UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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November 2, 2020

Refer to NMFS No.: WCRO-2020-02952

Lt. Col. Richard T. Childers
U.S. Army Corps of Engineers
Walla Walla District
201 North Third Avenue.
Walla Walla, Washington 99362

Re: Endangered Species Act Section 7 Formal Consultation for the Cottonwood Creek-Newman Bank Stabilization Project, Idaho County, Idaho, HUC 170603050806 (U.S. Army Corps of Engineers DA No.: NWW-2020-00269)

Dear Lt. Col. Childers:

Thank you for your letter dated October 5, 2020, 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 Cottonwood Creek-Newman Bank Stabilization 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 the enclosed biological opinion (Opinion), NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River Basin steelhead. NMFS also determined the action will not destroy or adversely modify designated critical habitat for Snake River Basin steelhead. 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 (RPMs) 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 U.S. Army Corps of Engineers (COE), and any permittee 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.

This document also includes the results of our analysis of the action's effects on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). We did not include EFH Conservation Recommendations because measures to reduce effects on EFH were sufficiently addressed in pre-consultation through adjustments to the proposed action.

If you have questions regarding this consultation, please contact Aurele LaMontagne, Northern Snake Branch Office, Boise, Idaho at (208) 378-5686, or aurele.lamontagne@noaa.gov.

Sincerely,

Michael Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: K. Urbaneck-COE
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C. acker-USFWS
M. Lopez – NPT

Endangered Species Act Section 7(a)(2) Programmatic Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Cottonwood Creek-Newman Bank Stabilization Project, Idaho County, Idaho, HUC 170603050806

NMFS Consultation Number: **WCRO-2020-02952**

Action Agencies: U.S. Army Corps of Engineers Walla Walla District

Affected Species and NMFS' 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	Yes	No

Fishery Management Plan That Identifies EFH in the project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	No

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

Issued By: Michel Tehan
Assistant Regional Administrator

Date: November 2, 2020

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BA	Biological Assessment
BMP	Best Management Practices
cfs	Cubic Feet Per Second
COE	U.S. Army Corps of Engineers
CWA	Clean Water Act
DPS	Distinct Population Segment
DQA	Data Quality Act
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
HAPC	Habitat of Particular Concern
ISWCC	Idaho Soil and Water Conservation Commission
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
OHWM	Ordinary High Water Mark
Opinion	Biological Opinion
PBF	Physical and Biological Features
RPM	Reasonable and Prudent Measures
Tribe	Nez Perce Tribe

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 also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR 600.

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 Northern Snake Branch Office

1.2 Consultation History

The U.S. Army Corps of Engineers (COE) proposes to issue a Clean Water Act (CWA) section 404 permit for the Cottonwood Creek-Newman Bank Stabilization Project (project; COE DA No.: NWW-2020-00269). The property owner received project design assistance from the Idaho Soil and Water Conservation Commission (ISWCC).

The project is located in Cottonwood Creek near the City of Stites in Idaho County, Idaho. The project includes stream bank and floodplain stabilization on Cottonwood Creek, tributary to the South Fork Clearwater River, to prevent erosion of a private road and bridge structures. Cottonwood Creek, in the action area, is designated critical habitat for Snake River Basin steelhead and supports spawning and rearing for this species.

On May 19, 2020, the COE received a joint application for permits from Mr. Darrel Newman for the proposed project. After discussions with NMFS and the ISWCC, the ISWCC helped revise the project design. On September 19, 2020, the COE received revised designs for the project as proposed.

On October 5, 2020, NMFS received a request for ESA formal consultation on the project.

On October 8, 2020, the COE requested via email that EFH consultation be added to the requested ESA consultation.

On October 13, 2020, NMFS contacted the COE for additional and clarifying information regarding fish salvage.

On October 14, 2020, NMFS contacted Bill Lillibridge for additional information on expected site conditions and the need, or not, to dewater and salvage fish from the riprap work area.

On October 5, 2020, NMFS initiated formal consultation for the Cottonwood Creek-Newman Bank Stabilization project.

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 Nez Perce Tribe (Tribe) on October 26, 2020. On October 28, 2020, NMFS received an email from the Tribe stating they had no comments on the project.

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). We considered, under the ESA, whether the proposed action would cause any other activities and determined that it would not.

The COE proposes to issue a CWA section 404 permit for the project for discharge of fill material into Cottonwood Creek.

The purpose of this project is to address riverbank instability, overland flow, and gravel deposition on the applicant's property. Flood flows in Cottonwood Creek have resulted in large gravel depositions (west bank; gravel embankment) on the Newman floodplain property in Cottonwood Creek. This gravel deposition has increased flooding on other adjacent areas of the property, eroded the property owner's access road, and created structural concerns for the access road bridge approximately 200 feet downstream of the project.

