native and non-native riparian vegetation.

Mine site restoration includes deep ripping of the soil, seeding, placing LWD, and restricting vehicle use of the site.

Minimization Measures

The conservation measures described here and in the consultation initiation package as part of the proposed action are intended to reduce or avoid adverse effects on listed species and their habitats. NMFS regards these conservation measures as integral components of the proposed action and expects that all proposed project activities will be completed consistent with those measures. We have completed our effects analysis accordingly. Any deviation from these conservation measures will be beyond the scope of this consultation and will not be exempted from the prohibition against take as described in the attached incidental take statement. Further consultation will be required to determine what effect the modified action may have on listed species or designated critical habitats.

To minimize adverse impacts from the project, the BLM will:

General to All Activities

- Clean equipment of leaks prior to arriving at the project site and inspect daily for leaks or problems;

- Maintain equipment at the furthest distance possible from the stream;

- Store fuels outside the RHCA and use slip-on fuel tanks less than 150 gallons for fueling;

- Prepare and implement a Spill Prevention and Control and Countermeasures Plan that incorporates the rules and requirements of the Idaho Forest Practices Act Section 60, Use of Chemicals and Petroleum Products, and U.S. Department of Transportation rules for fuels haul and temporary storage;

- Use erosion and sediment control measures, such as sediment fences, sediment traps, mulching, and straw waddles, as needed;

- Reseed disturbed sites upon completion of each project activity;

- Conduct all road maintenance in accordance with the *Programmatic Biological Assessment of the Road Maintenance Program, Minor Reconstruction and Repair, and Snow Plowing* (BLM 1999a); and

- Conduct all trail maintenance in accordance with the *Programmatic Biological Assessment of Trail Maintenance* (BLM 1999b).

Timber Harvest and Prescribed Fire

- Harvest trees outside the RHCA and outside high landslide prone areas;

- Field verify the harvest units, and drop landslide prone areas not previously identified, or modify them with watershed specialist oversight;

- Apply biomass utilization, where feasible, in lieu of excavator piling to reduce physical soil damage and to encourage natural regeneration;

- Restore soil when the project is complete, which includes scarifying landing sites and skid trails, replacing surface soil and organic material, stabilizing erosion features (rills and gullies) and revegetation;

- Suspend all activities when soils are wet and resource damage can occur;

- Require 4 inches or greater of frozen soils, a barrier of snow greater than 2 feet of unpacked snow or 1 foot of packed snow when harvesting timber during frozen conditions;

- Construct slash filter windrows at the toe of the fill slopes on new landings and roads, limited to 3-feet high;

- Restrict livestock grazing for two growing seasons or until reforestation and restoration objectives are met;

- Apply State of Idaho best management practices, which are incorporated by reference;

- Ignite fire outside of the RHCA, but allow fire to burn into the RHCA at low intensities;

- Suppress fires that pose a threat to riparian resources;

- Utilize the appropriate pre-attack suppression methods for a WUI area for fire suppression activities, if needed, within the project area. Fire suppression activities would utilize general fire suppression guidance included in *Programmatic Biological Assessment of the Fire Management Program* (USDI-BLM 1999) and minimum impact suppression tactics (MIST) guidelines.

Road Decommissioning, Abandonment, or Conversion to Trails

- Decommission temporary roads 1 to 3 years after completion of the project;
- Scarify compacted soils with a minimum depth of 16 inches and avoid mixing of surface ash layer with subsoil;
- Recontour temporary roads, revegetate, mulch, and cover with slash where needed;
- Seed disturbed soil with native, certified, weed-free seed;
- Use mulching to provide for seed cover and reduce erosion;
- Seed and plant during favorable conditions;
- Place woody debris on at least 50% of the decommissioned road surface;
- Maintain a minimum of 2 inches of snow on the road when snow plowing, leave ditches and culverts functional, sidecast material will not contain dirt or gravel, berms will not be left on shoulder unless drainage holes are opened and maintained;
- Implement sediment and erosion control measures, such as sediment barriers, and rocking road surfaces and/or ditches; and
- Install gates on temporary roads to restrict public vehicle use, where needed.

Bridge Construction and Instream Restoration

- Conduct instream work from July 1 through August 1;
- Construct the new ATV bridges to accommodate 100-year flood events;
- Construct bridges to not encroach on the stream channel at mean high flow;
- Maintain a minimum of 1-foot free board under the bridges;
- Install riprap on 15 to 20 feet upstream and downstream from center line of the road to assist in bank stabilization;

- Gravel the road approaches to the bridges a minimum of 100 feet;

- Conduct channel reconnect work in the dry and do not reconnect the channel until all work is complete;

- Pump excess subsurface flow into an off-channel settling basin and filter through straw and natural vegetation before reaching the stream;

- Use straw bales and straw laid on the ground in the settling basin so water can filter through the straw to prevent sediment from reaching the stream channel;

- Bury the new culvert 35%, ensure it is large enough to accommodate 100-year flood events. and simulate a natural stream bottom with appropriately sized substrate; and

- Use excavators from the streambank, when possible, during streambank reconstruction.

Weed Control

- Use native and non-native (annuals), weed-free seed to replant disturbed sites;

- Certify straw and mulch used for restoration and revegetation projects as weed free;

- Remove mud, soil, and plant parts from all equipment associated with the project before moving into the project area;

- Use county-certified, noxious weed-free rock for road surfacing;

- Pretreat small outbreaks of invasive weeds within 1 mile of the project and along all haul routes leading to the project prior to ground disturbing activities;

- Inventory areas disturbed during project activities a minimum of 2 years post project to detect establishment of noxious weeds;

- Give new weed sites found during inventory efforts high priority for weed treatment to help prevent further spread; and

- Use the current Cottonwood Field Office noxious weed control program for specific weed treatments and herbicide use.

Monitoring

Two types of monitoring identified for the Eastside Project are: (1) Implementation and (2) effectiveness. Monitoring specifics are described in the BA.

Implementation monitoring will focus on design criteria and mitigation as well as this Opinion's terms and conditions identified for project implementation. Agency personnel responsible for

overseeing project implementation will complete monitoring forms that document compliance with project specific designs and mitigation criteria. These monitoring forms will be available for review and maintained in the BLM Cottonwood Field Office project/contract files. The BLM will note problems and take corrective actions within the scope of contract provisions.

The BLM will conduct effectiveness monitoring to determine if project design and mitigation criteria achieve desired objectives and if the effects analysis of the BA was accurately predicted. Sampling will be conducted to monitor turbidity and sediment, and compliance with the Idaho State Water Quality Standards and the Clean Water Act. Effectiveness monitoring would be accomplished using established protocols specific to deposited sediment, turbidity, fish population, and riparian restoration, as outlined in the BA.

Other applicable and aquatic condition and trend monitoring efforts by the BLM, the U.S. Forest Service, Tribe, and Idaho Department of Fish and Game (IDFG) are ongoing for fish populations and fish habitat within Red River, American River, and South Fork Clearwater River. Results from these coordinated monitoring efforts will be used to update the environmental baseline and evaluate land management actions.

1.3. Action Area

'Action area' means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For purposes of this consultation, the action area is located in the American River watershed, within the upper portion of the South Fork Clearwater River subbasin. The project area is composed of the following prescription watersheds: Middle American River, Lower American River, Maggie Creek, Telephone Creek, Baboon Creek, East Fork American River, Whitaker Creek, Queen Creek, Box Sing Creek, Kirks Fork, Elk Creek, and Little Elk Creek. The action area also consists of the South Fork Clearwater River from American River to the confluence with Crooked River. NMFS does not expect discernable effects from proposed activities downstream from Crooked River due to the distance from the project activities and the total water volume of American River and Crooked River combined. No proposed activities will occur in the Telephone Creek subwatershed due to recent timber harvest activities on private land; however, it is part of the Eastside Project action area.

Snake River Basin steelhead (71 FR 834) are likely to occur in the action area. The actions are within designated critical habitat for ESA-listed Snake River Basin steelhead (70 FR 52630). Although spring/summer Chinook salmon are likely to occur in the action area, they are not listed under the ESA for this watershed. Pursuant to NMFS ESA responsibilities and authorities, NMFS evaluated the effects of the project on Snake River Basin steelhead and their designated critical habitat.

2. ENDANGERED SPECIES ACT

The ESA establishes a national program to conserve threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with USFWS, NMFS, or both, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitats. Section 7(b)(4) requires the provision of an incidental take statement that specifies the impact of any incidental taking and includes reasonable and prudent measures (RPMs) to minimize such impacts.

2.1. Biological Opinion

This Opinion presents NMFS' review of the status of each listed species of Pacific salmon and steelhead[2] considered in this consultation, the condition of designated critical habitat, the environmental baseline for the action area, all the effects of the action as proposed, and cumulative effects (50 CFR 402.14(g)). For the jeopardy analysis, NMFS analyzes those combined factors to conclude whether the proposed action is likely to appreciably reduce the likelihood of both the survival and recovery of the affected listed species.

The critical habitat analysis determines whether the proposed action will destroy or adversely modify designated critical habitat for listed species by examining any change in the conservation value of the essential features of that critical habitat. This analysis relies on statutory provisions of the ESA, including those in section 3 that define "critical habitat" and "conservation," in section 4 that describe the designation process, and in section 7 that sets forth the substantive protections and procedural aspects of consultation. The regulatory definition of "destruction or adverse modification" at 50 CFR 402.02 is not used in this Opinion.

