UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

July 22, 2019 **Refer to NMFS No:** WCRO-2019-00347

Dana York
Branch Chief, Environmental Services E2
California Department of Transportation
1656 Union Street
Eureka, California 95501

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Fernbridge Emergency Opening Project on the Lower Eel River in Humboldt County, California (EA 01-0H070)

Dear Mr. York:

Thank you for your letter of March 19, 2019, 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 Fernbridge Emergency Opening Project.

Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA)(16 U.S.C. 1855(b)) for this action.

The California Department of Transportation (Caltrans[1]) first notified NMFS of a potential emergency project on March 15, 2017, and then on March 19, 2019 Caltrans requested consultation from NMFS regarding the emergency action to place rock to protect Fernbridge from serious bank erosion around the western abutment on State Route 211 near post mile 78.5 in Humboldt County, California. The emergency action was funded by the Federal Highway Administration and carried out by Caltrans and its contractor, beginning on March 10, 2017 and ending on May 30, 2017.

The enclosed biological opinion is based on our review of the description of the emergency action outlined in Caltrans' March 19, 2019, Post-Project Biological Assessment and describes NMFS' analysis of potential effects, and describes NMFS' analysis of potential effects on

[1] Pursuant to 23 USC 327, and through a series of Memorandum of Understandings beginning June 7, 2007, the Federal Highway Administration (FHWA) assigned and Caltrans assumed responsibility for compliance with Section 7 of the federal Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for federally-funded transportation projects in California. Therefore, Caltrans is considered the federal action agency for consultations with NMFS for federally funded projects involving FHWA. Caltrans proposes to administer federal funds for the implementation of the proposed action, and is therefore considered the federal action agency for this consultation.

threatened Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon (*O. tshawytscha*), or Northern California (NC) steelhead (*O. mykiss*), and designated critical habitat in accordance with section 7 of the ESA. Based on the best scientific and commercial information available, NMFS concludes that the action, was not likely to jeopardize the continued existence of SONCC coho salmon, CC Chinook salmon, and NC steelhead or destroy, or adversely modify designated critical habitat for these species. NMFS expects that the proposed action resulted in incidental take of SONCC coho salmon, CC Chinook salmon, and NC steelhead. An incidental take statement is included with the enclosed biological opinion.

The enclosed EFH consultation was prepared pursuant to section 305(b) of the MSA. The proposed action includes areas identified as EFH for coho salmon and Chinook salmon, Pacific Salmon species managed under the Pacific Coast Salmon Fishery Management Plan. Based on our analysis, NMFS concludes that the project adversely affected EFH for coho salmon and Chinook salmon. Therefore, NMFS provides conservation recommendations in Section 3 of this document.

Please contact Mike Kelly, Northern California Office, Arcata, at (707) 825-1622 or via email at Mike.Kelly@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Alicia Van Atta
Assistant Regional Administrator
California Coastal Office

Enclosure

cc: ARN File # 151422WCR2017AR00088
PCTS # WCR-2017-6527

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

Fernbridge Emergency Opening Project on the Lower Eel River
in Humboldt County, California

NMFS Consultation Number: *WCRO-2019-00347*

Action Agency: California Department of Transportation, District 1

Table 1. 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 Destroy or Adversely Modify Critical Habitat?
Southern Oregon/North California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*)	Threatened	Yes	No	No
California Coastal (CC) Chinook salmon (*O. tshawytscha*)	Threatened	Yes	No	No
Northern California (NC) Steelhead (*O. mykiss*)	Threatened	Yes	No	No

Table 2. Essential Fish Habitat and NMFS' Determinations:

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	Yes

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

Issued By: 

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Date: July 22, 2019

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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

NOAA's 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. 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). A complete record of this consultation is on file at the NMFS Northern California Office in Arcata, California.

1.2 Consultation History

During elevated river flows in March of 2017, the riverbank upstream of the western abutment of Fernbridge eroded to the point that the California Department of Transportation (Caltrans) declared an emergency on March 10, 2017, due to the threat that the bridge could be compromised during continuing high flows. Project activities took place beginning March 10, 2017, and ending on May 30, 2017.

Caltrans initially notified NMFS of an emergency project at Fernbridge on State Route (SR) 211 in Humboldt County on March 15, 2017. On March 16, 2017, Caltrans requested emergency consultation (technical assistance) from NMFS via email. NMFS staff (Rebecca Bernard) participated in an on-site agency meeting on March 17, 2017, and Ms. Bernard provided conservation recommendations to Caltrans. The recommendations included biological monitoring, standard impact minimization measures, native plant revegetation, and a suggestion that large logs with rootwads be incorporated into the rock slope protection (RSP). The recommendations were also incorporated into the U.S. Army Corps of Engineers' (Corps) Clean Water Act Section 404 permit.

NMFS provided a species list to Caltrans on July 10, 2018. On March 19, 2019, NMFS received a letter from Caltrans requesting formal consultation on the Project as required under 50 CFR 402.05(b) and request for MSA EFH consultation. This request included a biological assessment and EFH assessment (BA/EFHA) (Caltrans 2019) that described project implementation and analyzed effects of the action on Southern Oregon/Northern California Coast (SONCC) coho salmon, California Coast (CC) Chinook salmon and Northern California (NC) steelhead, and their designated critical habitats.

