UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Refer to NMFS No.: WCRO-2020-00098
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March 27, 2020

Lt. Col. Christian Dietz
U.S. Army Corps of Engineers
Idaho Falls Regulatory Office
900 North Skyline Drive, Suite A
Idaho Falls, Idaho 83402

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Jenkins-Cummings Bridge Repair Project, HUC #17060203 – Salmon River, Lemhi County, Idaho

Dear Lt. Col. Dietz:

Thank you for your January 14, 2020, letter requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Jenkins-Cummings Bridge Repair Project. This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

In this biological opinion (Opinion), NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) and Snake River Basin steelhead (*O. mykiss*). NMFS also concurs with the U.S. Army Corps of Engineers (COE) determinations that the action may affect, but is not likely to adversely affect, Snake River sockeye salmon (*O. nerka*), and designated critical habitat for all three species. Rationale for our conclusions is provided in the attached Opinion.

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

Thank you also for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management

Act (MSA) (16 U.S.C. 1855(b)) for this action. However, after reviewing the proposed action, we concluded that it would not adversely affect EFH, therefore, no EFH consultation is required.

Please contact Chad Fealko, Southern Snake Branch Office, 208-756-5105, or chad.fealko@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: R. Brochu – COE
S. Fisher – USFWS
C. Colter – SBT
J. Richards – IDFG
J. Bragg – High Basin Engineering, PLLC

Endangered Species Act Section 7(a)(2) Biological Opinion

Jenkins-Cummings Bridge Repair Project (NWW-2018-00329-I01), HUC #17060203
Salmon River, Lemhi County, Idaho

NMFS Consultation Number: WCRO-2020-00098

Action Agencies: U.S. Army Corps of Engineers

Affected Species and Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely To Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Snake River Basin steelhead (*Oncorhynchus mykiss*)	Threatened	Yes	No	No	NA
Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*)	Threatened	Yes	No	No	NA
Snake River sockeye salmon (*Oncorhynchus nerka*)	Endangered	No	NA	No	NA

Consultation Conducted by: National Marine Fisheries Service, West Coast Region

Issued By: Michael P. Tehan
Assistant Regional Administrator

Date: March 27, 2020

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ACRONYMN	DEFINITION
BA	Biological Assessment
COE	U.S. Army Corps of Engineers
CWA	Clean Water Act
DPS	Distinct Population Segment
DQA	Data Quality Act
ECO	Environmental Consultation Organizer
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FHWA	Federal Highway Administration
HUC	Hydrologic Unit Code
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
ITD	Idaho Transportation Department
ITS	Incidental Take Statement
MPG	Major Population Groups
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
NTU	Nephelometric Turbidity Units
NWP	Nationwide Permit
OHWM	Ordinary High Water Mark
Opinion	Biological Opinion
PBF	Physical or Biological Feature
PCE	Primary Constituent Element
PIT	Passive Integrated Transponder
RPM	Reasonable and Prudent Measures
SCNF	Salmon Challis National Forest
SH-93	State Highway 93
USFWS	U.S. Fish and Wildlife Service
VSP	Viable Salmonid Population
yd^3	cubic yards

1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

1.1 Background

The National Marine Fisheries Service (NMFS) prepared the biological opinion (Opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), and implementing regulations at 50 CFR 402, as amended.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at NMFS' office in Boise, Idaho.

1.2 Consultation History

The U.S. Army Corps of Engineers (COE) proposes to permit the applicant to repair the central pier of an existing private bridge over the Salmon River between Carmen and North Fork, Lemhi County, Idaho. The bridge is locally referred to as the Jenkins-Cummings Bridge. The applicant is Rebecca Jenkins-Cummings and they have been represented in part by High Basin Engineering, PLLC, who designed the repair work and drafted a report on the action (High Basin Engineering 2019). The COE proposes to issue a Nationwide Permit (NWP) No. 3, under their authority in Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

NMFS first learned of the proposed project in an August 14, 2018, Idaho Department of Water Resources (IDWR) email soliciting feedback on a joint application for permits. That email generated additional correspondence between NMFS and Idaho Department of Fish and Game (IDFG), IDWR, and the COE. The COE requested the Applicant complete a biological assessment (BA) of the proposed action by email on August 20, 2018. On August 24, 2018, the U.S. Coast Guard notified the applicant that no Coast Guard permit will be required for proposed bridge maintenance. An updated 404 application was distributed by the COE on October 12, 2018. On August 19, 2019, the IDWR notified NMFS that the joint application had been temporarily closed pending their request for new information. The IDWR's August 19, 2019, email provided a "Revised Construction Report" and updated construction plans. The COE submitted a draft BA for NMFS review on August 30, 2019. NMFS provided comments on the draft BA by email September 13, 2019. NMFS received a revised BA and request for formal ESA consultation on January 14, 2020. The COE subsequently revised the BA's effects determinations by email dated January 28, 2020. Revisions changed the ESA determinations for Snake River sockeye salmon (*Oncorhynchus nerka*) and designated critical habitat for Snake River sockeye salmon, Snake River spring/summer Chinook salmon (*O. tshawytscha*), and Snake

River Basin steelhead (*O. mykiss*) from "likely to adversely affect" to "not likely to adversely affect." NMFS agreed that the email documenting the changed effects determinations sufficed, and formal revisions of the January 14, 2020, BA were not necessary to document these changes. By letter, dated January 29, 2020, NMFS notified the COE that consultation had been initiated on January 28, 2020, and that formal consultation would be complete prior to June 10, 2020.

The final BA determined that the proposed action is likely to adversely affect Snake River Basin steelhead and Snake River spring/summer Chinook salmon, and is not likely to adversely affect Snake River sockeye salmon and designated critical habitats for all three species

NMFS shared draft excerpts of the Opinion with the COE on March 16, 2020. The COE responded on March 26, 2020. Because this action has the potential to affect tribal trust resources, NMFS provided copies of the draft proposed action and terms and conditions for this Opinion to the Shoshone Bannock Tribes on March 16, 2020. The Shoshone Bannock Tribes did not respond.

1.3 Proposed Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies (50 CFR 402.02). The proposed action is the COE authorization of the Applicant's proposed repair of the center pier of the Jenkins-Cummings Bridge (Figure 1). The bridge is located at 1898 Highway 93 North, Section 22, Township 24N, Range 21E, Boise Meridian, near latitude 45.3913770138016N, longitude -113.979108559137W, near North Fork, Lemhi County, Idaho. The center pier is constructed of metal piling and reinforced concrete. Over time, the concrete has degraded, exposing the steel reinforcement and pilings. The project will install additional steel reinforcement and then additional concrete around the pier footing and wall. The following general activities are included in the action: (1) Access and staging of equipment and materials above the ordinary high water mark (OHWM); (2) temporary equipment access below the OHWM of the Salmon River; (3) installation of temporary cofferdams to isolate the existing pier and site dewatering with screened pumps; (4) cleaning, grouting, reinforcing with steel, and resurfacing the existing pier with a new concrete footing and wall; (5) cofferdam removal; and (6) site clean-up and restoration. Additional detail and proposed conservation measures are described below.

To repair the bridge, a track hoe (i.e., excavator) will drive down the riverbank on an old, existing earthen ramp. Any small woody riparian vegetation in the route will be clipped at ground level and roots left intact. Clipped vegetation will be retained to assist in site reclamation. The excavator will then travel on the riverbed via a marked path to the center pier (approximately 120 feet from the bank). The excavator will be used to construct a temporary cofferdam around the pier. The equipment access and ford routes will be marked to minimize disturbance of vegetation and any saturated soils. The BA indicates the forded section of river can be dry, or covered by approximately 2- to 8-inches of water, depending on base flows.

To construct the cofferdam, gravel-filled super sacks will be transported over the bridge near the center pier, where a segment of bridge decking will be temporarily removed. Then, the excavator, working from below, will lower the sacks to river level where the sacks will form the

temporary cofferdam. A tarp or visqueen will be installed over the sacks and keyed into the streambed to more effectively seal water seepage required for successful dewatering. Finally, a pump sump station will be installed and the pump's discharge hose suspended from the bridge to the southwest side of the river where discharge will occur in a vegetative buffer. An existing berm will prevent discharge water from re-entering the Salmon River for a minimum of 400 feet, and an erosion control blanket will be installed at the discharge point to further dissipate energy and minimize erosion. The cofferdam is expected to dewater a total of about 800 square feet around the pier.

