



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-2021-01729

August 12, 2021

Chandra Jenkins
Chief, California Delta Section
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 Lodi Lake Erosion Repair Project

Dear Chandra Jenkins:

This letter responds to your July 14, 2021, request for initiation of consultation with NOAA's 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 and designated critical habitats.

We reviewed the U.S. Army Corps 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 incorporate by reference the following documents, which have been provided, by the Corps, the applicant, or 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 formal initiation request letter dated May 27, 2021, from Ms. Chandra Jenkins (Corps).
- A Biological Assessment (BA) for the Lodi Lake Erosion Repair Project (Moore 2020).

Consultation History

- On April 16, 2021, the Corps sent a letter requesting concurrence that the proposed project was not likely to adversely affect listed species or designated critical habitat.
- From April 20, 2021, to May 5, 2021, emails were exchanged between NMFS and the Corps regarding a need for more information and BA corrections.



- On May 13, 2021, after a discussion between NMFS, the Corps, and the City of Lodi, there was agreement that a determination of “likely to adversely affect” was more appropriate.
- On July 14, 2021, the Corps provided the final BA and requested formal consultation.
- After NMFS determined the requesting materials were sufficient, consultation was initiated on July 14, 2021.

Under 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). The Corps proposes to issue a Department of the Army permit to the City of Lodi, the applicant, to carry out the Lodi Lake Erosion Repair Project (Project).

For the purposes of this consultation, NMFS adopts by reference the complete project description as it is presented in the BA (refer to pages 1-3 of the BA, Moore 2020). In summary, the Project as a whole would encompass a total of 3.03 acres, mostly consisting of developed parkland that will be used for construction access and staging. The project would involve bank stabilization in approximately 0.89 acres of riverbank located below the ordinary high-water mark (OHWM) of the Mokelumne River and 0.10 acres above the OHWM. Total construction of bank stabilization would include approximately 1600 linear feet of shoreline of the Mokelumne River. Existing rock slope protection (rsp) that consists of old concrete debris up to approximately 2 feet deep would be removed from above and below the OHWM within the designated project area, which would then be graded and protected from further erosion with a blanket of clean quarry stone.

The project would also involve the removal of approximately 16 non-native trees along the riverbank, most of which are relatively small and contribute little, if any, to shading the riparian corridor. Approximately 11 native trees would also be removed and/or trimmed. Native trees to be removed are limited to those leaning over the water in a manner that would preclude accomplishing the bank stabilization. Native oaks and native riparian tree species will be replanted along the bank in approximately the same locations as where the trees were removed at a 1:1 ratio.

Construction is anticipated to occur in February 2022, during the annual draining of Lodi Lake and when river levels are at their lowest. The majority of the construction, including all grading and slope stabilization, is anticipated to take no longer than one month. Tree planting and installation of irrigation for the new trees are expected to occur within a few months of grading and slope stabilization.

To mitigate for the permanent loss of critical habitat due to the placement of rsp, mitigation credits will be purchased from the Bullock Bend mitigation bank at a 1:1 ratio to the amount of critical habitat lost.

ENDANGERED SPECIES ACT

In this biological opinion, we examined the status of threatened California Central Valley (CCV) steelhead (*O. mykiss*) distinct population segment (DPS) (CCV steelhead) that would be adversely affected by the Project to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discuss the function of the physical or biological features (PBFs) essential to the conservation of the species that create the value of that habitat. PBFs are described in the critical habitat designation for CCV steelhead (70 FR 52488; September 2, 2005) and the CCV steelhead recovery plan (NMFS 2014). NMFS adopts by reference the description of the status of the species and its designated critical habitat that is provided on page 6 of the BA (Moore 2020).

"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 of the BA that was prepared by the applicant's consultant and supplied by the Corps as part of the original initiation package (Moore 2020).

The action area, as described in the BA, encompasses 3.03 acres, comprised of 1.13 acres of Mokelumne Riverbank below the OHWM (this includes the 0.89 acres of permanent impacts and the surrounding areas and 500 feet downstream that could be temporarily affected by increased turbidity) and 1.69 acres of uplands situated within the Lodi Lake Park recreation area. The area below the OHWM will be impacted by excavation and fill activities, while the upland areas will be used for construction access and staging. The action area includes designated critical habitat for CCV steelhead. Also included in the action area is the Bullock Bend Mitigation Bank.

