



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
650 Capitol Mall, Suite 5-100  
Sacramento, California 95814-4700

Refer to NMFS No: WCRO-2019-04039

August 21, 2020

Laura Loeffler  
Environmental Branch Chief  
District 3  
California Department of Transportation  
703 B Street  
Marysville, California 95901

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens  
Fishery Conservation and Management Act Essential Fish Habitat Response for the Watt  
Avenue Bridge Replacement Project

Dear Laura Loeffler:

Thank you for your letter of April 8, 2020, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Watt Avenue Bridge Replacement Project. This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

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 (16 U.S.C. 1855(b)) for this action.

Based on the best available scientific and commercial information, the biological opinion concludes that the proposed Project is not likely to jeopardize the continued existence of the federally listed as threatened California Central Valley steelhead distinct population segment (*Oncorhynchus mykiss*), and is not likely to destroy or adversely modify its designated critical habitat. NMFS has included an incidental take statement with reasonable and prudent measures and non-discretionary terms and conditions that are necessary and appropriate to avoid, minimize, or monitor incidental take of listed species associated with the Project.

NMFS recognizes that Caltrans has assumed the Federal Highway Administration's (FHWA) responsibilities under Federal environmental laws for this project as allowed by a Memorandum of Understanding (NEPA Assignment) with the FHWA effective December 23, 2016. As such, Caltrans serves as the lead Federal Action Agency for the proposed Project.



Please contact Elizabeth Keller at the California Central Valley Office of NMFS at (916) 930-3606 or via email at [Elizabeth.keller@noaa.gov](mailto:Elizabeth.keller@noaa.gov) if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

A handwritten signature in cursive script that reads "A. Catherine Marcinkevage".

Cathy Marcinkevage  
Acting Assistant Regional Administrator  
California Central Valley Office

Enclosure

cc: Copy to File No: 151422-WCR2019-SA00563



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

Watt Avenue Bridge Replacement

NMFS Consultation Number: WCRO-2019-04039

Action Agency: California Department of Transportation (Caltrans)

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely To Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Central Valley steelhead ( <i>Oncorhynchus mykiss</i> )	Threatened	Yes	No	Yes	No

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes

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

Issued  
 By:

*A. Catharine Marcinkevage*

Cathy Marcinkevage  
 Acting Assistant Regional Administrator for California Central Valley Office

Date: August 21, 2020



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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

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

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

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

### 1.2. Consultation History

- On November 26, 2019, NMFS received a consultation request letter and Biological Assessment (BA) from Caltrans requesting formal consultation on the Watt Avenue Bridge Replacement Project (Project)
- On December 16, 2019, NMFS requested additional Project information.
- On February 6, 2020, NMFS and Caltrans met on-site to discuss the Project.
- On February 24, 2020, NMFS sent a letter notifying Caltrans that the consultation was considered withdrawn, due to lack of response with sufficient information to begin consultation.
- On April 8, 2020, NMFS received sufficient information and consultation was initiated.

### 1.3. Proposed Federal 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 MSA, Federal action means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a Federal Agency (50 CFR 600.910).]

#### *Project Description*

The Placer County Department of Public Works (County) in conjunction with the California Department of Transportation (Caltrans) is proposing to construct a replacement bridge along

Watt Avenue (Bridge No. 19C-0084) over Dry Creek due to the existing bridge's functionally obsolete and hydraulically deficient status, as determined by the Federal Highway Administration (FHWA) criteria. The Project would be located in southwestern corner of Placer County near the border of Sacramento County where Watt Avenue crosses Dry Creek. The Proposed Action would be on the Rio Linda CA USGS 7.5' Quadrangle within Township 10 North, Range 5 East, Section 11.

The Project would remove and replace the existing bridge structure to meet current standards. The existing bridge was built in 1940 and consists of a three-span structure composed of steel girders and a concrete cast-in-place deck. The bridge is founded on solid wall reinforced concrete piers and seat abutments with monolithic wingwalls of unknown foundation type. It currently has a length of approximately 171 feet and a width of approximately 25 feet. The existing bridge shades approximately 0.03 acres of Dry Creek from the overwater structure, while the new bridge would shade approximately 0.14 acres of Dry Creek.

### *Proposed New Bridge*

The proposed bridge would be approximately 375 feet long with a maximum width of approximately 130 feet. In addition, the proposed bridge elevation would be approximately 8 feet higher than the existing bridge in order to meet the Central Valley Flood Protection Board clearance requirements. The centerline alignment of the proposed bridge would be parallel to and approximately 43 feet west of the existing bridge centerline. The new bridge would span the creek, leaving no piers within the normal bank-full area of the channel.

### *Construction Scheduling*

Construction is currently scheduled to start in the spring of 2021 lasting 18 to 24 months. All work within Dry Creek would be conducted during the low-flow season (June 15 to September 30).

Construction would consist of the following activities in this general order:

- Installing construction area and detour signs: Sufficiently in advance of construction operations, detour signs would be installed identifying the road closure and detour routes. Signs would remain in place throughout the duration of construction.
- Relocating utilities (if required): Existing utilities which conflict with proposed improvements and equipment required to install piling and erect girders would be relocated.
- Clearing, grubbing, and tree removals: Portions of existing roadway, hardscape, and landscaping in conflict with construction would be removed. Areas around the corners of the new bridge would be cleared of vegetation and fencing to gain access for constructing the new bridge. Vegetation and trees adjacent to Dry Creek and within the footprint of the new bridge would be removed.

### *In-channel Work*

Due to the existing level of scour, the foundations for the replacement bridge would be supported by large diameter cast-in-drill hole (CIDH) piles. CIDH piles are reinforced concrete piles cast in holes drilled to predetermined elevations. To install CIDH piles, a borehole is drilled into the ground then concrete and steel reinforcement cages are placed into the borehole to form the pile. CIDH piles would not use an impact hammer (Caltrans 2015). Piles would be 30 inches in diameter at the abutments and 96 inches in diameter at the piers. Prior to construction, a pile installation plan would be prepared by the contractor for approval by the County, in conformance with applicable permits and environmental measures and conditions. All drilling slurry from the CIDH pile construction would be contained in holding tanks and properly disposed of offsite.

New bridge construction would involve placement of falsework to support the wet concrete of the superstructure, construction bridge formwork, placing reinforcement and then casting the bridge superstructure.

### *Dewatering*

Prior to entering the flowing portion of the channel, a flow diversion consisting of either multiple corrugated metal or plastic pipe culverts, K-rail with visqueen, sand or gravel bags, or an equivalent method would be temporarily installed in the work area for removal of the existing bridge. The area of the cofferdam system or other dewatering structures would be dewatered in order to create dry working space. About 580-linear feet (0.75 acres) of Dry Creek would be dewatered for up to 5 months during the dry season (June 15 to September 30) to allow construction in dry conditions. This flow diversion would occur during the summer work window, when there are low flows and high-water temperatures. Pipes may be installed to allow for fish passage to be maintained during construction. The dewatering area would be 0.75 acres, and the diversion would only be in place during the in-channel work window of June 15 – September 30.

During removal of the existing bridge, a tarp or other approved barrier would be deployed below the structure to prevent debris from falling to the ground or entering into the water or channel below the work site. Standard Best Management Practices (BMPs), including the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would be adhered to in order to minimize turbidity increases and sedimentation that could result from construction activities. The temporary cofferdams and culvert would be removed after the completion of foundation and abutment construction and after placement of rock slope protection (RSP). All in-channel work would be limited to the dry season (June-September).

### *Fish Capture and Relocation*

Any fish captured from the isolated work area would be immediately relocated to the main stream channel. Fish relocation operations would take place early in the day, prior to warming air, to reduce stress to possible trapped fish, both juveniles and adults. A NMFS-approved fisheries biologist would use seine nets to conduct the fish capture/relocation. Fish gathered in the seine would be immediately transferred to buckets containing oxygenated stream water.



Captured fish would be released prior to another pass through the enclosed cofferdam area. All captured fish would be released at least 100 feet downstream of the project.