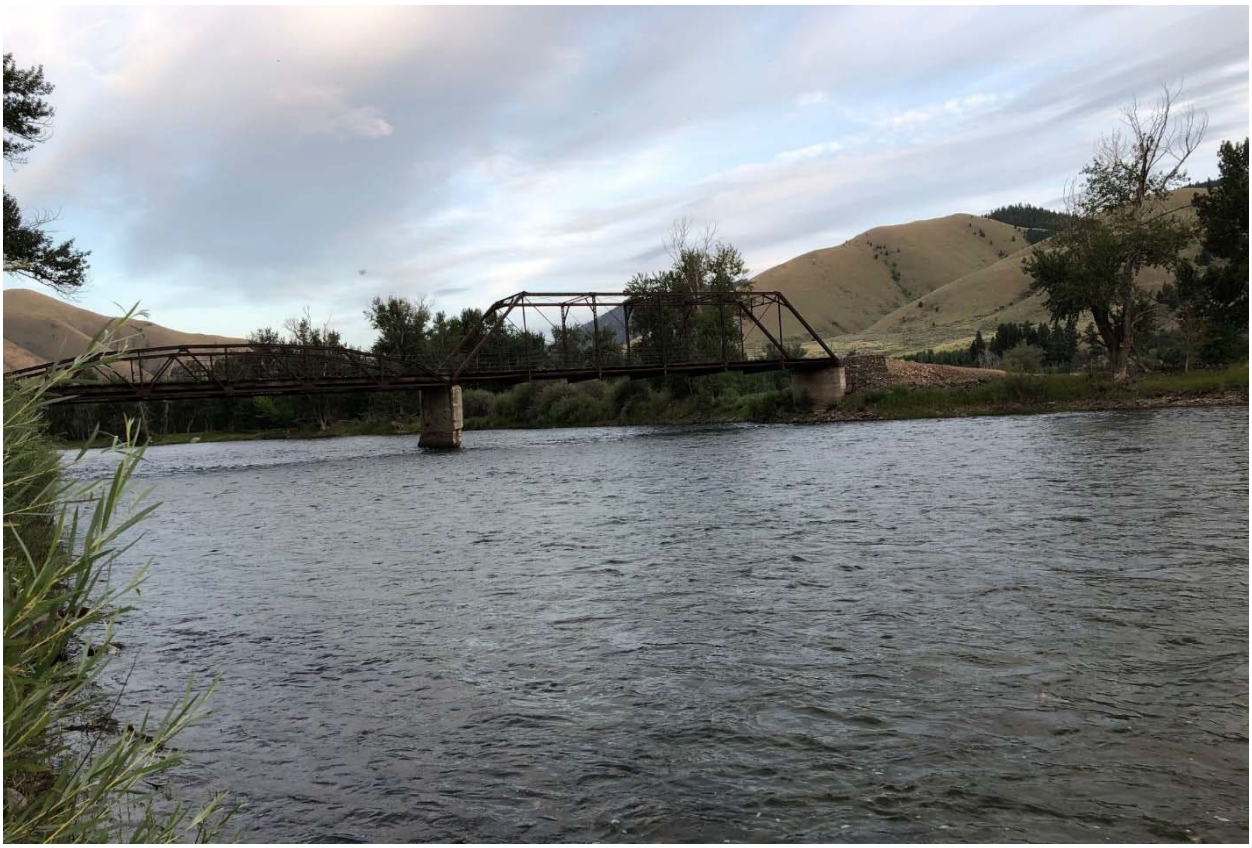

Figure 1. Jenkins-Cummings Bridge taken downstream of bridge and from the east side of the Salmon River, looking upstream (High Basin Engineering 2019).

Prior to dewatering the coffered area, the Applicant will notify Idaho Department of Fish Game (IDFG) and give a minimum 48-hour notice and request to complete fish salvage. Work will cease until IDFG is able to complete salvage.

Following dewatering and fish salvage, approximately 20 cubic yards (yd^3) of streambed material will be excavated from around the pier. Excavated material will be placed in bulk bags within the dewatered area, lifted up to the bridge deck, discharged into a dump truck, hauled away, and ultimately dumped in an approved disposal site. Concrete forms will then be built for the new pier footing, concrete will be poured and then allowed to cure a minimum 7 days. The site will remain dewatered for the duration of the cure period. The top of the footer elevation

will be approximately one foot above the existing water surface elevation, reducing the need to keep the site completely dewatered while the pier walls are formed and cured.

When the pier footing is cured, pier walls will be formed and concrete poured. While curing, for seven days, the cofferdam will remain in place but the pump will be shut off as curing concrete will remain more than one foot above the water surface elevation. All concrete will be pumped to the pour sites from the northeast abutment, with material delivered over the existing bridge deck.

After the wall is cured, the forms will be removed, followed by removal of the dewatering pump. Appropriately 20 yd^3 of large rock riprap will then be installed around the perimeter of the reinforced footing to prevent undercutting. Rock will be delivered in the same fashion as cofferdam material, via the existing bridge deck, and then lowered to the river by the excavator. Water will then slowly be reintroduced by removing the tarp/visqueen from the cofferdam. When a water equilibrium is established, the cofferdam super sacks will be removed, starting at the downstream end to moderate turbidity. The excavator will lift the super sacks back to the bridge deck, where they will be hauled off by a skidsteer. The excavator will exit the channel following the established access route. In total, the COE anticipates no more than 10 round trip excavator crossings between the north shore and the pier, all on the pre-marked route, established to maximize use of dry substrate to the extent possible.

No instream work shall occur prior to September 15. Work shall be substantially completed by December 15. Work is expected to occur in 2020, but could occur in 2021 or 2022, within the same dates.

Except for continued private bridge maintenance and ongoing vehicle access to private property across the Salmon River, no other State or private actions are known to be planned or proposed within the action area. The property is currently used principally for residential purposes, with some unknown level of livestock use also likely occurring. Livestock can ford the Salmon River during summer months and thus grazing on private lands does not depend on bridge access. For this reason, consequences of the proposed bridge repair that are likely to continue into the future are limited to future effects of residential use. There are no known plans to subdivide the property, so current residential use (two houses) are the only consequences considered in the following analyses.

1.3.1 Conservation Measures

The COE will require the Applicant to comply with applicable 2017 NWP General Conditions, NWP Regional Conditions, and the Idaho Department of Environmental Quality's (IDEQ) 401 Water Quality Certification Conditions for the 2017 NWPs[1]. The applicant provided engineer's Construction Report (High Basin Engineering 2019) and the BA provided numerous conservation measures. Table 1 displays the relevant measures, which are all required as special conditions of any COE permit authorized for the activity.

[1] http://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/Nationwide-%20Permits/

Table 1. Conservation Measures.

Category	Specific Measures
Sediment and Stormwater Control	• Site layout and flagging: Prior to construction, the action area will be flagged to identify the following: a. Sensitive resource areas, such as areas below OHWM, spawning areas, springs, and wetlands; b. Equipment entry and exit points; c. Stream crossing alignments; d. Staging, storage, and stockpile areas. • The contractor will ensure that there is an adequate supply of sediment control materials (e.g., silt fence, straw bales), including absorbent pads whenever surface water is present. • Temporary access roads: a. Minimize removal of riparian vegetation; b. River crossings shall not occur where: (1) Adults are actively spawning, or immediately upriver (300-feet) of actively spawning adults; (2) holding adult ESA-listed fish are present; or (3) eggs or alevins are in the gravel. c. Do not place temporary crossings in areas that may increase the risk of channel re-routing or avulsion, or in potential spawning habitat (e.g., pools and pool tail outs). d. Minimize the number of temporary river crossings and trips across. e. Equipment and vehicles may cross the river in the wet only where the riverbed is naturally stable. f. Vehicles and machinery will cross rivers at right angles to the main channel wherever possible. • Heavy equipment will be selected (when possible) and operated in a manner that minimizes adverse effects to the environment (e.g., minimally sized, low pressure tires, minimal hard turn paths for tracked vehicles, temporary mats or plates within wet areas or sensitive soils). • Inspect and, if necessary, wash vehicles and equipment to prevent introducing terrestrial invasive species prior to bringing equipment on the work site. • A supply of emergency erosion control materials will be on hand; and temporary erosion controls will be installed and maintained in place until site restoration is complete. Temporary erosion control measures may include, but not be limited to, fiber wattles, silt fences, jute matting, wood fiber mulch and soil binder, or geotextiles and geosynthetic fabric. • Ground disturbance will not occur during wet conditions (i.e., during or immediately following rain events). • Vegetation may be grubbed only from areas where permanent ground alteration will occur. Vegetation is to be cut at ground level and root wads retained where temporary clearing occurs. • When construction is finished, all riverbanks, soils, and vegetation will be cleaned and restored as necessary. • Temporary access roads will be obliterated and reconditioned. • Permittee is responsible for all work done by any contractor. Permittee shall ensure any contractor who performs the work is informed of and follows all the terms and conditions of this authorization, including any Special Conditions required. • Post-construction, any banks with bare soil will be planted with native seed mix. • Woody vegetation damaged by tracked equipment will be scattered over access routes to reduce erosion and an equal or greater number of trees and shrubs will be planted for any that were removed or killed.
Equipment Spill and Leak Prevention	• All vehicle staging, fueling, storage, and washout areas will be located at least 150 feet from aquatic areas and adequately buffered such that runoff is incapable of being delivered to surface waters or wetlands.

