



**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-2024-01204

July 5 2024

Lt. Col. ShaiLin KingSlack  
U.S. Army Corps of Engineers  
Walla Walla District  
201 N. 3rd Avenue  
Walla Walla, Washington 99362-1876

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Cassidy Bridge Maintenance project; 170602010408; Custer County, Idaho

Dear Lt. Col. KingSlack:

This letter responds to your May 14, 2024 request for initiation of consultation with 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 Cassidy Bridge Maintenance Project.

You also requested 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. Your request qualified for our expedited review and analysis because it met our screening criteria and contained the required information on, and analysis of, your proposed action and its potential effects to listed species, designated critical habitat, and EFH.

We reviewed the U.S. Army Corps of Engineers' (COE) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. The parts of the document we are incorporating by reference are explicitly stated in the biological opinion (opinion) sections below, where appropriate. Our opinion incorporates the following sections from the COE's biological assessment (BA) (Stewart Consulting 2024), available in our South Snake Branch Office in Boise, Idaho:

- Proposed Action, including proposed conservation measures (Section 2, pages 2–6);
- Environmental Baseline (Section 4, pages 12–21);
- Analysis of Effects (Section 5, pages 21–27).



To complete the biological opinion, we augmented the BA with additional information necessary to understand the status of the species and status of critical habitat potentially affected by the action. Information we relied on is cited to appropriate scientific standards and is the best available information. In completing the status sections, we relied in part on the information in Section 3 of the BA (Stewart Consulting 2024), Natural History and Species Occurrence, pages 8-12.

NMFS first learned of pier erosion concerns for the Cassidy Bridge on January 12, 2023, when we received an emergency consultation request from the COE to perform temporary pier stabilization work. NMFS and the COE subsequently completed emergency consultation<sup>1</sup> on the applicant's (Mr. Cassidy's) temporary placement of 400 gravel-filled sandbags (100 at each pier) to prevent additional scour during spring 2023 runoff. NMFS received the required completion report for that action on January 8, 2024. Approximately 300 bags were placed, and only at the two easternmost piers. The January 8, 2024 report indicated the temporary sandbags would be left in place through the 2024 runoff period (Figure 1) in anticipation of Section 404 permit issuance for permanent fill placement.

NMFS received a draft BA on this proposed action on January 16, 2024 with comments being returned on January 18, 2024. Project modifications were shared with NMFS by email on February 25, 2024. Revisions included the elimination of rock riprap aprons around the two piers and limiting all stabilization work to two of the four piers. NMFS provided feedback and suggestions for additional mitigations via email on February 27, 2024. A request for formal consultation was received from the COE on May 14, 2024, and NMFS issued a 30-day letter on June 5, 2024, identifying May 14 as the consultation initiation date. NMFS exchanged phone messages and emails with the applicant on multiple occasions prior to and after receipt of the final BA. NMFS shared draft excerpts of the opinion with the COE and the Shoshone Bannock Tribes on June 24, 2024. The COE provided minor edits (which NMFS subsequently adopted), on June 28, 2024. The Shoshone Bannock Tribes did not respond.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 Fed. Reg. 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the Act. 89 Fed. Reg. at 24268; 84 Fed. Reg. at 45015. We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this biological opinion and incidental take statement would not have been any different under the 2019 regulations or pre-2019 regulations.

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<sup>1</sup> Project record available at NMFS' South Snake Branch Office in Boise, Idaho.



Figure 1. Cassidy Bridge and temporary sandbags placed on March 20, 2023, at the two eastern piers (foreground).

**Proposed Action.** The proposed action is described in Section 2.0 of the COEs BA (Stewart Consulting 2024). The proposed Federal action is the COE’s issuance of a Clean Water Act (CWA) Section 404 permit authorizing the applicant to discharge fill material below the ordinary highwater mark (OHWM) of the Salmon River to reinforce two of the four existing bridge piers. The action will extend the service life of the bridge by stabilizing the two pier footings on the east end of the bridge with a narrow steel and concrete casing to shore up the pier footings where erosion has undermined the footings and protect them from future erosion to ensure long-term stability of the bridge. While all work is proposed to occur during the recommended instream work window in 2024 (July 7 through August 15; USBWP 2005), the project is expected to only take one month. Equipment will operate from the bridge deck while instream work will occur by hand. Work areas will be isolated with gravel-filled sandbags and the use of appropriately screened pumps will be used to remove any contaminated water resulting from uncured concrete exposure to water in the cofferdam area.

## **BIOLOGICAL OPINION**

### **Status of Species and Designated Critical Habitat**

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species’ “reproduction, numbers, or distribution” as described in

50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discuss the function of the physical or biological features (PBFs) essential to the conservation of the species that create the conservation value of that habitat. We have augmented the BA's section on status of the species (Section 3.1, pages 8–10); with information from the species recovery plans (NMFS 2017) and the most recent biological viability update (Ford 2022), 2022 5-Year Review: Summary & Evaluation of Snake River Spring/Summer Chinook Salmon (NMFS 2022a), and 2022 5-Year Review: Summary & Evaluation of Snake River Basin Steelhead (NMFS 2022b). Together, this information represents the best available and most recent information on the status of the species considered in this consultation. Finally, we examined the likely effects on any listed species and critical habitats for which your agency made "not likely to adversely affect" (NLAA) determinations. Our conclusions regarding the effects of the action on those species (i.e., Snake River sockeye salmon) and their critical habitat is presented below under the heading: NLAA determinations.