NMFS determined there was sufficient information provided in order to initiate formal consultation on March 19, 2019.

1.3 Description of Completed Federal Emergency Action

Under the ESA, “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). Under the MSA, “action” means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a Federal Agency (50 CFR 600.910).

“Interrelated actions” are those that are part of a larger action and depend on the larger action for their justification. “Interdependent actions” are those that have no independent utility apart from the action under consideration (50 CFR 402.02). NMFS and Caltrans identified no interrelated or interdependent actions related to this emergency action.

Caltrans carried out the action as an emergency to stabilize the bank and arrest erosion around the western abutment of Fernbridge on State Route 211, which is an important link between U.S. Highway 101 and the town of Ferndale. Caltrans' emergency activities were conducted between March 10 and May 30, 2017, and in-water work occurred March 10-17, 2017.

Caltrans placed half-ton rock slope protection (RSP) on the eroded bank from flush with the downstream side of the abutment, to approximately 200 feet upstream of the bridge, for approximately 275 feet of stabilized bank. Individual rocks were placed by an excavator equipped with a bucket thumb. The rock was placed from the toe of the bank, in the flowing river, up the 20 to 30-foot high slope face to just shy of the top of the bank. Total RSP placed below the ordinary high water mark (OHWM) is estimated to be 1,922 cubic yards, which equals approximately 1,260 tons of half-ton-sized rocks. At the leading upstream edge of the RSP, Caltrans embedded three large logs with rootwads projecting into the river in order to create complexity and varied habitat for various size fish at different flow rates. All equipment operated outside of flowing water.

Access to the site was provided by existing road surfaces on State Route 211. Construction activities, including mobilization and utilization of heavy equipment for rock placement, used existing road surfaces. Parking, staging, and storage of equipment and materials took place in previously disturbed open areas along the shoulder and margin of State Route 211. These areas were devoid of trees or ground vegetation. The emergency project did not affect existing riparian habitat other than a sparse covering of ruderal vegetation. The severe erosion associated with high water conditions resulted in scouring that removed all functional riparian vegetation from the work area prior to start of work.

Caltrans implemented standard construction site best management practices (BMP) to minimize adverse impacts. BMP’s included silt fencing and staked wattles to minimize sediment discharge.

2 ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their

designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provides an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an incidental take statement (ITS) that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

2.1 Analytical Approach

This biological opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "to jeopardize the continued existence of" a listed species, which is "to engage in an action that would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This biological opinion relies on the definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features" (81 FR 7214).

The designation of critical habitat uses the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a ''destruction or adverse modification'' analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this biological opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Identify the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Describe the environmental baseline in the action area.
- Analyze the effects of the proposed action on both species and their habitat using an "exposure-response-risk" approach.
- Describe any cumulative effects in the action area.
- Integrate and synthesize the above factors by: (1) Reviewing the status of the species and critical habitat; and (2) adding the effects of the action, the environmental baseline, and cumulative effects to assess the risk that the proposed action poses to species and critical habitat.
- Reach a conclusion about whether species are jeopardized or critical habitat is adversely

modified.
- If necessary, suggest an RPA to the proposed action.

2.2 Rangewide Status of the Species and Critical Habitat

This opinion examines the status of each species that would be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' current "reproduction, numbers, or distribution" as described in 50 CFR 402.02. The opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the current function of the essential PBFs that help to form that conservation value.

2.2.1 Species Description and General Life History

2.2.1.1 SONCC Coho Salmon

Coho salmon have a generally simple 3-year life history. The adults typically migrate from the ocean and into bays and estuaries towards their freshwater spawning grounds in late summer and fall, and spawn by mid-winter. Adults die after spawning. The eggs are buried in nests, called redds, in the rivers and streams where the adults spawn. The eggs incubate in the gravel until fish hatch and emerge from the gravel the following spring as fry. These 0+ age fish typically rear in freshwater for about 15 months before migrating to the ocean. The juveniles go through a physiological change during the transition from fresh to salt water called smoltification. Coho salmon typically rear in the ocean for two growing seasons, returning to their natal streams as 3-year-old fish to renew the cycle.

2.2.1.2 CC Chinook Salmon

CC Chinook salmon are typically fall spawners, returning to bays and estuaries before entering their natal streams in the early fall. The adults tend to spawn in the mainstem or larger tributaries of rivers. However, they are not known to spawn in tidally influenced mainstem river reaches. As with the other anadromous salmon, the eggs are deposited in redds for incubation. When the 0+ age fish emerge from the gravel in the spring, they typically migrate to saltwater shortly after emergence. Therefore, Chinook salmon typically enter the estuary as smaller fish compared to coho salmon. Chinook salmon are typically present in the stream-estuary ecotone, which is located in the downstream portions of major tributaries to Humboldt Bay, from early May to early September, with peak abundance in June/July (Wallace and Allen 2007). Similar to coho salmon, prey resources during out-migration are critical to Chinook salmon survival as they grow and move out to the open ocean.