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). NMFS adopts by reference the description of the environmental baseline provided on pages 7-11 of the BA (Moore 2020).

In addition to the environmental baseline presented in the BA the environmental baseline of the mitigation bank must also be considered. Mitigation banks present a unique factual situation, which warrant 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 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 will 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 opinion.

The Project occurs within the service area of a bank approved by NMFS with available credits for purchase or which are anticipated to have available credits for purchase prior to construction under the proposed action.

Bullock Bend Mitigation Bank:

Established in 2016, the Bullock Bend Mitigation Bank is a 119.65-acre floodplain site along the Sacramento River at the confluence of the Feather River (Sacramento River Mile 80) and is approved by NMFS to provide credits for impacts to Sacramento River winter-run salmon, Central Valley spring-run Chinook salmon, and CCV steelhead. There are salmonid floodplain restoration, salmonid floodplain enhancement, salmonid riparian restoration, and salmonid riparian enhancement credits available. To date, there have been 82.91 of 119.65 credits sold and the ecological value (increased rearing habitat for juvenile salmonids) of the sold credits are part of the environmental baseline. Of the types of credits available, the salmonid riparian restoration credits are most applicable to this project and, to date, there have been 28.44 of those credits sold at this mitigation bank and 6.17 credits are currently available for purchase. All features of this bank are designated critical habitat for CCV steelhead.

Although the aquatic habitat in the action area has been substantially altered and its quality diminished through years of human actions, its value remains high for the above NMFS-listed species and designated critical habitat. The Recovery Plan for CCV steelhead (NMFS 2014) describes the Mokelumne River as a Core 2 population. Core 2 populations are secondary to Core 1 populations, but are also needed to support recovery of the species. The three priority recovery actions for the Mokelumne River are 1) Adaptive water release management 2) Cold-water pool management and 3) Hatchery management.

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).

Pages 11 through 14 of the BA and the letter requesting consultation offer a detailed discussion and comprehensive assessment of the effects of the proposed action, which NMFS adopts here by reference (Moore 2020). 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 temporary increases in both turbidity and sound disturbances from construction activity, and the temporary and permanent diminishment of the ecological function and value of the PBFs of designated critical habitat for the conservation of the species within the action area, as summarized below. The Corps proposes to permit the placement of rsp along 1600 linear feet of the bank of the Mokelumne River to stabilize and protect the shoreline from future erosion and eventual bank failure. The temporary and long-term effects of this proposed action are:

- Temporary minor impacts to fish from underwater sound and increased turbidity, including behavioral changes, caused by construction activities including the operation of heavy equipment immediately adjacent to the river and the placement of rsp in the river and on its bank.
- Temporary and permanent reduction in riparian habitat quantity and quality. The temporary impacts to the designated critical habitat in the action area will reduce thermal refugia and prey availability, as well as increase exposure to predation, for migrating or rearing individual listed salmonids in the action area. This habitat is expected to largely recover within two to five years after the bank stabilization work has been completed and the replanted native riparian vegetation has been successfully reestablished. The incorporation of specific conservation measures into the proposed action as described on page 12 of the BA and 1:1 replanting plan are expected to improve bank stability over the long term and lead to the reestablishment of native vegetation and natural bank conditions. This will help restore the ecological function and PBFs of this habitat over time, although there will be a temporal delay in the realization of those benefits, and the proposed action will result in the permanent conversion of a small portion of this habitat from aquatic to upland habitat.

The effects of construction will be temporary and expected to impact a few CCV steelhead individuals during the one-month construction period. The temporary loss of habitat quality resulting from the proposed action is a small portion of the available habitat in the Mokelumne River. A few individual CCV steelhead will be temporarily displaced or disturbed, as a result of increased turbidity and construction related noise in the aquatic environment generated by the operation of heavy equipment on the adjacent upland habitat.