This opinion considered the status of the Snake River (SR) spring/summer Chinook salmon evolutionarily significant unit (ESU) and the SR Basin steelhead distinct population segment (DPS). The SR Chinook salmon ESU consists of 28 extant and 4 extirpated or functionally extirpated populations, each spawning and rearing in different watersheds across the SR basin. The SR Basin steelhead DPS consists of 24 populations, spread across five major population groups (MPGs). Having multiple viable populations makes an ESU/DPS less likely to become extinct from a single catastrophic event (ICTRT 2010). NMFS expresses the status of an ESU 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 (VSP). The four parameters of a VSP are abundance, productivity, spatial structure, and diversity. NMFS' recovery plan for SR spring/summer Chinook salmon and SR Basin steelhead (NMFS 2017) describes these four parameters in detail and the parameter values needed for persistence of individual populations and for recovery of the ESU and the DPS.

NMFS maintains an online status of the species discussion for SR spring/summer Chinook salmon (<https://www.fisheries.noaa.gov/s3/2023-02/feb-2023-status-snake-r-spring-summer-chinook.pdf>) and SR Basin steelhead (<https://www.fisheries.noaa.gov/s3/2023-02/feb-2023-status-snake-r-steelhead.pdf>), incorporating information from the species' recovery plans (NMFS 2017), the most recent 5-year status reviews (NMFS 2022b; NMFS 2022c), the Biological Viability Assessment Update for Pacific Salmon and Steelhead (Ford 2022), and other best available information pertinent to the VSP parameters. NMFS updates the status of the species material annually and it is considered the best available information. For this document, we have incorporated that discussion by reference and printed copies of the information has been retained in our project file in the event the material becomes unavailable in the future. To view the 5-year reviews, the reader is directed to the following web addresses: <https://repository.library.noaa.gov/view/noaa/45367>.

To summarize, the SR spring/summer Chinook salmon ESU is at a moderate to high risk of extinction. While there have been improvements in abundance/productivity in several populations since the time of listing, the majority of populations experienced sharp declines in abundance in recent years. If productivity remains low, the ESU's viability will become more tenuous. If productivity improves, populations could increase again, similar to what was

observed in the early 2000s. This ESU continues to face threats from disease; predation; harvest; habitat loss, alteration, and degradation; and climate change (NMFS 2022b). On August 18, 2022, in the agency's 5-year review for SR spring/summer Chinook salmon, NMFS concluded that the species should remain listed as threatened (NMFS 2022b).

In addition, based on information available for the 2022 viability assessment of SR Basin steelhead (Ford 2022), none of the DPS' five MPGs are meeting their recovery plan objectives and the viability of many populations remains uncertain. The recent, sharp declines in abundance are of concern and are expected to negatively affect productivity in the coming years. Overall, available information suggests that SR Basin steelhead continue to be at a moderate risk of extinction within the next 100 years. This DPS continues to face threats from tributary and mainstem habitat loss, degradation, or modification; predation; harvest; hatcheries; and climate change (NMFS 2022c).

In this opinion we also examined the condition of critical habitat for SR Chinook salmon and SR Basin steelhead throughout the designated area and discussed the function of the PBFs essential to the conservation of the species that create the conservation value of that habitat. We have supplemented the BA's environmental baseline (Section 4.0, pages 12-20) with critical habitat information for SR spring/summer Chinook salmon and SR Basin steelhead at the scale of the ESA listings (see Table 1). Table 1 is based on the detailed information on the status of critical habitat throughout the designation area provided in the recovery plan for each species (NMFS 2017) and the most recent status review (NMFS 2022b, 2022c), which are incorporated by reference.

Table 1. 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 Spring/summer Chinook salmon	10/25/99; 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon Rivers, and all tributaries of the Snake and Salmon Rivers (except the Clearwater River) presently or historically accessible to this evolutionarily significant unit (ESU) (except reaches above impassable natural falls, and Dworshak and Hells Canyon dams). 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.
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.

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 SR spring/summer Chinook salmon, PBFs include spawning gravel, water quality, water quantity, food (juvenile migration only), riparian vegetation, water temperature, substrate, water velocity, cover or shelter, space, and safe passage. For SR Basin steelhead, PBFs include water quality, water quantity, substrate, floodplain connectivity to form and maintain physical habitat conditions, forage (rearing), natural cover, and free of artificial obstructions. Across the designations, the current ability of PBFs to support the species varies from excellent in wilderness areas to poor in areas of intensive human land use. Climate change and its influence on PBFs such as water quality, water quantity, temperature, and safe passage are expected to exacerbate current conditions for salmon, negatively affecting spawning and rearing conditions and potentially affecting future run timing (due to reduced adaptability). These impacts are expected to increase the difficulty of species recovery. A synthesis of current literature pertinent to these species' future habitat conditions can be found in NMFS' recovery plans (2017), recent climate vulnerability assessments (Crozier et al. 2019), and our 5-year reviews (NMFS 2022b, 2022c).

For both species, the construction and operation of water storage and hydropower projects in the Columbia River basin, including the run of river dams on the mainstem lower Snake and lower Columbia Rivers, have altered biological and physical attributes of the mainstem migration corridor for juveniles and adults. However, several actions taken since 1995 have reduced the negative effects of the hydro system on juvenile and adult migrants. Recent examples include providing spill to dissolved gas caps at mainstem dams for smolts, steelhead kelts, and adults that fall back over the projects; and maintaining and improving adult fish way facilities to improve migration passage for adult salmon and steelhead (NMFS 2020).

**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). Section 2.3 of the BA describes the action area and is adopted here, including Figure 3 of the BA. In addition to the action area identified in the BA, we also include the access road to and off the Cassidy Bridge as equipment and workers will use these routes to complete the action.

**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 impacts 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). Section 4 of the BA describes the environmental baseline (pages 12–21) and we have adopted that section here.

The action is located in the mainstem Salmon River, just upstream of the Valley Creek confluence and immediately downstream of the town of Stanley, Idaho. This area falls within the boundaries for the Salmon River Lower Mainstem SR spring/summer Chinook and Salmon

River Upper Mainstem steelhead populations, which belong to the Upper Salmon River and Salmon River MPGs, respectively.