2.2.1.3 NC Steelhead

Steelhead exhibit the most complex suite of life history strategies of any salmonid species. They

have both anadromous and resident freshwater life histories that can be expressed by individuals in the same watershed. The anadromous fish generally return to freshwater to spawn as 4 or 5 year old adults. Unlike other Pacific salmonids, steelhead can survive spawning and return to the ocean only to return to spawn in a future year. It is rare for steelhead to survive more than two spawning cycles. Steelhead typically spawn between December and May. Like other Pacific salmonids, the steelhead female deposits her eggs in a redd for incubation. The 0+ age fish emerge from the gravel to begin their freshwater life stage and can rear in their natal stream for 1 to 4 years before migrating to the ocean.

Steelhead have a similar life history as noted above for coho salmon, in the sense that they rear in freshwater for an extended period before migrating to saltwater. As such, they enter the estuary as larger fish (mean size of about 170 to 180 mm or 6.5 to 7.0 inches) and are, therefore, more oriented to deeper water channels in contrast to Chinook salmon that typically enter the estuary as 0+ fish. The CDFW data indicate that steelhead smolts generally migrate downstream toward the estuary between March 1 and July 1 each year, although they have been observed as late as September (Ricker et al. 2014). The peak of the outmigration timing varies from year to year within this range, and generally falls between early April and mid-May.

2.2.2 Status of Species and Critical Habitat

In this biological opinion, NMFS assesses four population viability parameters to help us understand the status of each species and their ability to survive and recover. These population viability parameters are: abundance, population productivity, spatial structure, and diversity (McElhaney et al. 2000). While there is insufficient information to evaluate these population viability parameters in a thorough quantitative sense, NMFS has used existing information, including the Recovery Plan for SONCC Coho Salmon (NMFS 2014) and Coastal Multispecies Recovery Plan (NMFS 2016), to determine the general condition of each population and factors responsible for the current status of each Distinct Population Segment (DPS) or Evolutionarily Significant Unit (ESU). We use these population viability parameters as surrogates for numbers, reproduction, and distribution, the criteria found within the regulatory definition of jeopardy (50 CFR 402. 02).

2.2.2.1 Status of SONCC Coho Salmon

SONCC Coho Salmon Abundance and Productivity: Although long-term data on coho salmon abundance are scarce, the available evidence from short-term research and monitoring efforts indicate that spawner abundance has declined since the last status review for populations in this ESU (Williams et al. 2016). In fact, most of the 30 independent populations in the ESU are at high risk of extinction because they are below or likely below their depensation threshold, which can be thought of as the minimum number of adults needed for survival of a population.

SONCC Coho Salmon Spatial Structure and Diversity: The distribution of SONCC coho salmon within the ESU is reduced and fragmented, as evidenced by an increasing number of previously occupied streams from which SONCC coho salmon are now absent (NMFS 2001, Good et al. 2005, Williams et al. 2011, Williams et al. 2016). Extant populations can still be found in all major river basins within the ESU (70 FR 37160). However, extirpations, loss of brood years, and sharp declines in abundance (in some cases to zero) of SONCC coho salmon in several

streams throughout the ESU indicate that the SONCC coho salmon's spatial structure is more fragmented at the population-level than at the ESU scale. The genetic and life history diversity of populations of SONCC coho salmon is likely very low and is inadequate to contribute to a viable ESU, given the significant reductions in abundance and distribution.

2.2.2.2 Status of CC Chinook Salmon

CC Chinook Salmon Abundance and Productivity: Low abundance, generally negative trends in abundance, reduced distribution, and profound uncertainty as to risk related to the relative lack of population monitoring in California have contributed to NMFS' conclusion that CC Chinook salmon are likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Where monitoring has occurred, Good et al. (2005) found that historical and current information indicates that CC Chinook salmon populations are depressed. Uncertainty about abundance and natural productivity, and reduced distribution are among the risks facing this ESU. Concerns regarding the lack of population-level estimates of abundance, the loss of populations from one diversity stratum, as well as poor ocean survival contributed to the conclusion that CC Chinook salmon are "likely to become endangered" in the foreseeable future (Good et al. 2005, Williams et al. 2011, Williams et al. 2016).

CC Chinook Salmon Spatial Structure and Diversity: Williams et al. (2011) found that the loss of representation from one diversity stratum, the loss of the spring-run history type in two diversity substrata, and the diminished connectivity between populations in the northern and southern half of the ESU pose a concern regarding viability for this ESU. Based on consideration of this updated information, Williams et al. (2016) concluded the extinction risk of the CC Chinook salmon ESU has not changed since the last status review. The genetic and life history diversity of populations of CC Chinook salmon is likely very low and is inadequate to contribute to a viable ESU, given the significant reductions in abundance and distribution.