2.1.1. Status of the Species and Critical Habitat

This section defines the biological requirements of each listed species affected by the proposed action, and the status of each designated critical habitat relative to those requirements. Listed species facing a high risk of extinction and critical habitats with degraded conservation value are more vulnerable to the aggregation of effects considered under the environmental baseline, the effects of the proposed action, and cumulative effects.

2.1.1.1. Status of the Species.

NMFS reviews the condition of the listed species affected by the proposed action using criteria that describe a 'viable salmonid population' (VSP) (McElhany *et al.* 2000). Attributes

[2] "An 'evolutionarily significant unit' (ESU) of Pacific salmon (Waples 1991) and a 'distinct population segment' (DPS) of steelhead (final steelhead FR notice) are considered to be 'species,' as defined in section 3 of the ESA."

associated with a VSP include abundance, productivity, spatial structure, and genetic diversity that maintain its capacity to adapt to various environmental conditions and allow it sustain itself in the natural environment. These attributes are influenced by survival, behavior, and experiences throughout the entire life cycle, characteristics that are influenced, in turn, by habitat and other environmental conditions.

Steelhead are anadromous fish which spawn in freshwater streams and mature in the ocean. Starting from the adult life stage, Snake River Basin steelhead migrate from the Pacific Ocean into the Columbia River and reach the Snake River and major tributaries from late summer through fall. During spawning migration, adult salmon and steelhead require clean water, cool temperatures, access to thermal refugia, dissolved oxygen levels near 100% saturation, low turbidity, adequate flows and depths to allow passage over barriers to reach spawning sites, and sufficient holding and resting sites. Snake River Basin steelhead hold positions in larger rivers for several months before moving upstream into smaller tributaries. While holding in freshwater rivers, adult steelhead are generally believed to stop feeding actively, but many individuals appear to feed passively as opportunities arise, and evidence suggests that some adults may continue to actively forage. Vander Hagen *et al.* (1998) and Burns (1974), respectively, examined stomach contents of adult summer steelhead to examine feeding habits in fresh water and found 11% of the fish sampled from June through October in the Cowlitz River contained food items, and 95% of fish sampled from October through January in the Sacramento River drainage contained food items. Adult steelhead are generally believed to live primarily on stored energy while in fresh water, but little is known about the biological significance of winter feeding.

In late winter or early spring, adult steelhead begin to disperse from holding areas and move upstream. In the Snake River, the majority of adults disperse into tributary spawning areas from March through May, with earlier dispersal among steelhead that spawn at lower elevations, and later dispersal at higher elevations. The timing of spawning and migration in Pacific salmon and steelhead is highly variable and appears to be influenced more by genetic factors shaped by average long-term conditions faced by individual stocks, rather than proximal environmental conditions such as temperature and stream flow (Quinn 2005). The degree of dispersal within a given watershed appears to be influenced by the amount of stream flow, with low rates of dispersal among headwater streams at low flows and greater dispersal at higher flows. Spawning begins shortly after fish reach spawning areas.

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 55.4 °F or less. Juveniles emerge from redds in 4 to 8 weeks, depending on temperature. After emergence, fry have poor swimming ability and they are subject to high rates of mortality at this stage. Steelhead fry initially drift from the redds into shallow, low velocity areas in side channels and along channel margins to escape high velocities and predators (Everest and Chapman 1972), and progressively move

toward deeper water as they grow in size and swimming abilities improve (Bjornn and Rieser 1991). Migration of juvenile to rearing areas requires that access to these habitats is not impeded by physical, chemical, and thermal conditions. As juveniles develop in fresh water, they require environments with cold water, abundance of pools and cover, adequate stream flows, and a source of invertebrate prey. Highest rates of mortality typically occur during the fry stage and during the first winter.

Juveniles typically reside in fresh water for 2 to 3 years, or longer, depending on temperature and growth rate (Mullan *et al.* 1992). There appears to be a size threshold that determines the age at which steelhead smolt, with faster-growing fish smolting at an earlier age. Smolts migrate downstream during spring runoff, which occurs from March to mid-June in the Snake River Basin, depending on elevation.

Additional details considered in this consultation on steelhead life history and habitat requirements are found in Busby *et al.* (1996), Swift (1976), and Pauley *et al.* (1986).

2.1.1.2. Status of Snake River Basin Steelhead

The biological status of a listed species is a synthesis of available information describing environmental and biological conditions affecting the species' survival, threats to the listed species, and the species' response to these factors. The biological status of a species depends on population attributes such as a species' range, abundance, productivity, spatial distribution, and stock (genetic) structure (McElhany *et al.* 2000).

The draft status update report (BRT 2003), population assessment (McClure *et al.* 2003), updated status review (Goode *et al.* 2005), and listing notice in the January 5, 2006, Federal Register (71 FR 873) provide a variety of assessments on the biological status of Snake River Basin steelhead (up through the spring of 2005). These documents show a general range-wide decline in wild steelhead abundance over the past century, with present abundance greatly depressed compared to estimates of historic numbers. Trends in hatchery-origin fish are generally increasing in abundance, but combined numbers of hatchery and wild fish still remain far below historic numbers. Accurate counts and stock-specific information on abundance and distribution of wild steelhead are unavailable for most of the Snake River Basin steelhead, and available data are limited to aggregate counts of wild and hatchery fish counted at different hydropower dams since the 1970s, with hatchery fish counted separately since 1995. In addition to declines in abundance, the natural range of Snake River Basin steelhead has been reduced by nearly one-half due to impassable dams and other passage barriers introduced in the past century. None of the independent populations in the Salmon and Clearwater major population groups currently meet population viability criteria according to the draft recovery plan (NMFS 2006).

Snake River Basin steelhead have experienced a dramatic and long-term decline in population size since the 1870s. By 1962, Snake River Basin steelhead had already declined considerably from estimates of population size prior to European influence. Direct estimates of steelhead are not available prior to construction of the Ice Harbor Dam in 1962. Since the construction of dams in the Snake River, counts of natural- and hatchery-origin steelhead returning to the Snake

River Basin declined sharply in the early 1970s, increased modestly from the mid-1970s through the 1980s, declined again during much of the 1990s, and increased sharply in 2001 (NPCC 2003). Since 2001, counts of natural-origin steelhead have exhibited mixed trends, with present numbers averaging approximately 25% of the fish counted in 1962, while aggregate counts of all steelhead are slightly higher than the numbers counted in 1962. The 10-year average of all adult steelhead passing Lower Granite Dam through March 2005 is 140,361 adults, and the 10-year average for natural-origin steelhead for the same period is 28,303 adults. Parr densities in natural production areas, which are another indicator of population status, have been substantially below estimated capacity for several decades (Hall-Griswold and Petrosky 1996).

The South Fork Clearwater Population is classified as an "intermediate" population in the Clearwater River major population group based on historical habitat potential (NMFS 2006). Steelhead populations classified as intermediate have a mean minimum abundance threshold of 1,000 naturally produced spawners with sufficient intrinsic productivity to achieve a 5% or less risk of extinction over a 100-year period. Abundance in recent years has been moderately variable; the most recent 10-year geometric mean number of natural spawners was 272. During the period 1986 to 1998, returns per spawner for B-run steelhead ranged from 0.24 (1990) to 6.63 (1998). The 13-year average had a geometric mean of 0.85, which is substantially less than the approximate 1.25 that would be required at an abundance of 1,000 spawners (NMFS 2006).

Dominant factors associated with trends in wild steelhead abundance include negative effects of hydroelectric dams, fishing, competition with hatchery fish, and conversion of watersheds from natural ecosystems to urban, agricultural, or industrial landscapes. Additional factors with sometimes negative or positive effects on steelhead abundance include variation in ocean circulation and North Pacific weather patterns.

2.1.1.3. Status of Critical Habitat

NMFS reviews the status of designated critical habitat affected by the proposed action by examining the condition and trends of primary constituent elements (PCEs) throughout the designated area. The PCEs consist of the physical and biological features identified as essential to the conservation of the listed species in the documents that designate critical habitat Table 5.

Freshwater areas designated as critical habitat for Snake River Basin steelhead vary in quality. Most of the streams accessible to Snake River Basin steelhead are largely intact, with mostly minor to moderate alterations in aquatic conditions due to the prevalence of undeveloped National Forest and BLM lands. However, aquatic conditions in certain drainages are severely altered by human activities such as water withdrawals, agriculture, mines, hydropower dams, stream channelization, elimination of wetlands, construction of flood control dams and levees, construction of roads (many with impassable culverts), timber harvest, splash dams, unscreened water diversions, livestock grazing, urbanization, outdoor recreation, fire exclusion/suppression, artificial fish propagation, fish harvest, and introduction of non-native species (Henjum *et al.* 1994; Rhodes *et al.* 1994; NRC 1996; Spence *et al.* 1996; and Lee *et al.* 1997).

In many parts of the Columbia River Basin, including the Snake River Basin, land management and development activities have: (1) Reduced connectivity (i.e., the flow of energy, organisms, and materials) between streams, riparian areas, floodplains, and uplands; (2) elevated fine sediment yields, degrading spawning and rearing habitat; (3) reduced large woody material that traps sediment, stabilizes streambanks, and helps form pools; (4) reduced vegetative canopy that minimizes solar heating of streams; (5) caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations; (6) altered peak flow volume and timing, leading to channel changes and potentially altering fish migration behavior; and (7) altered floodplain function, water tables and base flows (Henjum *et al.* 1994; McIntosh *et al.* 1994; Rhodes *et al.* 1994; Wissmar *et al.* 1994; NRC 1996; Spence *et al.* 1996; and Lee *et al.* 1997; Ecovista *et al.* 2003).