The proposed action addresses erosion in two areas with two different treatments, riprap on the streambank and plantings in silted areas (Figure 1). The west bank of Cottonwood Creek bordering the Newman property will be stabilized. The applicant proposes to install 300 linear feet of riprap to stabilize this embankment on the property. Bank stabilization will primarily be constructed with imported angular riprap. The stabilization will be planted with willow clumps and cuttings to provide additional riparian habitat functions in the project area; plantings will be at a depth that allows plant roots year-round access to the water table to ensure successful retention. Approximately 16 logs with large root wads will be installed in equal spacing along this riprap, facing slightly upstream to function similarly to bank barbs. These root wads will provide additional instream structure for fish habitat in the project area. The elevation of the stabilization is designed to allow flood flows of two years recurrence or greater to inundate the Newman property floodplain.

Figure 1: Project treatment areas, bridge, and property owner's access road.

An area of gravel deposition and siltation on the floodplain will be stabilized. The proposed treatment area is approximately 80 to 150 feet landward of the bank stabilization and is subject to flow inundation and gravel mobilization during high flows. To retain gravels in-place, six rows of willow plantings are proposed, roughly evenly spaced, behind the bank stabilization installation. The plantings are designed to fill further fill with silt to help establish the willow plantings and are referred to in the Biological Assessment (BA) as "live siltations." Trenches will vary between 80 and 150 feet in length depending on the width of the floodplain, will be approximately 2 feet wide, and will be 3-6 feet deep depending on the depth of the water table to ensure successful retention. Approximately 2,500 willow stems are expected to be planted.

The COE proposes the following conservation measures to minimize the impacts of construction on listed fish and their habitat:

Table 1: Conservation Measures.

Category	Specific Measures
In-water work windows	• In-channel activities will take place between August 1 and November 15 if possible, though a work window extension through December 15 may be necessary, and is proposed as a contingency
Erosion control	• Erosion control devices, such as wattles, sediment fences, or other sediment control methods, will be installed where appropriate, to reduce the potential for sediment delivery into Cottonwood Creek. • Eroded and/or disturbed areas will be replanted with native vegetation and stabilized until vegetative root mass can become established.

Category	Specific Measures
	• Non-biodegradable materials, such as chicken or hog wire, or plastic netting that may entrap wildlife or pose a safety concern will not be used for soil stabilization. • Riprap must be clean and free of contaminants and excessive fine materials. • Materials for project activities (i.e., rock riprap, willow cuttings) will be sourced from outside the action area.
Site restoration	• The permittee will avoid and minimize the removal of native vegetation in riparian and wetland areas to the maximum extent practicable. • Riparian areas subject to project temporary vegetation removal will be replanted with appropriate native species by the end of the first growing season following the disturbance.
Fuel leaks, storage, and transfer	• All equipment to be used for construction activities shall be cleaned and inspected for leaks prior to arriving at the project site. • Project staging, equipment maintenance, material and fuel storage, fuel transfer, and fuel/oil spill kits will be located a minimum of 150 feet from perennial surface waters, in currently developed areas.
Work area dewatering and fish salvage	• Cofferdams will be constructed of non-erosive material such as concrete jersey barriers, sand or gravel filled bags, water bladders, sheet pile, logs, and or other similar non-erodible devices. • Cofferdams may not be constructed by using mechanized equipment to push streambed material through flowing water. • Water removed from within the coffered area will be pumped to a sediment basin or otherwise treated to remove suspended sediments prior to its return to the waterway. • Water pipe intakes will be screened (openings <3/32 inch) to prevent entrainment of fish trapped in the coffered area. • Fish trapped within the coffered areas will be collected by electrofishing, seining or dip net and returned to the waterway upstream of the project area. If electrofishing is used, National Marine Fisheries Service (NMFS) guidelines for electrofishing will be followed. • Temporary stockpiles in waters of the United States will be removed in their entirety so as not to form a berm or levee parallel to the stream that could confine flows or restrict overbank flow to the floodplain. • For stream channels, which have been de-watered during project construction, re-watering will occur slowly to minimize a sudden increase in turbidity.

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

2.1 Rangewide Status of the Species and Critical Habitat

The status of Snake River Basin steelhead is determined by the level of extinction risk that the listed species faces, based on parameters considered in documents such as the recovery plan, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The condition of critical habitat throughout the designated area is

determined by the current function of the essential physical and biological features (PBFs)[1] that help to form that conservation value.

The Snake River Basin steelhead distinct population segment (DPS) is composed of 24 individual populations, which spawn and rear in different watersheds across the Snake Basin. Having multiple viable populations makes a DPS less likely to become extinct from a single catastrophic event (ICBTRT 2007). NMFS expresses the status of a DPS in terms of the status and extinction risk of its individual populations, relying on McElhaney et al.'s (2000) description of a viable salmonid population. The four parameters of a viable salmonid population are abundance, productivity, spatial structure, and diversity. The recovery plan for Snake River spring/summer Chinook salmon and steelhead (NMFS 2017) describes these four parameters in detail and the parameter values needed for persistence of individual populations and for recovery of the DPS.

The following section summarizes the status and best available information on the Snake River Basin steelhead DPS, based on the detailed information on the status of individual populations, and the species as a whole provided by the *ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead* (NMFS 2017) and *Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest* (NWFSC 2015). These two documents are incorporated by reference here. Although species abundance has increased since the time of listing in 1997, many individual populations are not meeting recovery plan abundance and productivity targets and the species remains threatened with extinction.