Approximately 1.24 acres of the designated critical habitat for CCV steelhead will be temporarily impacted for a period of approximately 5 weeks. Temporary effects in the action area during this time will likely include increased turbidity and higher concentrations of suspended sediment in the water column during the 4 week construction period and for a brief period of time afterwards, lasting anywhere from several hours to a few days following, as the turbidity dissipates downriver and attenuates to background conditions. In addition to these temporary effects to designated critical habitat, the proposed action will result in the permanent loss of a total of 0.89 acres of designated critical habitat, which will remain rsp. This constitutes extending the useful life of the rsp and results in reduced fitness of CCV steelhead.

The critical habitat designation for CCV steelhead (70 FR 52488; September 2, 2005) lists the PBFs of those habitats, which are described in the recovery plan (NMFS 2014).

The PBFs that will be affected by the proposed action include migratory corridors and rearing habitat for CCV steelhead. Due to the location and timing of the proposed action, however, no spawning habitat will be affected. Adverse effects to rearing and migratory corridor PBFs that are anticipated to occur as a result of the construction activities described include a temporary increase of suspended solids and turbidity in the water column, a temporary reduction in foraging habitat and prey availability in nearshore riparian waters, and an expected increase in exposure and vulnerability to predators in close proximity to the action area during and immediately following construction.

The Applicant will purchase compensatory mitigation credits at a 1:1 ratio to compensate for the permanent loss of 0.89 acres of riparian habitat. The purchase of mitigation credits are expected to offset impacts for CCV steelhead PBFs. The purchase of credits will be provided in the short-term as the purchase of credits at a mitigation bank ensures immediate and effective critical habitat benefits. These benefits are ensured as the bank is managed, monitored, and maintained in perpetuity.

The purchase of mitigation credits will address the loss of ecosystem functions due to the modification of the riverbank. These credit purchases are ecologically relevant to the PBFs of CCV steelhead critical habitat affected by the proposed action, because the bank includes salmonid riparian and floodplain credits with habitat values that are already established and meeting performance standards. Also, the bank is located in an area that will benefit CCV steelhead. The purchase of mitigation credits is expected to benefit the PBFs of freshwater rearing habitat and migration corridors for juvenile CCV steelhead by providing suitable riparian habitat. The floodplains and riparian habitat 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 will be realized, because the NMFS-approved bank considered in this opinion has 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.

“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 in section 4 of the initiation letter that was supplied by the Corps as part of the original initiation package.

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat, as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency’s biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species. The proposed action is scheduled to occur during a period of drawdown of Lodi Lake, in a reach of the river where there is historically no spawning habitat present. Despite being a migratory corridor and rearing habitat for CCV steelhead, the numbers of individuals from CCV steelhead present at the time of construction are expected to be very low, and impacts to those individuals are not likely to translate into population level effects.

Specifically, CCV steelhead adults and juveniles have the potential to be migrating through the action area during the in-water work window. Adult CCV steelhead migrating through the action area are not expected to be present in large numbers during this time of the year, and those few that might be present would most likely be oriented towards the center of the channel, where the current is stronger and the effects of the action would be muted or sufficiently diminished to minimize their exposure to adverse effects. A small number of juvenile CCV steelhead are expected to be present during the in-water work window. In addition, the action area represents a very small proportion of the adjacent habitat available for fish to disperse into, and the effects from the action are expected to dissipate rapidly within the context of the larger surrounding habitat as well. Therefore, construction effects to listed species are expected to be temporary and limited to behavioral responses and injury or death to a few individuals from CCV steelhead migrating through the action area during the month of February.