At the time each habitat area was designated as critical habitat that area contained one or more PCEs within the acceptable range of values required to support the biological processes for which the species use that habitat. The PCEs within the action area that will be affected by this project include sites for freshwater spawning, rearing, migration, and foraging (Table 4). American River is one of four major spawning areas in the South Fork Clearwater River drainage and makes up approximately 12% of the major population group (MPG) spawning habitat (NMFS 2006). In American River and its tributaries, there are numerous stream reaches suitable to support the biological processes for adult, juvenile, fry, and egg life stages of Snake River Basin steelhead. However, all of the PCEs have been severely degraded in the American River action area by a combination of legacy mining impacts, timber harvest, road building, and recreational pursuits. The habitat conditions of the American River watershed are further discussed in the Environmental Baseline.

Table 4. Types of sites and essential physical and biological features designated as PCEs, and the species life stage each PCE supports.

Site	Essential Physical and Biological Features	ESA-listed Species Life Stage
Snake River Steelhead[a]		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity & floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage[b]	Juvenile development
	Natural cover[c]	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover[c]	Juvenile and adult mobility and survival

a Additional PCEs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River steelhead. These PCEs will not be affected by the proposed action and have therefore not been described in this Opinion.

b Forage includes aquatic invertebrate and fish species that support growth and maturation.

c Natural cover includes shade, large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

2.1.2. Environmental Baseline

'Environmental baseline' includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02). An environmental baseline that does not meet the biological requirements of a listed species may increase the likelihood that adverse effects of the proposed action will result in jeopardy to a listed species or in destruction or adverse modification of a designated critical habitat.

NMFS describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support all life stages of each listed species within the action area. Each listed species considered in this Opinion resides in or migrates through the action area. Thus, for this action area, the biological requirements for salmon and steelhead are the habitat characteristics that support successful completion of spawning, rearing, and freshwater migration.

The American River watershed is 58,612 acres and joins Red River to form the South Fork Clearwater River. The watershed is composed of 72% U.S. Forest Service lands, 15% privately owned land, and 13% BLM land. The American River watershed was extensively mined which disconnected many of the tributaries by depositing tailings along the river. Mining activities have caused significant erosion in the tributaries and accelerated sediment deposition in the mainstem river. Other land uses in the watershed include livestock grazing, recreation, residence construction, road construction, sewage treatment, water withdraws for domestic and irrigation uses, and timber harvest.

The forest vegetation in the Elk City area is dominated by lodgepole pine. These stands are well into the cycle where mountain pine beetles attack and kill individual and groups of trees. The area of trees that are dead and dying is extensive and will continue to grow over the next 10 to 20 years, increasing the potential for high-intensity, stand-replacing fires.

Approximately 8,000 acres of timber have been harvested in the watershed (14% of the area), with approximately 925 of these acres occurring in the RHCA. The current equivalent clearcut area (ECA) is 9% in the watershed and the current sediment yield is 15% over the natural base. The road density is 2.3 miles/mile^2 and some of the roads have encroached on the stream/riparian processes. Watershed condition indicators and existing conditions of FISHSED variables for each subwatershed are shown in Tables 5 and 6, respectively. Fish bearing streams in the watershed are American River, Middle American River, East Fork American River, Maggie Creek, Kirks Fork, Elk Creek, Little Elk Creek, and the South Fork Clearwater River. Routed sediment delivery to the South Fork Clearwater River is approximately 6% over baseline.

There are a number of on-going and proposed activities in the American River watershed involving BLM and U.S. Forest Service lands. Two currently planned projects that have been identified within the American River watershed include the BLM American River Restoration

Project (BLM 2006) and the Nez Perce National Forest (NPNF) American and Crooked River Project (USFS 2005). These projects include timber harvest, prescribed burning, road construction, road reconstruction, road decommissioning, riparian restoration, fish passage projects and instream fish habitat improvement. The BLM past and future fish passage projects in the Upper South Fork Clearwater River are shown in Table 7. For the American Crooked River Project, the NPNF will construct 12.57 miles of new temporary road that will also be used for the Eastside Project. The NPNF and BLM will obliterate the roads upon completion of the projects. Timber harvest for the Eastside Project will occur approximately 2 years after the NPNF harvests.

Table 5. American River watershed condition indicators for subwatersheds.

Watershed Name	Area (mi^2)	Road Density (mi/mi^2)	RHCA Road Density (mi/mi^2)	LSP Roads[2] (miles)	Timber Harvest (% wtshd area)	RHCA Harvest (%RHCA area)
Upper American River	10.1	2.0	0.6	0	11	4
Middle American River[1]	5.1	3.0	2.7	0	13	5
East Fork American River[1]	8.6	1.0	0.7	0	6	3
Flint Creek	9.2	3.1	1.7	0	23	13
Whitaker Creek	1.4	3.9	2.6	0	27	23
Queen Creek	1.7	4.3	3.7	0	33	22
Box Sing Creek	1.4	3.3	3.1	0	16	8
Kirks Fork	9.8	0.6	0.5	0	4	3
Lower American River	6.8	2.0	3.5	0	NA	NA
Entire American River[1]	91.6	2.3	1.9	0.4	NA	NA

[1]Data compiled for composite watersheds, not pure watersheds
[2]LSP = Landslide Prone Terrain

Table 6. Existing Conditions of select FISHSED variables.

Prescription Watershed	Prescription Watershed Name	Current Fishery Habitat Condition (%)	Fishery/Water Quality Objective (% Habitat Potential)	Sediment Yield Guideline (% Over Baseline)	Entry Frequency Guideline (Per Decade)
17060305-05-06	Middle American R.	65%	80%	30%	1
17060305-05-16	Lower American R.	60%	80%	30%	1
17060305-05-10	E. Fk. American R.	80%	90%	30%	1
17060305-05-12	Whitaker Creek	70%	70%	60%	3
17060305-05-13	Queen Creek	70%	70%	60%	3
17060305-05-15	Box Sing Creek	65%	70%	60%	3
17060305-05-11	Kirks Fork	75%	80%	30%	1
17060305-05-05	Little Elk Creek	60%	80%	30%	1

Table 7. BLM past and future fish passage projects in the Upper South Fork Clearwater River.

Stream	Fish Passage Projects	Year
Box Sing Creek (American River Tributary–RM 8.5)	Constructed re-connect channel (mouth) through dredge tailings (mouth). Facilitate access to 2.4 miles of stream.	1992
Box Sing Creek (American River Tributary–RM 8.5)	Replaced barrier culvert (SM 0.1) with 6 ft. open arch culvert. Facilitate access to 2.4 miles of stream.	2002
Little Campbell Creek (Big Campbell Creek Tributary–SM 0.15) (Red River Tributary 0.7)	Replaced barrier culvert (SM 0.6) with partially embedded 6 ft. culvert. Facilitate access to 1 mile of stream.	2004
Little Campbell Creek (Big Campbell Creek Tributary–SM 0.15) (Red River Tributary–RM 0.7)	Removed barrier culvert (SM 0.35), rocked ford crossing, and closed road to public vehicle use. Facilitate access to 1 mile of stream.	2004
Buffalo Gulch (American River Tributary–RM 1.3)	Replaced barrier culvert (SM 0.8) with 8 ft. partially embedded culvert. Facilitate access to 5 miles of stream.	2005
Buffalo Gulch (American River Tributary–RM 1.3)	Replaced barrier culvert (SM 2.1) with 7 ft. partially embedded culvert. Facilitate access to 5 miles of stream.	2005
Buffalo Gulch (American River Tributary–RM 1.3)	Replaced barrier culvert (SM 4.5) with 6 ft. partially embedded culvert. Facilitate access to 5 miles of stream.	2005
East Fork American River (American River Tributary–RM 10.6)	Replaced barrier culvert (mouth) with 20 foot bridge. Provided fish access to 13 miles of stream.	2006
Telephone Creek (American River Tributary–RM10.5)	Re-connect channel and install 6 ft. partially embedded culvert at American River road crossing (mouth). Armor and stabilize two ford crossings for road to ATV trail conversion project. Facilitate access to 0.7 mile of stream.	2008

2.1.3. Effects of the Action

'Effects of the action' means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Effects of the action that reduce the ability of a listed species to meet its biological requirements may increase the likelihood that the proposed action will result in jeopardy to that listed species or in destruction or adverse modification of a designated critical habitat.

2.1.3.1. Effects of Sediment

The BLM proposes a combination of shelterwood, irregular shelterwood, seedtree, thinning, and sanitation (salvage) timber harvest methods on 1,155 acres, prescribed burning on harvested acres, 10 miles of new temporary road, 2.4 miles of road improvement, 1.5 miles of road decommissioning, 2.5 miles of road to trail conversion, 0.3 miles of new ATV trails, 0.2 miles of ATV trail improvements, 1.2 miles of streambank recontouring, two ATV bridge replacements

and decommissioning associated ford crossings, and 4.8 miles of riparian vegetation planting along the streambank. With the exception of riparian vegetation planting, all these activities have the potential to increase sediment in the American River watershed.

Timber harvest removes vegetation and exposes bare areas of soil, which increases the risk of erosion. If sediment reaches the river channels, it can be stored for years and become repository (Bilby *et al.* 1989), which is a concern, since several streams in the action area are sediment impaired. Sediment delivery can be effectively controlled by buffer zones 300-feet wide (Belt *et al.* 1992). The BLM will maintain 300-foot wide buffers along fish-bearing streams, as defined by PACFISH. Sediment can also reach streams through landslide processes. The BLM will not harvest on high risk landslide prone slopes and will scarify the soil following harvest activities, thereby reducing the overall potential for landslides to occur.