The Salmon River Lower mainstem SR spring/summer Chinook salmon population is classified as very large, with an Interior Columbia Technical Recovery Team (ICTRT) abundance threshold of 2,000 adults. As of 2022 (Ford 2022), the 10-year geometric mean abundance of natural spawning adults was just 71 (standard deviation 87) and productivity was 1.3<sup>2</sup>. These conditions lead to a High abundance/productivity risk rating. Combined with a low spatial structure and diversity risk rating, the population has a high viability risk rating (Ford 2022). This population is recommended to achieve maintained status<sup>3</sup> for MPG and ESU viability (NMFS 2017).

The Salmon River Upper Mainstem steelhead population is classified as ‘intermediate’ in size and has a 1,000 adult ICTRT abundance threshold. Population-specific abundance estimates are not available for most of the MPG’s populations (Ford 2022). In lieu of that data, estimates of natural-origin abundance are based on genetic stock identification and run reconstruction from the aggregate Lower Granite Dam returns. For the Upper Salmon, this group consists of six populations, including the Salmon River Upper Mainstem. As of 2022 (Ford 2022), the 10-year geometric mean abundance of natural spawning adults was 3,502 (SD 2,562) and productivity was relatively high at 1.88<sup>4</sup>. This results in a moderate abundance/productivity risk. Combined with the moderate spatial structure and diversity risk rating, the population group as a whole has a maintained risk rating<sup>5</sup>. For MPG viability, this risk level needs to be maintained into the future in combination with six other populations in the MPG achieving viable or highly viable status (see NMFS 2017 for recovery scenarios).

The action area contains suitable spawning habitat for SR Chinook salmon and SR Basin steelhead. Between 2008 and 2023, SR Chinook salmon spawned in the action area seven times in four years. Two redds were present in return years 2011, 2015, and 2016, and one redd was present in 2014. Spawning has not been documented in the action area since 2016 (IDFG unpublished data). SR steelhead spawning may occur there, but we have no data on frequency or numbers of redds in any timeframe. Both species regularly migrate through the action area as adults and juveniles. Juveniles of both species are believed to rear in the action area, with spring and summer use likely highest. Winter use by juveniles is possible, but the shallow habitat and extreme amounts of frazil (i.e., slushy ice at the surface) and anchor ice (i.e., submerged ice attached or anchored to the bottom) likely results in most fish overwintering farther downstream or in more suitable habitats. Habitat is predominantly riffles with cobble and gravel substrate. The action area lies in a wide valley where riparian vegetation is almost exclusively sedges, grass, and native willows. Large wood is generally lacking. The few pieces of large wood that are present are likely delivered into the area during high water flows. The BA indicated that large wood hanging up on the instream bridge piers is rare, having occurred just twice in the past 12 years. Disposition of large wood caught on the piers is not known.

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<sup>2</sup> Interior Columbia Technical Recovery Team (ICTRT) productivity: 20-yr geometric mean for parent escapements below 75% of population threshold. Standard error 0.23. 20 of 20 years had qualifying estimates for productivity.

<sup>3</sup> Defined as having a 25 percent or less risk of extinction over 100 years.

<sup>4</sup> Standard error 0.17 with 16 of 20 years having qualifying estimates for productivity.

<sup>5</sup> Less than 25% risk of extinction in 100 years.

Sandbags were temporarily placed around two of the Cassidy Bridge's abutments in winter of 2023. Those bags have remained in place since that time and have experienced two spring runoff events. They were placed under emergency authorization by the COE (i.e., the emergency consultation referenced above) to prevent bridge failure and allow for a permanent, long-term stabilization effort (i.e., this consultation action) to be developed and permitted. The BA baseline section evaluated the project as though the sandbags were not present and assumed that fish would occupy the individual pier work areas. Since the sandbags will remain until completion of the project, fish are currently unable to utilize habitat in a two-foot wide area around each pier. For this reason, our environmental baseline in this opinion appropriately considers those areas occupied by sandbags (approximately 800 square feet) unlikely to support fish. This is a departure from the adopted baseline from the BA.

**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.

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Section 5 (pages 21-27), and is adopted here (50 CFR 402.14(h)(3)). NMFS has evaluated this section and after our independent, science-based evaluation determined it meets our regulatory and scientific standards. Supplementary information used to complete our analysis includes our consideration of temporary sandbags that remain in place around the perimeter of the two piers proposed for stabilization. These sandbags preclude fish use of the immediate work area and make it unlikely that fish handling or displacement will occur during work area isolation.

The BA did not specifically address the long-term use of the private land accessed by the bridge. We considered this use, and found that future use and occupancy of the private property is reasonably certain to occur into the future regardless of pier maintenance. Even if the subject piers failed, and the bridge became unsafe, the bridge can reasonably be expected to be rebuilt, likely under a future ESA consultation, and the current land use would likely continue. Private property is rare in the Sawtooth Valley, making up approximately five percent of Custer County. The limited number of homes present near Stanley are highly valued, with waterfront homes being more valuable due to additional scarcity. The private property accessed by the bridge is already developed and fences already restrict livestock, vehicle, and foot traffic from streamside areas. Effects of future use are expected to be similar to those described in the environmental baseline (Section 4 of the BA).

*Effects to Species.* Instream work will occur during the recommended instream work window (July 7 – August 15). Adult steelhead are not present during this time; therefore, the construction phase of the proposed action will not affect adult steelhead. Similarly, spring/summer Chinook spawning occurs after August 15; therefore, the proposed action will not affect spawning Chinook salmon, redds, or embryos.