### *Demolition*

Demolition of the existing bridge would be performed in accordance with the Caltrans Standard Specifications modified to meet environmental permit requirements. Equipment would include hydraulic hammer, hoe ram, and jack hammer. All concrete and other debris resulting from bridge demolition would be removed from the work zone and disposed of by the contractor. The construction contractor would prepare a bridge demolition plan. The construction staging areas would be located on the western side of Watt Avenue, with one area north of Dyer Lane and a second area south of Dry Creek.

The existing bridge would be demolished and properly disposed of offsite. The creek below the bridge would be protected from contamination and all debris generated by the demolition by a tarp or other approved barrier. Heavy equipment may be required to demolish and remove such features. All debris generated by the demolition would be removed from the site.

### *Compensatory Mitigation*

To compensate for impacts to California Central Valley (CCV) steelhead, critical habitat, and EFH and removal of riparian vegetation resulting from the proposed action, off-site mitigation credits for salmonids would be purchased from a NMFS-approved mitigation bank. Credit purchase ratios would vary based on habitat type and permanent or temporary impacts.

Credits would be purchased at a 1:1 ratio for permanent aquatic habitat impacts (0.18 acre) and a 3:1 ratio for permanent removal of riparian vegetation associated with the bridge construction (2.43 acre). A total of 7.47 acres of credits would be purchased. Table 2 (Section 2.5.3) outlines proposed permanent and temporary impacts to habitat types within the project area. NMFS-approved mitigation banks with service areas that include the proposed action area are the Fremont Landing Conservation Bank and the Bullock Bend Mitigation Bank.

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

## **1.4. Proposed Avoidance and Minimization Measures**

The following are the BMPs proposed by Caltrans intended to minimize overall impacts associated with the proposed action:

- Construction would occur in the period between June 15 and September 30.
  - Construction activities occurring within the creeks banks and channel beds would be limited to the low-flow period when the creeks are less likely to support CCV steelhead.
  - In-channel construction activities in the channel, such as flow diversion, pile driving and demolition work, would be restricted to this work window.
- Installation of temporary stream diversions/dewatering.

- Fish screens and temporary diversions would be installed to exclude CCV steelhead from areas where in-water or near-water construction activities are conducted.
- The dewatering area would be limited to the work space, which would be isolated to avoid construction activities in flowing water.
- Creek diversions and dewatering would occur only during the low-flow work window of June 15 to September 30.
- The bed and banks of Dry Creek would be re-compacted and returned to their original configuration immediately following the completion of instream construction work and prior to restoring flow to the original channel.
- No heavy equipment would be used in flowing water.
- NMFS-approved biologist present for in or near water construction activities.
  - A NMFS-approved fisheries biologist would design and conduct a fish capture and relocation plan to collect fish and species from the isolated work area involving the capture and return of those fish to suitable habitat within Dry Creek. To ensure compliance, a fisheries biologist would provide observation during initial dewatering activities within the cofferdam. The fish relocation plan would be approved by NOAA Fisheries, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW) prior to flow diversion installation and dewatering.
  - If surface water is present when instream construction must be conducted, stream diversion would be implemented such that diverted surface flow is returned to Dry Creek immediately downstream of the work area. Prior to any work within surface water, a NMFS-approved fisheries biologist would complete a survey for steelhead. If steelhead are found in the work area, all work affecting Dry Creek would cease and NOAA Fisheries and CDFW would be notified.
- The new bridge would span the creek, leaving no piers within the normal bank-full area of the channel.
- RSP would be the minimum for scour protection, and no RSP would be placed below the ordinary high water mark.
- Installation of fencing along construction limits.
  - Wetlands, riverine and associated riparian habitats located in the vicinity of the Action Area (within 200 feet of proposed construction) would be protected by installing fencing to demarcate the edge of construction areas.
  - The construction specifications would contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, trenching, grading, or other surface-disturbing activities outside of the designated construction area.
  - Signs will be erected along the protective fencing to indicate the area is environmentally sensitive and no construction or other operations may occur beyond this fencing.
- Implementation of erosion control BMPs and Stormwater Pollution Prevention Plan (SWPPP) measures.
  - The Project would conform to water pollution control standards, including adherence to a SWPPP that would be implemented and monitored by Caltrans. This would address prevention procedures, including proper management of

construction site materials and equipment, covering and stabilization of loose soils and stockpiles, development of a spill response plan and containment of potentially hazardous materials, and prevention of oil, grease, or fuel leaks in to the ground, storm drains or surface waters.

- The Project would include implementing BMPs that control for dust, erosion, sedimentation, and turbidity, such as soil covers, silt fences, and establishing perimeters around work areas.
- Non-erosive materials (*e.g.*, gravel bags, sheet pile, rubber/plastic tubes) would be used to construct the diversion berm. An energy dissipater and sediment trap (fiber rolls, or equivalent) would be used at the diversion pipeline outlet.
- Excavated material would be stored away from the low-flow channel to prevent incidental discharge.
- Any streambed access points would be stabilized using a pad of coarse aggregate underlain by filter cloth to reduce erosion and tracking of sediment.
- Silty or turbid water produced from dewatering or other project activities would be filtered or allowed to settle prior to discharge into Dry Creek.
- Surface water would be sampled during the installation and removal of the diversion system to ensure that turbidity levels do not go above lethal levels.
- Implementation of pollution prevention and control BMPs.
  - A barrier would be deployed beneath the bridge structure preventing any debris from falling to the ground or entering the water below the work site.
  - All materials placed in stream would be nontoxic.
  - Good site management “housekeeping” requirements would be implemented for construction materials, waste management, vehicle storage and maintenance, landscape materials, and other potential pollutant sources. These would include proper management of construction site materials and equipment; covering and/or stabilization of loose soils and stockpiles; tracking controls; proper use, containment and management of portable toilets and other sanitation facilities; development of a spill response plan and containment of potentially hazardous materials; and prevention of oil, grease, or fuel leaks in to the ground, storm drains or surface waters.
  - Non-stormwater management would be conducted, including washing vehicles and cleaning streets in a manner that prevents non-storm water discharges from reaching surface water or municipal drainage systems.
- Avoid impacts to riparian vegetation and develop/implement a restoration plan for riparian impacts.
  - The Project would minimize impacts to riparian vegetation and would incorporate restoration and enhancement of the riparian corridor into the final design plans and construction specifications. A Restoration and Revegetation Plan would include onsite replanting and purchase of mitigation credits to compensate for permanent and temporary loss of riparian cover.
  - The revegetation plan may include plant salvage, seeds, and seedlings obtained from local native sources and irrigation, as necessary.
  - The annual five-year monitoring program would be implemented and would employ standard ecological methods to estimate plant cover and to document survival rates and growth characteristics.

- A planting plan would be implemented as detailed in a Restoration and Revegetation Plan approved by the CDFW and the Placer County Planning Services Division.
- Current riparian vegetation and oaks would be retained. A Tree Protection Zone (TPZ), would be delineated around these trees by an ISA Certified Arborist and be demarcated using fencing. Construction-related activities within the TPZ would be limited to those activities that can be done by hand.
- Impacts to CCV steelhead resulting from the proposed action would be mitigated by replacement, through replanting or purchase of off-site mitigation credits for salmonids from a NMFS-approved mitigation bank (or combination of both replanting and mitigation credits), at a 3:1 ratio for permanent removal of riparian habitat.
- A total of 7.47 acres of credit would be purchased from NMFS-approved mitigation banks.
- Where avoidance of riparian vegetation is not shown on the engineering plans, a revegetation plan and a five-year monitoring plan would be implemented in coordination with the CDFW, to restore native riparian habitat in the Action Area to a self-sustaining, ecologically functioning plant community.

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

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an opinion stating how the agency’s actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an 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 “jeopardize the continued existence of” a listed species, which is “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 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 as a whole for the conservation of a listed species” (50 CFR 402.02).

The designation of critical habitat for CCV steelhead uses the term primary constituent element (PCE) or essential features. The 2016 critical habitat regulations (50 CFR 424.12) replaced 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.

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

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

- Evaluate the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their habitat using an exposure-response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat, analyze whether the proposed action is likely to: (1) directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species, or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.
- If necessary, suggest a reasonable and prudent alternative 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’ “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 function of the PBFs that are essential for the conservation of the species. See Table 1 for species and critical habitat information.

Table 1. Description of species, critical habitat, current ESA listing classification, summary of species and habitat status.