The Nez Perce National Forest sediment model (NEZSED) was used in the analysis of the original project to model the total sediment yield for timber harvest, prescribed fire, temporary road construction, road reconstruction, and road decommissioning (Table 8). The revised Eastside Fuels project should have less sediment effects than those described in the original BA because the BLM will construct fewer temporary roads and will no longer construct a permanent section of road and vehicle bridge. Also, the BLM is now treating 92 fewer acres (Table 1). Temporary roads have the potential to produce large amounts of sediment. This potential is reduced by reducing the amount of temporary roads constructed in the project area. Although the revised project will not have the same long-term reduction in sediment from obliterating 1.4 miles of road, converting the road to ATV trail is likely to reduce sediment inputs relative to existing conditions. Therefore, the BLM does not expect the proposed activities in the revised Eastside project to exceed the sediment yield numbers originally modeled.

Road construction, reconstruction, and decommissioning can affect fish habitat through changes in erosion and sediment delivery rates due to ground disturbance and, when roads are located in RHCAs, through disturbance of riparian vegetation and stream channels. Also, increased road traffic from hauling logs and transporting machinery will increase the amount of road dust produced by the Eastside Project; however, the BLM will use water as dust abatement in the project area to reduce this effect. The primary source of chronic and excessive sediment in these watersheds is believed to be the road system and legacy mining. Existing levels of instream sediment throughout the action area are not properly functioning for salmonids, as indicated by cobble embeddedness and percent surface fines. Silvicultural treatments (shelterwood, irregular shelterwood, and seedtree) and harvest treatment (tractor, skyline/cable, and helicopter) were incorporated into the NEZSED model. Effects were modeled for a 10-year period starting in 2003 and ending in 2012. Activities occurring throughout the lifetime of the project are modeled as occurring all within 1 year (2006).

Activities not modeled by NEZSED include soil restoration activities, trail construction or maintenance, and stream channel restoration activities and will be discussed below. The model is limited in that it does not consider the effects of activities on mass erosion greater than 10 cubic yards, the effects of grazing on streambank erosion, and most mining effects. Though

the model shows annual variations in response to land use, it does not attempt to estimate annual variation due to climate or weather events. Sediment yield is commonly expressed as tons/year or percent over baseline.

Table 8. Percent (%) over base sediment yield from the proposed action.

Watershed Name	Area (mi^2)	Year	Existing	Proposed Action
Middle American River[1] (Maggie Cr. included)	23.8	2003	13	13
		2006	12	17
		2012	12	11
East Fork American River[1]	18.4	2003	12	12
		2006	12	12
		2012	12	12
Whitaker Creek	1.4	2003	66	66
		2007*	31	57
		2012	31	31
Queen Creek	1.7	2003	37	37
		2007*	37	59
		2012	37	33
Box Sing Creek	1.4	2003	21	21
		2006	21	47
		2012	21	21
Kirks Fork	9.8	2003	5	5
		2006	5	7
		2012	5	5
Little Elk Creek	8.0	2003	24	24
		2006	24	24
		2012	24	24
Lower Elk Creek[1]	25.5	2003	16	16
		2006	16	18
		2012	16	16
Lower American River[1] (Telephone Cr. & Baboon Cr. Included)	91.6	2003	16	16
		2006	15	22
		2007	15	17
		2012	15	14
South Fork American River		2003	16	16
		2006	16	19
		2007	16	17
		2012	16	16

*Note: Queen and Whitaker creeks are modeled for harvest and roading in 2007
[1]Composite watersheds were combined with upstream watersheds for sediment yield analysis

The peak sediment yield is predicted to increase in eight of the nine subwatersheds. The BLM used the NEZSED model to estimate delivery to first-order stream channels in the action area. Sediment yield is expressed as the percentage of sediment delivery over the "natural" baseline. Road and watershed improvements, fuel treatments, and timber harvest will increase sediment

yield in the year the activity takes place, but the project is designed to create an upward trend in water quality after the Eastside Project is completed with the road decommissioning and instream projects.

The streams in the project area are all classified as Rosgen B and C type channels. These channels are characterized as low gradient, storage reaches. Even small amounts of sediment have the potential to persist in these channel types for long periods of time.

Predicted changes in winter rearing capacity exceed 10% in Whitaker Creek and Queen Creek (Table 9). With the exception of these two subwatersheds, predicted increases in deposited sediment are not of a magnitude where measurable changes would be expected to occur. Erosion control measures, project design features, and effectiveness of buffers are expected to minimize or prevent erosion and sediment from reaching stream channels. Whitaker Creek is not a fish bearing stream due to past mining activities. Queen Creek is not a fish bearing stream to date but will be reconnected to American River during the proposed project.

Table 9. Winter and summer rearing capacity in the Eastside Project

Stream/Channel Type	Existing (Legacy[2])	PREDICTED PERCENT (%)	
		Winter Rearing Capacity	Summer Rearing Capacity
Middle American River/C[1]	35 (34)	33	88
Lower American River/C[1]	45 (42)	41 (2006)	93 (2006)
		42 (2007)	93 (2007)
East Fork American River/C[1]	32(30)	30	86
Whitaker Creek/B	23 (22)	20 (2007)	75 (2007)
Queen Creek/B	34 (31)	31 (2007)	86 (2007)
Box Sing Creek/B	32 (30)	29	84
Kirks Fork/B	31 (31)	31	86
Elk Creek/C[1]	19 (18)	18	70
Little Elk Creek/C	23 (21)	21	76
South Fork Clearwater River/C[1]	46 (43)	42	93

[1] Data compiled for composite watersheds, not pure watersheds. Includes upstream sediment contributing subwatersheds and routed downstream sediment.

[2] Identifies modeled FISHSED effects from legacy/existing sediment (percent over base). Displayed for alternative comparison purposes so that legacy and existing NEZSED modeled sediment (percent over base) effects and Eastside Project action alternative effects can be identified. These are the FISHSED predicted changes attributed to existing levels of sediment over base, with no increases attributed to Eastside Project action.

The basic assumption behind FISHSED is that an inverse relationship exists between the amount of fine sediments in spawning and rearing habitats and fish survival and abundance. In general, when sediment yields are increased over natural rates in Idaho Batholith watersheds, especially on a sustained basis, fish biomass decreases. Fine sediment is known to degrade salmonid spawning and rearing habitat (Chapman and McCleod 1987; Bjornn and Reiser 1991) as suggested by the FISHSED model. Specifically, high sediment levels can impair habitat for spawning and rearing by: (1) Trapping fry in redds when they are attempting to emerge;

(2) depleting intergravel oxygen levels in redds, smothering eggs contained within; (3) limiting aquatic invertebrate population used for a food source; (4) reducing the number and depth of large pools which serve as primary feeding and resting areas for juvenile salmonids; and (5) filling spaces between rocks that serve as over wintering refuge for juvenile salmonids (NMFS, USFWS, USFS, and BLM 1998).

The ability to detect changes due to land management activities from cobble embeddedness is unclear and results have rarely been published in peer reviewed literature (Sylte and Fischenich 2003). Burns (1984) sampled embeddedness in 19 tributaries of the South Fork Salmon River with varying levels of development. He found that streams with more development had statistically significant higher mean embeddedness than undeveloped or partially developed streams. Partially developed and undeveloped streams were not significantly different from each other. Munther and Frank (1986) quantified conditions in Montana streams and found significant differences in only four of eight pairings of habitat units between developed and undeveloped streams. Potyondy (1998) in one of the most rigorous of all embeddedness studies summarized the results of cobble embeddedness analyses conducted on 120 streams in the Idaho Batholith on the Boise National Forest using Burns (1984) measurement methodology. Potyondy found no statistical differences among streams in watersheds with various degrees of land-disturbing impacts from timber harvest, road construction, grazing, and mining. Stream embeddedness levels appeared to be more closely related to estimated natural sediment yields related to geology rather than to management activities occurring in the watershed.

The results of FISHSED show predicted increases in cobble embeddedness, and no change or slight decreases in summer and winter rearing capacity for most fish-bearing streams. As stated by Stowell *et al.* (1983), FISHSED is most appropriately used to assess the effects of substantial changes in habitat quality greater than 10% to 20% and to document the relative difference among action alternatives. Of the above results, predicted changes in cobble embeddedness in the Lower American River and Queen Creek exceed this 10% threshold; for all other subwatersheds, the predicted changes in cobble embeddedness are less than 10%. However, cobble embeddedness, as modeled in FISHSED, was based on the proposed activities described in the April 3, 2007, BA.

It is expected that changes in substrate condition from modeled increased sediment yield are of an amount that only minor effects on fish would occur. However, recent findings suggest that there is no threshold below which increased fine-sediment delivery will be harmless (Suttle *et al.* 2004). That study also found that sediment reduction could produce immediate benefits for salmonid restoration. When combining the modeled activities with the improvements, short-term increases in sediment are likely; however, long-term reductions from chronic sources, such as decommissioning roads and fords, is expected.

The BLM will walk an excavator up two ridges to access timber harvest units in the Middle American River watershed. The access points are off a main U.S. Forest Service road in the RHCA. NMFS does not expect sediment effects from this activity because: (1) The slopes are less than 35%; which will reduce the potential for mass failure; (2) large mine tailing separate the

access point from the river, which will capture sediment; (3) minimization measures will be followed to reduce the amount of bare soil created; and, (4) the BLM will restore any disturbance to the path.