The Snake River Basin steelhead was listed as a threatened Evolutionarily Significant Unit (ESU) on August 18, 1997 (62 FR 43937), with a revised listing as a DPS on January 5, 2006 (71 FR 834). This DPS comprises 24 populations organized into five major population groups (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. Although abundance has increased since the time of listing, 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).

Historical estimates of steelhead production for the entire Snake River basin are not available, but the basin is believed to have supported more than half the total steelhead production from the Columbia River basin (Mallet 1974) as cited in (Good et al. 2005). Historical estimates of steelhead passing Lewiston Dam (removed in 1973) on the lower Clearwater River were 40,000 to 60,000 adults (Ecovista et al. 2003), and the Salmon River basin likely supported substantial production as well (Good et al. 2005). In contrast, at the time of listing in 1997, the 5-year mean abundance for natural-origin steelhead passing Lower Granite Dam, which includes all but one population in the DPS, was 11,462 adults (Ford 2011). The most recently completed 5-year

[1] We use the term PBF to mean primary constituent element; the shift in terminology does not change the approach used (81 FR 7414).

status review (2011–2015) (NWFSC 2015), reports an annual average of 30,667 adult wild steelhead passing Lower Granite Dam. However, the average annual return over the most recent five years (2015/16 – 2019/20) for natural-origin steelhead passing Lower Granite Dam was 15,505 (Joint Columbia River Management Staff 2020), a marked drop from the annual average of 30,667 from the prior 5-year period.

Limiting factors for the DPS include:

- 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 a high proportion of hatchery fish on natural spawning grounds.
- Degraded fresh water habitat.
- Harvest related effects, particularly on B-run steelhead.
- Predation in the migration corridor.

The proposed action will occur in Cottonwood Creek, a tributary to the South Fork Clearwater River watershed, which is occupied by the South Fork Clearwater River steelhead population. Currently, the population has an overall viability rating of high risk (NWFSC 2015). There is a moderate risk rating for the spatial structure/diversity of this population. The overall high-risk rating is driven by a high-risk rating for abundance/productivity, which is based on estimates of wild adult steelhead and substantial uncertainty associated with abundance and productivity estimates (NWFSC 2015). The minimum abundance thresholds are 1,000 natural origin spawners and the minimum productivity threshold is 1.14 for the South Fork Clearwater River population. Natural-origin spawner numbers compiled from the most recent run reconstruction reports show a downward trend in numbers from 2015 through 2019 (Table 2).

Table 2: Estimated number of wild spawning adult steelhead for the South Fork Clearwater River population by adult return year.
Data compiled from Copeland et al. (2015); Stark et al. (2016); Stark et al. (2017); Stark et al. (2018); Stark et al. (2019a); Stark et al. (2019b); and NMFS (2020).

Adult return year	Estimated number of wild adults
2012-2013	1407
2013-2014	1222
2014-2015	2519
2015-2016	1693
2016-2017	891
2017-2018	513
2018-2019	541

The recovery plan goal is to achieve at least maintained status (moderate risk) for the South Fork Clearwater River population, whereas the most recent population status rating was "High Risk?," with the question mark due to substantial uncertainty associated with abundance and productivity estimates (NWFSC 2015). The more recent downward trend in wild adult numbers (Table 2) indicates that a "high risk" status may be warranted. Major spawning areas for the South Fork Clearwater River population include the American River, the upper South Fork Clearwater River, Newsome Creek, and lower South Fork Clearwater River tributaries. The proposed action will occur in Cottonwood Creek, which is in the lower South Fork Clearwater River tributaries major spawning area.

Table 3 summarizes the status of designated critical habitat for Snake River Basin steelhead, based on the detailed information on the status of critical habitat throughout the designation area provided in the recovery plan for the species (NMFS 2017), which is incorporated by reference here. NMFS describes critical habitat in terms of essential PBFs of that habitat to support one or more life stages (e.g., sites with conditions that support spawning, rearing, migration, and foraging). For Snake River Basin steelhead, PBFs include water quality, water quantity, spawning substrate, floodplain connectivity, forage, natural cover, and passage free of artificial obstructions. Across the designation, the current ability of PBFs to support the species varies from excellent in wilderness areas to poor in areas of intensive human land use.

Table 3: Critical habitat, designation date, Federal Register citation, and status summary for critical habitat considered in this Opinion.

Species	Designation Date and Federal Register Citation	Critical Habitat Status Summary
Snake River Basin steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 25 subbasins in Oregon, Washington, and Idaho. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2017). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migration corridor habitat quality has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.

The construction and operation of dams and reservoirs have affected the lower Snake and lower Columbia Rivers, altering the biological and physical attributes of the mainstem migration corridor. In general, these alterations have affected juvenile migrants to a much larger extent than adult migrants. Since 1995, a series of actions (e.g., storage release to lower instream temperatures, improved fishways, new surface passage structures, increased spill, etc.) have taken place to ameliorate these negative effects on both juvenile and adult migrants. The action area for this project is in Snake River Basin steelhead critical habitat.