Adult SR spring/summer Chinook salmon may be migrating through or staging in the action area prior to spawning. Juvenile SR Basin steelhead and Chinook salmon rear in the action area during the instream work window and are also expected to be present. Adults and juveniles of both species will use the action area for rearing and migration over the life of the new structure. Adults may use the action area for spawning over the life of the new structure. As discussed in the Section 5 of the BA, the action will have the following effects to these species and life stages:

- Adult Chinook salmon and juveniles of both species may be temporarily displaced from the work area during instream activity. Equipment noise and exposure to minor levels of turbidity during construction could influence how fish utilize the available habitat; however, only small behavioral modifications are expected as fish move away from the activities occurring in the relatively small work area for up to one month. That is, fish that are disturbed and move away from activities have plenty of similar habitat to move into and any effects of displacement will be temporary and minor.
- Capture and handling of juveniles of both species would normally be expected to occur from a proposed action like this as instream work areas would need to be dewatered and fish would need to be salvaged. However, because temporary sandbags will remain in place around each of the piers, juvenile fish are not expected to be present in the areas isolated from the main channel (approximately 800 square feet). This contradicts findings in the BA (page 22), which did not account for the continued presence of the emergency sandbags and consequently anticipated fish salvage, hazing, and handling from each area. Therefore, we do not expect juvenile fish to be captured or handled during this phase of the project.
- Electrofishing gear will still be used to verify no fish have entered the isolated areas while cofferdam sandbags are moved from the pier to proposed 2.5-foot wide offset during construction. For this reason, we find it reasonable to assume a small number of juvenile fish could be exposed to the electrical current and be hazed or captured. Based on NMFS' prior experience from similar actions in similar environments, along with professional judgement, we assumed up to five individual juveniles of each species could be captured during implementation. None are expected to be killed due to adherence to appropriate electrofishing guidelines (NMFS 2000). We believe it is improbable that electrofishing will affect adult Chinook salmon as they are highly mobile and large enough to leave the area by their own volition, or can otherwise be easily excluded without contact. Movement away is not expected to affect spawning success.
- There is a small potential for juvenile Chinook salmon and steelhead to be crushed or buried beneath cofferdam sandbags as they are being relocated away from the piers approximately 2.5-feet to maintain a dewatered work area. The likelihood of juvenile fish being crushed beneath sandbags during their movement is improbable since sandbags are small, they are moved by hand, and juvenile fish present are expected to be mobile, effectively avoiding being crushed or buried. Further, the location of the temporary sandbags already in place at least partially overlaps with the proposed work area, likely precluding fish use of those areas and avoiding crushing. We believe it is improbable that adult Chinook salmon will be affected by sandbag movement as they are highly mobile

and large enough to leave the area by their own volition. Movement away is not expected to effect spawning success.

- The work area around both piers (approximately 800 square feet) will remain unavailable during the one-month construction period. Juveniles of both species will not be able to utilize these areas during critical summer growth periods. Although the affected area is small, it will be temporarily unavailable for one month. Some juvenile Chinook and steelhead may experience small negative impacts to growth and survival due to this temporary habitat loss. Adult Chinook are unlikely to be affected by the temporary loss of habitat as they should continue migrations to spawning habitat or hold in more secure habitat than is afforded at the two piers. The emergency sandbag cofferdam will be removed upon completion of the project, restoring much of the habitat for fish that has been unavailable since January 2023.
- Because each pier's footprint will be increased by 6- to 8- inches with the added concrete and steel form, habitat in the Salmon River will be permanently reduced by approximately 40 square feet <sup>6</sup>by the action. Although the affected area is small relative to the surrounding river, this is a permanent habitat loss for the life of the new structure. Some juvenile Chinook salmon and steelhead may experience small negative impacts to growth and survival over the life of the new structure due to this loss. This minor, permanent effect to habitat is not expected to affect adults; they are expected to continue migrations to more suitable spawning habitat or hold in surrounding available habitat.
- Pump entrainment or impingement of fish is improbable as all pumps used will be screened to NMFS' most-recent guidelines (2022c).
- Effects from construction-produced noise are not expected to vary from baseline conditions. The work area is adjacent to Highway 75, which receives heavy summer traffic. The subject bridge is also used multiple times daily. Construction equipment is not expected to produce higher sound levels or more frequent sounds. Therefore, we expect noise effects to fish from construction activities to be minor, temporary, and intermittent.
- Potential for chemical contamination and effects to fish could also occur (BA, page 23) during construction. Dewatering, use of pumps, and other appropriate best management practices (BMPs 4, 6, 11, and 12) are expected to effectively avoid spills, drips, or other chemical contamination from entering the Salmon River.

Concrete will be pumped into voids under each pier and within the steel sheeting form offset from the pier by 6- to 8-inches. The BA included BMP number 4 (page 7), stating, "Water from inside the coffer dams will be pumped and discharged into an upland area upon completion of the project, if necessary, to mitigate water quality impacts." Pumping water from the coffered area only after work is complete may result in pH changes in the

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<sup>6</sup> This area is an estimate for purposes of evaluating effects, not an absolute number. Using Google Earth®, we estimated each pier perimeter was 35 feet. The BA indicated pier expansion would be between 6 and 7-inches. Assuming average of 7- inch increase \*35-foot perimeter \* 2 piers = 40 square feet. Some minor variation is expected due to error in satellite measuring tool.

water column adjacent to the work areas due to the hardening agent found in concrete potentially entering the Salmon River. Rearing juveniles and migrating adult Chinook salmon could experience adverse effects from degraded pH levels. Because adults potentially exposed to the pH increase will be actively migrating, they are expected to avoid the small areas of pH affected water below the two piers and instead utilize adjacent unaffected areas for safe passage through the action area. This is a minor behavioral effect we do not expect to result in injury or death.