The BLM will reconnect Queen Creek with American River and install a culvert on Queen Creek to maintain transportation in the Eastside subdivision. Queen Creek will be relatively dry during the construction period (no more than 0.5 cfs) and the work will be conducted in Queen Creek before it is reconnected to American River. The installed culvert will maintain a natural bottom and allow for 100-year flood events. When connecting Queen Creek to American River the water will be released slowly to fully saturate the soil and reduce the amount of sediment mobilized. Reconnecting Queen Creek has the potential to increase sediment to American River in the short term but will have long-term beneficial effects by increasing the amount of habitat that is accessible to Snake River Basin steelhead by 1.35 miles.

The BLM will construct two ATV bridges in the project area where two fords currently exist. Construction of the bridges will temporarily increase sediment in these water bodies. The BLM will implement minimization measures, such as coffer dams, sediment traps, and water pumps in place to reduce the amount of sediment that enters the stream during construction activities. Constructing the new bridges will eliminate the use of the fords, and thus improve fish habitat in the long term by reducing streambank erosion.

All of the instream activities have the potential to add pulses of sediment to the stream. The pulses will be short term (few hours) and will settle within 300 feet downstream of the project. Studies conducted by the NPNF in Crooked River have shown that a 300-foot downstream distance is adequate for settling out suspended sediment. Turbidity may increase physiological stress, result in physical injury (e.g., gill abrasion), and potentially displace rearing juvenile fish (Bisson and Bilby 1982). Juvenile salmonid avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Differing concentrations of suspended sediment may cause salmonids to cease feeding, and/or alter their social behavior (Bilby *et al.* 1989; Hicks *et al.* 1991; Waters 1995). Adult and larger juvenile salmonids appear to be little affected by the high concentrations of suspended sediments (Bjornn and Reiser 1991); however, chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

Restoration efforts would focus on long-term reductions in chronic or press disturbance sediment. Pulse disturbance like most fire, floods, and some droughts are within the range of natural disturbances to which an ecosystem is adapted, are temporary in time, often patchy in space, and natural recovery is usually possible without assistance. Press disturbance alters the long-term resilience of an ecosystem, like sediment from roads or channels alteration from mining or grazing. The press disturbances discussed for this project are generally chronic, often widespread, and may exceed the capacity for recovery without assistance. Per NEZSED modeling, surface erosion and sediment delivery to streams are expected to return to near pre-project conditions within 1 or 2 years, with additional gradual sediment reductions in the long term.

Planting 4.8 miles of streambank along American River will have long-term beneficial effects, including greater streambank stability, reduced erosion and sediment, reduced stream temperatures, and additional LWD in the stream. Long-term reductions in sediment from decommissioning, moving, and converting roads to trails will contribute to the upward trend in the watershed and reduce press disturbance from sediment. The effects from sediment increases and decreases are not likely to alter VSP attributes (distribution, abundance, and productivity) of Snake River Basin steelhead because the increases are small and short-term; the benefits from restoration projects will then improve overall fish habitat for the long term.

2.1.3.2. Effects of Water Yield

The ECA, a surrogate for predicting increased water yield, from timber harvest and burning will increase in five of the nine subwatersheds (Table 10). Whitaker and Queen Creeks will have the greatest increase in ECA at 6% and 5%, respectively. The NPNF's American-Crooked Project will occur concurrently with the Eastside Project. Increases in ECA from the American-Crooked Project are already included in the baseline. Whitaker and Queen subwatersheds will experience the greatest increase in ECA, with the totals being 20% and 23%, respectively. NMFS uses 15% ECA as a threshold of concern regarding effects on stream hydrology, particularly peak flow, and thus on fish habitat conditions (NMFS 1995). In the smaller watersheds in the action area, ECA is expected to increase more. The threshold was identified to provide a conservative approach to water yield that would avoid the following undesirable effects on stream habitat conditions: (1) Accumulation of streambed materials, (2) channel braiding, (3) channel down cutting, and (4) increased bank erosion. Local studies by Gerhardt *et al.* (1991) have shown increases in water yield are not noticeable within the stream until ECA reaches 25% to 30%. None of the watersheds will exceed 25% ECA under the proposed action. Streambank stability is also a factor in the effects increased water yield will have on the watershed. Streambank stability ratings were established for all the creeks in the watershed. Queen Creek and Whitaker Creek had high streambank stability ratings and will support higher peak stream discharge without severe erosion.

Approximately 40% of the timber proposed for harvest in the project area is dead or dying. Water yield effects will be less than if exclusively live trees are harvested. NMFS feels the overall increase in ECA will have some small detrimental effects to fish, but project minimization measures and restoration activities such as road decommissioning and soil restoration will improve water infiltration and reduce surface runoff, which will buffer most of the detrimental effects due to potential increases in water yield.

Table 10. Percent (%) ECA for the Eastside Project, including American-Crooked Project.

Watershed Name	Area (mi^2)	Existing ECA	Proposed Action ECA	Proposed Action With American Crooked ECA
Middle American River	23.8	3	4	4
East Fork American River	18.4	6	6	7
Whitaker Creek	1.4	10	16	20
Queen Creek	1.7	13	18	23
Box Sing Creek	1.4	6	11	15
Kirks Fork	9.8	2	2	3
Little Elk Creek	8.0	11	11	11
Lower Elk Creek	25.5	14	14	14
Lower American River	91.6	9	10	11

2.1.3.3. Effects of Nutrients, Toxins, and Chemicals

The BLM proposes to use underburning, broadcast burning, and pile burning following timber harvest to achieve their fuel treatment objectives. The BLM expects these fires to burn at low to moderate intensities and have little effect on forest canopy. Escaped fires and increases in nutrients are potential problems associated with fuel treatments. Increases in nutrients are expected to have minimal impacts on listed fish since the BLM will not ignite fire in the RHCA and fires that burn into the RHCA will be of low intensities. Nutrients released from prescribed burning are expected to be absorbed by riparian vegetation before reaching live water. Another risk from prescribed fire includes the potential of escaped fire situations. The use of fire retardants, foams, and wetting agents are not identified in the BA as chemicals proposed for use in the project area; however, these chemicals are sometimes used with prescribed burns, and particularly with escaped fires. If fire-control chemicals are used, as in the case of escaped fire, their use is subject to the conditions outlined in the *Programmatic Biological Assessment of the Fire Management Program* (USDI-BLM 1999) and MIST guidelines. The BLM believes the proposed fuel treatment activities to be beneficial, because they may reduce the severity and extent of future fires in the action area, possibly preventing uncontrollable, stand-replacing fires.

The BLM will construct five helicopter landing sites for timber harvest activities. One landing site will be in the RHCA along American River. The proposed landing is a large flat between the site and American River that has already been heavily disturbed with legacy mine tailings. The use of the area as a landing site will not further degrade the RHCA and the site will be rehabilitated after its use. The BLM will not cut trees to develop the site and a spill prevention plan will be in place to prevent toxins and chemicals from reaching the river.

Toxic chemicals could be introduced to the stream during all project activities, including when hauling logs, transporting machinery, and conducting instream work. The BLM and its contractors use fuels, hydraulic fluids, and various petroleum-based lubricants, which are toxic to aquatic species if they leak or spill. To keep toxic material from live water, the proposed action

includes minimization measures to reduce impacts from fuel storage, refueling, and fuel leaks. The BLM also established minimization measures requiring a spill plan prior to project implementation.

2.1.3.4. Effects of Instream Work Disturbance

Watershed restoration activities that have the potential to harm juvenile steelhead include streambank recontouring, bridge construction, and reconnecting Queen Creek to American River. During streambank recontouring most of the work will be done from the streambank; however, heavy equipment will need to enter American River. American River is too large to adequately divert the water or to pump the water around the project area. The work will be conducted from July 1 through August 1, and a fish biologist will check the project area for redds or age-0 steelhead prior to instream work. Juvenile steelhead will be able to disperse from the work area during streambank recontouring, reducing the potential for fish to be harmed during this activity.

To estimate the number of fish directly harmed from instream work, NMFS uses Hall-Griswold and Petrosky (1996) habitat ratings of poor, fair, good, or excellent, where each habitat rating has a corresponding smolt density to parr carrying capacity number for steelhead or Chinook salmon in Idaho streams. NMFS selected a fair habitat rating for steelhead, which corresponds to 0.47 steelhead per 100 square feet (ft^2). When assessing potential for take, NMFS often uses a worst case scenario analysis (i.e. the highest densities likely to be encountered) to ensure that the potential take is not underrepresented in the jeopardy analysis. NMFS believes that fish densities represented by fair habitat conditions represent the worst case scenario.

The extent of instream activities includes the area for streambank recontouring, bridge replacement, bridge construction, ford decommissioning, and reconnecting Queen Creek. This area was determined using the following calculations:

- Only one-half of the 1.2 miles of streambank (3,160 feet) will be recontoured, and equipment will extend only 10 feet out into the river; therefore, the total area for streambank recontouring is 31,600 ft^2 (3,160 x 10 feet).

- For the ATV bridge (6-feet wide) crossing American River (30-feet wide), the construction area would total 180 ft^2 (6 x 30 feet). For the ATV bridge (6-feet wide) crossing Kirk's Fork (15-feet wide), the construction area would be 90 ft^2 (6 x 15 feet).

- The area of impact for each bridge is assumed to include a 50-foot upstream buffer and a 300-foot downstream distance where suspended sediment could be high. The area of impact on American River is 10,500 ft^2 ((50 + 300) x 30 feet). For Kirk's Fork, the area is 5,250 ft^2 ((50 + 300) x 15 feet).