2.2.2.3 Status of NC Steelhead

NC Steelhead Abundance and Productivity: With few exceptions, NC steelhead are present wherever streams are accessible to anadromous fish and have sufficient flows. The most recent status review by Williams et al. (2016) reports that available information for winter-run and summer-run populations of NC steelhead do not suggest an appreciable increase or decrease in extinction risk since publication of the last viability assessment (Williams et al. 2011). Williams et al. (2016) found that population abundance was very low relative to historical estimates, and recent trends are downwards in most stocks.

NC Steelhead Spatial Structure and Diversity: NC steelhead remain broadly distributed throughout their range, with the exception of habitat upstream of dams on both the Mad River and Eel River, which has reduced the extent of available habitat. Extant summer-run steelhead populations exist in Redwood Creek and the Mad, Eel (Middle Fork) and Mattole Rivers. The abundance of summer-run steelhead was considered "very low" in 1996 (Good et al. 2005), indicating that an important component of life history diversity in this DPS is at risk. Hatchery practices in this DPS have exposed the wild population to genetic introgression and the potential for deleterious interactions between native stock and introduced steelhead. However, abundance and productivity in this DPS are of most concern, relative to NC steelhead spatial structure and

diversity (Williams et al. 2011).

2.2.2.4 Status of Critical Habitats

The condition of SONCC coho salmon, CC Chinook salmon, and NC steelhead critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that currently depressed population conditions are, in part, the result of the following human induced factors affecting critical habitat: overfishing, artificial propagation, logging, agriculture, mining, urbanization, stream channelization, dams, wetland loss, and water withdrawals (including unscreened diversions for irrigation). Impacts of concern include altered stream bank and channel morphology, elevated water temperature, lost spawning and rearing habitat, habitat fragmentation, impaired gravel and wood recruitment from upstream sources, degraded water quality, lost riparian vegetation, and increased erosion into streams from upland areas (Weitkamp et al. 1995). Diversion and storage of river and stream flow has dramatically altered the natural hydrologic cycle in many of the streams within the ESU's and DPS. Altered flow regimes can delay or preclude migration, dewater aquatic habitat, and strand fish in disconnected pools, while unscreened diversions can entrain juvenile fish.

2.2.3 Factors Responsible for Decline of Species and Degradation of Critical Habitat

The factors that caused declines of species and degradation of critical habitat include hatchery practices, ocean conditions, habitat loss due to dam building, degradation of freshwater habitats due to a variety of agricultural and forestry practices, water diversions, urbanization, over-fishing, mining, climate change, and severe flood events exacerbated by land use practices (Good et al. 2005, Williams et al. 2016). Sedimentation and loss of spawning gravels associated with poor forestry practices and road building are particularly chronic problems that can reduce the productivity of salmonid populations. Late 1980s and early 1990s droughts and unfavorable ocean conditions were identified as further likely causes of decreased abundance (Good et al. 2005). From 2014 through 2016, the drought in California reduced stream flows and increased temperatures, further exacerbating stress and disease. Ocean conditions have been unfavorable in recent years (2014 to present) due to the El Nino in 2015 and 2016. Reduced flows can cause increases in water temperature, resulting in increased heat stress to fish and thermal barriers to migration.

One factor affecting the range wide status and aquatic habitat at large is climate change. Information since these species were listed suggests that the earth's climate is warming, and that this change could significantly impact ocean and freshwater habitat conditions, which affect survival of species subject to this consultation. In the coming years, climate change will influence the ability to recover coho salmon in most or all of their watersheds. Steelhead are particularly vulnerable to climate change due to their need for year-round cool water temperatures (Moyle 2002). Through effects on air temperatures and stream flows, climate change is expected to increase water temperatures to the detriment of coho salmon. Climate change effects on stream temperatures within Northern California are already apparent. For example, in the Klamath River, Bartholow (2005) observed a 0.5°C per decade increase in water temperature since the early 1960's, and model simulations predict a further increase of 1-2°C over the next 50 years (Perry et al. 2011).

In coastal and estuarine ecosystems, the threats from climate change largely come in the form of sea level rise and the loss of coastal wetlands. Sea levels will likely rise exponentially over the next 100 years, with possibly a 50-80 cm rise by the end of the 21st century (IPCC 2007). This rise in sea level will alter the habitat in estuaries and either provides an increased opportunity for feeding and growth or in some cases will lead to the loss of estuarine habitat and a decreased potential for estuarine rearing. Marine ecosystems face an entirely unique set of stressors related to global climate change, all of which may have deleterious impacts on growth and survival while at sea. In general, the effects of changing climate on marine ecosystems are not well understood given the high degree of complexity and the overlapping climatic shifts that are already in place (e.g., El Niño, La Niña, Pacific Decadal Oscillation) and will interact with global climate changes in unknown and unpredictable ways. Overall, climate change is believed to represent a growing threat, and will challenge the resilience of listed salmonids in Northern California.

2.3 Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area for the project includes access roads and staging areas for equipment and workers; 275 feet of streambank where RSP was placed, which included placement in water at the toe of the slope; waters downstream where turbidity extended, which Caltrans estimated was approximately 300 feet downstream along the western/southern bank.