In addition, the proposed action will result in the temporary disturbance of up to 0.36 acres, and permanent impact to 0.89 acres, of designated critical habitat for CCV steelhead. This will diminish the ecological function and value of the PBFs of designated critical habitat for the conservation of species in the action area (*i.e.*, migratory corridor and rearing habitat) over both the short and long term. The area is expected to largely recover much of the previous function and value following the stabilization of the bank and successful re-establishment of native

vegetation. The disruption of the habitat and temporary degradation of the PBFs in the action area during construction and prior to the successful re-establishment of native vegetation is not expected to appreciably reduce the ability of listed fish to utilize the available habitat adjacent to and adjoining the action area for rearing and migration. To mitigate for the permanent impacts of the project on critical habitat, the applicant is proposing off-site compensatory mitigation for permanent impacts to 0.89 acres of waters of the U.S., wetlands, and CCV steelhead habitat at a 1:1 ratio through the purchase of credits at an agency-approved mitigation bank, Bullock Bend Mitigation Bank.

The Mokelumne River has been identified as a Core 2 for CCV steelhead in the NMFS recovery plan (NMFS 2014), and recovery actions such as adaptive water management, cold pool management, and hatchery management are needed in order for the watershed to support recovery of the species. Although the proposed action will result in permanent impacts to riparian habitat, the replanting of trees and purchase of credits at a mitigation bank is expected to offset adverse effects.

This project constitutes a continuation of the degradation of a non-natural bank. Although individuals of the Mokelumne population are expected to be adversely affected at this location, there are adjacent areas that offer riparian cover while the planted vegetation establishes. CCV steelhead are widespread within the Central Valley and this project is not expected to affect the species at the DPS level, or critical habitat at the designation level.

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, NMFS has concluded that the proposed action is not expected to reduce appreciably the likelihood of both the survival and recovery of the listed species in the wild by reducing their numbers, reproduction, or distribution; or appreciably diminish the value of designated critical habitat for the conservation of the species. It is therefore NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of CCV steelhead DPS, or destroy or adversely modify their designated critical habitat.

1. 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.

1.1. Amount or Extent of Take

In this biological opinion, NMFS determined that the proposed action is reasonably certain to result in the incidental take of individual adult and juvenile CCV steelhead. Incidental take in the form of injury, harm or harassment is expected to occur through alteration of habitat conditions in a manner that may significantly disrupt normal behavior. 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, fry, or larval 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) as a result of the proposed action due to the variability and uncertainty associated with the long-term response of listed species to the effects of the proposed action, 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 habitat degradation, which includes the degradation of aquatic habitat, through the placement of rsp below the ordinary high water mark (OHWM). The behavioral modifications or fish responses that result from the habitat disturbance are described below. NMFS anticipates incidental take will be limited to the following forms:

1. Take in the form of harm to rearing juvenile and migrating adult CCV steelhead from the degradation of aquatic habitat from the placement of up to 0.89 acres of rsp below to OHWM. This loss will affect juvenile CCV steelhead each year through displacement or increased predation, resulting in decreased growth and survival.
2. Take in the form of injury or harassment during physical placement of rsp and elevated turbidity in the aquatic environment relative to environmental background conditions. The analysis of the effects of the proposed action anticipates that construction activities will result in a temporary disturbance of up to 1.13 acres, including up to 500 feet downstream, during February 2022, and for up to 1 week after.

Incidental take will be exceeded if the amount of habitat disturbance described in the above is exceeded.

1.2. 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, destruction, or adverse modification of critical habitat.

1.3. 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. Measures shall be taken to minimize the impacts of bank stabilization by properly implementing BMPs that provide beneficial growth and survival conditions for juvenile steelhead.
2. Measures shall be taken to 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.
3. The Corps/City of Lodi shall provide NMFS with a post-construction final report describing Project activities to ensure effects/incidental take did not exceed what was described in the BA and this biological opinion.