<b>Species Name</b>	<b>Current Final Listing Status</b>	<b>Status Summary</b>	<b>Critical Habitat Designated</b>	<b>Critical Habitat Status Summary</b>
California Central Valley Steelhead	1/5/2006 71 FR 834 Threatened	According to the NMFS 5-year species status review (NMFS 2016), the status of CCV steelhead appears to have remained unchanged since the 2011 status review that concluded that the DPS was in danger of extinction. Most natural-origin CCV populations are very small, are not monitored, and may lack the resiliency to persist for protracted periods if subjected to additional stressors, particularly widespread stressors such as climate change. The genetic diversity of CCV steelhead has likely been impacted by low population sizes and high numbers of hatchery fish relative to natural-origin fish. The life-history diversity of the DPS is mostly unknown, as very few studies have been published on traits such as age structure, size at age, or growth rates in CCV steelhead. CCV steelhead is likely to become endangered within the foreseeable future through all or a significant portion of its range.	9/2/2005 70 FR 52488	Critical habitat for CCV steelhead includes stream reaches of the Feather, Yuba, and American rivers, Big Chico, Butte, Deer, Mill, Battle, Antelope, and Clear creeks, the Sacramento River, as well as portions of the northern Delta. Critical habitat includes the stream channels in the designated stream reaches and the lateral extent as defined by the ordinary high-water line. In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. Physical and biological features (PBFs) considered essential to the conservation of the species include: spawning habitat; freshwater rearing habitat; freshwater migration corridors; and estuarine areas. Many of the PBFs of CCV steelhead critical habitat are currently degraded and provide limited high quality habitat. Although the current conditions of PBFs for CCV steelhead critical habitat in the Central Valley are significantly limited and degraded, the habitat remaining is considered highly valuable.

### 2.2.1. Global Climate Change

One major factor affecting the rangewide status of the threatened and endangered anadromous fish in the Central Valley and aquatic habitat at large is climate change. Warmer temperatures associated with climate change reduce snowpack and alter the seasonality and volume of seasonal hydrograph patterns (Cohen *et al.* 2000) Central California has shown trends toward warmer winters since the 1940s (Dettinger and Cayan 1995). Projected warming is expected to affect CCV steelhead because fish are restricted to low elevations as a result of impassable rim dams.

CCV steelhead are blocked from the vast majority of their historic spawning and rearing habitat and may be particularly sensitive to temperature increases in these habitats because juvenile CCV steelhead need to rear in the stream for one to two summers prior to emigrating as smolts. In the Central Valley, summer and fall temperatures below the dams in many streams already exceed the recommended temperatures for optimal growth of juvenile CCV steelhead, which range from 14°C to 19°C (57°F to 66°F).

In summary, observed and predicted climate change effects are generally detrimental to the species (McClure 2011, Wade *et al.* 2013), so unless offset by improvements in other factors, the status of the species and critical habitat is likely to decline over time. The climate change projections referenced above cover the time period between the present and approximately 2100. While there is uncertainty associated with projections, which increases over time, the direction of change is relatively certain (McClure *et al.* 2013).

### 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 Project area is located in southwestern Placer County on the Rio Linda USGS topographic quad (T10N, R5E, Section 11), within the Central Valley. The entire Project area drains to Dry Creek, which flows in a northeast to southwest direction before draining into the East Main Drainage Canal, a tributary to the Sacramento River. Dry Creek is the primary aquatic feature within the Project area and is surrounded on both sides by a mature riparian corridor. Dry Creek belongs to the Lower American Hydrologic Unit and is within the Sacramento River Hydrologic Region.

The action area includes the immediate project area (Figure 1) where construction would take place and extends both upstream and downstream to the outer limits of the effects from construction activities. The action area includes area upstream and 350 feet downstream of potential impacts to account for effects of in-water construction activities, such as bank disturbance, dewatering, or turbidity. The action area also includes land disturbance due to staging and equipment access. Since Caltrans plans to purchase mitigation credits from a mitigation bank, the action area also includes the area affected by the mitigation banks.

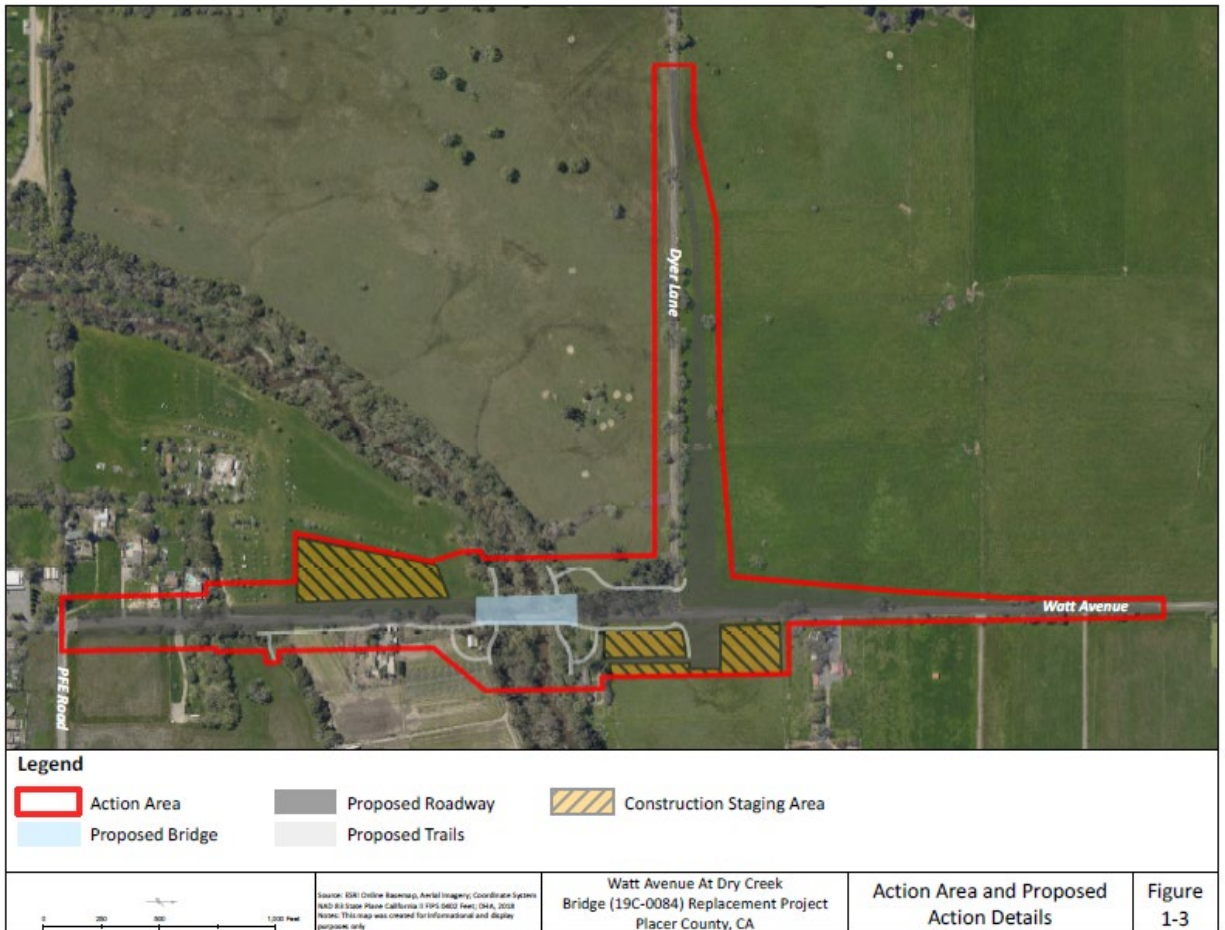


Figure 1. Action Area as defined in the Caltrans Biological Assessment. The NMFS-defined action area includes this area in addition to 100 feet up and downstream in Dry Creek, as well as acreage in the mitigation bank(s) where credits would be purchased.

Dry Creek is within designated critical habitat for CV steelhead. The main PBFs for this species within the portion of Dry Creek in the action area include freshwater rearing sites and freshwater migration corridor for migrating and foraging adults and juveniles. Dry Creek is also mapped as EFH for Pacific Salmon. Habitat Areas of Particular Concern within the action area include thermal refugia.