2.1.1 Climate Change Implications for ESA-listed Species and their Critical Habitat

One factor affecting the ESA-listed species and critical habitat is climate change. Likely changes in temperature, precipitation, wind patterns, and sea-level height have implications for survival of Snake River Basin steelhead in both its freshwater and marine habitats. As the climate changes, air temperatures in the Pacific Northwest are expected to increase 2°C to 8°C by the 2080s (Mantua et al. 2009). While total precipitation changes are uncertain, increasing air temperature will result in more precipitation falling as rain rather than snow in watersheds across

the basin (NMFS 2017). In general, these changes in air temperatures, river temperatures, and river flows are expected to cause changes in salmon and steelhead distribution, behavior, growth, and survival, although the magnitude of these changes remains unclear.

Climate change could affect Snake River Basin steelhead in the following ways: (a) Winter flooding in transient and rainfall-dominated watersheds may reduce overwintering habitat for juveniles; (b) reduced summer and fall flows may reduce the quality and quantity of juvenile rearing habitat, strand fish, or make fish more susceptible to predation and disease; (c) timing of smolt migration may change due to a modified timing of the spring freshet ; and (d) lethal water temperatures may occur in the mainstem river migration corridor or in holding tributaries resulting in higher mortality rates (NMFS 2017). Climate factors will likely make it more challenging to increase abundance and recover the species by reducing the suitable rearing areas and leading to a more limited run timing under the warmer future conditions.

Summary. Since the 2015 5-year status review, the South Fork Clearwater River population has declined to approximately a third of its 2013 - 2015 abundance, is currently moving farther from its minimum viability threshold, and has a "high risk?" rating for viability. Critical habitat in some tributaries is of poor quality with reduced water quantity, water quality, and habitat complexity. Projected climate change is expected to increase winter flooding, reduce summer flow, and increase summer water temperatures resulting in decreased juvenile rearing habitat and increased mortality rates for anadromous salmonids.

2.2 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 is Cottonwood Creek from the upstream end of the project footprint to the bridge approximately 200 feet below the downstream end of proposed riprap (Figure 1). This 200-foot distance below where the work area may be dewatered and rewatered is the estimated maximum distance expected for appreciable effects from suspended and deposited sediment caused by the project. The bridge provides access to the Newman property and access to the floodplain work area. The action area also includes the adjacent floodplain (gravel embankment) within the project footprint and any staging or refueling areas in upland areas within 150 feet of the floodplain, riparian area, or channel of Cottonwood Creek. NMFS expects any project effects to Cottonwood Creek to be contained within these bounds.

The action area is used by all freshwater life history stages of, and is critical habitat for, threatened Snake River Basin steelhead. The action area is also EFH for Chinook and coho salmon (PFMC 2014), and is in an area where environmental effects of the proposed project may adversely affect EFH for this species.

2.3 Environmental Baseline

The environmental baseline is defined at 50 CFR 402.02.

Cottonwood Creek is a large tributary to the South Fork Clearwater River. Annual flows in Cottonwood Creek range from an average high of 200 cubic feet per second (cfs) during spring runoff to five cfs in August through October. Water quality, including fine sediment and water temperature, do not fully support beneficial uses due to agricultural runoff, timber harvest, and urban/other property development along and near the creek (IDEQ 2000). Stream banks are unstable and cobble embeddedness in the lower reaches containing the action area were about 25% (Kucera and Johnson 1986). Summer water temperatures were already high in past decades (average 18°C maximum 26°C; (Kucera and Johnson 1986) due to a lack of shade and low flow. The primary limiting factors to aquatic life in Cottonwood Creek include lack of good quality pools, lack of instream cover, elevated water temperatures, wide/shallow stream channels, and flood scoured stream channel/banks (IDEQ 2000). Physical characteristics of the action area include all of these limiting factors. In addition, the main channel of Cottonwood Creek is bound on its east bank by a road with a riprap shoulder and is constricted by the narrow bridge used to access the Newman property. These constrictions have resulted in an incised main channel.

Steelhead use Cottonwood Creek for spawning and rearing. Kucera and Johnson (1986) found two pulses of yearling steelhead outmigration in spring and late fall. Yearling steelhead densities in lower Cottonwood Creek were 0.0125 steelhead per square foot (ft2) in November (Kucera and Johnson 1986).

Summary. Baseline conditions in the action area include lack of good quality pools, lack of instream cover, elevated water temperatures, wide/shallow stream channels, and flood scoured stream channel and banks. Steelhead use Cottonwood Creek for spawning and rearing.

2.4 Effects of the Action

"Effects of the action" is defined at 50 CFR 402.02.

2.4.1 Effects to Species

The in-water portion of the proposed action would take place between August 1 and December 15. During this period, juvenile steelhead are the only steelhead life stage expected to be in the action area. Adult steelhead are likely to be in Cottonwood Creek from January through May, and fry-stage juveniles would have emerged from the gravels of any redds by July 15.

