State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Deputy Director
Ecosystem Conservation Division
Post Office Box 944209
Sacramento, California 94244-2090
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

November 26, 2018

Mr. Paul Souza, Regional Director
U.S. Fish and Wildlife
Pacific Southwest Region
2800 Cottage Way, Room W2606
Sacramento, California 95825

Dear Mr. Souza:

Concurrence for the Implementation of the San Joaquin River Restoration Program and Accompanying Hatchery and Genetic Management Plan Project (2080-2018-014-04)

The California Department of Fish and Wildlife (CDFW) received notification from the United States Fish and Wildlife Service (USFWS) on or about October 29, 2018, notifying CDFW that the National Marine Fisheries Services (NMFS) issued Scientific Research and Enhancement Permit 20571 (Permit) to USFWS on September 10, 2018, for implementation of the San Joaquin River Salmon Conservation and Research Hatchery Program (Project). The notification also included copies of NMFS' Biological Opinion (Service file No.151422-WCR2017-SA00345) (BiOp) for the Project.

NMFS issued the Permit 20571 pursuant to section 10(a)(1)(A) of the federal Endangered Species Act. The Permit authorizes take of ESA-listed Central Valley spring-run Chinook salmon (*Onchorhynchus tshawytscha*) for hatchery propagation, research, and enhancement activities at the San Joaquin Conservation Hatchery Facilities, to establish and maintain an experimental population of spring-run Chinook salmon in the San Joaquin River. (See Cal. Reg. Notice Register 2018, No. 47-Z, p. 2053.) The Permit and its associated BiOp describe the Project and set forth a series of measures to minimize harm to spring-run Chinook salmon from Project activities. Spring-run Chinook salmon is designated as a threatened species pursuant to the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.). (See Cal. Code Regs., tit. 14, § 670.5, subd. (b)(2)(C).)

The Permit authorizes USFWS to collect, transport, rear, handle, and tag juveniles and eggs from the Feather River Fish Hatchery, as well as potential future collections from wild stocks in Butte Creek and the San Joaquin River, to implement a broodstock program. The Permit also authorizes intentional take of individuals by holding fish as captive broodstock, juvenile rearing and release, and take associated with research, monitoring, and evaluation studies.

CDFW has determined pursuant to Fish and Game Code section 2080.3 that this Permit will further the conservation of spring-run Chinook salmon. A copy of the CDFW determination is enclosed for your records and will be published in the California Regulatory Notice Register.

If you have questions regarding CDFW's concurrence, please contact Gerald Hatler, Environmental Program Manager, at (559) 243-4005, extension 127, or via email at gerald.hatler@wildlife.ca.gov.

Sincerely,

Chad Dibble, Deputy Director
Ecosystem Conservation Division
California Department of Fish and Wildlife

Enclosure

cc: Donald Ratcliff, Central Valley Supervisor
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Erin Strange, Chief
San Joaquin River Basin Branch
NOAA Fisheries West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814

ec: California Department of Fish and Wildlife

Julie Vance, Regional Manager
Central Region
julie.vance@wildlife.ca.gov

Gerald Hatler, Central Region
Environmental Program Manager
gerald.hatler@wildlife.ca.gov

Annee Ferranti, Central Region
Environmental Program Manager
annee.ferranti@wildlife.ca.gov

Tina Bartlett, Regional Manager
North Central Region
tina.bartlett@wildlife.ca.gov

Jeff Drongesen
Environmental Program Manager
North Central Region
jeff.drongesen@wildlife.ca.gov

Kevin Shaffer, Chief
Fisheries Branch
kevin.shaffer@wildlife.ca.gov

Richard Macedo, Chief
Habitat Conservation Planning Branch
richard.macedo@wildlife.ca.gov

Ryan Mathis, Senior Environmental
Scientist (Supervisor)
Habitat Conservation Planning Branch
ryan.mathis@wildlife.ca.gov

Wendy Bogdan, General Counsel
Office of the General Counsel
wendy.bogdan@wildlife.ca.gov