Wet concrete, water bleeding from uncured concrete, and concrete wash out water all contain Portland cement or lime, the hardening agent in concrete. When dissolved in water, lime forms a calcium hydroxide solution which has a pH of about 12 (alkaline) on the pH scale of 0 to 14; where pure water is “neutral” with a pH of 7 (pH is a measure of acidity or basicity of aqueous solutions). Calcium hydroxide solution is caustic, causing chemical burns to the skin, eyes, and gills of fish, and can interfere with reproduction (EPA 2012). The safe pH range for aquatic life is 6.5 to 9.0 (EPA 2012). Because the pH scale is logarithmic, each whole number decrease or increase represents a 10-fold increase in the acidity or basicity. This logarithmic property is important. For example, one gallon of 12 pH concrete wash-water or bleed would need 1,000 gallons of neutral stream water to dilute it to a pH at the upper safe level for fish (pH 9); until that dilution is reached, the volume of water that is injurious or lethal to fish has increased 1,000 times.

The sandbag cofferdams will be lined with visqueen, but water is reasonably expected to come in contact with uncured concrete pumped inside the steel casing as it enters the coffer area from subsurface. Concrete fill can take several days to fully cure, at least suggesting pH effects may persist for a similar amount of time. However, Fitch et. al. (2003) found that pH increases typically returned to baseline within four to six hours after pouring concrete grout beneath bridge piers. They also found that where high water exchange rates and thus dilution occurred, pH rarely exceeded 9 pH. Increases in pH were successfully moderated (i.e., less than 9 pH) by pouring in the dry, use of turbidity curtains around pour sites, and/or use of grout bags in concert with anti-washout admixture. The small amount of concrete used (2 cubic yards), combined with the general isolation of the work area, reduced water exchange with the surrounding water column, and the implementation of BMPs 4 and 6, is expected to reduce potential adverse pH effects by ensuring that any bleed water entering the Salmon River will be minor and will not extend across the entire channel. Fitch et. al. (2003) found the highest pH increases for underwater grout pours occurred about 10 yards downstream. Relative to the concrete volume, a large volume of water passes the site daily – approximately 500 cubic feet per second or about 224,430 gallons per minute. Consistent with the limited available research (CalTrans 2016, Law et al. 2013, Law and Evans 2013, Adamson 2011), these conditions likely reduce the action’s potential adverse impacts on pH, and associated adverse impacts to exposed fish, but they do not eliminate or mitigate effects entirely.

Minor levels of adverse effects to elevated pH water adjacent to the two worksites are reasonably expected to occur and the highest values will occur within 10 yards downstream of each pier and probably last just four to six hours (Fitch et al. 2003), with

effects potentially lasting from one to four days (CalTrans 2016). Effects are dependent on water mixing rate and fish occupancy, both of which we lack specific data.

Given the relatively high volume of water passing the site and the small volume of concrete being used, combined with the proposed isolation measures, including a steel form around the concrete (which limits water contact) we conclude minor levels of harm will occur to juveniles. We believe it is improbable that increased pH will affect adult Chinook salmon as they are highly mobile and large enough to leave the area affected by increased pH of their own volition. Like above, movement away is not expected to affect spawning success.

*Effects to Critical Habitat.* The BA (Section 5) discussed effects to critical habitat, including the PBFs necessary to support spawning, rearing, and migrating Chinook salmon and steelhead. The following effects to the water quality, substrate, safe passage/space, natural cover/shelter, and forage PBFs are anticipated:

- Noise generated during dewatering at the two piers and while pouring concrete will have minor, temporary and intermittent impacts on the safe passage attribute of the migration and rearing PBFs for up to one month. As discussed above, the action area occurs adjacent to Highway 75, and below the existing bridge which each receives heavy summer traffic.
- The area surrounding both piers (approximately 800 square feet) will remain unavailable for migration and rearing for both species for the one-month long construction window, causing a minor, temporary negative effect to the space and forage PBFs (migration and rearing sites). Suitable migration habitat occurs across the remainder of the cross section and throughout the action area and the safe passage PBF will not be negatively affected during construction. Upon completion of the project, the emergency sandbag cofferdams will be removed, restoring the space and forage PBFs for migration and rearing areas that have been unavailable since January 2023.
- Moving the existing sandbags to create a cofferdam and then removing them after concrete cures, may cause very small turbidity and deposition impacts (water quality and substrate PBFs). Turbidity and subsequent sediment deposition will be too small to have any influence on spawning gravels or rearing habitat in the action area. Spawning gravels are not present in the isolated work areas.
- Because each pier's footprint will be increased by 6- to 8- inches with the added concrete and new steel form, the Salmon River's available habitat will be permanently reduced by approximately 40 square feet. This permanent reduction is expected to have a minor negative effect on the space and forage PBFs for migration and rearing habitats. The absence of spawning gravel in the permanently lost habitat precludes effects to the substrate PBF for spawning sites over the life of the new structure.
- The proposed action is not expected to affect the floodplain connectivity PBF important for channel forming processes in support of the rearing sites because the quantity of channel fill is small (2 cubic yards). Expansion of the two piers will reduce the channel

cross-sectional area by 1.5 percent from baseline conditions, which is not anticipated to meaningfully influence floodplain access in the action area.