2.4 Environmental Baseline

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 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

In the action area, the threat to SONCC coho salmon, CC Chinook salmon, and NC steelhead from climate change is likely to include a continued increase in average summer air temperatures; more extreme heat waves; and an increased frequency of drought (Lindley et al. 2007). In future years and decades, many of these changes are likely to further degrade habitat throughout the watershed by, for example, reducing streamflow during the summer and raising summer water temperatures. Many of these impacts will likely occur in the action area via higher water temperatures and reduced flows in both the tributaries and mainstem of the Eel River.

High water temperatures greatly limit the quality and quantity of suitable summer rearing habitat, and the action area is predominantly a migratory corridor for adult and smolt life stages, as well as rearing habitat for juvenile life stages during the wet season. Older age classes of steelhead can be found in cooler microhabitats throughout the summer, generally near riffles. The composition of the substrate in the action area is primarily cobble, gravel, and associated fines (silt/clay particles). The watershed consists of soils that are prone to erosion. Riparian vegetation capable of providing shade to the Eel River is limited to northern/eastern side of the river across from the action area, and there are only a few individual trees within approximately 4,000 feet upstream of the action area. The bank erosion being addressed by the proposed action resulted in

the loss of a small stand of trees adjacent to the bridge abutment. Additionally, the active river channel is over 1,000 feet wide, so riparian trees have little impact on water temperatures in the action area.

The action area is near the upper extent of tidal influence. Consequently, all anadromous salmonids in the Eel River watershed, with the exception of a few small creeks that drain into the estuary, must pass by or through the action area once as juveniles and again as adults. The action area does not provide spawning habitat for salmonids.

2.4.1 Status of Listed Species and Critical Habitat in the Action Area

As noted, nearly all anadromous salmonids from all Eel River populations use the action area during their migrations. The populations discussed below inhabit streams in proximity to the action area, so are the populations most likely to use the action area for seasonal rearing.

The action area is located in the range of the SONCC coho salmon Mainstem Eel River population, which the NMFS SONCC Coho Salmon Recovery Plan indicates is at high risk of extinction (NMFS 2014). The action area is located in the range of the Chinook salmon Lower Eel/South Fork population, which NMFS Coastal Multispecies Recovery Plan suggests is likely well below the number needed to be at a low risk of extinction (NMFS 2016). The action area is located in the range of the Lower Mainstem Eel River Tributaries population of NC steelhead, which is a population that is dependent on other Eel River populations to be sustained (NMFS 2016).

The condition of SONCC coho salmon, CC Chinook salmon and NC steelhead critical habitat, specifically its ability to provide for their conservation, is degraded from conditions known to support viable populations. The Eel River consistently remains in the stressful to lethal range for salmonids during the summer (Kubicek 1977, NMFS 2014). Despite being tidally influenced, sea water has little, if any, potential to moderate temperature in the action area. The action area does not include deep pool habitat that would provide thermal stratification, nor is there cool tributary inflow into the action area. Springs or seeps below the low-flow waterline may provide a limited number of cool water microhabitats during this time period. Water flowing interstitially through gravel deposits provides the greatest amount of cool water inflow during the summer months. Juvenile steelhead may be found near these cool inputs.

The highest threat to SONCC coho salmon, CC Chinook salmon, and NC steelhead in the action area is likely related to the loss of habitat diversity resulting from the arrest of natural habitat forming processes by levying, bank stabilization and floodplain development. These impacts are in part due to the presence of Fernbridge and its western approach, which is constructed of fill material that obstructs natural flow across the floodplain. Additionally, floodplain flows redirected by the western approach may have contributed to scour around the abutment.

Satellite images of the floodplain surrounding the action area show many scars of old channels on open agricultural land. The natural condition of this area was likely a mosaic of channels within a densely vegetated floodplain. The present condition of the Eel River in the action area is highly simplified and provides poor habitat conditions for rearing salmonids.

Additionally, because the action area is near the head of tidal influence, it is an important holding and resting area for adult salmonids as they begin their freshwater migration. The bridge piers appear to provide some depth and cover for holding adults, but the lack of large wood or other cover elements is likely responsible for loss of holding habitat compared to the historic condition.

2.4.2 Previous ESA Section 7 Consultations in the Action Area

There are no known previous section 7 consultations in the action area.

2.5 Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

2.5.1 Turbidity and Contaminant Exposure

Periods of turbidity likely extended as far as 300-feet downstream for approximately seven days during the in-water rock placement portions of work. No turbidity monitoring took place and work was performed during high flows and turbid water conditions, which made visual evaluation of the extent and intensity of turbidity difficult. However, the project was implemented during the month of March in tidally influenced water, so few, if any, of the smallest and most vulnerable life stages of salmonids would have been exposed. The adult and larger juvenile salmonids that may have been present appear to be little impacted by the high concentrations of suspended sediments that occur during winter storm runoff episodes (Bjornn and Reiser 1991). Therefore, any impacts due to exposure to brief pulses of localized elevated turbidity would likely have been insignificant.

