



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 ECO #: WCR-2022-00092

**May 13, 2022**

Zachary Fancher  
Senior Project Manager  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, CA 95814

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens  
Fishery Conservation and Management Act Essential Fish Habitat Response for the L-150  
Gas Transmission Retirement project

Dear Mr. Fancher:

This letter responds to your December 17, 2021, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and analysis, because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species.

We reviewed the Army Corp of Engineers (Corps) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced, but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. Specifically, we incorporated by reference the following documents, provided by the Corps and the applicant's consultant, in the initiation package that accompanied the original request for consultation, or in the subsequent correspondence with NMFS through electronic mail (email) during the course of the consultation process:

- The letter requesting initiation of formal consultation dated December 17, 2021 from Zachary Fancher (Corps)
- A Biological Assessment (BA) for the L-150 Gas Transmission Retirement project (ICF International 2021)

The proposed project for this consultation is to retire and remove a partially exposed section of a gas transmission pipeline (Line 150) where it crosses Putah Creek at the boundary of Yolo and Solano Counties, near the town of Winters, California, tributary to the Sacramento River. This project will involve the separate dewatering of Putah Creek, where the creek splits into two channels. Dewatering is necessary so the pipeline can be exposed, removed, and the trench refilled to pre-construction conditions. During dewatering it may be necessary to capture and relocate fish. The pipeline at the Putah Creek crossing is a 6-inch diameter, 0.135-inch thick, steel pipe. The project is needed because the Line 150 gas transmission line is being retired. A



portion of the pipeline is currently exposed within the Putah Creek crossing area along the southern channel, although the line is buried under the remainder of the channel, including the north flowing channel. No new pipeline, facilities, or structures would be installed within the pipeline removal area. The project would restore the Line 150 crossing at Putah Creek by removing the line section within the creek channel and banks, and restoring the pipeline removal area, which includes bank stabilization, site restoration and revegetation.

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. As stated in the BA, the only species likely to be present or effected by the proposed project is California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*) distinct population segment (DPS). There is no designated critical habitat within the action area. We incorporate by reference pages 1-1 to 1-2 of the BA (ICF International 2021).

"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). For the purposes of this consultation, NMFS adopts by reference the description of the action area provided on page 2-1 of the BA (ICF International 2021).

The "environmental baseline" refers to the condition of the listed species in the action area, without the consequences to the listed species 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 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).

NMFS adopts by reference the description of the environmental baseline provided on pages 3-1 to 3-6 of the BA (ICF International 2021) and is summarized with some additions below.

The Putah Creek watershed is characterized by cool, wet winters with high flows, and hot dry summers with low summer and fall run-off. Most of the annual precipitation falls as rain from November through April. Historically, Putah Creek flows were flashy, driven by rainfall events in winter, and the creek frequently overtopped its banks. However, following construction of the Solano Project, stream flow in lower Putah Creek has been regulated year-round with median flows slightly higher in summer than in winter in response to spring through- fall irrigation releases and the capture of winter high flows behind Monticello Dam at Lake Berryessa. This flow pattern is periodically interrupted, however, during large rainfall events in winter and spring that result in uncontrolled spills from Monticello Dam and large pulses of inflows from downstream tributaries (Kiernan *et al.* 2012). Putah Creek is listed as an impaired water body under CWA Section 303(d). The low availability of water quality data throughout most of lower Putah Creek limits the ability to comprehensively assess water quality conditions within the lower creek (EDAW 2005). Factors affecting water quality conditions in the action area include urban stormwater runoff from the City of Winters and non-point source loadings including unknown influences of agricultural activities below the diversion dam, illegal dumping throughout the watershed, and mercury discharges from the upper watershed (EDAW 2005). Since 2003, efforts to release fall attraction flows and improve floodplain function have resulted in the return of fall-run Chinook salmon (*O. tshawytscha*) but to date no CCV steelhead have been reported

(Chapman 2022). Under the ESA, “effects of the action” are all consequences to listed species 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).