The reach of Dry Creek in the action area provides suitable migration and natal rearing habitat for CV steelhead but does not provide suitable spawning habitat. Aquatic habitat is characterized by low gradient, slow moving water, dominated by sand/silt substrate. Juvenile salmonids were observed within the project area during the May 2018 project surveys.

Valley oak riparian forest is the predominant vegetation type surrounding Dry Creek. Trees and shrubs growing along the banks of the channel provide shade for the water column adjacent to the stream bank and deposit insects and nutrients into the water. Over-hanging vegetation provides shaded riverine aquatic habitat and food for fish and other aquatic wildlife.



Within the study area, riparian forested wetland habitat consists of a side channel to Dry Creek. During high precipitation events (typically December through March), water also flows through this area. The bed of Dry Creek is sandy silt with areas of instream woody debris and devoid of aquatic vegetation.

## **2.4. Environmental Baseline**

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02).

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

The action area, which includes Dry Creek and associated floodplain and riparian areas at and adjacent to the Project work area, functions primarily as rearing and migratory habitat for CCV steelhead. The in-water work location on Dry Creek is located in designated critical habitat for CCV steelhead. Spawning adults, holding post-spawn adults, and rearing juveniles may utilize the area on their way to the estuary. Due to the life history timing of CCV steelhead, it is possible for one or more of the following life stages to be present within the action area throughout the year: adult migrants, rearing juveniles, or emigrating juveniles.

The “Recovery Plan for the Evolutionary Significant Units of Sacramento River winter-run Chinook salmon and Central Valley spring-run Chinook salmon and the Distinct Population Segment (DPS) of California Central Valley steelhead” (NMFS 2014, herein referred to as “Recovery Plan”) provides a watershed profile for Dry Creek. The Recovery Plan identifies the Dry Creek watershed as a Core 3 watershed, meaning CCV steelhead populations are present on an intermittent basis. These populations aid in recovery of the species by providing genetic diversity and dispersal connectivity to the greater DPS.

The PBFs of CCV steelhead designated critical habitat within the action area include freshwater rearing habitat and freshwater migration corridors. The essential features of these PBFs include: water quality and forage, water quantity and floodplain connectivity, water temperature, riparian habitat, natural cover, and access to and from spawning grounds. The intended conservation roles of habitat in the action area are to provide appropriate freshwater rearing and migration conditions for juveniles and unimpeded freshwater migration conditions for adults. However, the condition and function of this habitat has been severely impaired through several factors, including mining, agriculture, urbanization, and removal of riparian vegetation. Similar activities throughout the Dry Creek watershed have resulted in degradation of these PBFs across the entire region. Conditions for juvenile rearing in the action area are poor and likely contribute to reduced growth and survival of CCV steelhead.

### **2.4.2. Factors Affecting Listed Species and Critical Habitat in the Action Area**

Dry Creek watershed is a low gradient watershed spanning Placer and Sacramento counties. This watershed has a history of augmentation, due to mining and agricultural uses. More recently, the Dry Creek watershed has undergone significant urbanization. The main creek corridor receives surface runoff from adjacent developed areas via City culverts and sheet flow from residential areas. Tributaries within the watershed are known to support salmonids or have historically supported anadromous fish but many have passage barriers or contain habitat, which has been so degraded that they no longer support fish. The mainstem of Dry Creek is not ideal habitat, but is considered a migratory passage for CCV steelhead.

Construction of impervious hardscape cover within a 100-foot buffer of the creek can result in loss of in-stream cover, bank stability, and affect percent of silt, sand, and fine gravel in the watershed. These changes can also result in higher water temperatures. Impervious cover (in this case a proxy for urban development) is a source of aquatic life impairment in urbanized watersheds such as the Dry Creek watershed which can result in reduction of habitat quality and quantity for CCV steelhead.

Riparian vegetation is important to aquatic habitats, because it provides overhanging cover for rearing fish, streamside shading, and a source of terrestrial and aquatic invertebrate contributions to the fish food base. Riparian vegetation is also an important source of future large woody material contributions to the aquatic system. Removal of vegetation through bank modification has reduced habitat quality and the productivity of the Dry Creek watershed. The result of these changes has been the reduction in quantity and quality of several essential features of migration and rearing habitat required by CCV steelhead to grow and survive.

### **2.4.3. Mitigation Banks and the Environmental Baseline**

Mitigation banks present a unique factual situation, and this warrants a particular approach to how they are addressed. Specifically, when NMFS is consulting on a proposed action that includes mitigation bank credit purchases, it is likely that physical restoration work at the bank site has already occurred and/or that a section 7 consultation occurred at the time of bank establishment. A traditional reading of "environmental baseline" might suggest that the overall ecological benefits of the mitigation bank actions therefore belong in the environmental baseline. However, under this reading, all proposed actions, whether or not they included proposed credit purchases, would benefit from the environmental 'lift' of the entire mitigation bank because it would be factored into the environmental baseline. In addition, where proposed actions did include credit purchases, it would not be possible to attribute their benefits to the proposed action, without double-counting. These consequences undermine the purposes of mitigation banks and also do not reflect their unique circumstances. Specifically, mitigation banks are established based on the expectation of future credit purchases. In addition, credit purchases as part of a proposed action would also be the subject of a future section 7 consultation.

It is, therefore, appropriate to treat the beneficial effects of the bank as accruing incrementally at the time of specific credit purchases, not at the time of bank establishment or at the time of bank restoration work. Thus, for all projects within the service area of a bank, only the benefits attributable to credits sold are relevant to the environmental baseline. Where a proposed action

includes credit purchases, the benefits attributable to those credit purchases are considered effects of the action. That approach is taken in this biological opinion.

## **2.5. Effects of the Action**

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

### **2.5.1. Effects of the Proposed Action to CCV Steelhead**

The effects of the proposed action are based on best available life history information and monitoring data on CCV steelhead for which ESA designated critical habitat and geographical range occurs in the action area. In-water work would occur between June 15 and September 30. Life stages of CCV steelhead that are expected to occur during this time include juveniles and adults. In this section of Dry Creek where the proposed action would occur, there are no known spawning areas for salmonids, so impacts or mortality to eggs are not expected to occur. The following analysis of the proposed action includes potential pathways of effects to species and designated critical habitat.

#### *Dewatering and Fish Relocation*

Fish diversion structures would be used to preclude CCV steelhead from the work area for in-water work, covering an area of 0.75 acres. During dewatering a fish relocation plan would be followed and would include monitoring by a NMFS-approved biologist. The in-water work window occurs when CCV steelhead are unlikely to be present. If CCV steelhead are present, their numbers are expected to be low. During the installation of the temporary diversion system, CCV steelhead present may swim away from the noise, resulting in displacement from preferred habitat and altered behavior.

Installation of the fish screens and diversion structures may entrap some juvenile CCV steelhead. Fish would be captured with a net and relocated. A full description of fish relocation procedures are described above in Proposed Federal Action section. Some incidental injury or mortality may occur during this process as fish experience abrasion from handling, exposure to air, and close proximity to one another as they are relocated downstream. Individuals stranded in the work area after installation of the system may become stressed and exhibit the following symptoms: gasping for air at the surface due to the lack of oxygen in the confined work area, erratic swimming (*i.e.*, swimming frantically without going anywhere, crashing into the temporary dam system, or locking fins to their sides).

Fish relocation activities pose a risk of injury or mortality to rearing juvenile CCV steelhead, since any fish relocation or collection gear has some associated risk to fish, including stress, disease transmission, injury, or death. Fish that are released from the work area may continue to

exhibit stress, which can impact egg quality and the survival of eggs and newly hatched fish and, in severe cases, can cause the death of adult fish, due to disease. The amount of unintentional injury and mortality attributable to fish relocation varies widely, depending on the method used, ambient conditions, and the experience of the field crew. Since fish relocation activities would be conducted by a NMFS-approved fisheries biologists following NMFS' guidelines, direct effects to and mortality of juvenile CCV steelhead during relocation activities is expected to be minimal.