Category	Specific Measures
	• Any waste liquids generated at the staging areas will be temporarily stored under cover on an impervious surface such as tarpaulins until such time they can be properly transported to and treated at an approved facility for treatment of hazardous materials. • Spill containment kits adequate for the types and quantity of hazardous materials stored at the site are required. • The project sponsor will remove external oil and grease prior to arriving onsite. Thereafter, equipment will be inspected daily for leaks or accumulations of grease, and any identified problems fixed before operation within 150 feet of any natural waterbody or wetland. • Generators, cranes, and any other stationary equipment operated within 150 feet of any natural waterbody or wetland will be maintained as necessary to prevent leaks and spills from entering the water. • Gas-powered equipment with tanks larger than 5 gallons will be refueled in a vehicle staging area placed 150 feet or more from a natural waterbody or wetland. • Hydraulic fluids in machinery used for instream work will be nontoxic to salmonids.
Concrete Contamination	• No uncured concrete or form materials will be allowed to enter the active river channel. • All poured concrete will be allowed a minimum 7-day curing period before being exposed to surface water. • Concrete will be pumped to pour locations using a pump truck located near the northwest abutment, with material transported directly above the existing bridge deck to capture any spills.
Instream Work	• No instream work shall occur prior to September 15. Work shall be substantially completed by December 15. • Inspect and sanitize water craft, waders, boots, and any other gear to be used in or near water to prevent the spread of invasive species. • Fish Screens: all water intakes where fish could be entrained and injured, including pumps used to isolate inwater work area, will have a fish screen installed, operated, and maintained according to NMFS criteria (2011). • Any work area within the wetted channel (not including the travel route) will be isolated from the active river whenever ESA-listed fish are reasonably certain to be present, or if the work area is 300 feet upriver from spawning habitats. When work area isolation is required, engineering design plans will include all isolation elements and fish release areas. • A fish biologist will clear the area of fish before the site is dewatered using one or more of a variety of methods including seining, dipping, or electrofishing, depending on specific site conditions. All handling of fish, using any method, will be conducted by or under the direction of a fish biologist, using methods directed by NMFS' electrofishing guidelines (2000). A fish biologist will conduct or supervise the following activities and all the associated fish handling activities will be completed the same day. a. Slowly remove approximately 80 percent of the river flow from the work area to allow some fish to leave the work area volitionally. b. Seine or haze fish from the work area while the downstream end remains open. c. Electrofish to capture and relocate fish not caught during seining. d. Continue to slowly dewater the river reach. e. Collect any remaining fish in cold-water buckets and relocate to unaffected river reach. Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water. • Fish passage (downriver, unless upriver was available prior to implementation) will be provided for any adult or juvenile ESA-listed fish likely to be present in the action area

Category	Specific Measures
	during construction, unless passage did not exist before construction or the river is naturally impassable at the time of construction. • Design, build, and maintain facilities to collect and treat all construction discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present. • Equipment will be cleaned prior to use in the area to prevent spread of aquatic invasive organisms. • Dewatered areas will be re-watered slowly to minimize a sudden increase in turbidity. • An approved monitor will conduct turbidity monitoring with an appropriate and regularly calibrated turbidity meter, measuring nephelometric turbidity units (NTUs) during instream work. a. A background turbidity sample must be taken prior to expected turbidity pulses at a relatively undisturbed area approximately 100 feet upriver from in-water disturbance. b. A sample must then be taken every hour and approximately 600 feet downriver from the point of discharge, or most appropriate downriver site, during sediment pulses and be compared against the background measurement. c. If turbidity levels exceed 50 NTUs over background levels for two consecutive readings (2 hours), the contractor must cease work immediately and take measures to reduce turbidity before continuing to reintroduce river flow.

2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an Opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

The COE determined the proposed action is not likely to adversely affect Snake River sockeye salmon, and critical habitat for Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River Basin steelhead. Our concurrence is documented in the "Not Likely to Adversely Affect" Determinations section (Section 2.12).

2.1 Analytical Approach

This Opinion includes a jeopardy analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an

action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

The 2019 regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the regulations (84 FR 44977), that definition does not change the scope of our analysis and in this opinion we use the terms "effects" and "consequences" interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species:

- Evaluate the rangewide status of the species expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species.
- Evaluate the effects of the proposed action on species and their habitat using an exposure-response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species, analyze whether the proposed action is likely to directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.
- If necessary, suggest a RPA to the proposed action.

2.2 Status of the Species

This section describes the present condition of the Snake River spring/summer Chinook salmon evolutionarily significant unit (ESU) and the Snake River Basin steelhead distinct population segments (DPS). NMFS expresses the status of a salmonid ESU or DPS in terms of likelihood of persistence over 100 years (or risk of extinction over 100 years). NMFS uses McElhaney et al.'s (2000) description of a viable salmonid population (VSP) that defines "viable" as less than a 5 percent risk of extinction within 100 years and "highly viable" as less than a 1 percent risk of extinction within 100 years. A third category, "maintained," represents a less than 25 percent risk within 100 years (moderate risk of extinction). To be considered viable, an ESU or DPS should have multiple viable populations so that a single catastrophic event is less likely to cause the ESU/DPS to become extinct, and so that the ESU/DPS may function as a metapopulation that can sustain population-level extinction and recolonization processes (ICTRT 2007). The risk level of the ESU/DPS is built up from the aggregate risk levels of the individual populations and MPGs that make up the ESU/DPS.

Attributes associated with a VSP are: (1) Abundance (number of adult spawners in natural production areas); (2) productivity (adult progeny per parent); (3) spatial structure; and (4) diversity. A VSP needs sufficient levels of these four population attributes in order to: safeguard the genetic diversity of the listed ESU or DPS; enhance its capacity to adapt to various environmental conditions; and allow it to become self-sustaining in the natural environment (ICTRT 2007). These viability attributes are influenced by survival, behavior, and experiences throughout the entire salmonid life cycle, characteristics that are influenced in turn by habitat and other environmental and anthropogenic conditions. The present risk faced by the ESU/DPS informs NMFS' determination of whether additional risk will appreciably reduce the likelihood that the ESU/DPS will survive or recover in the wild.

Table 2 summarizes the status and available information on the Snake River Basin steelhead DPS and the Snake River spring/summer Chinook salmon ESU, based on the detailed information on the status of individual populations, and the species as a whole provided by their recovery plan (NMFS 2017) and status review update (NWFSC 2015). These two documents are incorporated by reference here. Both species remain threatened with extinction due to many individual populations not meeting recovery plan abundance and/or productivity targets.

Table 2. Most recent listing classification and date, status summary (including recovery plan reference and most recent status review), and limiting factors for species considered in this Opinion.

Species	Listing Status	Status Summary	Limiting Factors
Snake River Spring/summer Chinook Salmon	Threatened 6/28/05	This ESU comprises 28 extant and four extirpated populations, organized into five major population groups (MPGs), none of which are meeting the viability goals laid out in the recovery plan (NMFS 2017a). All except one extant population (Chamberlin Creek) are at high risk of extinction (NWFSC 2015). Most populations will need to see increases in abundance and productivity in order for the ESU to recover. Several populations have a high proportion of hatchery-origin spawners—particularly in the Grande Ronde, Lower Snake, and South Fork Salmon MPGs—and diversity risk will also need to be lowered in multiple populations in order for the ESU to recover (NWFSC 2015). Overall adult returns have remained very low over the past 3 years (Nez Perce Tribe 2018; Nez Perce Tribe 2019), and the trend for the most recent 5 years (2014-2018) has been generally downward (ODFW and WDFW 2019).	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Degraded freshwater habitat, including altered streamflows and degraded water quality. • Harvest-related effects. • Predation in the migration corridor. • Potential effects from high proportion of hatchery fish on natural spawning grounds.