NMFS adopts here by reference pages 4-1 through 4-8 of the BA, and the letter requesting consultation, which offer a detailed discussion and comprehensive assessment of the effects of the proposed action (ICF International 2021). NMFS has independently evaluated the analysis of effects provided by the Corps and the applicant and determined it meets our regulatory and scientific standards. In addition, NMFS has applied its own analytical tools to independently assess and verify the anticipated extent of effects likely to occur as a result of the proposed action. Through this process, the potential pathways of effects were identified and considered, including:

- Turbidity and sedimentation – Increase in turbidity and suspended sediment that may lead to increased deposition of fine sediment and degradation of migration and rearing habitat.
- Modification of physical habitat – Physical alteration, both temporary and permanent, of the bank, channel and streambed that may affect salmonid migration and rearing habitat including water depths, cover, substrate conditions, or channel obstructions.
- Contaminants – Accidental discharges of toxic substances that can kill aquatic invertebrates and reduce the availability of food for juvenile salmonids.
- Injury or death – Contact with construction equipment or materials, or unintentional injury or mortality attributed to fish capture and handling.
- Fish passage – Installation of cofferdams and associated stream dewatering may result in creating impediments to fish passage once in place.

CCV steelhead will be affected by the proposed action. The effects of construction will be temporary and will cease soon after construction.

“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. NMFS adopts by reference the description of cumulative effects provided on page 4-7 of the BA (ICF International 2021).

The Integration and Synthesis section is the final step in our assessment of the risk posed to species as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species, 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 as a whole for the conservation of the species.

The 2016 status review (NMFS 2016b) concluded that, overall, the status of CCV steelhead appears to have changed little since the 2011 status review and should remain as a threatened species. According to the 2016 status review, although there is still a general lack of data on the status of wild populations, there are some encouraging signs, as several hatcheries in the Central

Valley have experienced increased returns of steelhead. There has also been a slight increase in the percentage of wild steelhead in salvage at the south Delta fish facilities, and the percentage of wild fish in those data remains much higher than at Chippis Island. Mill Creek likely supports one of the best wild steelhead populations in the Central Valley, though at much reduced levels from the 1950s and 1960s (ICF International 2021). Restoration efforts in Clear Creek continue to benefit CCV steelhead. However, the catch of unmarked (wild) steelhead at Chippis Island is still less than 5 percent of the total smolt catch, which indicates that natural production of steelhead throughout the Central Valley remains at very low levels (NMFS 2016b). Despite the positive trend on Clear Creek and encouraging signs from Mill Creek, all other concerns raised in the 2016 status review remain. These concerns include construction of dams, which has led to loss and alteration of rearing habitat through reduced flows and increased water temperatures. Additionally, in many areas migration corridors have likely been limited due to thermal barriers.

Historically, anadromous steelhead spawned in the tributaries of Putah Creek upstream of Monticello Dam. As of 2015, there are no confirmed reports of anadromous steelhead in Putah Creek. *O. mykiss* have been observed downstream of the Putah Diversion Dam to Dry Creek. Spawning *O. mykiss* have been observed in lower Putah Creek during the late fall (WSPSS 2015), with peak spawning in early to late December (Normandeau Associates 2017). In winter and spring, juvenile *O. mykiss* have been observed as far downstream as the City of Davis (downstream of the action area), and during summer as far downstream as the Hasbrook crossing, approximately 1.5 miles upstream of the action area (EDAW 2005). Given that this latter sighting was during the early years of the Putah Creek Accord flow requirements, juvenile steelhead may be present in the action area during implementation of the proposed action.

In the action area, factors adversely affecting steelhead include habitat modifications, non-native species introductions, lack of suitable spawning habitat, and elevated water temperatures—especially during summer (EDAW 2005). Although no non-flow-related fish passage issues were observed in the action area during field surveys, Monticello Dam and Putah Diversion Dam upstream of the action area completely block steelhead from accessing historical spawning and rearing habitat in the upper watershed. Furthermore, other natural and human-made migration barriers (e.g., beaver dams, Los Rios check dam) downstream of the action area may also impede fish from accessing the action area.

Temporary increases in turbidity and suspended sediment in Putah Creek are expected to occur during in-water Project activities. The potential for turbidity and suspended sediment to exceed background levels in the creek are greatest during removal of the temporary cofferdams and channel re-watering. However, because of the small footprint and short duration of these activities, any noticeable increases in turbidity are expected to be brief and diminish within a short distance downstream of the work site (approximately 200 feet) due to settling of sediment and generally low stream flow of an average of 20 cfs during the summer when this project will be completed (ICF International 2021). Upon completion of construction and restoration activities, the gradual release of water from the cofferdams into the downstream channel would further minimize the mobilization of sediment as flow is restored to the low-flow channel. Any sedimentation effects on the channel downstream of the worksite are expected to be minimal given the avoidance and minimization measures (AMMs) implemented and the small quantities of sediment that are expected to be released.