Sites selected for relocating fish would have similar water temperature and provide similar suitable habitat as that of the capture site. However, relocated fish may endure short-term stress from crowding at the relocation site. Relocated fish may also have to compete with resident fish for available resources, such as food and habitat. Some of the fish released at the relocation site would likely move upstream or downstream to areas that have more habitat and a lower density of fish. As each fish disperses, competition diminishes and remains localized in a small area. The number of fish affected by competition cannot be accurately estimated, due to variability in fish presence or absence in any given area, but it is unlikely that this impact would cascade through the population within the watershed based on the small area that would be affected and the small number of CCV steelhead that would need to be relocated.

Juvenile CCV steelhead that evade capture and remain in the construction area may be injured or killed from construction activities. This includes desiccation if fish remain in the dewatered area, or death if fish are crushed by personnel or equipment. However, because experienced biologists would be collecting fish, most are expected to be removed from the area before construction.

A small number of juvenile CCV steelhead are expected to be present during dewatering and would be exposed to handling, and resulting in injury or death. Adult CCV steelhead are not expected to be present during relocation and, thus, impacts to this life stage of these species is considered improbable.

#### *Increased Sedimentation and Turbidity*

Increased sedimentation and turbidity in Dry Creek may result from the proposed Project. Activities including site clearing, earthwork, vegetation removal and planting, and construction would result in disturbance of soil and riverbed sediments and therefore temporary increases in turbidity and suspended sediments. Disturbance of sediments during in-water construction could lead to a degradation of water quality. In addition, short-term increases in turbidity would be anticipated to occur during water diversion and dewatering activities, during the first flush of the stream channel when it is re-watered, and during the first rainstorms, which may mobilize disturbed sediments within the Action Area.

Increased exposure to elevated levels of suspended sediments have the potential to result in physiological and behavioral effects. High concentrations of suspended sediment can clog or abrade gill surfaces, disrupt normal feeding behavior, reduce feeding efficiency, and decrease food availability or result in avoidance or displacement of fish from preferred habitat (Cordone and Kelley 1961, Phillips and Campbell 1961, Newcombe and Jensen 1996). Salmonids have been observed to move laterally or downstream to avoid turbidity plumes (Sigler *et al.* 1984). Temporary spikes in suspended sediment may result in behavioral avoidance of the site by fish; several studies have documented active avoidance of turbid areas by juvenile and adult

salmonids (e.g., Sigler *et al.* 1984, Lloyd 1987, Servizi and Martens 1992). Chronic exposure to high turbidity and suspended sediment may also affect growth and survival by impairing respiratory function, reducing tolerance to disease and contaminants, and causing physiological stress (Berg and Northcote 1985, Servizi and Martens 1992, Waters 1995).

Increased sedimentation and turbidity could have adverse effects to adult fish through gill fouling, reduced foraging ability, and reduced predator avoidance (Kemp *et al.* 2011). Juvenile salmonids are unlikely to avoid increased levels of turbidity below a level of 70 nephelometric turbidity units (NTU) (Bash *et al.* 2001). As a result, they may be at greater risk to turbidity and sediment-related effects than adults. Predator avoidance behavior has been shown to decrease as a result of increased turbidity, which has implications for juvenile salmonids (Gregory 1993). Growth and survival amidst increased sediment and turbidity have also been shown to decrease resulting from reduced prey detection and availability.

Any increase in turbidity associated with proposed instream work is likely to be brief and localized, attenuating downstream as suspended sediment settles out of the water column. Potential effects of increased sedimentation and turbidity would be minimized through implementation of proposed BMPs including erosion control, sediment control, and stabilization measures, such as silt fencing and fiber rolls. All in-water work would be conducted between June 15 and September 30 to minimize exposure to fish. Although there is potential for impact to adult and juvenile fish due to temporary, localized plumes of turbidity during these processes, BMPs would minimize the extent of the effects of sedimentation and turbidity caused by the proposed action and impacts to listed fish are expected to be minimal and temporary.

#### *Contaminants and Pollution-Related Effects*

The proposed action would involve heavy construction equipment and activities that could impair water quality if a spill were to occur. Potential sources of pollutants include gasoline, diesel, hydraulic fluid, lubricants, concrete, and asphalt. A spill or discharge could result in the introduction of heavy metals, nutrients, hydrocarbons, or synthetic compounds, which may cause increased temperatures, disease susceptibility, or algal blooming. Potential pollution-related effects have the potential to be persistent in the action area and may affect multiple species and life stages, if they were to occur.

High concentrations of contaminants can cause short-term and long-term effects to fish. Short-term effects include mortality from exposure, reduced oxygen availability, or increased susceptibility to disease that reduces the overall health and survival of the exposed fish. The severity of these effects depends on the contaminant, the concentration, duration of exposure, and sensitivity of the affected life stage. A potential long-term effect of contamination is reduced prey availability (invertebrate prey survival could be reduced following exposure), making food less available for fish. Fish consuming affected prey may also absorb toxins indirectly. For CCV steelhead, potential effects of reduced water quality during Project construction would be minimized with proposed BMPs and implementation of a Water Pollution Control Plan and Stormwater Pollution Prevention Plan, which would minimize the probability of pollutant incursion into Dry Creek. With BMPs in place, impacts to adult or juvenile CCV steelhead from contaminants are not expected to occur.

### *Construction Related Effects*

Construction-related activities have the potential to result in injury or death to listed fish species. Construction-related effects may include debris falling into the active channel, tools and/or equipment falling into the active channel, or noise generated by displaced rock and sediment and the operation of construction machinery. Both adult and juvenile life stages of CCV steelhead can potentially utilize the action area as a migration corridor and may exhibit rearing behavior there as well. Juvenile or adult CCV steelhead that migrate through the Project site may be exposed to short-term noise and disturbance caused by construction activities. For juveniles this may cause stress from being displaced from their rearing area and needing to locate a new rearing area. As such, juvenile CCV steelhead may experience crowding and competition with other resident fish for food and habitat, which can lead to reduced growth. Further, juvenile CCV steelhead may be subject to increased predation risk while they are locating to new rearing areas, leading to reduced survival.

However, we expect displaced adult and juvenile fish would likely relocate to downstream suitable habitat and experience minimal competition. A small number of listed CCV steelhead are likely to be present in the action area and temporarily displaced by the proposed Project actions. BMPs, and avoidance and minimization techniques would be implemented, minimizing the probability and severity of construction-related effects in the action area. With BMPs in place, effects to CCV steelhead are expected to be minimal and temporary. Therefore, effects to juvenile CCV steelhead are expected to be minimal.

#### **2.5.2. Effects of the Proposed Action to Critical Habitat**

Critical habitat has been designated for CCV steelhead in the action area. The PBFs of critical habitat within the action area for CCV steelhead are (1) freshwater rearing sites, and (2) freshwater migration corridors. In-water work is expected to temporarily affect 0.75 acres of critical habitat.

#### *Riparian Vegetation Removal*

Removal of riparian vegetation has the potential to result in adverse effects to critical habitat PBFs. Riparian vegetation plays a key role in the value of rearing habitat for the conservation of several salmonid life stages. It provides shading to reduce stream temperatures, increases the recruitment of large woody material into the river, increasing habitat complexity, provides shelter from predators, and enhances the productivity of aquatic macroinvertebrates (Anderson and Sedell 1979, Pusey and Arthington 2003). Riparian zones enhance water quality by reducing the input of fine sediments and pollutants into streams (Karr and Schlosser 1978, Lowrance *et al.* 1985). It has also been shown to directly influence channel morphology and may be directly correlated with improved water quality in riverine systems through biogeochemical cycling, soil and channel chemistry, water movement, and erosion (Schlosser and Karr 1981, Dosskey *et al.* 2010).