- Large woody debris currently passes through the gaps between piers. The permanent 1-foot reduction in span (between two piers) and a 6-inch span reduction between two other piers and another 6-inch reduction of span between the east bank and easternmost pier, will have minor negative effects on the forage and natural cover/shelter PBFs important for juvenile rearing and migrations due to a small potential for higher frequency removal of large wood from the river to maintain the bridge. This effect could persist for the future life of the new structure but is not expected to be a meaningful affect.
- Riparian vegetation PBF will not be affected in any way. The action will maintain existing riparian vegetation and its influence on spawning, rearing, and migration habitat in the action area.
- As discussed in the effects to species section, the water quality PBF is likely to be temporarily affected by minor turbidity plumes during cofferdam movement. Elevated turbidity is expected to be of such low intensity and so brief that the use of habitat due to turbidity will not be affected, even temporarily.
- Concrete is likely to be exposed to flowing water due to the use of unsealed sandbag cofferdams. The resultant bleed off water will likely have higher pH than background levels and pH will likely be elevated above background for a period ranging from one to four days. Elevated pH will have a minor, negative effect on the water quality, safe passage, and forage PBFs of migration and rearing habitat for up to four days within the action area. Both the magnitude and extent of effects are dependent on water mixing rate, the amount of concrete poured, and the effectiveness of isolation measures. Given the relatively high volume of water passing the site and the small volume of concrete being used, combined with the proposed isolation measures' anticipated effectiveness, we do not expect pH increases to extend very far away from the two pour areas. We lack suitable data and resources to identify a specific area that will be affected. Effects will be temporary and site conditions suggest pH increases will be small and probably not extend downstream very far from each pier. For the purposes of this opinion, and based on observations reported in Fitch et. al. (2003), along with site conditions and the volume of concrete being used, we anticipate the most severe effects will be contained within 10 yards of either pier, with diminishing effects further downstream.

**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). 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. Section 5.4 of the BA discussed cumulative effects of the action. No future state or private actions that differ from baseline activities are expected. For this reason, no cumulative effects have been identified.

**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 to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency's biological 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 as a whole for the conservation of the species.

The proposed action will extend the service life of the Cassidy Bridge over the Salmon River near Stanley, Idaho, by reinforcing and stabilizing the two pier footings on the east end of the bridge where erosion has undermined the footings. To avoid migration and spawning season, instream work is proposed to occur July 7–August 15, 2024.

Juvenile Chinook salmon and steelhead utilize the action area for rearing and migration. Additionally, adult steelhead and Chinook salmon could potentially spawn there. The Salmon River Lower mainstem SR spring/summer Chinook salmon population is at a high risk of extinction due to low abundance and productivity. The population needs to reach a maintained status for the MPG and ESU to attain a viable status. The Salmon River Upper Mainstem steelhead population is at a maintained status currently and this status is required to be sustained for the MPG and DPS to become viable.

No cumulative effects were identified for the action area. Ongoing impacts from private activities associated with bridge access, including existing housing impacts on floodplain function, are expected to continue into the future unchanged.

Based on the species life stages and the activities described in the submitted BA, the supplemental information provided herein, and our independent, science-based evaluation, the proposed action is expected to result in harm, harassment, and injury of up to five juvenile steelhead and five juvenile Chinook salmon within the action area during electrofishing salvage. Additionally, as described above, a small number of juvenile steelhead and Chinook salmon are expected to experience injury from exposure to elevated pH produced from water contact with freshly poured concrete at two bridge piers. These effects could last between one and four days, but effects are expected to be limited to four to six hours given proposed isolation methods, water volume, and small concrete amounts. An undefined number of juveniles from each species may also experience small reductions in growth or survival due to the temporary unavailability of 800 square feet of Salmon River habitat during construction (one month) and permanent loss of approximately 40 square feet of habitat from pier reinforcement. The presence of similar suitable habitat near the work area and the relative low abundance of each population should minimize actual harm from this pathway during construction; however, we have considered it as a possible effect of the action for small numbers of juvenile fish. Adult migration and use of the action area (staging and spawning) are not expected to change during or after the proposed action. Post-construction, a small number of juveniles may continue to experience reduced growth from the permanent loss of approximately 40 square feet of habitat. The action will not contribute to or exacerbate anticipated effects to the species from climate change.

NMFS has determined that the above described adverse effects are relatively minor. Although up to five juveniles of each species may be harassed and potentially handled, no fish are expected to

be directly killed by the action. Some juveniles will also be temporarily displaced from the work area and the same fish (or additional fish) may be exposed to temporarily elevated pH conditions within 10 yards of each pier for one to four days during concrete curing. These impacts are not substantial enough to negatively influence the viability at the population scale for either species, and the action's effects will not appreciably reduce the likelihood of the populations maintaining their current status. Because the effects of the proposed action will not be substantial enough to negatively influence viability at the population scale, the viability of the MPGs and the DPS/ESU are also not expected to be reduced. Therefore, the effects of proposed action are not likely to appreciably reduce survival of SR Basin steelhead or SR spring/summer Chinook salmon. Similarly, the action is not likely to reduce the likelihood of recovery of either species.

The PBFs important to support spawning, rearing, and migration critical habitat affected by the proposed action include: safe passage/space, water quality, substrate, forage and natural cover/shelter. Space will temporarily be reduced by approximately 800 square feet for about one month due to work area isolation. This space is currently not useable due to emergency placement of sandbags in 2023. Forage and natural cover will experience minor temporary reductions commensurate with the loss of space, but only within the small area described. Post-construction, the piers will replace approximately 40 square feet of existing habitat. This equates to a 1.5 percent reduction in cross sectional area beneath the bridge, a small but measurable permanent reduction in space and substrate. This impact is limited to the site scale. Water quality is likely to be temporarily degraded due to increased pH levels caused by uncured concrete exposure to water. Water quality effects are expected to be highest within 10 yards downstream of each of the two piers and typically last four to six hours, with potential for effects extending up to four days. Water quality effects will not extend across the entire channel, being limited by the proposed isolation measures, type of construction, and small area of concrete being poured. Additionally, the high volume of water passing the site is expected to quickly attenuate elevated pH levels. While we do expect adverse effects on critical habitat at the scale of the action area, we do not expect these effects to alter the conservation value of the habitats. Thus, when we scale up the designation, we expect the conservation value of critical habitat for SR Basin steelhead and SR spring/summer Chinook salmon to be maintained.