Contaminants from heavy equipment were managed in accordance with Caltrans standard best management practices and no contaminant discharges are known to have occurred. Therefore, exposure of listed salmonids to construction related contaminants was discountable.

2.5.2 Exposure to Rock Placement

A precise count of rocks placed in water is not available. However, a total of 5,049 tons of half-ton rock (each sized approximately ¾ cubic yard) was placed, and approximately 25% of the rock was placed below the ordinary high water mark (OHWM). Caltrans estimated OHWM at Fernbridge as 30,000 cubic feet per second (CFS) at the upstream Scotia Eel River stream gage. The flows at Scotia ranged between 23,000 and 10,000 CFS during in-water work, so not all rock placed below OHWM would have been placed in water. However, Caltrans used a "mounded toe approach" because elevated flows prevented them from digging a key trench at the toe. This approach meant that relatively more rocks would have been placed in water relative to the thickness of the remaining out-of-water rock. Therefore, a conservative rough estimate of half of the rocks placed below OHWM being placed in water seems reasonable. Given that the average

weight of each rock is ½ ton, this leads to an estimate of approximately 1,250 rocks being placed in water.

The rocks were placed individually by an excavator with a "thumb" on the bucket, which would have made crushing of fish less likely than if the rocks had been dropped individually or dumped several at a time. This method of placement would also likely have been quiet enough that barotrauma due to exposure to impulse sound energy was unlikely. However, the turbidity during work would likely have prevented fish from seeing the excavator and being spooked away. Therefore, there was some risk of fish being crushed during work. Additionally, localized turbulence combined with a turbidity pulse produced by rocks being placed could disorient juvenile fish in the immediate area, which could make them more vulnerable to predation. However, the project was implemented during the month of March in tidally influenced water, so few, if any, of the smallest and most vulnerable life stages of salmonids would have been exposed.

Based on data provided by Allan Renger of CDFW (personal communication, April 3, 2017) adult Chinook and coho would have completed their upstream spawning migrations through the action area by the time of in-water work; however, adult steelhead would likely have been entering the river. Steelhead kelts may have been running back downstream after spawning; however, the action took place at the far downstream end of the river early in the spawning season, so few, if any, kelts would likely have been exposed. The action also occurred during the early part of the smolt outmigration for all three salmonid species, so some smolts, or rearing pre-smolts, could have been exposed. These potentially rearing fish would include year-old coho and multiple year classes of juvenile steelhead.

The chances of injuring an individual fish while placing an individual rock is very low. However, given the number of rocks placed, NMFS finds it unlikely that no fish were exposed to the approximately 1,250 rocks placed in water. Caltrans observed no injured fish during work, but NMFS cannot conclude that no fish were injured given the difficulty of observing small fish in the turbid conditions.

NMFS believes that adult steelhead that have just entered the river may be too strong and athletic to be contacted or disoriented by a rock as it is individually placed. We do not rule out that this may happen, but we think it is extremely unlikely and therefore discountable. Juvenile fish of all three species would be less likely to be able to avoid contact with moving rocks, and NMFS thinks that enough rocks were placed, and enough juvenile salmonids were present, that exposure to rock placement is not discountable.

Given the relative numbers of each species of juvenile salmonids that may have been in the action area, juvenile steelhead would have been the most likely fish to have been crushed or otherwise injured by rock placement – then coho and then Chinook.

The following estimates are highly speculative, but given a greater-than-discountable chance of injuring a fish, and the number of rocks placed, some very low number of fish may have been injured. NMFS believes that a reasonable conservative estimate would include five juvenile steelhead, two one-year-old coho, and one outmigrant juvenile Chinook that may have been

injured during rock placement in the water. Of course, it is possible that no fish were injured, or that more fish than this estimate were injured, but NMFS believes that no more than a few juvenile fish would have been killed or injured.

2.5.3 Effects to Critical Habitat

Bank stabilization arrests a river's ability to migrate laterally and create/maintain aquatic habitat, and can result in channel incision and other unfavorable morphological responses (Hall et al. 2007). Additionally, RSP bank stabilization degrades the local habitat by interfering with benthic food production; interferes with establishment of overhanging riparian vegetation and associated cover and food production; provides poor quality cover for rearing salmonids; and can enhance habitat for salmonid predators like sculpin (Peters et al. 1998).

Because the action prevents formation of habitat by arresting normal channel function in the action area, it may adversely impact all PBFs of critical habitat, with the exception of spawning areas due to the action area being in a tidally influenced reach.

As described in the Environmental Baseline section above, the action area lies within a highly impacted and simplified reach of the lower mainstem Eel River that includes other areas of bank stabilization and levying. For example, NMFS' SONCC Coho Salmon Recovery Plan (2014) lists "lack of floodplain and channel structure" as one of the two top stresses that limit coho recovery. In order for natural riverine processes to be meaningfully restored and lead to improved floodplain and channel structure, a significant reworking of infrastructure on the river would be necessary. The new project makes this possibility slightly less likely.