Steven Ingram, Assistant Chief Counsel
Office of the General Counsel
steven.ingram@wildlife.ca.gov

THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
ECOSYSTEM CONSERVATION DIVISION
POST OFFICE BOX 944209
SACRAMENTO, CA 94244-2090

CALIFORNIA ENDANGERED SPECIES ACT
FISH AND GAME CODE SECTION 2080.3 CONCURRENCE NO. 2080-2018-014-04

Project: Implementation of the San Joaquin River Restoration Program and Accompanying Hatchery and Genetic Management Plan

Location: Butte, Napa, Yolo, and Fresno Counties

Permittee: U.S. Fish and Wildlife Service

Background

On September 12, 2018, the National Marine Fisheries Service (NMFS) issued Scientific Research and Enhancement Permit 20571 (Permit) to the United States Fish and Wildlife Service (USFWS), pursuant to section 10, subdivision (a)(1)(a) of the federal Endangered Species Act (ESA). The Permit authorizes USFWS to take ESA-listed Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*)(spring-run Chinook salmon) from the Feather River Fish Hatchery (FRFH), Butte Creek, and the San Joaquin River for scientific research and enhancement activities associated with the San Joaquin River Restoration Program (SJRRP). The Permit authorizes collection of wild and hatchery eggs, juveniles, and adults for broodstock development and maintenance, releases of juvenile hatchery-origin spring-run Chinook salmon, and in-stream research, monitoring, and evaluation activities. Spring-run Chinook salmon is designated as a threatened species pursuant to the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.). (See Cal. Code Regs., tit. 14, § 670.5, subd. (b)(2)(C).) The purpose of the hatchery program is to produce spring-run Chinook salmon for reintroduction in order to restore a self-sustaining population in the San Joaquin River below Friant Dam. The Permit is effective for approximately five years and will expire December 31, 2023.

The Permit that is the subject of this determination, as well as the Permit's associated Biological Opinion (BiOp), arise from the SJRRP. The SJRRP executes a legal settlement from the lawsuit, *NRDC et al. v. Kirk Rodgers et al.* In 1988, a coalition of environmental groups led by the Natural Resources Defense Council (NRDC) filed a lawsuit challenging the renewal of long-term water services contracts between the United States Department of Interior and the Central Valley Project Friant Division contractors. After more than 18 years of litigation, the Settling Parties reached a Stipulation Agreement (Settlement). The Settling Parties, including NRDC, Friant Water Users Authority (now known as the Friant Water Authority), and the United States Departments of Interior and Commerce, agreed on the terms and conditions of the Settlement, which establishes two primary goals:

- Restoration Goal - To restore and maintain fish populations in "good condition" in the mainstem San Joaquin River below Friant Dam to the confluence with the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- Water Management Goal - To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided in the Settlement.

Through a 2006 memorandum of understanding between the California Department of Fish and Wildlife (CDFW) and other state agencies and the Settling Parties, CDFW stated its intention to assist the Settling Parties in implementation of the Settlement consistent with CDFW's authorities, resources, and broader regional resource strategies. Subsequently, President Obama signed the San Joaquin River Restoration Act on March 30, 2009, giving the Department of Interior full authority to implement the SJRRP. The implementing agencies, consisting of the Department of Interior, Bureau of Reclamation (Reclamation) and USFWS, NMFS, CDFW, and California Department of Water Resources (DWR) organized a Program Management Team and associated work groups to begin the Settlement implementation.

The Settlement requires the reintroduction of spring-run Chinook salmon into the San Joaquin River. To implement the Settlement, the SJRRP's Hatchery and Genetics Management Plan (HGMP) (2016) proposes using a Conservation Facility (Interim Facility and future Salmon Conservation and Research Facility [SCARF]) and genetic management and conservation hatchery techniques to develop a self-sustaining population of spring-run Chinook salmon for the SJRRP. The Interim Facility, located in Friant, California, in Fresno County, and the SCARF will rely on artificial propagation using broodstock to attain sufficient numbers of spring-run Chinook salmon for reintroduction.