Species	Listing Status	Status Summary	Limiting Factors
Snake River Basin Steelhead	Threatened 1/5/06	This DPS comprises 24 populations organized into five MPGs. Currently, five populations are tentatively rated at high risk of extinction, 17 populations are rated at moderate risk of extinction, one population is viable, and one population is highly viable. Four out of the five MPGs are not meeting the population viability goals laid out in the recovery plan (NMFS 2017). In order for the species to recover, more populations will need to reach viable status through increases in abundance and productivity. Additionally, the relative proportion of hatchery fish spawning in natural spawning areas near major hatchery release sites remains uncertain and may need to be reduced (NWFSC 2015, most recent species status review). Since 2015, abundance has declined steadily with only 10,717 natural-origin adult returns counted in 2018 (ODFW & WDFW 2019).	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Genetic diversity effects from out-of-population hatchery releases. Potential effects from high proportion of hatchery fish on natural spawning grounds. • Degraded fresh water habitat. • Harvest-related effects, particularly B-run steelhead. • Predation in the migration corridor.

The proposed action will occur in the mainstem Salmon River within part of the Wagonhammer Creek-Salmon River hydrologic unit code (HUC) (170602030507). For Snake River Basin steelhead, this area falls within the Lemhi River Population of the Salmon River MPG. For Snake River spring/summer Chinook salmon, the area is part of the Lemhi River Population of the Upper Salmon River MPG.

The Lemhi River steelhead population is intermediate-sized and one of 12 populations in the MPG. The minimum threshold for this intermediate sized population is 1,000 adults at a minimum productivity of 1.14 recruits per spawner. The current status is 'maintained' with a target status of viable (NMFS 2017). Although there are insufficient data to generate adult abundance and productivity estimates (NMFS 2017), passive integrated transponder (PIT) tag data provide insight into recent abundance. Dobos et al. (2019) reported 92 to 419 wild origin adult steelhead returned to the Lemhi River between 2010 and 2018 spawn years. Notably, the 2017 and 2018 returns, 149 and 92 adults respectively, were the lowest estimates for the observed period and less than half the prior eight year average return (338). These estimates are for fish returning to the Lemhi River proper, and do not account for returns to tributary streams within the Lemhi Population boundary (e.g., Carmen, Fourth of July, and Tower Creeks). Those tributary areas provide only about 2.9 percent of the available intrinsic potential habitat (ICBTRT 2007), suggesting the Lemhi estimates are reasonable for the overall population, but with some unknown error. Recent Lemhi population declines are consistent with overall Snake River Basin steelhead returns observed at Lower Granite Dam, which also decreased annually the past three return years. Recent decreases are reportedly influenced by poor ocean conditions (Camacho et al. 2019; Daly et al. 2017; Cavole et al. 2016). Poor 2018 returns were exacerbated

by poor freshwater migration conditions in 2015 (Camacho et al. 2019). Spatial structure risk is low and diversity risk is rated moderate due to historical hatchery influence. Returns are still well below minimum abundance and the population is tentatively rated as moderate risk of extinction (i.e., 10–25 percent risk of extinction in 100 years).

For Snake River spring/summer Chinook salmon, the Lemhi River is one of two historically very large-size populations in the Upper Salmon River MPG, its habitat was historically very productive, and the population has very little hatchery influence. Due to its classification as a very large population, the location in the downstream part of the MPG, and the low level of hatchery influence, the proposed recovery goal for this population is viable (i.e., low risk of extinction over 100 years) (NMFS 2017). The minimum population abundance to achieve viable status is 2,000 returning spawners (10-year geomean). The minimum population growth rate needed to achieve viable status at the minimum abundance is 1.34.

Since listing in 1992, the number of redds (10-year geomean) in the Lemhi River Chinook salmon population area has increased 18.3% from approximately 125 to 147, and population productivity (10-year geomean) has increased from 0.51 to 1.53. Expanding available redd count data, the current population size (10-year geomean) is 294 returning adults, which is approximately 15% the number required to be "viable." Although the current population size is sufficient to achieve "maintained" status, productivity remains less than the 1.7 needed to achieve "maintained" status at the current population size. Also, the last three returns (2017-2019) have been below replacement, suggesting that productivity is not likely to increase substantially in the near future. Recent ocean conditions have likely affected the last several years of returns (Camacho et al. 2019; Daly et al. 2017; Cavole et al. 2016). Although both population size and population productivity have increased since listing, the Lemhi River Chinook salmon population remains at high risk due to low abundance/productivity.

The Lemhi Chinook population also remains at high risk for spatial structure loss and diversity loss, primarily as a result of disconnected habitats and historical hatchery influence, respectively. Improvement in all four VSP parameters is necessary for the population to be viable.

2.2.1 Climate Change Implications for ESA-listed Species

One factor affecting the rangewide status of Snake River salmon and steelhead, and aquatic habitat at large is climate change. Several studies have revealed that climate change has the potential to affect ecosystems in nearly all tributaries throughout the Snake River (Battin et al. 2007; ISAB 2007). While the intensity of effects will vary by region (ISAB 2007), climate change is generally expected to alter aquatic habitat (water yield, peak flows, and stream temperature). As climate change alters the structure and distribution of rainfall, snowpack, and glaciations, each factor will in turn alter riverine hydrographs. Given the increasing certainty that climate change is occurring and is accelerating (Battin et al. 2007), NMFS anticipates salmonid habitats will be affected. Climate and hydrology models project significant reductions in both total snow pack and low-elevation snow pack in the Pacific Northwest over the next 50 years (Mote and Salathé 2009) changes that will shrink the extent of the snowmelt-dominated habitat available to salmon. Such changes may restrict our ability to conserve diverse salmon life histories.

In the Pacific Northwest, most models project warmer air temperatures, increases in winter precipitation, and decreases in summer precipitation. Average temperatures in the Pacific Northwest are predicted to increase by 0.1 to 0.6°C (0.2°F to 1.0°F) per decade (Mote and Salathé 2009). Warmer air temperatures will lead to more precipitation falling as rain rather than snow. As the snow pack diminishes, seasonal hydrology will shift to more frequent and severe early large storms, changing stream flow timing which may limit salmon survival (Mantua et al. 2009). The largest driver of climate-induced decline in salmon populations is projected to be the impact of increased winter peak flows, which scour the streambed and destroy salmon eggs (Battin et al. 2007).

Higher water temperatures and lower spawning flows, together with increased magnitude of winter peak flows are all likely to increase salmon mortality. The Independent Scientific Advisory Board (ISAB) (2007) found that higher ambient air temperatures will likely cause water temperatures to rise. Salmon and steelhead require cold water for spawning and incubation. As climate change progresses and stream temperatures warm, thermal refugia will be essential to persistence of many salmonid populations. Thermal refugia are important for providing salmon and steelhead with patches of suitable habitat while allowing them to undertake migrations through or to make foraging forays into areas with greater than optimal temperatures. To avoid waters above summer maximum temperatures, juvenile rearing may be increasingly found only in the confluence of colder tributaries or other areas of cold water refugia (Mantua et al. 2009).

Climate change is expected to make recovery targets for salmon and steelhead populations more difficult to achieve. Climate change is expected to alter critical habitat by generally increasing temperature and peak flows and decreasing base flows. Although changes will not be spatially homogenous, effects of climate change are expected to decrease the capacity of critical habitat to support successful spawning, rearing, and migration. Habitat action can address the adverse impacts of climate change on salmon. Examples include restoring connections to historical floodplains and freshwater and estuarine habitats to provide fish refugia and areas to store excess floodwaters, protecting and restoring riparian vegetation to ameliorate stream temperature increases, and purchasing or applying easements to lands that provide important cold water or refuge habitat (Battin et al. 2007; ISAB 2007).

2.3 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). The action area includes: (1) All proposed staging and access areas adjacent to the bridge; (2) a 300-foot radius around the bridge pier, where noise impacts may occur; and approximately 1,500 feet of the Salmon River downstream of the pier, where temporary turbidity/sedimentation effects may occur. The core of the action area, along with the majority of the impacts, will occur within a small area of approximately 0.14 acres. This area will include the cofferdam area, riverbed travel area, and access route from the adjacent highway down to the riverbed.

2.4 Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The 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 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

State Highway 93 (SH-93) parallels the action area and is the principle physical influence on habitat there. At the bridge, the valley bottom is moderately narrow, and SH-93 lies at the toe of the adjacent side slope, essentially adjacent to the Salmon River's east bank, where bedrock ridges and steep side slopes did not allow for further setback. Just downstream of the bridge, SH-93 lies upslope of active floodplains, farther from the river and with substantially less influence on floodplain processes. The west side of the Salmon River, in the action area, is flatter and floodplain access is likely not impaired. Extensive high-water flood channels are apparent both upstream and downstream of the bridge (Google Earth® 2014). Both bridge abutments and SH-93 reduce floodplain access and riparian vegetation extent, but at minor levels considering the small scale of the action area and small footprint of these facilities in the floodplain. Currently, a thin thread of native trees and shrubs occur between SH-93 and the river's east bank. The Jenkins-Cummings Bridge departs SH-93 within the highway right-of-way, crosses the Salmon River in two spans, and exits on private property on the west side of the river. The two bridge abutments are above the OHWM.