According to Pat Higgins, fish biologist and Managing Director of the Eel River Recovery Project (personal communication to Mike Kelly, 2017), the adult migration corridor, and specifically holding habitat, could have been altered by the project. The thought is that the bank armoring could change the way water naturally maintains a scour hole near the southern/western end of Fernbridge. Mr. Higgins suggested that Caltrans incorporate some large logs into the rock structure to help offset possible degradation of holding habitat. This recommendation was subsequently included in the Corps' Clean Water Act permit, and Caltrans incorporated the recommendation into the action. And after the first winter the logs appear to have created some scour and overhead cover that could serve as adult holding habitat.

Additionally, NMFS must consider whether future impacts from a structure should be considered effects of the action. To do this, we consider whether the proposed action extends the useful life of a structure in a meaningful way (NMFS 2018). Had the emergency stabilization project not taken place, the bridge abutment could have been damaged to the point that the bridge would have been closed and require extensive repairs. However, Fernbridge was constructed in 1911 and has survived many floods, including the Christmas 1964 flood that wiped out many other bridges in the Eel River basin, so it appears to be a very stable structure apart from localized scour events. NMFS believes that the need to provide transportation access to Ferndale, combined with the stability of the existing bridge and the long-term planning and construction required to fully replace Fernbridge, indicates that repairs would have been made to preserve the structure as-is, and would not have hastened the replacement of Fernbridge with a more environmentally compatible structure. In fact, if the emergency repairs had not taken place, the

work required to repair the abutment would likely have had a greater impact than the emergency work. Therefore, we do not believe that future impacts of Fernbridge should be considered effects of the action.

2.5.4 Combined Effects

The potential exists for simultaneous construction-related impacts to have a synergistic effect that is greater or different than each stressor acting alone. Simultaneous project impacts may include visual impacts from workers and equipment working near or over the watercourses at the same time that fish may be exposed to noise and vibration from construction equipment. Fish may also be exposed to noise and/or visual disturbances during minor increases in turbidity.

This project was unlikely to produce visual disturbance due to the turbid background condition of water present during construction. However, other direct impacts that could occur simultaneously include exposure to turbidity at the same time as being disoriented or crushed by a rock. Obviously, exposure to turbid water would be irrelevant if a fish were crushed. Simultaneous exposure to localized turbulence and elevated turbidity as a rock is placed could increase the disorientation of a small fish. However, we considered this combined effect in Section 2.5.2. Because no other combined effects are expected to be additive, NMFS does not expect any further reductions in listed salmonid fitness from any combined effects of individual construction elements.

2.6 Cumulative Effects

"Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

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

SONCC coho salmon, CC Chinook salmon, and NC steelhead in the action area are likely to be affected by future, ongoing non-federal activities like cannabis cultivation, timber harvest, and recreation from upstream sources. Cannabis cultivation requires water to be diverted from streams or otherwise removed to irrigate crops, contributing to diminished stream flow and higher water temperatures.

2.7 Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to

species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), 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 diminishes the value of designated or proposed critical habitat for the conservation of the species.

As described in NMFS' SONCC Coho Salmon Recovery Plan (2014) and NMFS' Coastal Multispecies Recovery Plan (2016), SONCC coho salmon, CC Chinook salmon, and NC steelhead have all declined to a large degree from historic numbers. CC Chinook salmon have fragmented population structures, placing them at additional risk. Summer run populations of NC steelhead are in very poor condition. Due to the timing of the Project, NMFS expects that no adult CC Chinook salmon or SONCC coho salmon were present during construction. NMFS expects that some unknown number of adult and juvenile NC steelhead, as well as some juvenile CC Chinook and SONCC coho would have been present. As described in the Effects of the Action section, NMFS expects that very few, if any, of these fish would have been injured due to rock placement in water. NMFS thinks a reasonable estimate, based on life history timing and project methods, would be five juvenile steelhead, two one-year-old coho, and one outmigrant juvenile Chinook that may have been injured during rock placement in the water.

Outside of the action area, each of these species continues to be present in the Eel River watershed and many Eel River tributaries. Due to the relatively large number of juveniles produced by each spawning pair, spawning by each of these species in the Eel River watershed and the broader population areas would be expected to produce enough juveniles to replace any that were lost at the project site due to crushing. NMFS does not expect that the potential small loss of juveniles by this project would impact future adult returns for SONCC coho salmon, CC Chinook salmon, or NC steelhead.

As described in the Effects of the Action section, the project may have reduced the quality of migratory and rearing habitat for juvenile salmonids. The project also had the potential to affect adult holding habitat, but that possibility may have been reduced by incorporation of the three large logs placed within the rock structure. The project also further reduced the likelihood of natural habitat forming processes being re-established in the lower Eel River.

2.8 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, any effects of interrelated and interdependent activities, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of SONCC coho salmon, CC Chinook salmon, or NC steelhead, or destroy or adversely modify their designated critical habitat.

2.9 Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "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.

The recommendations provided by NMFS during the emergency response function in place of terms and conditions with respect to the incidental take caused by the emergency response, and are incorporated here as terms and conditions of this consultation. Thus, to the extent that the emergency response action was performed in compliance with those recommendations, the associated incidental take is considered exempt from the ESA take prohibition.