- The estimated area for the Queen Creek reconnect is 3,000 ft^2, which includes 300 feet downstream by 10-feet wide. Since ESA-listed fish are currently not in Queen Creek, the 50-foot upstream buffer was not used.

Therefore, the total area for instream activities, figured by adding the individual areas of instream disturbance, should not exceed 50,620 ft^2.

Using the estimated fish densities and the total area of instream work, NMFS estimates that 238 fish have the potential to be harmed by instream activities. However, with minimization measures in place, such as working instream from July 1 through August 1 and having a fish biologist check the work site for redds prior to construction activities, it is unlikely that 238 fish will be harmed or killed. Fish will be able to move away from ongoing activities and American River is large enough to provide suitable habitat for displaced fish.

In-channel and streambank activities may result in disturbance to individual fish, both within the immediate work area and downstream. Timing restrictions for in-channel work would result in avoidance of spawning fish or occupied redds. With other minimization measures in place, the overall population size in the action area, and implementation of restoration activities, NMFS does not anticipate that the number of fish harmed or killed from project activities will alter VSP attributes (abundance, productivity, and diversity) for Snake River Basin steelhead.

2.1.3.5. Effects on Critical Habitat

The actions, as proposed, are likely to have the following direct and indirect effects on designated critical habitat: (1) Increased short-term sediment deposition throughout the action area, which would tend to decrease the amount of both summer and winter rearing habitat; (2) long-term reductions in sediment from decommissioning roads, planting riparian vegetation, and instream restoration work; (3) increased habitat access from reconnecting Queen Creek; (4) increased shading and cover, and reduced water temperatures after the streamside vegetation is established; and (5) a slight increase in water yield from increased ECA.

The PCEs which could potentially be affected by the Eastside Project are water quality, water quantity, and substrate. The types of sites which could be affected for these PCEs include freshwater spawning, rearing, and migration sites.

Water quantity could be affected by the increases in ECA predicted under the proposed action. As noted in the Effects of Water Yield section above, water quantity could increase slightly after timber harvest is complete; however, the amount of increase is not likely to have significant effects on spawning, rearing, or migrating habitat due to the very small increases which would likely occur.

Water quality could be affected during instream work by increases in suspended sediment and the potential introduction of toxic materials. As noted in the Effects of Sediment section above, pulses of suspended sediment will be short term (few hours) and will settle within 300 feet of the activity. The BLM will monitor suspended sediment during instream activities and cease working if suspended sediment exceeds water quality thresholds. The effects of suspended sediment on spawning, rearing, and migrating habitat are expected to be minor and short-lived.

The BLM will implement minimization measures and design criteria to reduce the potential for toxins and chemicals to reach live water. The potential for adverse effects from toxins and chemicals on critical habitat is expected to be discountable due to these measures.

Substrate could potentially be affected by the proposed action through the deposition of suspended sediment produced by project activities. As noted in the analysis above, increases in sediment deposition could decrease winter and summer rearing habitat for the short term (3 to 5 years). The BLM will implement minimization measures that will reduce the amount of sediment that may reach the stream to minimal amounts. The BLM will also avoid spawning areas. In the short term, the amount of sediment that will reach live water will be small and the amount deposited even smaller; therefore, substrate will not be affected to an extent sufficient to alter the conservation value of designated critical habitat. In the long term, NEZSED modeling shows the amount of sediment will be reduced through road decommissioning, road to trail conversions, ford decommissioning, and riparian planting. This will improve the overall quality of spawning, rearing, and migrating habitat.

In the long term, the proposed project will increase the quality of the physical and biological features of Snake River Basin steelhead habitat for natural cover, forage, substrate, floodplain connectivity, and water quality. Road decommissioning will reduce chronic sediment inputs, promote the improvement of substrate composition, and improve floodplain connectivity. Riparian plantings will increase the potential for LWD and habitat complexity while reducing stream temperatures. Connecting Queen Creek to American River and installing LWD and rock structures will increase spawning, rearing, and migrating habitat by 1.35 miles. Decommissioning fords and installing ATV bridges will improve water quality by reducing erosion and reducing the potential for toxins and chemicals to enter the streams. Also, the project will reduce artificial obstructions and allow for better access to steelhead habitat. The limiting factors in the American River watershed are summer and winter rearing habitat; the goal of the restoration projects is to increase both the summer and winter carrying capacities.

A qualitative change in the conservation value of critical habitat within the action area is anticipated through the long-term effects of the action, which are likely to result in subtle improvements in channel features essential for spawning and rearing. However, based on the effects described above, it is reasonably likely that the proposed action will also have small to moderate, local, short-term negative impacts. Due to the short duration and small scale of these impacts, it is not expected that the project will reduce the conservation value of designated critical habitat in the short term. In the long term, the conservation value of the critical habitat is likely to be similar to, or higher than the present value. While beneficial, the influence of the proposed action on the conservation value of the critical habitat is limited primarily due to numerous legacy effects of mining which continue to impair habitat conditions in the action area.

These changes will affect the PCEs of freshwater rearing, freshwater migration, and freshwater spawning in the American River watershed. In the long term, the proposed project will increase the quality of the physical and biological features of Snake River Basin steelhead habitat for natural cover, forage, substrate, floodplain connectivity, and water quality. Also, the project will

reduce artificial obstructions and allow for better access to steelhead habitat. The limiting factors in the American River watershed are summer and winter rearing habitat; the goal of the restoration projects is to increase both the summer and winter carrying capacities.

An incremental change in the conservation value of critical habitat within the action area due to the proposed action cannot be quantified. However, based on the effects described above, it is reasonably likely that the proposed action will have small to moderate, local, short-term negative impacts and long-term positive benefits in the conservation value of the critical habitat affected.

2.1.3.6. Compliance with PACFISH Objectives

PACFISH identifies project and site-specific standards and guidelines which apply to all RHCAs and to projects and activities in areas outside RHCAs that will degrade them (USFS and BLM 1995). Eastside Project activities have been developed and designed to reduce project effects to listed fish, such that the activities do not retard or prevent attainment of Riparian Management Objectives (RMOs). PACFISH identifies that RMOs and RHCAs may be modified in the absence of a watershed analysis where watershed, stream reach, or site-specific data supports the rationale for the modification. The BLM has included their site-specific rationale in the BA supporting the RHCA modifications; any effects of the changes will be documented through their monitoring program. The rationale that the helicopter landing, excavator access for two harvest units, and the 0.3 miles of new ATV trail in the RHCA will not retard the attainment of RMOs is based on the following considerations:

<u>Helicopter Landing Site</u>

- The BLM will decommission the landing and access road when timber harvest activities are complete, which will reduce the potential for long-term adverse effects.

- Sediment is not expected to reach American River due to topography, slope, dredge ponds, and the overall distance to the river.

- The BLM will not need to cut trees for the new landing; therefore, no impacts to American River riparian shading or LWD recruitment will occur.

<u>Excavator Access</u>

- The BLM will not store fuels in the RHCA. Slip-on fuel tanks, less than 150 gallons, will be used for refueling and will occur at least 50 to 200 feet from live water.

- The excavator routes will not have future adverse effects because the BLM will use minimization measures to reduce the amount of soil disturbed, restore any disturbed areas when the project is complete, and monitor the routes to ensure they are not used for recreation trails.

- The BLM will not cut trees to create the excavator trails; therefore, the activity will not affect LWD recruitment or shading.

- Sediment is not expected to reach American River due to topography, slope, dredge ponds, and the overall distance to the river.

New ATV Trail

- A "pioneered" ATV trail currently exists in the area proposed for the new ATV trail. The trail is a chronic source of sediment and has degraded riparian/meadow areas and aquatic habitat. The new trail will use portions of the old trail and decommission the rest, which will improve overall habitat conditions in the meadow area.

- The trail approaches and ford at a small perennial stream will be hardened to reduce erosion.

- The new ATV trail will have minimal potential for sediment delivery to American River due to its location, topography, and existing dredge tailings along the river.

- Trees that may need to be cut for the new trail are more than one tree length from American River and will not have adverse effects to LWD recruitment or stream shading.

- Restoration of the road crossing the meadow will result in improvement of riparian habitat.

- The ATV trail and ford proposed for decommissioning will have short-term sediment effects, but long-term beneficial effects from reducing a chronic sediment source and improving meadow/riparian habitat conditions.

2.1.4. Cumulative Effects

'Cumulative effects' are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Cumulative effects that reduce the ability of a listed species to meet its biological requirements may increase the likelihood that the proposed action will result in jeopardy to that listed species or in destruction or adverse modification of a designated critical habitat.

NMFS does not anticipate specific future state or private activities reasonably certain to occur in the action area; however, present activities and their effects described under the environmental baseline are likely to persist beyond the duration of this project. Private land use in the action area include fire suppression, timber harvest, prescribed burning, roads, urban development, recreation, mining, and livestock grazing, all of which could affect fish habitat in the future. These actions would likely lead to incremental increases in sediment delivery, along with the loss of shade and potential LWD (USFS 1999).

Between 1990 and 2000, the population of Idaho County increased 12.7%[3]. Thus, NMFS assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the action area continues to grow, demand for agricultural, commercial, or residential development is also likely to grow. The effects of new development caused by that demand are likely to reduce the conservation value of the habitat within the action area.

Although quantifying an incremental change in survival for the Snake River steelhead distinct population segment due to the cumulative effects is not possible, it is reasonably likely that those effects within the action will have small, short-term and long-term negative effects on the likelihood of their survival and recovery.