Because the SJRRP is expected to result in take of a species designated as threatened under the federal ESA, USFWS consulted with NMFS as required by Section 7 of ESA. The timeline of relevant regulatory activities to date is as follows:

- October 11, 2012 - NMFS issued Enhancement of Survival Permit 14868 to USFWS, authorizing take of spring-run Chinook eggs or juveniles from FRFH to establish broodstock methodologies and begin studies associated with holding practices.
- December 18, 2013 - CDFW issued a concurrence (CDFW file No. 2080-2012-017-014) pursuant to Fish and Game Code section 2080.3 that Permit 14868 would further the conservation of spring-run Chinook salmon.
- December 31, 2013 - NMFS issued final regulations designating an experimental population of spring-run Chinook salmon under Section 1539, subdivision (j) of Title 16 of the United States Code and established take provisions for members of that population.
- March 18, 2014 - CDFW issued a determination (CDFW file No. 2080-2014-005-04) that the management restrictions, protective measures, prohibitions, and exceptions to prohibitions contained in the federal regulations meet the requirements in Fish and Game Code section 2080.4.

- March 21, 2014 - NMFS issued Enhancement of Survival Permit 17781 to USFWS, authorizing take of spring-run Chinook salmon for collection, rearing, and release.
- April 1, 2014 - CDFW issued a concurrence (CDFW file No. 2080-2014-006-04) pursuant to Fish and Game Code section 2080.3 that Permit 14868 would further the conservation of spring-run Chinook salmon.
- September 12, 2018 - NMFS issued Scientific Research and Enhancement Permit 20571 authorizing take of threatened spring-run Chinook salmon and threatened California Central Valley (CCV) steelhead (*O. mykiss*) associated with hatchery propagation, research, and enhancement activities.

On or about October 29, 2018, the Director of CDFW received a letter from USFWS notifying CDFW pursuant to Fish and Game Code section 2080.3 that it had received a 10(a)(1)(A) permit authorizing the taking of spring-run Chinook salmon in order to establish or maintain an experimental population in the San Joaquin River. USFWS' notification requested that CDFW: (1) make a determination that the Permit will further the conservation of the species; and (2) publish the notification as required by Fish and Game Code section 2080.3, subdivision (a)(2).

Project Summary

The activities described in the Permit will incidentally take[1] spring-run Chinook salmon. Spring-run Chinook salmon will be intentionally taken at the FRFH, Butte Creek, and the San Joaquin River. The Permit authorizes take to include one or more of the following: harassment, capture, handling, collection, transport, holding, lethal spawning, biological sampling, tagging, and live release of marked spring Chinook salmon in excess of broodstock needs, unmarked spring Chinook salmon, and natural-origin steelhead, if encountered. The Permit authorizes take associated with hatchery propagation, research, and enhancement activities at the San Joaquin Conservation Hatchery Facilities, which include the SCARF near Friant Dam on the San Joaquin River, the Interim Facility, and a small Satellite Incubation and Rearing Facility (SIRF; referred to collectively as the Conservation Facilities), as cited in USFWS' Permit application.

Two types of direct take would occur under the Permit: (1) take of spring-run Chinook salmon associated with broodstock collection, maintenance of fish held as captive broodstock, and juvenile rearing and release, and (2) take of spring-run Chinook salmon and CCV steelhead associated with research, monitoring, and evaluation (RM&E) activities.

SJRRP proposes to collect up to 5,470 eggs or juveniles from all sources, including 70 for pathology studies from each collection event. The total number of eggs or juveniles collected annually and the collection source will be constrained by the Interim Facility or SCARF

[1] Pursuant to Fish and Game Code section 86, "'Take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." See also *Environmental Protection Information Center v. California Department of Forestry and Fire Protection* (2008) 44 Cal.4th 459,507 (for purposes of incidental take permitting under Fish and Game Code section 2081, subdivision (b), "'take'...means to catch, capture or kill").

capacity and donor stream conditions. If conditions are suitable, the SJRRP would prefer to collect equally from all three donor sources, with collection ratios dependent on acceptable take from each donor source.