Juvenile steelhead in the action area could experience the following adverse effects from the proposed action:

- Death or injury from dewatering and fish salvage;
- exposure to short-term suspended and deposited sediment downstream of the project site;

- exposure to bank hardening and channel constriction;
- exposure to construction noise; and
- exposure to chemical contamination.

The likelihood of exposure and the magnitude of response to these effects of the action are discussed below.

2.4.1.1 Fish Salvage

The main channel of Cottonwood Creek in the action area is along the east bank (public roadside). The proposed action will occur on the west bank, the channel and floodplain of which are separated from the main channel by a mid-channel gravel bar (Newman property side). The west side of the bar is expected to be dry during construction of the riprap bank. In the event that there is flow in the west channel, the channel may be blocked and dewatered to remove fish and to minimize sediment from being transported downstream from the work site. Substrate in the west channel is not large enough to conceal a fingerling-stage juvenile steelhead (Personal communication with Bill Lillibridge, design engineer, October 14, 2020).

If conditions change from expected, and fish salvage is necessary, juvenile steelhead may be captured and handled. Capturing and handling fish causes short-term stress for all individuals (Frisch and Anderson 2000; Hemre and Krogdahl 1996; Olla et al. 1995) and is likely to cause harm or death to some individuals, particularly those exposed to electrofishing (McMichael et al. 1998; Nielson 1998). Some juvenile steelhead within the area being dewatered may not be caught in the fish salvage and will die from stranding.

Electrofishing can cause spinal injury to individual fish, which can lead to slower growth rates (Dalbey et al. 1996). Following the NMFS (2000) electrofishing guidelines will minimize the levels of stress and mortality related to electrofishing. McMichael et al. (1998) found a 5.1 percent injury rate for juvenile middle Columbia River steelhead captured by electrofishing in the Yakima River subbasin. A literature review by Nielson (1998), on the other hand, suggests that 25 percent of the total number of fish electrofished could be injured or killed.

For this project, we make the following assumptions about injury and death rates during fish salvage activities.

- An area of up to 1,050 ft^2 of Cottonwood Creek will be de-watered for construction (350 feet long by 3 feet wide).
- Based on Kucera and Johnson (1986) fish surveys from 1983 and 1984, researchers found an average of 0.0125 juvenile steelhead per square foot at two sites in lower Cottonwood Creek. These estimates are considered applicable still because the description of the habitat at the time of the study is similar to the habitat condition today and Snake River steelhead numbers overall remain low, as they were at the time of those estimates. Given

this density and channel area, 13 juvenile steelhead could be present in the de-watered area and will therefore be harmed or killed by capture, or killed from stranding.

These estimates are likely overestimates because gradual dewatering will cause some or most fish to leave the area volitionally. Given mean smolt-to-adult return rates of 1.6 percent from 1997–2012 (Comparative Survival Study Oversight Committee and Fish Passage Center 2015), the loss of 13 juvenile steelhead in the South Fork Clearwater River population would mean a one-time loss of less than one adult equivalent (0.2 adults) returning to spawn.

2.4.1.2 Suspended and Deposited Sediment

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 nephelometric turbidity units (NTU) (Lloyd 1987; Servizi and Martens 1992; Berg and Northcote 1985).

The proposed action, including both bank and floodplain work, is anticipated to be done in the dry; therefore, turbidity monitoring is not proposed. However, the proposed action does include a work window that extends into the time when this work area may not be entirely dry, and does include provisions for that contingency, such as discussed above for fish salvage. The proposed action incorporates multiple conservation measures aimed at preventing sediment from entering Cottonwood Creek during construction, and thus minimizing potential increases in suspended sediment (turbidity). With the channel dry, no sediment will be transported downstream until high water transports away the sediments that were loosened during construction.

One of the conservation measures is to block and dewater the west channel if flow is present, to prevent downstream transport of sediment from the riprap installation. In the event that flow is present in the small west channel but still low enough to progress with work, the channel will be blocked using available non-erodible materials. If the channel is blocked, it is expected that flow would be reduced to a trickle and very little sediment would be transported downstream for a short period of hours per day while work is in progress. If turbidity moves into the mainstem Cottonwood Creek during construction or during rewatering the west channel, flow is expected to be very low and turbidity is expected to travel no more than 200 feet beyond the west channel convergence with the main channel to the bridge and be restricted to the west half of the Cottonwood Creek main channel. This amount of sediment suspended, transported, and deposited in downstream substrates, is expected to have, if any, very small effects to juvenile steelhead. For instance, fish may move temporarily to less turbid areas or areas with more favorable substrate conditions. Given the 200-foot distance, a half channel width of 7 feet, and steelhead density cited above, NMFS estimates 17 juvenile steelhead may be temporally

displaced by the turbidity plume, or may stay within the plume and experience small temporary effects from a turbidity plume.