2.1.5. Conclusion

After reviewing the status of Snake River Basin steelhead and their designated critical habitat, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River Basin steelhead and is not likely to destroy or adversely modify designated critical habitat for this species.

The conclusion that the action is unlikely to jeopardize the continued existence of Snake River Basin steelhead is based on the following considerations:

1. The amount of sediment produced from instream construction activities is likely to cause displacement, stress, and gill flaring of listed steelhead; these effects will be minimal and short-lived due to minimization measures.

2. The magnitude and pattern of localized, scattered, and infrequent take is unlikely to appreciably alter any VSP attributes in the action area.

3. No significant change in the American River watershed steelhead production is expected from mortality, since only a very small percentage of fish in the action area are likely to be killed.

4. Only a very small proportion of fish in the drainage (based on area) are likely to be harmed by sublethal effects, based on a worst-case assumption that all juvenile fish in the project area would be harmed.

5. Steelhead are unlikely to be exposed to appreciable amounts of chemicals in most of the treatment areas due to their distance from water and precautionary measures to prevent water contamination; therefore, only a small percentage of steelhead in the action area are likely to be harmed.

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[3] U.S. Census Bureau, State and County Quickfacts, Idaho, County. http://www.census.gov/main/www/cen2000.html.

6. The combined take from the proposed action and take under the environmental baseline (the USFS American and Crooked River project) may affect juvenile steelhead in the American River drainage for the duration of the proposed actions. However, the combined amount of take is still small.

7. Long-term effects are improved steelhead habitat which will lead to increased steelhead production and survival in the action area. Long-term beneficial effects from the proposed project contribute to the upward trend in the project area.

The proposed action is unlikely to destroy or adversely modify designated critical habitat. This conclusion was reached by examining the action's effects on PCEs and how those effects alter the conservation value of freshwater spawning, rearing, or migration habitat. Specifically,

1. As noted in the Effects on Water Yield section above, the increases in ECA will increase streamflows. However, based on previous project monitoring and scientific literature, the changes in streamflow will be very small and unlikely to alter the conservation value of freshwater spawning, rearing, and migration habitat.

2. Based on the terrain of the action area, historic disturbances (mine tailings and dredge ponds), riparian buffers, minimization measures and design criteria, the amount of sediment that may reach the streams from terrestrial activities is minimal. The amount of sediment that may reach the streams is unlikely to alter the conservation value of freshwater spawning, rearing, and migration habitat.

3. Temporary roads in the action area may increase sediment yields for the short term. The BLM will construct the temporary roads on ridge tops or high in the watersheds, well outside RHCAs. The RCHA buffer along fish-bearing streams is sufficient to reduce sediment that may reach the stream to minimal amounts. The amount of sediment that reaches the streams from the construction of temporary roads is unlikely to alter the conservation value of freshwater spawning, rearing, and migration habitat. Roads will be decommissioned within 1 to 3 years from project completion, reducing long-term sediment impacts.

4. Replacing two ATV bridges and decommissioning the associated fords will have short-term increases in sediment. With minimization measures in place the amount of sediment produced from these activities will be minimal. The amount of sediment that may reach the streams is unlikely to alter the conservation value of freshwater spawning, rearing, and migration habitat.

5. Instream activities that have the potential to increase sediment will be monitored closely and ceased if sediment amounts reach water quality thresholds. Closely monitoring water quality will reduce the potential for adverse effects on spawning, rearing, and migration habitat to minimal amounts.

6. Reconnecting Queen Creek with American River will produce short-term sediment pulses during the project. The creek will not be connected to American River until all instream activities are complete and the stream will be rewatered slowly to reduce the amount of

sediment that enters American River. Reconnecting Queen Creek will increase the overall habitat in the project area by 1.35 miles, and the new LWD and rock structures will increase habitat complexity. Reconnecting Queen Creek will not alter the conservation value of spawning, rearing, and migration habitat, but instead improve the PCEs.

7. Riparian plantings will increase the potential for shade and subsequently reduce stream temperature. Planted trees will increase the potential for LWD to enter the stream over the long term and increase the overall habitat complexity of American River. Planting riparian vegetation will have only beneficial effects on the conservation value of spawning, rearing, and migration habitat. Associated long-term benefits to spawning, rearing, and migration habitat include reduction in chronic sediment, potential reduction in stream temperature from riparian plantings, and improved water quality.

2.1.6. Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. The following recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the BLM:

1. The BLM should evaluate the potential for reconnecting other streams in the watershed that have been disconnected by mining (i.e. Whitaker Creek).

2. The BLM should evaluate moving mine tailings from the streambanks along American River to restore floodplain function.

3. The BLM should consider planting more reaches along American River with native species.

4. The BLM should evaluate reestablishing functioning riparian areas and wetlands, which may include filling in dredge ponds along American River to reduce stream temperatures.

5. The BLM should evaluate decommissioning more roads in the RHCA and American River watershed.

6. The BLM should monitor the use of ATV trails to ensure the public is not creating new stream crossings and trails, and take corrective actions if needed.

Please notify NMFS if the BLM carries out any of these recommendations so that we will be kept informed of actions that minimize or avoid adverse effects and those that benefit listed species or their designated critical habitats.

2.1.7. Reinitiation of Consultation

Reinitiation of formal consultation is required and shall be requested by the Federal agency or by NMFS where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (1) If the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not previously considered; (3) if the identified action is subsequently modified in a manner that has an effect to the listed species or designated critical habitat that was not considered in the Opinion; or (4) if a new species is listed or critical habitat is designated that may be affected by the identified action (50 CFR 402.16).

To reinitiate consultation, contact the Idaho State Habitat Office of NMFS and refer to the NMFS Number assigned to this consultation.

2.2. Incidental Take Statement

Section 9(a)(1) of the ESA prohibits the taking of endangered species without a specific permit or exemption. Protective regulations adopted pursuant to section 4(d) extend the prohibition to threatened species. Among other things, an action that harasses, wounds, or kills an individual of a listed species or harms a species by altering habitat in a way that significantly impairs its essential behavioral patterns is a taking (50 CFR 222.102). Incidental take refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(o)(2) exempts any taking that meets the terms and conditions of a written incidental take statement from the taking prohibition.

2.2.1. Amount or Extent of Take

Despite mitigation measures aimed at reducing the negative impacts to fish, NMFS anticipates that the proposed actions are reasonably certain to result in incidental take of juvenile Snake River Basin steelhead because juvenile Snake River Basin steelhead occur in the action area and will be exposed to project effects that are likely to harm or kill a number of fish. The number of fish likely to be harmed or killed from the proposed action cannot be quantified because the number of fish exposed to project-related sediment and instream work activities, and the severity of effect at any given time cannot be accurately predicted for a 10-year project. The number of fish in the action area, and the location of individual fish when activities occur will vary throughout the duration of the project, as fish move in and out of the action area. The number of fish likely to be exposed to harmful amounts of sediment is unpredictable because the amount of sediment produced by each activity is highly variable, the number of fish present at each site is not known, juvenile steelhead older than several weeks capable of avoiding plumes of sediment by moving to another area, and the severity of effect at any given time cannot be accurately predicted. In circumstances where take cannot be quantified, NMFS describes the extent of take, or surrogate measures of habitat changes or activities that cause take.

Take is likely to occur from effects of sediment deposition, and injuring or disturbing fish while working in streams. Take will occur from sediment only in those instances where sediment concentrations are high enough to harm fish, and the fish are incapable of moving out of the sediment.

The primary cause of take from activities are effects of increased sediment from the proposed restoration activities. A portion of these projects are within live water and any amount of sediment that is produced could potentially reach fish habitat. The amount of take will increase as sediment levels increase (i.e. turbidity). A suitable surrogate for determining harmful effects from suspended sediment is measuring Nephelometric Turbidity Units (NTUs) and cobble embeddedness for deposited sediment. Measuring turbidity will allow for rapid adjustments in project activities if turbidity approaches unacceptable levels. The BLM will monitor turbidity and halt operations when turbidity reaches 50 NTUs over background, which would occur instantaneously at the mixing zones, or 25 NTUs over baseline 300 feet downstream from the worksite for a period of 3 hours. These turbidity thresholds are below suspended sediment concentrations that cause harmful sublethal effects in salmonids (Loyd 1987, Rowe et al. 2003). The BLM will reinitiate consultation with NMFS if turbidity measurements exceed the allowable NTU limits.

Another surrogate measure of take for each instream project is a visible sediment plume from disturbance 50 feet upstream of the activity and for a linear distance not to exceed 300 feet downstream from each crossing or channel reconnect site, plus the actual length of the construction site as stated in the proposed action. The BLM will conduct implementation monitoring to ensure compliance with these measures.

Increased cobble embeddedness will also be used as a surrogate for measuring instream take. The American Crooked River Project Opinion used cobble embeddedness as a surrogate for take; however, not all the streams in the current project were a part of the American Crooked River Project. Anticipated cobble embeddedness allowed, as a surrogate for take, for the Eastside Project is shown in Table 11. The BLM will reinitiate consultation if cobble embeddedness exceeds that described in Table 11 after the first year of monitoring. Queen Creek and Whitaker Creek were not considered fish-bearing streams for the American Crooked River project and were not given a take statement. Queen Creek will be reconnected to American River and will be considered a fish-bearing stream upon completion of the Eastside Project.

Due to the timing of instream activities and the ability of adult steelhead to move from the project area, NMFS does not expect lethal or non-lethal take of adult steelhead. The extent of habitat exceeding that described for instream work activities, NTUs, distance of visible sediment plume, and percent cobble embeddedness are the thresholds for reinitiation. Should any of these limits be exceeded during project activities, the reinitiation provision of this Opinion apply.