Property on the west side of the Salmon River is private and principally serves as rural residential. Domestic cattle are occasionally observed grazing the private property during summer months. Bank stability is high on both sides of the river, although winter ice jams regularly scour some banks below the OHWM and may cause localized bank instabilities along with winter flooding.

The Salmon River is warm during summer, with a mean August water temperature, between 1993 and 2011, of 63.5°F (Isaak et al 2017). Water temperatures exceed IDEQ criteria for cold water biota in many reaches (Herron et al. 2002). The action area reach is designated as a 303(d) listed waterbody for "cause unknown" (IDEQ 2017). In winter, the channel regularly fills with large ice dams, frequently causing overbank flows in low lying areas and scouring woody and brushy vegetation from shorelines. Although some level of summer warming is likely natural, extensive upstream irrigation diversion practices reduce average annual flow in the Salmon River by approximately 13 percent (NMFS 2012), likely contributing to elevated summer water temperatures. Existing temperature data suggest that salmon and steelhead adults and juveniles are likely affected by high summer water temperatures in the mainstem Salmon River. Flow reductions also likely reduce salmonid access to escape cover and cool water refugia, reduce food availability, and hinder migration.

During late summer and fall, the Salmon River segment of the action area is primarily a wide, shallow, low gradient riffle. Substrate is mostly large cobble. There are no pools in the reach and there are no undercut banks. Limited overhanging riparian vegetation exists, and what is present is primarily on the west shore. Overall, the physical condition of habitat is good, but lacks characteristics useful to adult and juvenile salmonids. Currently, salmon and steelhead migrate through the action area on their way to and from the Pacific Ocean. Juveniles could potentially rear in the action area, but likely only for short periods during the fall when some fish begin early migrations to the sea. However, sub-adult migrants likely spend their winter in ice-free reaches of the Salmon and Snake Rivers, farther downstream.

Historically, Chinook salmon may have spawned in mainstem Salmon River reaches, potentially in the action area. Mainstem spawning has not been detected within more than 30 miles in the past several decades. Future Chinook spawning is unlikely to occur here given elimination of some life histories, unsuitable substrate, and much higher quality spawning habitat found in nearby tributaries. Adult steelhead begin migrating through the action area in early October and could be moving through the reach, depending on ice levels, through March. Steelhead typically spawn in small tributary streams, some close to the action area, or within suitable perennial side channel habitats. The absence of suitable side channels, substrate, or tributary streams in/near the action area suggest steelhead spawning there is highly unlikely. Based on available information, juvenile anadromous fish may be present in the action area, but likely at low densities, and likely actively migrating downstream. Spawning Chinook salmon and steelhead are likely absent.

2.5 Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

2.5.1 Effects to Species

The in-water portion of the proposed action would take place between September 15 and December 15. Juvenile steelhead and Chinook may be present then, but as described above, only at low densities and likely actively migrating. Neither adult Chinook salmon or their redds are expected to be present for reasons described above. Adult steelhead will likely be migrating through the action area during this time period and thus could be exposed to consequences of the project. Steelhead redds are not expected to be present due to timing and habitat limitations.

Juvenile steelhead and Chinook and adult steelhead could experience the following adverse effects from the proposed action:

- Potential crushing by excavator fording the Salmon River;
- Death or injury from dewatering and fish salvage;
- Exposure to short-term turbidity plumes downstream of the project site;
- Exposure to construction noise;
- Exposure to chemical contamination; and
- Exposure to increased sediment deposition.

The bridge structure itself could affect the same species and life stages of fish[2] since the repaired center pier is located within the main Salmon River channel. Proposed repairs could modify habitat conditions, which could affect the identified species for several decades. Pier repair may also facilitate continued impacts from current residential uses such as: continued irrigation, vegetation management, road maintenance, etc. The likelihood of exposure and the magnitude of response to each of these effects are discussed below.

2.5.1.1 Fish Harm, Salvage, Disturbance, and Migration Behavior

One excavator will ford and work within the Salmon River channel. This activity is likely to cause some level of harassment and/or harm to fish that are present. The proposed action's design criteria include measures to reduce fish exposure and thus minimize the potential for adverse effects to occur. Specifically, the principle inwater work area will be dewatered, work is scheduled to occur during the lowest flow period when most fish are absent from the action area, the ford location will be marked to ensure the same route is used each time, and equipment will be directed to cross from dry patch to dry patch where possible.

Construction noise or visual stimulus may disturb nearby adult steelhead, juvenile steelhead, and juvenile Chinook salmon and cause them to move away from the worksite. Juvenile fish are expected to either move away, continuing their migration or move only short distances to an area where they feel more secure. Under the latter situation, fish relocations will last only a few hours in any given day (Grant and Noakes 1987; Ries 1995; Olson 1996; SNF 2009). Because the stream habitat near the worksite site is relatively uniform, we expect fish to readily occupy adjacent nearby and suitable habitats, or continue migrations unharmed. Such displacement is a minor behavioral modification and unlikely to cause biologically meaningful effects. Noise from construction equipment will not rise to the decibel level known to physically harm fish (FHWA 2008; Wysocki et al. 2007).

Adult steelhead exposed to approaching equipment or equipment working in the channel will likely use short bursts of energy to flee the disturbance. This is also a minor behavioral effect as suitable migratory habitat and alternative, higher quality, holding habitats are found in close

[2] Effects to species and designated critical habitat with "not likely to adversely affect" determinations (i.e., Snake River sockeye salmon and designated critical habitat for Snake River steelhead and Chinook and sockeye salmon) are discussed in Section 2.11.

proximity up- and downstream. Some juvenile fish, due to their size, are likely to hide in river substrate where they could be crushed by equipment or stranded by dewatering activities.

Ford use will be intermittent on days it occurs, and ten round trip ford crossings are expected during the one fall work window proposed. Only actively migrating fish will be affected. NMFS assumed no more than 25% of the fish potentially present in the ford site will seek refuge in the ford's substrate and be exposed to potential crushing. Excavator tracks are approximately 2-feet wide and we assume that only fish seeking cover in the exact footprint of the tracked area and within an additional one foot will be crushed (5 feet total). We also assumed fish would be most likely to be crushed on the first ford crossing of each round trip, and the exit route would not crush additional fish. This is reasonable given equipment will exit within minutes to hours and migrating fish are unlikely to reoccupy the ford area this quickly.

The ford route is approximately 120-feet long but we assumed 180-feet of impact for necessary work around the pier. Assuming the entire area will be wet and suitable fish habitat results in approximately 900 square feet of substrate impact. We applied fish densities[3] for 'poor' quality habitat developed (Hall-Griswold and Petrosky 1996) to calculate fish exposure at the ford. These are considered conservative estimates and likely overestimate the take likely to occur since: (1) The existing ford's substrate is already moderately compacted making fish refuge there unlikely; (2) water depth along the ford route is expected to be very shallow or non-existent, precluding fish use from most areas; (3) substrate will be further compacted after each crossing, making it increasingly unlikely for fish to seek refuge in the wheel ruts with successive fordings; and (4) the affected populations are not near carrying capacity, which the applied fish densities represent. Applying the stated assumptions and fish density calculations, NMFS calculated that up to 29 juvenile Chinook salmon and 15 juvenile steelhead may be killed during equipment fording.

Installation of the cofferdams and subsequent dewatering of the project area will likely strand some individuals. Adult fish and most juvenile fish are expected to flee the dewatered sites, avoiding harm or harassment. It is impossible to determine the number of fish likely to flee or hide in work area substrates. Similar to above, NMFS assumed only 25 percent of fish present will remain in the dewatered area and that 75 percent of the fish will leave volitionally as disturbance begins and water is drawn down slowly. Remaining fish will likely be harassed and/or injured and potentially killed during the proposed electrofishing salvage. Salvage operations will likely include hazing and or seining fish out of the dewatered area, electrofishing and netting of individual fish, and transfer of fish (by bucket) to a safe location.