2.4.1.3 Bank and Floodplain Stabilization

The placement of riprap on stream banks can adversely affect stream morphology, fish habitat, and fish populations (Schmetterling et al. 2001; Garland et al. 2002). The stream bank receiving the riprap treatment is part of a dynamic gravel depositional area that has little vegetation and mobile gravel substrates. The riprap incorporates log structures that will add a small amount of habitat complexity to the present streambank. The elevation of the riprap bank will allow floods of two-year recurrence and greater to overtop the riprap and spill onto the floodplain on the Newman property. This top elevation of the proposed riprap bank will allow some function in overtopping and allowing flood waters to dissipate energy over the floodplain, and will allow steelhead access to the floodplain. The riprap is semi-permanent as it could be eroded by future floods. However, for the time the riprap is in place, it will constrict Cottonwood Creek and perpetuate the condition of an incised main channel (Schmetterling et al. 2001) with its degraded function as habitat.

That increment of perpetuation and hardening of the degraded channel/floodplain access conditions is perhaps partially counterbalanced by the added instream structure created by the 16 logs with root wads. Considering those effects together, the project would likely manifest in the stream reach as whole as slightly reduced potential for and development of channel complexity and stream access to the floodplain, and therefore, slightly reduced quantity and quality of habitat for steelhead. However, at a smaller scale, the action would create some added instream structure and habitat complexity in the simplified stream channel adjacent to this property.

Work on the floodplain includes six live siltations (rows of willow plantings) that will reduce flood damage to the property owner's access road. These live siltations will be rows of willows planted in trenches that run approximately perpendicular to the direction of flow across the floodplain. These siltations are designed to reduce the velocity and sediment transport capacity of flow across the floodplain in order to reduce the movement of gravel across the floodplain. In addition, the siltations will be angled slightly too direct flow back to the main channel of Cottonwood Creek. If successful, these willows will add roughness to the floodplain, reduce gravel movement and damage to the road, and reduce stream velocity during high flows in some years. An increment of reduced stream velocity under certain high-flow conditions may have some temporary beneficial effects for juvenile steelhead holding in or moving through the area.

2.4.1.4 Noise and Disturbance

Construction noise or visual stimulus may disturb nearby juvenile steelhead causing them to move away from the instream and near stream work areas. If fish move, they are expected to move only short distances to an area where they feel more secure, and only for a few hours in any given day (Grant and Noakes 1987; Ries 1995; Olson 1996). Because the stream habitat at the site is relatively uniform, we expect that if fish are displaced temporarily into nearby areas they are unlikely to be adversely affected by those changes in location. Noise from heavy construction

equipment will not rise to the decibel level known to physically harm fish (FHWA 2008; Wysocki et al. 2007).

2.4.1.5 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 conservation measures aimed at minimizing the risk of fuel or oil leakage into the stream. Based on the past success of these types of conservation measures in other projects, negative impacts to ESA-listed fish and fish habitat from fuel spills or leaks are unlikely.

Summary. Work is expected to be done in the dry without the need for work area isolation or dewatering, but there is a chance isolation/dewatering will be needed. If channel dewatering is necessary, NMFS estimates 13 juvenile steelhead would be harmed or killed from capture or stranding. When the work channel is rewatered, flow is expected to be very low, with very low turbidity and deposited sediment; however, turbidity may cause an estimated 17 juvenile steelhead to move to other areas of Cottonwood Creek or remain in the turbidity plume and experience minor effects. Proposed riprap is expected to perpetuate degraded habitat conditions by limiting the frequency of access to the floodplain, perpetuating stream narrowing and incision at the reach scale, and increase habitat complexity at the project scale.

2.4.2 Effects to Critical Habitat

Implementation of the proposed project is likely to affect freshwater spawning, rearing, and migration habitat for Snake River Basin steelhead. The PBFs that could be adversely affected by the proposed action are water quality, substrate, floodplain connectivity, and natural cover.

Water quality. The proposed action could negatively affect water quality through chemical contamination or short-term increases in turbidity. As described above in Section 2.4.1.5, we expect the proposed conservation measures will prevent leaks or spills from machinery from entering Cottonwood Creek. As discussed above in Section 2.4.1.2, suspended sediment, if present, would not reduce the conservation value of the water quality PBF, or critical habitat as a whole, because the effects will involve a small area of the creek, will create at most a small increase in sediment concentration, and will be short-term.

Substrate. Turbidity plumes from construction work will deposit a small amount of sediment in Cottonwood Creek. Because of the expected effectiveness of the proposed sediment control BMPs and no to low flow conditions, NMFS little to no sediment deposition in the mainstem Cottonwood Creek. In the event of a small mainstem deposition, NMFS expects that sediment deposition would be confined to one side of the creek, not go past the bridge, and would be flushed downstream in the next high water. Because of the effect of this sediment would be small, or non-existent, it not reduce the conservation value of the substrate PBF or critical habitat.

Floodplain Connectivity. The riprap installation will have minor negative effects to floodplain connectivity and function for the following reasons: 1) the installation incorporates logs with the rock riprap and will be planted; 2) the elevation of the riprap will reduce the frequency of floodplain inundation but will allow a two-year flood or greater to overtop the riprap and spill onto the floodplain; and 3) steelhead will have reduced, but still frequent, access to the floodplain. Because the change in floodplain inundation and access will only be slightly reduced, the proposed action is not expected to appreciably reduce the conservation value of the floodplain connectivity PBF or critical habitat.