The proposed action would result in the permanent loss of 2.43 acres (0.50 acres riparian forested wetland, 1.93 acres valley oak riparian forest) and temporary loss of 0.08 acres (0.05 acres riparian forested wetland, 0.03 acres valley oak riparian forest) of riparian habitat due to

disturbance from Project activities (Table 2 in Section 2.5.3). This loss of riparian habitat would result in the degradation of migratory corridors and rearing habitat PBFs for CCV steelhead. Removal of riparian trees and shrubs would result in loss of shade, which has the potential to increase summer stream temperatures, decrease water quality, decrease available food sources and detritus associated with canopy cover, and affect growth and condition of juvenile salmonids (Anderson and Sedell 1979, National Marine Fisheries Service 1997, Pusey and Arthington 2003, Windell *et al.* 2017). BMPs and minimization measures, including fencing and identifying and minimizing construction activities within TPZs, would be implemented to minimize impacts to riparian vegetation. For areas temporarily impacted by construction activities, a planting plan would be implemented as detailed in a Restoration and Revegetation Plan, including performance standard to revegetation success, as well as a five-year monitoring plan to restore native riparian habitat in the Action Area to a self-sustaining, ecologically functioning plant community. For areas that would be replanted, return to pre-project conditions may take 1-5 years. Permanent impacts to riparian habitat within the Action Area would be mitigated by replacement, either through replanting or through the purchase of mitigation credits (or a combination), at a 3:1 ratio.

### *Structure*

Replacing the Watt Avenue Bridge would result in overwater structure shading the creek, which may degrade the PBFs of the migratory corridor. Overwater structures reduce riparian habitat and natural cover for juvenile salmonids and can alter underwater light conditions and provide potential holding conditions for juvenile and adult fish, including species that prey on juvenile listed fishes. Therefore, placement of these materials and may facilitate increased predation on juvenile CCV steelhead and decrease food source and detritus associated with canopy cover. This permanently degrades rearing habitat quantity and quality. Conversely, overwater shade can decrease water temperatures. The new bridge shades approximately 0.14 acres of Dry Creek.

### *Reduce Prey Availability*

Instream construction activities may cause mortality or reduce abundance of benthic aquatic macroinvertebrates within the footprint of the bridge construction, due to coarse sediment smothering. These effects to aquatic macroinvertebrates are expected to be temporary, as rapid recolonization (about 2 weeks to 2 months) is expected (Merz and Ochikubo Chan 2005). Furthermore, downstream drift is expected to temporarily benefit any downstream, drift-feeding organisms, including juvenile listed species. The amount of food available for adult and juvenile CCV steelhead in the action area at a minimum is therefore expected to return to pre-Project conditions.

Although CCV steelhead may be exposed to the construction area with reduced prey base, individuals would be able to move to adjacent suitable habitat, and affected food resources are expected to begin to recolonize as soon as construction is completed. Therefore, effects of instream construction activities are expected to be minor and are unlikely to result in injury or death.

### *Temporary loss of habitat*

During the two seasons of in-water work, the width of the channel within the migratory corridor would be decreased by water diversion. The ability of CV steelhead to migrate upstream through the Action Area would be hindered for several months while the diversion is in place.

Downstream migration of juvenile steelhead would not be expected to be significantly affected by a diversion using culverts; however, adults would not be able to migrate upstream through diversion pipes. Adult steelhead are not expected in the creek during the time of dewatering (adult CV steelhead migrate during the winter in the Central Valley) and, therefore, are not expected to be affected by construction activities. Impedance of migration through the Action Area would be temporary, and full connectivity between upstream and downstream stream reaches would be restored after the water diversion is removed and creek flows are returned. Effects would, therefore, be temporary and minor.

### *Streambed Disturbance*

Manipulation and disturbance of the streambed can result in changes to channel morphology and hydrologic conditions that can create impediments to steelhead migration. The streambed would be altered during proposed dewatering. Bridge construction and removal would result in minor disturbances to the amount of habitat available for fish to move and live. After construction is complete, the existing conditions of the dispersal area are expected to remain the same, because the proposed grading of the streambed would retain the existing substrate size, slope, and thalweg. Therefore, impacts to the PBFs for rearing and migration are expected to be minor.

### *Alteration of water quality*

The action area contains rearing habitat and a migratory corridor for CCV steelhead in Dry Creek. There is potential for degradation of PBFs resulting from turbidity and sedimentation during removal of bridge piers and during dewatering. Kemp *et al.* (2011) describe a suite of physiochemical effects to lotic aquatic systems resulting from increased sedimentation and turbidity-related events. Sedimentation has the potential to increase turbidity on a broad temporal scale and reduce oxygen supply. These impacts could degrade the PBFs for CCV steelhead, such as riparian habitat that provides for successful juvenile development and survival. BMPs and minimization and avoidance measures, such as groundcover and stabilization using silt fencing and fiber rolls, would be implemented during construction to minimize Project-disturbed soil on land from entering the water (see Section 1.4). With the minimization and avoidance measures included in the proposed action, turbidity and sedimentation are expected to result in minor, localized, and short-term effects to PBFs of designated critical habitat for CCV steelhead in the action area.

### **2.5.3. Mitigation/Conservation Bank Credit Purchase**

To address permanent impacts of the proposed action to riparian and aquatic habitats, the proposed action includes purchase of mitigation bank credits at a 1:1 ratio for impacts to riverine habitat and 3:1 ratio for impacts to riparian habitats (Table 2). Caltrans will purchase 7.29 acres of mitigation credits for the permanent loss of 2.43 acres of riparian habitat. Caltrans will



purchase 0.07 acres of credits for impact to ephemeral riverine habitat and 0.11 acres of salmonid credits for the permanently increased acreage of artificial shade over riverine habitat.

Both the riparian and aquatic habitat impacts affect designated critical habitat, as well as listed fish species, described above in this biological opinion. The purchase of mitigation credits would address the loss of ecosystem functions due to the modification of the riverbank. These credit purchases are ecologically relevant to the PBFs of critical habitat and the species affected by the proposed action, because both the mitigation banks where credits could be purchased include documented current and historic salmonid migration and rearing habitats including shaded riverine aquatic, riparian forest and floodplain credits with habitat values that are already established and meeting performance standards. Also, the banks are located in areas that would benefit the CCV steelhead DPS affected. The purchase of mitigation credits at one of these two banks is expected to benefit the PBFs of freshwater rearing habitat and migration corridors for juvenile CCV steelhead by providing suitable floodplain and riparian habitat. The floodplains and riparian forest in the bank benefit the growth and survival of rearing salmonids by providing habitat with abundant food in the form of aquatic invertebrates, structural diversity such as instream woody material (IWM), and cooler stream temperatures.

The purchase of credits provides a high level of certainty that the benefits of a credit purchase would be realized, because both of the NMFS-approved banks considered in this opinion have mechanisms in place to ensure credit values are met over time. Such mechanisms include legally binding conservation easements, long-term management plans, detailed performance standards, credit release schedules that are based on meeting performance standards, monitoring plans and annual monitoring reporting to NMFS, non-wasting endowment funds that are used to manage and maintain the bank and habitat values in perpetuity, performance security requirements, a remedial action plan, and site inspections by NMFS. In addition, each bank has a detailed credit schedule and credit transactions and credit availability are tracked on the Regulatory In-lieu fee and Bank Information Tracking System (RIBITS). RIBITS was developed by the U.S. Army Corps of Engineers with support from the Environmental Protection Agency, the USFWS, the FHWA, and NMFS to provide better information on mitigation and conservation banking and in-lieu fee programs across the country. RIBITS allows users to access information on the types and numbers of mitigation and conservation bank and in-lieu fee program sites, associated documents, mitigation credit availability, service areas, as well information on national and local policies and procedures that affect mitigation and conservation bank and in-lieu fee program development and operation.

Table 2: CCV Steelhead Habitat Impacts and Mitigation

Habitat Community	Habitat Function	Permanent (acres)	Temporary (acres)	Totals (acres)	Mitigation Ratio	Mitigation (acres)
Riparian Forested Wetland	shaded riverine aquatic	0.50	0.05	0.55	3:1	1.50
Riverine - Ephemeral	rearing and migration	0.07	0.00	0.07	1:1	0.07
Riverine (Dry Creek)	foraging	0.11	0.75	0.86	1:1	0.11
Valley Oak Riparian Forest	shaded riverine aquatic	1.93	0.03	1.96	3:1	5.79
<b>Total</b>		<b>2.50</b>	<b>0.83</b>	<b>1.96</b>		<b>7.47</b>

## 2.6. Cumulative Effects

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02 and 402.17(a)). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

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

### *Agricultural Practice*

Agricultural practices in the action area may adversely affect riparian and wetland habitats through upland modifications of the watershed that lead to increased siltation or reductions in water flow. Water diversions are present in the watershed. Depending on the size, location, and season of operation, any diversions that are unscreened may entrain and kill many life stages of aquatic species, including juvenile listed anadromous fish species.