Approximately 800 square feet will be dewatered to repair the pier. To calculate the number of fish disturbed, handled, and potentially injured/killed, NMFS applied the same fish densities cited above, since the area has the same general habitat conditions and the impact will occur during the same season. We estimate up to 10 juvenile Chinook salmon and five juvenile steelhead may be directly affected by the proposed dewatering. Of these fish, three juvenile Chinook salmon and one juvenile steelhead may be captured during electrofishing salvage efforts. Remaining fish will likely be displaced from the area, experiencing minor behavioral

[3] Hall-Griswold and Petrosky (1996) provided fish density estimates for the carrying capacity of four habitat quality categories.

effects. Assuming five percent of captured fish may die from electrofishing-related injuries (McMichael 1998), we expect salvage related activities could injure/kill no more than one juvenile Chinook salmon (0.129167) or no more than one juvenile steelhead (0.0645).

The area to be disturbed by the proposed action represents a very small proportion of the available habitat for the species in this stream reach. Given the brevity and minor scale of the action, the small number of juveniles expected to be in the project area during implementation in relation to the total population abundance, the project is not likely to have population level effects.

2.5.1.2 Turbidity

The effects of increased suspended sediment on salmonids vary based on exposure time and concentration. These effects were reviewed by Newcombe and Jensen (1996) and range from avoidance response, to minor physiological stress from increased rate of coughing, to death. Salmonids are relatively tolerant of low to moderate levels of suspended sediment (Gregory and Northcote 1993). Salmon and steelhead tend to avoid suspended sediment above certain concentrations (Servizi and Martens 1992; McLeay et al. 1987). Avoidance behavior can mitigate adverse effects when fish are capable of moving to an area with lower concentrations of suspended sediment. Researchers have reported thresholds for salmonid avoidance behavior at turbidities ranging from 30 to 70 NTU (Lloyd 1987; Servizi and Martens 1992; Berg and Northcote 1985).

The proposed action incorporates multiple conservation measures aimed at preventing sediment from entering the Salmon River, minimizing potential turbidity increases. Despite implementation of conservation measures, turbidity plumes extending downstream from the construction site are likely: (1) When the excavator is tracking through wet substrate; (2) when the diversion barriers are set in place to dewater the work area; (3) when substrate is excavated around the pier; and (4) when cofferdams are removed and the construction area around the pier is rewatered.

NMFS was unable to locate monitoring data for instream equipment fording in a large river like the Salmon River. We did locate turbidity data previously collected by the Salmon-Challis National Forest (SCNF) (unpublished) during pickup truck fording across small forest streams. These data suggest vehicles crossing small stream fords are likely to generate minor turbidity plumes (i.e., average of about 9.8 NTUs over background, be 13 minutes long, and affect about 300 linear feet of stream). Although this action will occur in a much larger waterbody and an excavator, not a pickup, will ford the channel, this is the best available information to infer effects of the action. The action area's substrate is largely cobble, and will likely not generate as much turbidity as the ford sites evaluated by the SCNF, where dirt approaches and smaller substrates exist in the channels. For this reason, we expect excavator ford events to generate comparable turbidity levels. Turbidity will affect just a small portion of the width of the Salmon River. Availability of extensive unaffected alternative habitats allows substantial opportunities for fish to avoid almost all turbidity exposure from ford events. These minor turbidity levels, generated by up to 10 round-trip ford events, are not expected to raise to the level of harm for exposed fish.

For in-river dewatering, excavation within the dewatered cell, and rewatering, we evaluated monitoring data from comparable projects that applied design criteria similar to the proposed action (Eisenbarth 2015; J-U-B Engineering 2018; J-U-B Engineering 2019). For this type of construction, turbidity levels, measured approximately 150 feet downstream of inputs, generally do not rise above 50 NTU over background, and when they do, exceedances typically last less than 60 minutes. The peak level reported for a Salmon River bridge pier removal was a 207 NTU net increase lasting 30 minutes. That pulse was 20-feet wide and dissipated within 1,500 feet. More typical turbidity pulses lasted less than 10 minutes, were approximately 20 NTUs above background, and affected less than 150 feet of stream downstream of the construction area. A similar range of turbidity levels are expected to occur during this project's construction.

Comparing these levels to a severity of effects index (Newcombe and Jensen 1996), exposure to these turbidity levels and durations will not cause lethal impacts to exposed fish. Monitoring is designed to limit turbidity exceedances above 50 NTU (intensity and duration) and the action contains triggers to modify sediment producing activities in real-time when turbidity levels are increasing. For these reasons we expect: (1) Turbidity levels will not exceed 207 NTUs above background at the 150-foot distance; (2) pulses exceeding a 50 NTU net increase will not last more than 30 minutes; (3) pulses will not be wider than about 20 feet; and (4) pulses will dissipate within approximately 1,500 feet. Juvenile steelhead and Chinook salmon, and adult steelhead will likely respond by avoiding these plumes, likely seeking temporary refuge in unaffected and adjacent habitats. Fish that do not avoid the plume will experience minor behavioral effects, and potentially, temporary sublethal effects from the individual pulses. The range of sublethal effects potentially experienced may include: (1) Minor physiological stress and increased rates of coughing and respiration; (2) moderate physiological stress; (3) moderate habitat degradation; (4) impaired homing; (5) short-term indicators of major physiological stress; and (6) potentially, increased foraging behavior. No turbidity-related mortality is anticipated.

2.5.1.3 Chemical Contamination

Use of construction equipment and heavy machinery adjacent to stream channels poses the risk of an accidental spill of fuel, lubricants, hydraulic fluid, antifreeze, or similar contaminants into the riparian zone, or directly into the water. If these contaminants enter the water, the substances could adversely affect habitat, injure or kill aquatic food organisms, or directly impact ESA-listed species (e.g., Neff 1985; Staples et al. 2001). The proposed action includes multiple conservation measures aimed at minimizing the risk of fuel or oil leakage into the stream (see Table 1). Based on the past success of these types of conservation measures in other projects, negative impacts to ESA-listed fish from fuel spills or leaks are unlikely.

The action does require concrete to be delivered to the center pier and then poured within forms to repair the pier. This presents some potential for uncured concrete contact with live water, which could create pH impacts adverse to exposed fish. Dewatering the center pier worksite, and using pumps to maintain a dewatered condition, are designed to avoid exposing uncured concrete to live water. Additionally, concrete will be pumped from the east bank to the center pier above the existing bridge deck. The combination of leak free and properly functioning equipment (proposed action requirements) and the bridge decking should prevent concrete from spilling and from reaching the Salmon River, respectively. Dewatered work areas will be

maintained for a minimum of 7 days to ensure concrete cures. Additionally, the first pour will complete the enhanced pier footer, raising its elevation about 1-foot above the low water surface. This ensures subsequent pours made to reinforce the sides of the pier will occur higher than the water level, avoiding contamination. Regardless, the dewatered work area will be retained for this portion of the action too and pumps will remain in place. The design features within the proposed action are expected to result in very low potential for pH contamination from uncured concrete. For this reason, effects to fish are not expected from this potential stressor.

2.5.1.4 Sediment Deposition

Turbidity plumes from construction work will deposit a small amount of sediment on Salmon River substrates downstream from the worksite. Effects to individual fish could include reduction of available cover for juveniles or changes to primary and secondary productivity, affecting food supply for the fish. Such changes could lead to reduced growth and/or survival. As described above in the turbidity section, only small amounts of sediment are expected to be mobilized, thus there will only be a small amount of sediment available for deposition. Because of the expected effectiveness of the proposed sediment control measures, NMFS does not expect that enough sediment deposition will take place to alter salmonid use of the habitat. Additionally, it is unlikely that primary or secondary production will be affected and foraging activity in the action area is likely light, given most fish are migrating downstream to more suitable overwintering habitat at this time. Habitat quality will likely recover as fine sediments are flushed downstream during the next season's high flows. The action's effects on sediment and thus fish response to changes in habitat, are temporary and minor, and they are unlikely to harm individual fish that migrate through the action area or rear within it for short periods of time.

2.5.1.5 Bridge Effects

Reinforcing the center pier, including adding approximately 20 yd^3 of riprap, may affect fish habitat in the action area. There is some potential substrate adjacent to the post-repair pier that could scour during subsequent high flows. Scour could create deeper water in the immediate area downstream of the pier. Deeper water, in combination with the larger substrate provided by the riprap may create improved foraging and security cover for migrating fish. This could be a very small beneficial effect to fish using the action area habitat over the next 60-plus years (anticipated lifespan of the repaired structure). Due to the very small area of affected habitat, any impacts to fish are also expected to be minor.

Repair of the bridge is expected to extend the structure's lifespan for approximately 60 years. The only reasonable consequence of this extension is the continued occupation and use of two residences on the west side of the Salmon River. Currently, baseline conditions for fish do not appear to be adversely affected by the two residences. Each house and the associated roads are mostly located more than 300-feet from the Salmon River and riparian conditions do not appear to be degraded by current activities. These conditions are expected to continue into the future. Grazing on private lands can occur with or without a bridge in place, so no new effects to fish are expected due to livestock. For these reasons, impacts to fish using the action area are not

expected given the separation of private residences/roads from habitat and lack of new actions/effects being generated from the expanded bridge lifespan.