1.4. 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 Corps 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) The Corps or permit applicant shall take all reasonable precautions to prevent heavy machinery from operating in the water. Shall limit construction activities to daylight hours and coordinate construction activities to occur when the river stage is at its lowest. This includes staying apprised of current weather conditions and relevant forecasts for the local area during the in-water work window, in order to avoid pulse flows that might be utilized by migrating fish. The applicant shall cease all in-water work if more than 0.25 inches (6.35 millimeters) of rainfall is forecasted to occur within 72 hours of scheduled construction activities.
 - b) The Corps or permit applicant shall visually inspect the waterway from the bank each day before initiating construction activities to ensure no listed species are immediately present in the action area.
 - c) BMP methods used for erosion control shall not contain monofilament material. Any non-biodegradable materials used on site (e.g., silt fence) shall be removed upon Project completion.
 - d) Any remaining loose soil disturbed by the Project shall be stabilized at the end of construction and upon Project completion to prevent any undesirable materials from entering the waterway during the first rainstorm of the season.
 - e) Stockpiled materials shall be located in areas that avoid disturbance to aquatic species, riparian vegetation, and aquatic habitat. Stockpiles not in use for prolonged periods shall be covered.
 - f) Vehicle tracks onto haul roads shall be cleaned as needed by a street sweeper or similar means, to prevent soil from leaving the site and being transported toward any waterway. Tracks shall not be sprayed with water in a manner that results in turbid water approaching or entering any waterway or storm drain.
 - g) All portable toilets shall be located at least 50 feet from any waterway, shall not be placed on ground which slopes toward the water, and shall be properly secured to the ground if there is risk of being blown over by wind (via sandbags, anchors, etc.).
 - h) For 2 years following the completion of the project, the trees planted as part of the revegetation effort shall be checked annually to ensure continued growth and survival. A report of the vegetation survival shall be sent to NMFS annually.
- 2) The following terms and conditions implement reasonable and prudent measure 2:

- a) The Corps shall provide a copy of this biological opinion and the BA 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) A NMFS-approved Worker Environmental Awareness Training Program 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.
- 3) The following terms and conditions implement reasonable and prudent measure 3:
- a) The Corps/City of Lodi shall provide NMFS with a final Project description describing the final amount of rsp placed. The report shall include the linear length of rsp placed, the amount of rsp placed below the OHWM (approximate acreage), and the linear length of the revegetated area. By December 31 after Project completion, the final Project description and receipt of mitigation credit purchase shall be submitted to:

By email (preferably): 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

1.5. 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. The Corps and the permit applicant/holder 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. The Corps should limit the amount of large rsp used for bank and in-stream protection in the Central Valley to the minimum amount needed for erosion and scour. When possible, include smaller rocks to fill interstitial spaces, and create vegetated intertidal bench section on levee. Engineering plans should be provided to the contractors that clearly

show the amount of rsp to be placed at the Project site. Limiting large rsp in design considerations is consistent with recovery actions described in NMFS' Recovery Plan (NMFS 2014).

3. Trees should be replanted at a 3:1 ratio to ensure successful revegetation.
4. Wherever possible bank stabilization should be incorporated around existing trees rather than trees being removed.

1.6. Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the Corps or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the amount or extent of incidental taking specified in the ITS is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (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 this biological opinion; or if (4) a new species is listed or critical habitat designated that may be affected by the identified action.

Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response

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.

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.

The effects of the proposed action on Pacific Coast Salmon EFH will be similar to those discussed above for CCV steelhead. Based on the information provided, NMFS concludes that the proposed action would adversely affect EFH for Federally managed Pacific Coast 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 occur. Number indicates affected HAPCs, corresponding to the list in the previous paragraph.

1. Sedimentation and Turbidity

- Reduced habitat complexity (1)
- Degraded water quality (1)

- Reduction in aquatic macroinvertebrate production (1)

2. Installation of Rsp

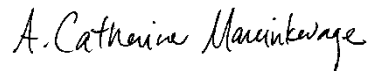
- Permanent loss of natural substrate (1)
- Reduced habitat complexity (1)
- Increased bank substrate size (1)
- Increased predator habitat (1)

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 biological opinion 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 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.

Please direct questions regarding this letter to Savannah Bell, savannah.bell@noaa.gov or (916) 930-3721 at the California Central Valley office.

Sincerely,



Cathy Marcinkevage
Assistant Regional Administrator for
California Central Valley Office

Enclosure

cc: Copy to File: ARN151422-2021-SA00079

REFERENCES

Moore Biological Consultants. 2020. Biological Assessment for the Lodi Lake Erosion Repair Project, City of Lodi, California. 22 pages.

National Marine Fisheries Service. 2014. Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead. California Central Valley Area Office. July 2014.