The temporary loss of vegetation within the action area can cause an increase of in-stream water temperature and loss of juvenile rearing habitat. The proposed project would result in the temporary loss of 0.527 acres of riparian cover, but as this is a small footprint compared to the

overall riparian cover in the surrounding area, the loss of shade will be minor. Additionally, as a result of revegetation plans after the project completion, regrowth is expected to occur within 2 to 4 years.

There is a possibility that contaminants could be introduced from the construction equipment but due to the implementation of AMMs, spills are not expected to occur.

Some injury or death to individual fish is possible during fish relocation efforts that will occur prior to dewatering. During the installation of the cofferdams, it is possible that juvenile steelhead may come into contact with construction equipment or the cofferdams themselves as they are put in place. However, it is likely that most fish in the area would move away from the activity. Once the cofferdams are in place, dewatering will occur if there is any. If pooled water remains present, screened pumps would be used. If fish are present in pooled water they would be captured and relocated. A fish relocation plan and all appropriate AMMs will be implemented (incorporating by reference section 2.3 of the BA) to minimize impacts, but harassment, injury and death to a small number of fish is expected to occur during fish relocation and dewatering activities.

After reviewing and analyzing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of CCV steelhead.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by interim guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

### **Amount or Extent of Take**

In this biological opinion, NMFS determined that the proposed action is reasonably certain to result in incidental take of individual juvenile CCV steelhead. Incidental take in the form of injury, harm or harassment is expected to occur through capture and relocation prior to dewatering activities. Because of proposed project timing, and due to the location and small size of the action area in relation to surrounding habitat, actual numbers of fish adversely affected are expected to be low. NMFS does not anticipate the incidental take of any spawning fish, or the eggs, or fry life stages of CCV steelhead, since no spawning habitat is present in the action area.

NMFS cannot, using the best available information, precisely quantify and track the amount or number of individuals that are expected to be incidentally taken (injured, harmed, harassed, or killed) as a result of the proposed action due to the varying population size, annual variations in the timing of migration, individual habitat use within the action area, and difficulty in observing harassed, injured, or harmed fish. However, it is possible to estimate the extent of incidental take by designating as ecological surrogates, those elements of the project that are expected to result in adverse effects to listed species, that are more predictable and/or measurable, with the ability to monitor those surrogates to determine the extent of take that is occurring.

The most appropriate threshold for incidental take is an ecological surrogate of the area to be dewatered. The behavioral modifications or fish responses that result from the dewatering are described below. NMFS anticipates incidental take will be limited to the following forms:

1. Take in the form of harm to rearing juvenile CCV steelhead from the placement of the cofferdams. The placement of the dams in the river will cause fish to be diverted from their normal rearing habitat and will result in a temporary decrease in feeding area. The project proposes to dewater 780 feet of the creek. Juvenile CCV steelhead will experience reduced growth and fitness as a result.
2. Take in the form of harassment, injury, or death during the capture and relocation of fish that are removed from the dewatered area. The capture and handling of fish is expected to result in stress to the fish and low levels of injury or death, reducing fitness and survival.

If the dewatered section of the creek exceeds approximately 780 feet, anticipated incidental take would be exceeded.

### **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.

### **Reasonable and Prudent Measures**

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

1. The Applicant shall ensure that contractors, construction workers, and all other parties involved with the Project, implement the Project as proposed in the BA and this biological opinion.
2. The Corps shall ensure the Applicant provides NMFS with a post-construction final report describing Project activities to ensure effects/incidental take did not exceed the amount identified in this biological opinion.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the Federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. The Corp 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.

The incidental take exemption conferred by this incidental take statement is based upon the proposed action occurring as described in this Biological Opinion, and in more detail in the Action Agency's Biological Assessment, as well as the Terms and Conditions noted herein. 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) The Corps/Applicant shall provide a copy of this biological opinion and BA and biological opinion to the contractor, making the primary contractor responsible for implementing all requirements and obligations included in these documents and to educate and inform all other contractors involved in the Project of the requirements of the BA and biological opinion.
  - b) Worker Environmental Awareness for construction personnel shall be conducted by a NMFS-approved biologist(s) for all construction workers prior to commencing construction activities. The program shall provide workers with information on their responsibilities with regard to Federally listed fish, their critical habitat, an overview of the life-history of all the species, information on take prohibitions, protections afforded these animals under the ESA, and an explanation of the relevant terms and conditions of the biological opinion.
2. The following terms and conditions implement reasonable and prudent measure 2:
  - a) The Corps/Applicant shall provide NMFS with a final Project description describing the final number of steelhead and/or rainbow trout relocated. The report shall include the number and age class of steelhead and/or rainbow trout relocated, the number killed, and the amount of the revegetated area. By December 31 after project completion, the final report shall be submitted to:

By email (preferably): [ccvo.consultationrequests@noaa.gov](mailto:ccvo.consultationrequests@noaa.gov) or:

Cathy Marcinkevage  
Assistant Regional Administrator  
California Central Valley Office  
National Marine Fisheries Service  
650 Capitol Mall, Suite 5-100  
Sacramento, California 95814

## **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 regarding the development of information (50 CFR 402.02).

1. The Corps and the permit holder/applicant 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 salmonid habitat restoration projects.
2. Trees removal should be avoided when possible, and should be replanted at a 3:1 ratio to ensure successful revegetation.

### **Reinitiation of Consultation**

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

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. Section 305 (b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species’ contribution to a healthy ecosystem. For the purposes of the MSA, EFH means “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”, and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.0-5(b)).

EFH designated under the Pacific Coast Salmon Fisheries Management Plan (FMP) may be affected by the proposed action. Salmon species that utilize EFH designated under this FMP within the action area include fall-run and 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.

The effects of the proposed action on Pacific Coast Salmon EFH will be similar to those discussed above for CCV steelhead (and in the incorporated BA). Based on the information provided, NMFS concludes that the proposed action would adversely affect EFH for Federally



managed Pacific Coast Salmon EFH. Listed below are the adverse effects on EFH reasonably certain to occur. Affected HAPCs are indicated by number, corresponding to the list in the previous paragraph.

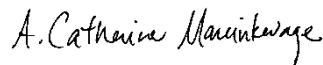
1. Temporary increased Sedimentation and Turbidity
  - a. Reduced habitat complexity (1)
  - b. Degraded water quality (1)
  - c. Reduction in aquatic macroinvertebrate production (1)
  
2. Modification of Physical Habitat and Riparian Habitat
  - a. Temporary loss of riparian habitat which provide shade, cover, nutrients, and habitat complexity due to vegetation removal or trimming (1, 2)

The terms, conditions, and conservation recommendations in this biological opinion contain adequate measures to avoid, minimize, or otherwise offset the adverse effects to EFH. Therefore, NMFS has no additional EFH conservation recommendations to provide.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository (<https://repository.library.noaa.gov/>). A complete record of this consultation is on file at the NMFS California Central Valley office.

Please direct questions regarding this letter to Ellen McBride, [ellen.mcbride@noaa.gov](mailto:ellen.mcbride@noaa.gov) or (916) 930-3712, at the California Central Valley office.

Sincerely,



Cathy Marcinkevage  
Assistant Regional Administrator for  
California Central Valley Office

Enclosure

cc: ARN 151422-WCR2021-SA00142  
Zachary Fancher, [Zachary.J.Fancher@usace.army.mil](mailto:Zachary.J.Fancher@usace.army.mil)

## References

Chapman, E., E. Jacinto, and P. Moyle. Habitat restoration for Chinook salmon in Putah Creek: a success story. <https://californiawaterblog.com/2018/05/13/habitat-restoration-for-chinook-salmon-in-putah-creek-a-success-story/>

EDAW. 2005. Lower Putah Creek Watershed Management Action Plan, Phase I – Resource Assessments. December. Prepared for Lower Putah Creek Coordinating Committee. Sacramento, CA.

ICF International. 2021. Biological Assessment/Essential Fish Habitat Assessment for the PG&E Gas Transmission Line 150 (R-670) Retirement at Putah Creek Project, Yolo and Solano County, California. January. (ICF 00280.20) Sacramento, CA. Prepared for Pacific Gas and Electric Company, Sacramento, CA.

Kiernan J. D., P. B. Moyle, and P. K. Crain. 2012. Restoring Native Fish Assemblages to a Regulated California Stream using the Natural Flow Regime Concept. *Ecological Applications* 22(5):1472–1482.

National Marine Fisheries Service. 2016b. 5-Year Status Review: Summary and Evaluation of California Central Valley Steelhead Distinct Population Segment. Pages 44 in Department of Commerce, editor, Sacramento, California.