**Conclusion.** After reviewing and analyzing the current status of the listed species and critical habitat, 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' biological opinion that the proposed action is not likely to jeopardize the continued existence of SR Basin steelhead and SR spring/summer Chinook salmon or destroy or adversely modify their designated critical habitats.

## **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). "Harass" is further defined by interim guidance as to

“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.

**Amount or Extent of Take.** In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as ESA-listed fish are known to use the action area to rear during the time period work is proposed to occur and because the proposed action includes instream work activities that could harm or kill juvenile steelhead and juvenile Chinook salmon. In some instances, NMFS is able to quantify the amount of take; however, where available information precludes our ability to quantify take, we use surrogates to describe the incidental take pursuant to 50 CFR 402.14.

In the biological opinion, NMFS determined that incidental take would occur as follows:

1. Harm or harassment of a few juvenile steelhead and Chinook salmon during work area isolation and fish salvage activities (i.e., electrofishing) during sandbag movement at the two instream pier work areas;
2. Harm of a few juvenile steelhead and Chinook salmon from exposure to temporary, elevated pH levels caused by water exposure to uncured concrete at the two piers being stabilized; and
3. Minor reductions in juvenile steelhead and Chinook salmon growth and survival from temporary loss of approximately 800 square feet of stream habitat made unavailable during the proposed action due to work area isolation.
4. Harm due to permanent habitat loss over the life of the new project.

As described in the species effects analysis, NMFS estimated a quantify of fish potentially handled/harassed during fish salvage. NMFS estimated no more than five individuals of either species would be handled during electrofishing and none would be killed. NMFS will consider the amount of take exceeded if more than five juveniles of either species is handled during fish salvage or if any juvenile fish is killed during fish salvage activities.

Take associated with elevated pH during concrete pouring is directly related to the area of stream affected and the duration. As discussed in the species effects analysis, exposure to elevated pH is primarily expected within 10 yards downstream of the two piers and exposures are not expected to persist for more than four days. Due to the highly variable number of juveniles that may be present in the action area during the four day when concrete will be curing, we cannot determine the number of juveniles that may be harmed due elevated pH. For this reason, NMFS relies on a surrogate for the extent of take. The surrogate is casually linked to the take pathway because the scale of the effect is related to the extent and duration of elevated pH. Therefore, if pH levels



measured 10 yards downstream of either pier exceed the safe range for aquatic life (i.e., 6.5-9.0), the extent of take will have been exceeded. Similarly, if pH remains elevated above background levels for more than four days once concrete is poured at either pier, the extent of take for this pathway will be exceeded.

Take associated with lost foraging habitat and space during construction is directly related to the area of stream unavailable and the duration of the habitat's absence. The total area of stream unavailable during construction is 800 square feet; this habitat will be unavailable for up to one month. Due to the highly variable number of juveniles that may be present in the action area during construction, we cannot determine the number of juveniles that may be harmed due to this loss. For this reason, NMFS relies on a surrogate for the extent of take. The surrogate is causally linked to the take pathway because the scale of the effect is related to the amount and duration of unavailable habitat. Thus, the extent of take will be exceeded if more than 800 square feet (400 square feet at each pier) of Salmon River habitat is dewatered and/or if the habitat is unavailable for more than one month.

Take associated with permanent loss of foraging habitat and space (for the life of the repaired structure) is directly related to the area of pier expansion proposed. The total area of stream unavailable after construction will be approximately 40 square feet. Due to the highly variable number of juveniles that may be present in the action area over time, we cannot determine the number of juveniles that may be harmed by this loss. For this reason, NMFS relies on a surrogate for the extent of take. The surrogate is causally linked to the take pathway because the scale of the effect is related to the amount and duration of unavailable habitat. Thus, the extent of take will be exceeded if more than 40 square feet of habitat is eliminated.

Although the three identified take surrogates are considered coextensive with the proposed action, monitoring and reporting requirements included in this ITS 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.

**Effect of the Take.** In the biological 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 or destruction or adverse modification of critical habitat.

**Reasonable and Prudent Measures.** The "reasonable and prudent measures" listed below are measures that are necessary or appropriate to minimize and/or monitor the impact of the amount or extent of incidental take (50 CFR 402.02).

1. Minimize the extent of take from the in-water pier repair.
2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS are effective in avoiding and minimizing incidental take from permitted activities and that the extent of take is not exceeded.

**Terms and Conditions.** In order to be exempt from the prohibitions of section 9 of the ESA, the federal action agency must comply (or must ensure that any applicant or contractor complies) with the following terms and conditions. The COE or any applicant or contractor 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. The following terms and conditions implement reasonable and prudent measure 1:
  - a. During concrete pumping and curing periods (four days), the applicant shall pump any water seeping into the cofferdam areas to upland areas, where runoff cannot reenter the Salmon River. The applicant shall make every reasonable attempt to maintain dewatered coffer areas until concrete is sufficiently cured, ensuring downstream pH impacts are minimized.
2. The following terms and conditions implement reasonable and prudent measure 2:
  - a. Maintain records of the number, species, and size of fish handled during any electrofishing event in order to verify the extent of take authorized by this opinion is not exceeded.
  - b. If more than five juvenile steelhead or five juvenile Chinook salmon are captured during construction-related fish salvage or if any juveniles of either species are killed during those activities, immediately stop work and contact NMFS to determine if and how to proceed, or to determine whether reinitiation of ESA consultation is necessary.
  - c. If more than 400 square feet of the Salmon River is dewatered at either of the two pier work areas (or more than 800 square feet total), immediately stop work and contact NMFS to determine if reinitiation of consultation is required.
  - d. Starting immediately after concrete is poured, monitor pH levels a minimum of four times daily (approximately every three hours during daylight), for no less than four days, to confirm the action's effect on pH and to determine if consultation reinitiation is required.
    - i. pH shall be collected at the following locations: (1) a background site upstream of the bridge; (2) within the cofferdam area if any water is present; (3) in the Salmon River immediately outside of and at the downstream boundary of the cofferdam; and (4) at an accessible location approximately 10 yards downstream of each pier and within the estimated mixing area influenced by the work area.
  - e. During construction of forms at each pier, ensure the reinforced casing will not increase pier width more than 7 inches.
  - f. The applicant, on behalf of the COE, shall submit a post-construction report to the Snake River Basin Office email ([nmfswcr.srbo@noaa.gov](mailto:nmfswcr.srbo@noaa.gov)) within four weeks of completing construction work (one report). The report will address the monitoring identified in the proposed action and terms and conditions relevant to ensuring the amount and/or extent of take is not exceeded.