2.6 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 and 402.17(a)). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Some continuing non-federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline *vs.* cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline (Section 2.4).

All of the action area is within the right-of-way for SH-93 or privately owned by the bridge owners. The Idaho Transportation Department (ITD) manages SH-93. Current ITD maintenance of the route (e.g., snow removal, right-of-way clearing, line painting, surface maintenance, etc.) is expected to continue consistent with current practices. Similarly, private land grazing and other uses are also expected to continue similar to current practices. Any effects from future road maintenance and/or private land management will be similar to effects that have generated the environmental baseline. No new cumulative effects are expected.

2.7 Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species (Section 2.2), to formulate the agency's Opinion as to whether the proposed action is likely to: reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution.

Species. Although Snake River Basin steelhead and Snake River spring/summer Chinook salmon abundance has increased since the time of listing, increases are minor and most individual populations are not meeting recovery plan abundance and productivity targets. The species remain threatened with extinction. Current abundance/productivity estimates for the Lemhi River steelhead population exceed minimum thresholds for low risk status, but the population is assigned moderate risk for abundance/productivity due to high uncertainty (NWFSC 2015). The Lemhi River Chinook salmon population remains at high risk of extinction for low abundance/productivity and spatial structure risks (NWFSC 2015). Climate factors will likely make it more challenging to increase abundance and recover both species (NMFS 2017). Recent poor adult returns at the MPG and individual population levels, which are likely tied to

ocean conditions (Werner 2017; Harvey et al. 2019), highlight this challenge. Habitat in the action area is generally satisfactory, with water temperature, riparian vegetation, and floodplain impacts being slightly impaired. These factors are also identified as limiting factors at the population scale (NMFS 2017). The action will have almost no impact on these factors.

Juvenile steelhead and Chinook salmon in the action area could potentially experience adverse effects associated with noise, turbidity/sediment, and chemicals; however, these effects are expected to be minor to non-existent because of the proposed conservation measures' effectiveness and the ability of fish to move out of the action area during construction. The analyses did not identify any indirect or direct consequences of the action that would occur due to bridge replacement. Similarly, no actions were identified to be caused by the proposed action and no cumulative effects from future State or private activities in the action area were identified. The absence of related consequences and cumulative effects are expected to maintain baseline habitat conditions, and thus maintain current effects to individuals using the action area into the future. The following one-time adverse effects are expected:

- Up to 29 juvenile Chinook salmon and 15 juvenile steelhead could be crushed and killed during equipment fording;

- Up to 10 juvenile Chinook salmon and five juvenile steelhead may be displaced by the proposed dewatering;

- Three juvenile Chinook salmon and one juvenile steelhead may be captured and handled during electrofishing salvage efforts; and,

- No more than one juvenile Chinook salmon and one juvenile steelhead may be killed from dewatering activities.

- Fish rearing or migrating through the action area could be exposed to several temporary turbidity pulses of high enough intensity (greater than 50 NTU over background) to generate sublethal impacts or temporary displacement to adjacent habitat. Plumes exceeding the 50 NTU increase are expected to last less than 60 minutes, be less than 20 feet wide and less than 150 feet long.

Applying a mean smolt-to-adult return rate of 1.6 percent from 1997–2012 (Comparative Survival Study Oversight Committee and Fish Passage Center 2015) to the total estimated project-related mortality of 29 juvenile Chinook salmon and 15 juvenile steelhead equates to a one-time loss of less than one adult equivalent steelhead (0.14) or Chinook salmon (0.47) returning to spawn. The loss of fewer than one individual Chinook salmon and steelhead from the Lemhi River populations is a one-time impact. Given the highly variable ocean survival rates of juveniles and high variability in annual returns to individual populations, this one time impact is unlikely to reduce the abundance or productivity of the affected populations. Because we do not anticipate a change in the viability of the Lemhi River steelhead or Chinook salmon populations, the proposed action will not likely reduce the survival of the DPS/ESU or negatively affect the species' probability of recovery.

2.8 Conclusion

After reviewing and analyzing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' Opinion that the proposed action is not likely to jeopardize the continued existence of Snake River Basin steelhead or Snake River spring/summer Chinook salmon.

2.9 Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). On an interim basis, NMFS interprets "harass" to mean "Create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as 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(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.9.1 Amount or Extent of Take

In the Opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

- **Fish Crushing**. We estimated that up to 29 juvenile Chinook salmon and 15 juvenile steelhead could be crushed and killed during equipment fording. It is not possible to determine the number of fish actually crushed by equipment as carcasses will be undetectable in river substrate. Because circumstances causing take are likely to arise, but cannot be quantitatively evaluated in the field, the extent of incidental take is described, pursuant to 50 CFR 402.14[I]. In this instance, the extent of take is directly related to both the area impacted by the excavator during ford events and the number of trips. For this reason, the extent of take will be exceeded if: (1) More than 900 square of feet of submerged substrate is compacted during the proposed ford events; and/or (2) if more than 10 round trip ford crossings occur.

  Although these surrogates could be considered coextensive with the proposed action, monitoring and reporting requirements will provide opportunities to check throughout the course of the proposed action whether the surrogates are exceeded. For this reason, the surrogates function as effective reinitiation triggers.

- **Fish handling.** We anticipate that up to one juvenile steelhead and three juvenile Chinook salmon may be salvaged, handled, injured, and/or killed, during dewatering activities around the pier. The amount of take will be exceeded if more than one juvenile steelhead and three juvenile Chinook salmon is captured or handled during fish salvage. The amount of take will also be exceeded if more than one juvenile of either species is directly killed during salvage.

- **Turbidity**. Establishing a cofferdam, excavating and replacing substrate around the pier, and rewatering the work area are all expected to produce individual turbidity pulses capable of causing sublethal effects to exposed juvenile Chinook salmon and steelhead electing not to seek cover in adjacent refugia. Because the number of fish exposed to individual plumes cannot be measured in the field we describe the extent of incidental take, pursuant to 50 CFR 402.14[I]. The extent of take is directly related to the intensity, and duration of turbidity pulses. In this instance, the extent of take will be exceeded if: (1) Any project related turbidity pulse, when measured 150-feet downstream of the source, is more than 207 NTUs above background; (2) if any pulse greater than 50 NTU over background lasts longer than 60 minutes; or (3) if any pulse is visible more than 1,500 feet downstream of the source.

2.9.2 Effect of the Take

In the Opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species.

2.9.3 Reasonable and Prudent Measures

"Reasonable and prudent measures" are nondiscretionary measures that are necessary or appropriate to minimize the amount or extent of incidental take (50 CFR 402.02).

The COE shall:

1. Minimize incidental take from construction activities and implement all of the proposed conservation measures.

2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS were effective in avoiding and minimizing incidental take from permitted activities and that the extent of take was not exceeded.

2.9.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and the COE, and any applicants, must comply with them in order to implement the RPMs (50 CFR 402.14). The COE or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. To implement RPM 1 (minimize take from construction activities), the COE shall ensure the following occurs:

    a. Ensure site dewatering and rewatering of the worksite is done in a slow and controlled fashion to maximize volitional fish movement out of the area prior to salvage.

    b. Require, by permit condition, final fish salvage is completed with electrofishing gear to reduce potential for juvenile fish to be stranded and killed in stream substrates.

        i. Ensure all electrofishing complies with NMFS guidelines (2000).

    c. Stake or otherwise mark the excavator ford route to ensure the same footprint is used during each ford use and that the footprint utilizes as much dry substrate as possible.

    d. Restrict fording to a maximum of 10 excavator round trips through the ford.

    e. While the dewatered area remains isolated from the Salmon River, retain at least two suitable pumps and adequate fuel and fish screens on site. The second pump is required to ensure uninterrupted dewatered conditions for the duration of pier reconstruction, including concrete curing periods.

    f. If turbidity levels exceed 50 NTUs over background for more than 30 minutes, the work causing the turbidity plume being monitored shall be stopped and delayed until turbidity levels subside and methods to reduce the turbidity are implemented.

    g. In the event a second turbidity plume exceeds 50 NTUs, the contractor or applicant shall complete or otherwise stabilize the turbidity producing activity and contact NMFS to determine how or if the project shall proceed.

    h. Ensure any CWA 404 permit conditions remain consistent with the project description, conservation measures, and terms and conditions in the BA and this Opinion.