Natural Cover. Installation of riprap to the streambank is not expected to reduce natural cover because the existing streambank has no mature vegetation. Installing the riprap with willow clumps and cuttings may improve the natural cover in this area. The siltation plantings will add some cover to the floodplain. The longevity of this cover is unpredictable as this area is very dynamic and the success of the plantings is somewhat unpredictable. Because the proposed action will not reduce the natural cover PBF, and may increase it somewhat, the conservation value of critical habitat will not be reduced.

Summary. The proposed riprap installation is expected to perpetuate, to a small degree, current degradation of critical habitat and, to a small degree, limit stream access to the floodplain. In addition, if dewatering the work area is necessary, a small, short-term pulse of suspended and deposited sediment is expected following rewatering of the west channel. Neither of these effects are large enough to appreciably decrease the conservation value of individual PBFs or critical habitat as a whole.

2.5 Cumulative Effects

"Cumulative effects" is defined at 50 CFR 402.02 and 402.17(a).

All of the land in and along the action area is privately owned. Because of the existing land ownership and associated infrastructure in the action area, NMFS assumes that current land use, and associated ongoing effects to species and critical habitat, will continue into the future in their current form.

2.6 Integration and Synthesis

In this section, we add the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5), taking into account the status of the species and critical habitat (Section 2.1, to formulate the agency's Opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat for the conservation of the species.

Baseline. Baseline conditions in the action area include lack of good quality pools, lack of instream cover, elevated water temperatures, wide/shallow stream channel, and flood-scoured stream channel and streambanks. Steelhead use Cottonwood Creek for spawning and rearing.

Status. Although Snake River Basin steelhead abundance has increased since the time of listing in 1997, many individual populations are not meeting recovery plan abundance and productivity targets, and the species remains threatened with extinction. Since the 2015 run reconstruction population estimate, the South Fork Clearwater River population has declined to approximately a third of the 2015 estimated abundance, is currently moving farther from its minimum viability threshold, and has a high risk rating for viability. Critical habitat in many tributaries is of poor quality with reduced water quantity, water quality, and habitat complexity. Projected climate change is expected to increase winter flooding, reduce summer flow, and increase summer water temperatures, resulting in decreased juvenile rearing habitat and increased mortality rates for anadromous salmonids. These climate factors will likely make it more challenging to increase abundance and recover the species (NMFS 2017).

Effects on Species. Juvenile steelhead in the action area could potentially experience adverse effects associated with project components including noise, chemicals, sediment, and bank hardening. However, those effects are generally expected to be negligible because of the proposed conservation measures, the ability of fish to move within and out of the action area during construction, and the current degraded conditions of habitat in the action area. The following effects are, however, substantive enough to be adverse to individual steelhead:

- Up to 13 juvenile steelhead are expected to be harmed or killed by captured or stranding due to dewatering/salvage activities; and

- Seventeen juvenile steelhead may experience or be displaced by a turbidity plume during channel rewatering.

- A small but appreciable reduction to floodplain connectivity in an already not well-connected floodplain.

Given mean smolt-to-adult return rates of 1.6 percent from 1997–2012 (Comparative Survival Study Oversight Committee and Fish Passage Center 2015), the harm or death of 13 juveniles in the South Fork Clearwater River population would mean a one-time loss of less than one adult equivalent (0.2 adults) returning to spawn. In addition, 17 juvenile steelhead may experience or move away from a turbidity plume. Small effects such as these would not likely reduce the abundance and productivity of the population. Despite the declining status of steelhead abundance, the potential, but unlikely, one-time loss of up to 13 juvenile steelhead is unlikely to change the viability of the South Fork Clearwater River steelhead population, survival of the DPS, or the species' probability of recovery.

Effects on Critical habitat. Critical habitat for Snake River Basin steelhead is present in the action area. The proposed riprap installation is expected to perpetuate, to a small degree, current degradation of critical habitat and, to a small degree, limit stream access to the floodplain. In addition, if dewatering the work area is necessary, a small, short-term pulse of suspended and deposited sediment is expected following rewatering of the west channel. Neither of these effects are large enough to appreciably decrease the conservation value of individual PBFs in the action area or critical habitat as a whole.

2.7 Conclusion

After reviewing the current status of the listed species and their designated critical habitat, the environmental baseline within the action area, the effects of 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 destroy or adversely modify its designated critical habitat.

2.8 Incidental Take Statement

Section 7(b)(4) and section 7(o)(2) of the ESA 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 incidental take statement.

2.8.1 Amount or Extent of Take

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

- **Fish handling.** We anticipate that up to 13 juvenile steelhead could harmed or killed from be captured or stranding during fish salvage prior to dewatering the construction site. The amount of take will be exceeded if more than 13 juvenile steelhead are captured, injured, or killed during fish salvage.