### *Increased Urbanization*

Increases in urbanization and housing developments can affect habitat by altering watershed characteristics, and changing both water use and storm water runoff patterns. Increased growth would place additional burdens on resource allocations, including natural gas, electricity, and water, as well as on infrastructure such as wastewater sanitation plants, roads and highways, and public utilities. Some of these actions, particularly those that are situated away from waterbodies, would not require Federal permits, and thus would not undergo review through the ESA consultation process with NMFS.

### *Rock Revetment and Levee Repair Projects*

Cumulative effects include non-Federal riprap projects. Depending on the scope of the action, some non-Federal riprap projects carried out by state or local agencies do not require Federal permits. These types of actions and illegal placement of riprap occur within the Dry Creek watershed. The effects of such actions result in continued degradation and fragmentation of riparian and freshwater habitat that affect salmonids in ways similar to the adverse effects associated with this Project. These types of projects can also result in habitat simplification, where habitat and channel complexities are reduced, leading to lower quality simplified habitat. Windell *et al.* (2017) focused the impact of channelized, leveed, and riprapped reaches potentially having low habitat complexity, low abundance of food organisms, and offer little protection from predators – factors which juveniles are dependent for growth and successful survival.

## 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 diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

In our *Rangewide Status of the Species* section, NMFS summarized the current likelihood of extinction of CCV steelhead. We described the factors that have led to the current listing of CCV steelhead under the ESA and across their range. These factors include past and present human activities and climatological trends and ocean conditions that have been identified as influential to the survival and recovery of the listed species. Beyond the continuation of the human activities affecting the species, we also expect that ocean condition cycles and climatic shifts will continue to have both positive and negative effects on the species' ability to survive and recover. The *Environmental Baseline* section reviewed the status of the species and the factors that are affecting their survival and recovery in the action area. The *Effects of the Action* section reviewed the exposure of the CCV steelhead and critical habitat to the proposed action. NMFS then evaluated the likely responses of individuals, populations, and impacts to critical habitat. The *Cumulative Effects* section described future activities within the action area that are reasonably certain to have a continued effect on listed fish.

In order to estimate the risk to CCV steelhead as a result of the proposed action, NMFS uses a hierarchical approach. The condition of the DPS is summarized in the *Status of the Species* section of this opinion. We then consider how the status of populations in the action area are affected by the proposed action, as described in the *Environmental Baseline* section. Effects on individuals are summarized, and the consequence of those effects is applied to establish risk to the DPS.

### *Status of the Species and Environmental Baseline*

Since the 2016 status review, the status of the CCV steelhead DPS appears to have remained unchanged and the DPS is likely to become endangered within the near future throughout all or a significant portion of its range (NMFS 2016). Many of the PBFs of CCV steelhead critical habitat are degraded and provide limited high-quality habitat. These rearing and migratory corridor PBFs that support CCV steelhead would be negatively impacted through riparian habitat removal and bridge shading. These permanent impacts only represent a small loss in the scope of the available habitat for CCV steelhead, but the intrinsic value of the area for the conservation of fish remains high.

The evidence presented in the *Environmental Baseline* section indicates that past and present activities within the Dry Creek basin have caused significant habitat loss, degradation, and fragmentation. This has significantly reduced the quality and quantity of the remaining PBFs

within the action area for the population of CCV steelhead that utilizes this area. Alterations in flow regimes, removal of riparian vegetation and shallow water habitat, reduced habitat complexity, construction of armored levees for flood protection, and the influx of contaminants from agricultural and urban discharges have also substantially reduced the functionality of the waterways.

### *Cumulative Effects*

Agricultural land use, water diversions, increased urbanization, and rock revetment projects are reasonably expected to continue in the future in the action area. The effects of these actions result in the continued degradation, simplification, and fragmentation of the riparian and freshwater habitat. Some of these actions, particularly those that are situated away from waterbodies, would not require federal permits, and thus would not undergo review through the ESA section 7 consultation process with NMFS.

### *Summary of the Effects of the Proposed Action*

CCV steelhead may be harassed, injured, or killed during completion of the proposed action through various pathways. Project activities could result in adverse effects through habitat loss and degradation. A dewatering and relocation plan involves capturing fish and physically handling and relocating them, which risks injury and death. Minor effects include construction-related increases in sedimentation and siltation above background level could potentially affect fish species and their habitat, reducing survival of juveniles or interfering with feeding, migrating, and rearing activities. Avoidance and mitigation measures, as well as BMPs, would be implemented to minimize any negative effects to listed species.

Critical habitat has been designated in the action area for CCV steelhead, PBFs affected for each species are described in section 2.5.2. The proposed action would temporarily and permanently affect the action area, which already contains degraded PBFs. Bridge construction would impact Dry Creek by permanently shading the portion of Dry Creek under the bridge, negatively impacting the rearing and migratory corridor PBFs that support CCV steelhead. The migratory corridors and rearing habitat that remain are considered to have high intrinsic value for conservation of the species. Therefore, the loss of any amount of these PBFs in the action area is expected to negatively affect CCV steelhead.

As discussed in Section 2.5.3 above, as mitigation for these impacts, Caltrans plans to purchase credits from either the Bullock Bend Mitigation Bank or the Fremont Landing Conservation Bank at a 1:1 ratio for permanent impacts to riverine habitat and 3:1 for permanent impacts to riparian habitat. The purchase of mitigation credits at one of these banks is expected to benefit the PBFs of freshwater rearing habitat and migration corridors for CCV steelhead by providing suitable floodplain and riparian habitat. The floodplains and riparian forest in the bank benefit the growth and survival of rearing salmonids by providing habitat with abundant food in the form of aquatic invertebrates, structural diversity such as IWM, and cooler stream temperatures.

### *Effects to the DPS*

According to the most recent status reviews (NMFS 2016), CCV steelhead are at risk of becoming endangered, due to past and present activities causing habitat loss, degradation and fragmentation.

The Recovery Plan (NMFS 2014) describes the CCV steelhead population in Dry Creek as a Core 3 population. A Core 3 population is characterized as being dependent on other nearby populations for their existence. The presence of these populations provides increased life history diversity to the DPS. Maintaining and restoring Core 3 populations, such as CCV steelhead in Dry Creek may enhance genetic diversity and connectivity between populations benefitting the DPS as a whole. Recovery Criteria for the Northern Sierra Nevada diversity group (the geographic region of Dry Creek), includes four viable populations, likely none of which are currently viable.

Although the proposed project will result in long-term and short-term impacts to the CCV steelhead DPS, the impacts are expected to be minor, and construction impacts would generally occur during seasons when fish abundance is very low. To mitigate the effects of the project, Caltrans plans to purchase mitigation credits off-site at a 1:1 ratio for riverine habitat and 3:1 for riparian habitat impacted, for a total of 7.36 acres purchased. These compensatory mitigation credits serve as a form of advanced mitigation, because the habitat at the bank (Bullock Bend Mitigation Bank, Fremont Landing Conservation Bank) was restored years before the impact of the construction activity would occur. The purchase of mitigation bank credits would improve floodplain and shaded aquatic and riverine habitat for CCV steelhead.

Therefore, for all of the reasons discussed above, the proposed project is not expected to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild, nor appreciably diminish the value of designated or proposed critical habitat for the conservation of the species.

## **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, 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 CCV steelhead DPS or destroy or adversely modify its 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.

### **2.9.1. Amount or Extent of Take**

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

NMFS anticipates that juvenile and CCV steelhead would be killed, injured, harassed, or harmed as a result of Project implementation due to expected presence in the action area during the scheduled in-water work window. Take is expected to occur in the form of capture, wounding, killing, and harm resulting from dewatering activities. Additionally, adverse effects to steelhead are expected as a result of the overwater bridge structure and its resulting shading of critical habitat as well as removal of riparian vegetation. This is expected to reduce the primary productivity of the affected habitat and increase the number of predatory fishes and their ability to prey on listed fish species resulting in injury, death and harm to listed species.