2.9.1 Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take was reasonably certain to have occurred as follows:

> Five juvenile steelhead, two one-year-old coho, and one outmigrant juvenile Chinook may have been killed or injured during rock placement in the water.

2.9.2 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.

2.9.3 Recommendations Provided by NMFS during the Emergency Response

1. A qualified biologist should monitor in-water activities and conduct fish collections, if needed, in a manner which minimizes all potential risks to listed salmonids.
2. If any salmonids are found dead or injured during visual observations, the biologist shall contact NMFS biologist Rebecca Bernard by phone immediately at (707) 825-1622.
3. All appropriate best management practices shall be implemented throughout the project site to help minimize sediment disturbance and suspension within the water.
4. All staging, maintenance, and storage of heavy machinery should be conducted in such a location and manner that no fuel, oil, or other petroleum products may run off or be washed by rainfall into the water.
5. Due to the poor salmonid habitat value of rock slope protection (RSP), you should

attempt to use large diameter trees with rootwads projecting into the stream channel intertwined with RSP or otherwise anchored to the stream bank.

6. Restoration and re-vegetation work for temporary effects should be implemented using native California plant species collected on-site or from local sources.

Caltrans implemented all of the above recommendations as appropriate.

2.10 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

Caltrans implemented the recommendations outlined in Section 2.9.3. NMFS has no further conservation recommendations that would minimize direct or indirect impacts of the action. (However, we provide Essential Fish Habitat Conservation Recommendations in Section 3.3 below.)

2.11 Reinitiation of Consultation

This concludes formal consultation for the Fernbridge Emergency Opening Project (EA 01-0H070).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 Caltrans and descriptions of EFH for Pacific Coast salmon (PFMC 2014) contained in the fishery management plans developed by the Pacific Fisheries Management Council (PFMC) and approved by the Secretary of Commerce.

3.1 Essential Fish Habitat Affected by the Project

Essential Fish Habitat is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802[10]). "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). The term "adverse effect" means any impacts which reduce the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrates and loss of, or injury to, benthic organisms, prey species, and their habitats, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of it and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.910). The EFH consultation mandate applies to all species managed under a Fishery Management Plan (FMP) that may be present in the action area.

The Pacific Coast Salmon FMP contains EFH that will be adversely affected by the Project. Furthermore, the project is located in a Habitat Area of Particular Concern (HAPC) for federally managed fish species (Chinook and coho salmon) under the Pacific Coast Salmon FMP. HAPC are described in the regulations as subsets of EFH that are identified based on one or more of the following considerations: the importance of the ecological function provided by the habitat; the extent to which the habitat is sensitive to human-induced environmental degradation; whether, and to what extent, development activities are, or will be stressing the habitat type; and the rarity of the habitat type (50 CFR 600.815(a)(8)). Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC are more carefully scrutinized during the consultation process. The HAPCs developed for complex channel and floodplain habitat was adversely affected by the emergency action.

3.2 Adverse Effects on Essential Fish Habitat

Both coho salmon and Chinook salmon are expected to occur within the action area. The effects to coho salmon and Chinook salmon critical habitat have already been described in Section 2.5, the Effects of the Action section. The adverse effects of the action on Pacific Coast Salmon EFH are as follows:

1. Temporary habitat degradation from increased suspended sediment, turbidity and placement of rock.
2. Additional loss of habitat forming processes in the lower Eel River due to bank armoring.

3. Reduction of the ability of riparian vegetation to re-establish in the area of bank armoring.

3.3 Essential Fish Habitat Conservation Recommendations

As described in the Effects of the Action section, placement of bank armoring in the form of large rock is likely to further reduce important habitat forming processes including lateral migration of the channel across the existing floodplain, and re-establishment of riparian vegetation. Therefore, NMFS suggests the following Conservation Recommendations to minimize or compensate for the adverse effects:

1. NMFS recommends that should Fernbridge require additional protection due to upstream erosion or continued erosion in the action area, Caltrans should treat these areas with biotechnical bank stabilization techniques. These techniques would incorporate live plantings of appropriate native species such as willows, and large wood to the extent practicable. These additional treatments, if deemed necessary, should be carried out under normal planning, including an MSA/ESA consultations with NMFS, rather than as an emergency when bioengineering techniques are less practical.
2. NMFS recommends that when the time comes to replace Fernbridge, Caltrans considers constructing a bridge and approaches that fully span the floodplain, or includes a causeway with foundations deep enough to allow lateral migration of the channel. All existing rock placed to protect Fernbridge should also be removed at that time.

Fully implementing these EFH conservation recommendations would protect, by avoiding or minimizing the adverse effects described in section 3.2, above, potentially hundreds of acres of designated EFH for Pacific Coast salmon.

3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, Caltrans 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 time frames 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

Caltrans 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 effects the basis for NMFS' EFH Conservation Recommendations (50 CFR600.920(1)).

4 DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

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 Caltrans and the Federal Highway Administration. Other interested users could include the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, local landowners and conservation groups. A copy of this opinion was provided to Caltrans. 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

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 and 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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