2. To implement RPM 2 (monitoring and reporting), the COE shall:

    a. Within four weeks of project completion, the COE shall submit a monitoring report (with information on fords, fish salvage, and turbidity plumes) to: Snake River Basin Office email nmfswcr.srbo@noaa.gov. The report shall include the following:

        i. The number of steelhead and Chinook salmon handled, injured, or killed during fish salvage (amount of take).

Ensure the construction contractor immediately ceases activities and contacts NMFS if more than one juvenile steelhead or three juvenile Chinook salmon are handled and/or if more than one of either species is killed during fish salvage.

ii. Number of round trip ford crossings used; area of substrate tracked across and also submerged. In the event compacted substrate exceeds 900 square feet, ensure the contractor immediately ceases work and contacts NMFS to determine how to proceed.

iii. Results of turbidity monitoring, measured in NTUs with a calibrated turbidity meter, measured approximately 150 feet downstream of individual sources (excluding ford crossings) and at a reference site upstream of all activities. Downstream measurements shall be taken every 30 minutes during individual plumes and background levels shall be recorded once daily before work begins.

iv. Results of visual observations of project-related turbidity plumes documenting they remained less than approximately 20-feet wide and dissipated prior to extending more than approximately 1,500 feet downstream.

2.10 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. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). Following our analyses of the proposed action's effects, NMFS does not have any conservation recommendations at this time.

2.11 Reinitiation of Consultation

This concludes formal consultation for the Jenkins-Cummings Bridge Repair Project.

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the federal agency or by NMFS where discretionary federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

2.12 "Not Likely to Adversely Affect" Determinations

The previous discussion focused on the action's adverse effects to steelhead and Chinook salmon. The COE determined the proposed action may affect, but will not likely adversely affect Snake River sockeye salmon (June 28, 2005; 70 FR 37160) and designated critical habitat for Snake River spring/summer Chinook salmon (October 25, 1999; 64 FR 57399), critical habitat for Snake River Basin steelhead (September 02, 2005: 70 FR 52630), and critical habitat for Snake River sockeye salmon (December 28, 1993; 58 FR 68543).

2.12.1 Sockeye Salmon

Sockeye salmon migrate through the action area as juveniles in the spring and as returning adults in late summer. The proposed action will not begin work below the OHWM prior to September 15. Based on PIT tag detections at river mile 271.5 (approximately 30 miles upstream of the action area), for return years 2013-2020, the latest detected adult migrant sockeye salmon occurred on August 30, 2013 (PTAGIS 2020). Applying these data, all adult sockeye salmon are expected to have migrated through the action area prior to the inwater work window. Juvenile sockeye will not be present during proposed operations due to their spring migration. Extending the bridge's lifespan by approximately 60 years will have insignificant effects on sockeye salmon. Both juveniles and adults migrate quickly, often dozens of miles daily, presenting little opportunity for fish to utilize action area habitat. The repaired bridge will not modify water velocities or migratory habitat in any meaningfully way, securing safe migratory conditions for sockeye salmon into the future. For the reasons discussed, the potential for construction-related impacts on migrating sockeye are discountable and the long-term effects of extending the bridge's lifespan will be insignificant to migrating sockeye adults and juveniles.

2.12.2 Critical Habitat

The critical habitat designations for Chinook and sockeye salmon and steelhead use the terms primary constituent element (PCE) or essential features. Revised critical habitat regulations (81 FR 7414) replace these terms with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a ''destruction or adverse modification'' analysis. In this section, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

The proposed action, including extending the bridge's life-span up to 60 years is likely to affect freshwater rearing, and migration habitat for each species. Specific PBFs that could be affected by the proposed action include: (1) Water quality (i.e., chemical contamination and turbidity); (2) substrate; (3) free passage; (4) natural cover; (5) riparian vegetation; (6) space; and (7) water velocity. Effects on each PBF are described further below. Because many of the effects to species were previously discussed in section 2.5.1 of above Opinion, that section is incorporated by reference here to avoid duplication.

Water quality. The proposed action could negatively affect water quality through chemical contamination or short-term increases in turbidity. As described above in Section 2.5.1.4, we expect the proposed conservation measures will prevent leaks or spills from machinery from

entering the Salmon River and that filtration by riparian vegetation will prevent chemicals from vehicle use of the bridge from entering the stream. As discussed above in Section 2.5.1.2, we expect increases in turbidity during cofferdam placement and removal and while excavating material from the dewatered cell. Proposed conservation measures to reduce turbidity (see Table 1) are expected to be successful and minimize project-generated effects. Individual pulses are not expected to exceed 50 NTU over background for more than 60 minutes, should remain less than 207 NTUs above background, affect up to 20-feet of river width, and extend less than 1,500 feet downstream (visible plume). These effects will be temporary, and the short duration and low intensity are small enough that effects to water quality will be insignificant.

Substrate. Turbidity plumes from construction work will deposit a small amount of sediment on Salmon River substrate, primarily related to the one-time dewatering/rewatering event at the bridge site and any plume generated during material excavation from the work area (see Section 2.5.1.5). Because of the expected effectiveness of the proposed sediment control conservation measures, and expected compliance with proposed monitoring plan, NMFS does not expect that enough sediment deposition will take place to alter salmonid use of the habitat and very little habitat could be affected at all. Given the habitat is primarily used for migration to and from the ocean, and longer-term occupation is unlikely the following winter due to ice jams, the minor quantities of sediment deposition caused by the action will be insignificant to this PBF. Additionally, any deposited sediment will be flushed downstream during high flows the spring after project completion.

Equipment fording in the Salmon River will temporarily compact a small amount of substrate (approximately 800 square feet). The affected substrate is mostly large cobble and is not expected to be permanently compacted by excavator crossings since subsequent spring runoff will likely remobilize affected substrates, reestablishing pre-project substrate conditions in the action area within about four months. Action area substrate is not likely depended on by migrating or rearing fish during the winter due extensive winter ice jams in this area. Compacted substrate will be limited to about 800 square feet, is submerged in less 1-foot of water, and will be compacted for one fall and winter season.

Collectively, the minor amount of sediment delivered to the channel, small amount of habitat affected (sedimentation and compaction), and one-time temporary nature of the effect result in insignificant effects to this PBF.

Free Passage/Water Velocity. Repairing the existing bridge will maintain a center pier in the Salmon River. The river is approximately 175-feet wide here, with independent spans of roughly 95-feet in the west channel and 80-feet in the east channel. The width of the two spans make it unlikely for floating trees to hang on and block either channel. For this reason long-term fish passage is expected to be maintained. During construction, the cofferdam will likely shunt some water toward the lower west channel, potentially increasing water velocity. Work will occur during the annual low water period and water velocities will remain substantially lower than occurs during high water. Adult fish regularly migrate through the reach unimpeded at a range of flows and the temporary presence of the cofferdam and resultant minor flow modification will have insignificant effects on fish passage and water velocity PBFs.

Natural Cover and Space. Approximately 400 square feet of habitat will be temporarily unavailable (less than 30 days) during pier reconstruction. Post-construction, large rock will band the perimeter of the pier – approximately 63 linear feet. Conversion of this small footprint from large cobble to large rock may have minor impacts on available cover. However, use of irregular sized rock for armoring will likely serve as a reasonable surrogate for cover originally provided by the large cobble. Long-term, there is some potential for scour to occur adjacent to or downstream of the reconstructed pier. Such scour may marginally enhance the available cover in the immediate vicinity. Because the action area serves primarily as a migratory corridor for adult and juvenile fish and because the scale of the impact is either temporary (loss of space) so small (impacts to cover), effects of the action on this PBF will be insignificant.

Riparian Vegetation. The action will have very little impact on riparian vegetation, and what impact does occur will be temporary – on the order of a couple years. Clearing an access route for equipment from SH-93 to the Salmon River presents the only opportunity to disturb vegetation. The identified route follows a previously used route and avoids all large trees. All small woody vegetation, mostly coyote willow (*Salix exigua*) and red osier dogwood (*Cornus sericea*) will be trimmed to ground level and areas with saturated soils will be avoided. Cut vegetation will be stockpiled on-site during construction and then used to stabilize the access route upon completion. Cut woody vegetation will regrow within a couple years of disturbance, since root systems will remain intact. The action also proposes to reseed and plant all disturbed areas, increasing the likelihood of complete recovery to pre-project conditions. Anticipated effects to riparian vegetation PBF are insignificant.

3. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The 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.

3.1 Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this Opinion are the COE and the Applicant. Individual copies of this Opinion were provided to the COE. The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. The format and naming adheres to conventional standards for style.

3.2 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.

3.3 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 the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01, et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this Opinion 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 West Coast Region ESA quality control and assurance processes.

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