It is not practical to quantify or track the amount or number of individuals that are expected to be incidentally taken as a result of the proposed action, due to the variability associated with the response of CCV steelhead to the effects of the proposed action, annual variations in the timing of spawning and migration, individual habitat use within the action area, and difficulty in observing injured or dead fish. However, it is possible to estimate the extent of incidental take by designating ecological surrogates, and it is practical to quantify and monitor the surrogates to determine the extent of incidental take that is occurring. The most appropriate threshold for incidental take is an ecological surrogate of temporary habitat disturbance expected to occur during dewatering activities and permanent habitat disturbance expected to occur, due to the bridge shade in critical habitat.

During dewatering activities, capture and handling result in fish behavioral modifications or stranding leading to harm or death. Shade reduces primary productivity of affected habitats and increases the number of predatory fishes in the action area and/or their ability to prey on listed fish species leading to injury. NMFS anticipates incidental take would be limited to the following forms:

- 1) Take in the form of harm, injury and death to juvenile CCV steelhead due to handling or stranding during the dewatering of approximately 0.75 acres of river habitat. This habitat disruption would affect the behavior of listed fish resulting in displacement and increased predation, and decreased feeding, which would result in decreased survival, reduced growth and reduced fitness, respectively.
- 2) Take in the form of harm to CCV steelhead from loss and degradation of river channel habitat that is expected to lead to death by creating habitat conditions that increase predation associated with the bridge structure components. The new bridge shades 0.14 acres of Dry Creek.

If the total acreage of dewatering areas for the Project exceeds 0.75 acres by more than 10 percent, the anticipated take levels described are also exceeded, triggering the need to reinitiate consultation. If the bridge structure shade footprint over Dry Creek exceeds 0.14 acres by more than 10 percent, the anticipated incidental take levels described are also exceeded, triggering the need to reinitiate consultation.

### **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. Reasonable and Prudent Measures**

“Reasonable and prudent measures” are non-discretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

1. Measures shall be taken to minimize adverse effects during fish relocation operations.
2. Measures shall be taken to minimize impacts to critical habitat.
3. Measures shall be taken by Caltrans to monitor and report on impacts related to bridge construction and dewatering.

### **2.9.4. Terms and Conditions**

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

1. The following terms and conditions implement reasonable and prudent measure 1:
  - a. All aspects of dewatering and fish relocation operations shall be supervised by at least one NMFS-approved biologist who will be personally on site throughout each phase of the dewatering and relocation operation.
  - b. A written plan for a fish relocation operation specific to this project shall be provided to NMFS for approval 45 days prior to implementation of the project. The plan shall be thoroughly understood by all individuals that are to be involved and operations shall be conducted in strict accordance with the written plan.
2. The following terms and conditions implement reasonable and prudent measure 2:
  - a. Caltrans shall develop and implement a Riparian and Restoration Plan addressing onsite habitat enhancement and purchase of mitigation bank credits to compensate

for permanent and temporal loss of habitat. As proposed by Caltrans, credits will be purchased at ratios of 1:1 for permanent impacts to riverine habitat and 3:1 for permanent impacts to riparian habitat. The plan shall also include monitoring for revegetated onsite locations. The plan shall be approved by NMFS 30 days prior to implementation.

3. The following terms and conditions implement reasonable and prudent measure 3:
  - a. Caltrans shall monitor the design of the dewatering operation to ensure the habitat disturbance does not exceed the proposed area (0.75 acre dewatering area). If the area is exceeded Caltrans shall contact NMFS within 24 hours.
  - b. Caltrans shall record the date, number, and specific location of all listed fish that are relocated from the cofferdam in addition to any direct mortality observed during in-water work and relocation. If a listed species is observed, injured, or killed by project activities, Caltrans shall contact NMFS within 24 hours, notification shall include species identification, the number of fish, and a description of the action that resulted in take.
  - c. A report shall include a summary description of in-water construction dates and activities, avoidance and minimization measures taken, mitigation credits purchased, and any revegetated areas on-site. Updates and reports required by these terms and conditions shall be submitted by December 31 of each year during the construction and monitoring period to:

Cathy Marcinkevage  
Central Valley Office  
National Marine Fisheries Service  
650 Capitol Mall, Suite 5-100  
Sacramento California 95814  
Email: cathy.marcinkevage@noaa.gov and Phone: (916) 930-5648

## **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).

- 1) Caltrans should continue to work cooperatively with other State and Federal agencies, private landowners, governments, and local watershed groups to identify opportunities for cooperative analysis and funding to support priority recovery actions for salmonid and sturgeon, including habitat restoration projects within the Sacramento River Basin. Implementation of future restoration projects is consistent with agency requirements set forth in section 7(a)(1).



## **2.11. Reinitiation of Consultation**

This concludes formal consultation for the Watt Avenue Bridge Replacement Project.

As 50 CFR 402.16 states, 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 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 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 (4) a new species is listed or critical habitat designated that may be affected by the action.

## **3. MAGNUSON-STEVENSON 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. 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 physical, biological, and chemical 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 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) 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 [CFR 600.905(b)]

This analysis is based, in part, on the EFH assessment provided by the Caltrans and descriptions of EFH for Pacific Coast salmon (PFMC 2014) contained in the fishery management plans developed by the PFMC and approved by the Secretary of Commerce.

### **3.1. Essential Fish Habitat Affected by the Project**

EFH designated under the Pacific Coast Salmon FMP may be affected by the proposed action. Additional species that utilize EFH designated under this FMP within the action area include fall-run/late fall-run Chinook salmon. Habitat Areas of Particular Concern (HAPCs) that may be either directly or indirectly adversely affected include (1) complex channels and floodplain habitats and (2) thermal refugia.

### **3.2. Adverse Effects on Essential Fish Habitat**

The effects of the proposed action on Pacific Coast salmon EFH would be similar to those discussed in the Effects of the Action section (2.5) for CCV steelhead. Based on the information provided, NMFS concludes that the proposed action would adversely affect EFH for federally managed Pacific salmon. Adverse effects to HAPCs are appreciably similar to effects to critical habitat; therefore, no additional discussion is included. Listed below are the adverse effects on EFH reasonably certain to have occurred and/or occur in the future as a result of the Project. Affected HAPCs are indicated by number in parentheses, corresponding to the list in Section 3.1:

1. De-watering/relocation
  - Degraded water quality (1, 2)
  - Temporary loss of habitat (1, 2)
2. Sedimentation and Turbidity
  - Reduced habitat complexity (1)
  - Degraded water quality (1, 2)
  - Reduction in aquatic macroinvertebrate production (1)
3. Contaminants and Pollution-related Effects
  - Degraded water quality (1, 2)
  - Reduction in aquatic macroinvertebrate production (1)
4. Removal of Riparian Vegetation
  - Reduced shade (2)
  - Reduced cover (1, 2)
  - Reduced supply of terrestrial food resources (1)
  - Reduced supply of instream woody materials (1)

### **3.3. Essential Fish Habitat Conservation Recommendations**

NMFS determined that the following conservation recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

The following conservation recommendations are necessary to avoid, mitigate, or offset the impact of the Project on EFH:

- (1) Caltrans should protect existing, and wherever practicable, establish new riparian buffer zones wide enough to support shading, large woody debris input, leaf litter inputs, sediment and nutrient control, and bank stabilization functions.
- (2) Caltrans should recommend to contractors to use biodegradable lubricants and hydraulic fluid in construction machinery. The use of petroleum alternatives can greatly reduce the risk of contaminants from entering the aquatic ecosystem.

Fully implementing these EFH conservation recommendations would protect EFH, by avoiding or minimizing the adverse effects described in section 3.2 for 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 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)).

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 affects the basis for NMFS' EFH Conservation Recommendations (50 CFR 600.920(l)).

## **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 user of this opinion is Caltrans. Other interested users could include contractors, citizens and landowners in the Dry Creek watershed, and other stakeholders in Dry Creek, California Central Valley steelhead, Cities of Roseville and Sacramento, as well as Placer and Sacramento Counties. The document will be available within two weeks at the NOAA Library Institutional Repository

[<https://repository.library.noaa.gov/welcome>]. The format and naming adheres to conventional standards for style.

## 4.2. Integrity

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

## 4.3. Objectivity

Information Product Category: Natural Resource Plan

**Standards:** This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

**Best Available Information:** This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion 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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