**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).

1. In the event that large woody debris hangs up on Cassidy Bridge at any future time, the COE should require the applicant to not remove large wood from the Salmon River, but instead relocate the wood downstream of the bridge where it can continue to provide natural functions necessary for the formation of complex fish habitat.
2. The COE should notify future CWA Section 404 applicants within the range of anadromous fish of the risks of development in floodplains and the potential for future property damage and environmental impacts, encouraging as little impact as possible in all cases.
3. The COE should encourage the applicant to protect existing native riparian vegetation and plant additional native vegetation in the action area to facilitate natural ecological function important for the conservation and future recovery of anadromous salmonids.

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

**Not Likely to Adversely Affect Determinations.** We reviewed the COE’s consultation request document and related materials. Based on our knowledge, expertise, and your action agency’s materials, we concur with the action agency’s conclusions that the proposed action is NLAA the following NMFS ESA-listed species and/or designated critical habitat: Snake River sockeye salmon and Snake River sockeye salmon critical habitat.

Migration for juvenile sockeye salmon from Redfish Lake to Lower Granite Dam (750 km) typically takes somewhere between 7 and 10 days (Axel et al. 2017). This equates to 75- to 107-km/day; therefore, juvenile sockeye salmon are not expected to rear in the project area but are instead expected to move quickly downstream through and beyond the action area. The permanent reduction of habitat (approximately 40 square feet), combined with the low amount of juvenile sockeye residence time at the affected site, result in insignificant effects to migrating juveniles or their critical habitat. Additional details on insignificant effect are addressed in the final BA.

## **ESSENTIAL FISH HABITAT RESPONSE**

Thank you also for your request for EFH consultation. NMFS reviewed the proposed action for potential effects on EFH pursuant to section 305(b) of the MSA, implementing regulations at

50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

We have concluded that the action would adversely affect Chinook salmon EFH designated under the Pacific Coast Salmon Fishery Management Plan (PFMC 2014). The Pacific Fishery Management Council (PFMC) designated the following five habitat types as habitat areas of particular concern (HAPCs) for salmon: complex channel and floodplain habitat, spawning habitat, thermal refugia, estuaries, and submerged aquatic vegetation (PFMC 2014). We have included EFH conservation recommendations in the following section.

### **Magnuson-Stevens Fishery Conservation And Management Act**

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). 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 may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.905(b)).

### **EFH Affected by the Proposed Action**

The proposed project occurs within EFH for various federally managed fish species within the Pacific Coast Salmon Fishery Management Plan (PFMC 2014). In addition, the project occurs within, or in the vicinity of complex channel and floodplain habitats and spawning habitat HAPCs. HAPCs are described in the regulations as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPCs are not afforded any additional regulatory protection under the MSA; however, federal projects with potential adverse impacts on HAPC will be more carefully scrutinized during the consultation process.

### **Adverse Effects on EFH**

NMFS determined the proposed action would adversely affect EFH as follows:

1. Approximately 800 square feet of habitat will be temporarily unavailable during construction (30 days).

2. Water quality will experience temporary pH increases within about 10 yards downstream of each of the two piers being stabilized for up to four days.
3. The cross-sectional areas beneath the bridge will be permanently reduced by 1.5 percent, compared to baseline conditions.

### **EFH Conservation Recommendations**

NMFS determined that the following conservation recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed action on EFH. These recommendations are similar to two of the ESA consultation's reasonable and prudent measures. There are no practical measures required to reduce the effects of the temporary loss of 800 square feet of habitat or the small amount of permanent habitat loss. Those impacts have been appropriately reduced through the design of the action and its conservation measures.

1. To reduce exposure to elevated pH downstream of the two weirs, the applicant should line the inside of sandbag cofferdams with visqueen anchored with cobbles.
2. During concrete pumping and curing periods (four days), any water seeping into the cofferdam areas should be pumped to upland areas, where runoff cannot reenter the Salmon River. Every reasonable attempt to maintain a dewatered coffer areas should be employed until concrete is sufficiently cured and downstream pH impacts are no longer occurring.

### **Statutory Response Requirement**

As required by section 305(b)(4)(B) of the MSA, the COE must provide a detailed written response 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 the 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)).


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)).

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository

<https://repository.library.noaa.gov/welcome>. A complete record of this consultation is on file at the Snake Basin Office, Boise, Idaho.

Please contact Mr. Chad Fealko, Salmon Field Office, 208-768-7707, [chad.fealko@noaa.gov](mailto:chad.fealko@noaa.gov) if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

A handwritten signature in blue ink that reads "Nancy L. Munn". The signature is written in a cursive style with a clear, legible font.

Nancy L. Munn, Ph.D.  
Acting Assistant Regional Administrator  
Interior Columbia Basin Office

cc:

K. Urbanek – COE  
S. Windham – COE  
K. Hendricks – USFWS  
C. Colter – SBT  
J. Richards – IDFG

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