Table 11. Cobble embeddedness increases (%) as a surrogate for take.

Stream	Percent (%) Cobble Embeddedness			
	% Increase from American Crooked River	Existing (Includes American Crooked River Project)	Proposed Action	% Increase from Eastside Project
Middle American River	2	40	42	2
Lower American River	3	31	34 (2006)	3
	--		34 (2007)	3
East Fork American River	--	44	46	2
Whitaker Creek	NA[1]	56	61	5
Queen Creek	NA[1]	42	46	4
Box Sing Creek	3	44	48	4
Kirks Fork	1	45	46	1
Elk Creek	--	64	67	3
Little Elk Creek	--	56	60	4

[1] Not considered fish bearing streams for the American Crooked River Projeet Opinion and not given a take statement.

2.2.2. Reasonable and Prudent Measures

The RPMs are nondiscretionary measures to avoid or minimize take that must be carried out by cooperators for the exemption in section 7(o)(2) to apply. The BLM has the continuing duty to regulate the activities covered in this incidental take statement where discretionary Federal involvement or control over the action has been retained or is authorized by law. The protective coverage of section 7(o)(2) will lapse if the BLM fails to exercise its discretion to require adherence to terms and conditions of the incidental take statement, or to exercise that discretion as necessary to retain the oversight to ensure compliance with these terms and conditions. Similarly, if any applicant fails to act in accordance with the terms and conditions of the incidental take statement, protective coverage will lapse.

NMFS believes that full application of conservation measures included as part of the proposed action, together with use of the RPMs and terms and conditions described below, are necessary and appropriate to minimize the likelihood of incidental take of listed species due to completion of the proposed action.

The BLM shall:

1. Minimize incidental take by requiring all designs and plans of operation for any activity, implemented by the BLM or through private contract, to include all applicable terms and conditions and project design and mitigation measures from this Opinion.

2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this incidental take statement are effective in avoiding and minimizing incidental take from permitted activities.

3. Minimize the incidental take from instream work.

4. Minimize the incidental take from timber harvest activities.

5. Minimize erosion from roads.

2.2.3. Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the BLM and its cooperators, including the applicant, if any, must fully comply with conservation measures described as part of the proposed action and the following terms and conditions that implement the RPMs described above. Partial compliance with these terms and conditions may invalidate this take exemption, result in more take than anticipated, and lead NMFS to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of designated critical habitats.

1. To implement RPM #1 (plans of operation), the BLM shall ensure that all applicable terms and conditions of this Opinion and minimization measures from the BA are included in any permit, grant, or contract issued for the implementation of the Eastside Project. As a part of the plans of operation, the BLM shall:

    a. Ensure a spill prevention plan is in place prior to beginning any ground-disturbing activities. The plan shall include the following measures:

        (1) Store petroleum products and jet fuels in excess of 100 gallons within constructed containment structures with an impervious liner and capacity at least 25% greater than the storage container.

        (2) Locate storage structures at least 100 feet from live water.

        (3) Inspect all equipment for leaks before being used within 100 feet of the stream.

        (4) Clean equipment with accumulations of oil, grease, or other toxic materials prior to use in these areas.

(5) Leaking or faulty equipment will not be used or stored anywhere that fluid could reach water.

b. Ensure that petroleum products are not disposed of on U.S. Forest Service or BLM land.

2. To implement RPM #2 (monitoring), the BLM shall ensure that:

a. Report annually to NMFS:

(1) Compliance with the terms and conditions, and the project design and mitigation measures.

(2) Descriptions of any incidental take occurring as a result of the project.

(3) Remedies to address and resolve problems identified in Terms and Conditions 2a(1) and 2a(2), above.

(4) Any environmental effects of the action that were not considered in the BA or this Opinion; report immediately any habitat indicators that change from "functioning at risk" to "not properly functioning."

(5) Any burning outside of prescribed burn plans, or any ignition within the RHCAs. The report will evaluate the extent, severity, and the effects of such burns. The monitoring report will focus on: (1) Burning outside the unit at moderate to severe levels that exceed 10% of the prescribed burn area for that unit; and (2) burning occurs within the RHCA that is moderate to severe that will cause a reduction in shading or an increase in sediment yield

(6) Results of NTU, cobble embeddedness, and sediment plume monitoring data, described above in section 2.2.1.

b. Submit to NMFS a draft of the monitoring plan prior to project implementation that includes a description of protocols for monitoring instream activities, including the Queen Creek reconnect, ford decommissioning, bridge construction, and streambank recontouring.

c. Notify NMFS promptly of any emergency or unanticipated situations in the action area that may be detrimental to steelhead. NMFS will then determine if project activities must cease or may continue, pending resolution of the problem and its impacts.

d. Submit all monitoring reports to NMFS, Idaho State Habitat Office, 10095 W. Emerald St., Boise, Idaho 83704.

3. To implement RPM #3 (instream work), the BLM shall:

   a. Provide NMFS with a construction plan prior to beginning instream construction. Implement instream activities according to approved construction plans.

   b. Operate equipment used for instream fish habitat improvement activities from existing roads or the streambank, where possible.

      (1) Prevent destruction of undercut banks by only entering the stream with heavy equipment where undercut banks are not present.

      (2) Require an aquatic specialist to designate heavy equipment water crossing sites that will least affect steelhead, if crossings will occur within 500 feet of occupied habitat.

   c. Require a fish biologist to survey all project sites prior to operating equipment to determine if steelhead or redds are present as follows:

      (1) If steelhead redds are located within 50 feet upstream or 300 feet downstream from an instream construction site, instream work shall not begin until a fish biologist verifies:

         (a) That juveniles have emerged from the redd(s), as indicated by the presence of age-0 fish in the vicinity of the redd(s); and

         (b) That work activities will avoid newly emerged fry.

   d. Require operators of construction equipment and/or construction personnel to immediately cease operation if a sick, injured, or dead specimen of a threatened or endangered species is found in association with project activities. The finder must then notify BLM, which in turn will contact the Idaho State Habitat Office of NMFS Law Enforcement at (208) 321-2956. The finder must take care in handling sick or injured specimen to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible conditions for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

   e. Retain areas of intact functioning riparian vegetation where possible during instream restoration work.

4. To implement RPM #4 (timber harvest activities), the BLM shall only use trees along the outer edge of the RHCA for cable anchoring and leave them in place so as not to retard attainment of RMOs.

5. To implement RPM #5 (road activities), the BLM shall maintain temporary roads, as needed, to keep erosion to a minimum.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The consultation requirement of section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions, or proposed actions that may adversely affect EFH. Adverse effects include the direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that may be taken by the action agency to conserve EFH.

The Pacific Fishery Management Council (PFMC) designated EFH for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and Chinook salmon, coho salmon, and Puget Sound pink salmon (PFMC 1999). The proposed action and action area for this consultation are described in the Introduction to this document. The action area includes areas designated as EFH for various life-history stages of Chinook salmon.

Based on information provided in the BA and the analysis of effects presented in the ESA portion of this document, NMFS concludes that proposed action will have the following adverse effects on EFH designated for Pacific Coast salmon: (1) Increased sediment deposition throughout the action area, which would tend to decrease the amount of both summer and winter rearing habitat; (2) increased habitat access from reconnecting Queen Creek; (3) increased shading and reduced water temperature after the streamside vegetation is established; (4) reduced press disturbance sediment from decommissioning roads in the project area; and (5) slight increase in water yield from increased ECA.

3.1. EFH Conservation Recommendations

NMFS believes that the following four conservation measures are necessary to avoid, mitigate, or offset the impact of the proposed action on EFH. These conservation recommendations are a non-identical set of the ESA Terms and Conditions.

1. Minimize incidental take by requiring all designs and plans of operation for any activity implemented through private contract to include all applicable terms and conditions and project design and mitigation measures from this Opinion.

2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this incidental take statement are effective in avoiding and minimizing incidental take from permitted activities.

3. Minimize incidental take from instream work by providing a construction plan prior to beginning instream construction, operating equipment from the streambank or roads, and preventing the destruction of undercut streambanks.

4. Implement road and trail activities by maintaining road and trail surfaces, as needed.

3.2. Statutory Response Requirement

Federal agencies are required to provide a detailed written response to NMFS' EFH conservation recommendations within 30 days of receipt of these recommendations [50 CFR 600.920(j) (I)]. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse affects of the activity on EFH. If the response is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations. The reasons must include the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, in your statutory reply to the EFH portion of this consultation, we ask that you clearly identify the number of conservation recommendations accepted.

3.3. Supplemental Consultation

The BLM must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600.920(k)].

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) (Data Quality Act [DQA]) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Opinion addresses these DQA components, documents compliance with the DQA, and certifies that this Opinion has undergone pre-dissemination review.

Utility: Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users.

This ESA consultation concludes that the proposed Eastside Project will not jeopardize the affected listed species. Therefore, the BLM can authorize and carry out this action in accordance with its authority. The intended users are the BLM and their permittees or applicants, if any.

Individual copies were provided to the above-listed entities. This consultation will be posted on NMFS Northwest Region website (http://www.nwr.noaa.gov). The format and naming adheres to conventional standards for style.

Integrity: This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

Objectivity:

Information Product Category: Natural Resource Plan.

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including NMFS ESA Consultation Handbook, ESA Regulations, 50 CFR 402.01, *et seq.*, and the MSA implementing regulations regarding EFH, 50 CFR 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the Literature Cited section. The analyses in this Opinion/EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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