- **Short-term water quality impacts from turbidity**. We estimate that up to 17 juvenile steelhead could experience sub-lethal impacts from exposure to elevated turbidity levels caused by instream work at the riprap site. Because it is not possible to observe the number of fish exposed to the turbidity plumes, NMFS will use the extent and duration of the turbidity plumes as a surrogate for take. This is a rational surrogate for take because the bigger the size and the longer the duration of turbidity plumes, the greater the likelihood of take. NMFS will consider the extent of take exceeded if turbidity plumes at the Newman access bridge, approximately 200 feet below the downstream extent of the riprap installation, are visible for more than four continuous hours during any day the riprap work is being done.

- **Reduction in floodplain access**. The installation of 300 feet of bioengineered riprap will cause a slight reduction in floodplain connectivity and associated reduction in steelhead habitat. The number of steelhead affected over time not practicably quantifiable, but we can track a surrogate and limit of extent for this effect—that the riprap installation is limited to the proposed limits on amount and size and installation type within that length. 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.

2.8.2 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.

2.8.3 Reasonable and Prudent Measures

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

The COE will:

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.

2.8.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and the COE must comply with them in order to implement the RPMs (50 CFR 402.14). The COE 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 will ensure the following by including funding or permitting conditions:

    a. Ensure that the construction contractor's diversion structures do not emit chronic visible turbidity into Cottonwood Creek.

    b. Ensure that construction contractor's equipment does not enter the water.

    c. Ensure that, if dewatering was done, the construction contractor slowly re-waters the west stream channel to minimize a sudden increase in turbidity.

    d. Ensure that the construction contractor stabilizes all disturbed areas within 12 hours of any break in work unless construction will resume within 3 days.

    e. For the COE, ensure that any terms applied to the CWA 404 permit are 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 will:

    a. Ensure that turbidity plumes created by the action are monitored. If turbidity plumes at the bridge downstream from the project site are visible for greater than four continuous hours, cease activities immediately and take actions to reduce turbidity and prevent reoccurrence.

    b. Report to NMFS the number of steelhead that are handled, injured, or killed during fish salvage (amount of take). Ensure that COE directs the construction contractor to immediately cease activities and contact NMFS if more than 13 juvenile steelhead are handled during fish salvage.

    c. Report to NMFS verification that the riprap installation did not exceed the design dimensions and used the proposed bioengineering methods and materials.

    Submit a monitoring report including information on turbidity plumes, fish salvage, and the consultation number WCR-2020-02952 by April 15 of the year following project completion to: Snake River Basin Office email, nmfswcr.srbo@noaa.gov.

2.9 Conservation Recommendations

Conservation recommendations are defined at 50 CFR 402.02, and, for this consultation, are as follows:

1. Consider replacement of the bridge to the Newman property with a crossing structure equal to or greater than the natural bank full stream width. This replacement would assist in arresting channel incision in this location and increase the quantity, quality, and conservation value of critical habitat in Cottonwood Creek.

2.10 Reinitiation of Consultation

This concludes formal consultation for the Cottonwood-Newman Stabilization Project.

As 50 CFR 402.16 states, reinitiation of formal consultation is required 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.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (Section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH.

This analysis is based, in part, on the EFH assessment provided by the COE and descriptions of EFH for Pacific Coast salmon (PFMC 2014)

3.1 Essential Fish Habitat Affected by the project

Pacific Coast Salmon designates the South Fork Clearwater watershed, including the action area, to be EFH for Chinook and coho salmon. In addition, the proposed action will affect a floodplain [habitat of particular concern (HAPC); PFMC (2014)].

3.2 Adverse Effects on Essential Fish Habitat

Pacific Coast salmon (Chinook and coho salmon) have access to Cottonwood Creek. The proposed action of stabilizing a streambank in Cottonwood Creek will impose a small reduction in the development of, and salmonid access to floodplain habitat. The floodplain habitat will lose accessibility during for small flood flows below the 2-year recurrence interval, which would reduce the frequency of the floodplain being accessible to salmonids, and would somewhat further hamper development of multiple channels and channel movement within this reach. In addition, the riprap application will, in small part, perpetuate the degraded state (Schmetterling et al. 2001) of the already incised channel of Cottonwood Creek.

3.3 Essential Fish Habitat Conservation Recommendations

Conservation recommendations were provided during pre-consultation and therefore are not provided here in this EFH consultation. The recommended uses of some bioengineering methods and materials were incorporated into the proposed project design. NMFS recommendation of a more substantive stream restoration at this site, e.g., involving replacement of the bridge with a crossing structure that would accommodate the bankfull flow, concurrent with this proposed action, was declined by the applicant and therefore not put forward by COE.

The habitat in the floodplain and channel work areas will directly benefit from the proposed incorporation of bioengineering in the form of installed logs, willow plantings, and live siltations.

3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, the COE must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the federal agency have agreed to use alternative timeframes for the federal agency response. The response must include a description of measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the Conservation Recommendations, the federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

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

3.5 Supplemental Consultation

The COE must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations (50 CFR 600.920(l)).

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity.

4.1 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 any of their cooperators, contractors, or permittees. 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.

4.2 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.

4.3 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/EFH consultation contain more background on information sources and quality.

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

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

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