Broodstock Collection: Broodstock collections, as with all hatchery activities, would occur pursuant to the associated HGMP (CDFW 2016), and include potential collections from Butte Creek (juvenile life stage), FRFH (juvenile and/or egg life stage), and/or the San Joaquin River (adult, juvenile, and/or egg life stage).

Annual broodstock collections that were initially focused on spring-run Chinook salmon from the FRFH will expand to include collections from wild stocks in Butte Creek and the San Joaquin River in 2018. The total number of broodstock collected from each source population over the course of the reintroduction will depend on the viability of those stocks and the effects of removal on the associated population risk factors. Depending on escapement numbers, returning adults and any adult spring-run Chinook salmon that enter the Restoration Area (defined as the San Joaquin River from Friant Dam near the town of Friant, California, to the confluence of the Merced River) from other rivers may also be available for use as broodstock beginning in 2018. Genetic analysis of these returns will inform fish crosses and reintroduction strategies. Broodstock collection from returns generally should not exceed 10 percent of the estimated in-river escapement unless river conditions preclude successful spawning. All broodstock used for spawning will be genotyped for parentage-based tagging and to prepare breeding matrices to maximize genetic diversity.

Feather River Fish Hatchery: If the FRFH is the only available donor source, the SJRRP will collect via hatchery operations a maximum of 5,470 individuals from the FRFH including collections for pathology. Actual collection numbers will depend on availability of fish from FRFH and other sources. Spring-run Chinook salmon broodstock collection protocols will follow methods described in the FRFH HGMP (Cavallo *et al.* 2012, update in progress).

Butte Creek: The SJRRP proposes to collect via rotary screw trap (RST) a maximum of 2,910 juveniles annually from Butte Creek including collections for pathology (2,700 for broodstock, and 70 for pathology for up to 3 collection periods). The actual number collected will depend on the number of adult returns to Butte Creek who survive to spawn and the number of individuals collected from other broodstock sources. The SJRRP will collect juveniles from existing sampling occurring on Butte Creek to minimize additional handling and incidental mortality, control cost, and simplify logistics.

San Joaquin River: When spring-run Chinook salmon adults return to the Restoration Area, the SJRRP proposes to collect via redd extraction, emergence trap, RST, fykes or weirs, seine, and/or dip nets a maximum of 2,980 juveniles or eggs, including collections for pathology from the San Joaquin River. If adults are collected for broodstock spawning, the SJRRP proposes to collect a maximum of ten percent of returning adults, up to 250 individuals annually. The SJRRP may collect individuals at three different life stages: eggs, juveniles, or adults. Each life stage has advantages and disadvantages for collection.

The number collected in any given year will be determined by the number of adult returns to the Restoration Area and the number of individuals collected from other source stocks.

Broodstock Releases: The SJRRP may release hatchery-produced fish and ancillary broodstock at various life stages based on production targets, hatchery capacity, river conditions, and program needs. The vast majority of releases from the rearing facilities will be the progeny of SJRRP broodstock. Broodstock will also be released to the river for research and reintroduction purposes.

All spring-run Chinook salmon released by the SJRRP will be adipose fin clipped and tagged with a coded wire tag (CWT).

The SJRRP will transport juveniles and eggs collected from donor stocks to an approved quarantine facility and, after clearing a fish health assessment, transfer the juveniles and eggs to the Conservation Facilities. Fish will be reared under controlled hatchery conditions to sufficient age for spawning. Depending on the Conservation Facilities' capacities and production needs, the SJRRP may release a portion of the broodstock to the San Joaquin River as ancillary broodstock. After fish reach maturity at the Conservation Facilities, they will be spawned and their progeny reared at the facility from the egg stage to be released to the San Joaquin River at the juvenile stage. Once the juvenile spring-run Chinook salmon reach an appropriate size, they will be marked (adipose fin clipped), tagged (CWT), and released directly to the river. Pre-release health assessment requirements, as defined by CDFW pathologists, will be followed for juveniles. The SJRRP will euthanize up to 20 fish per tank or rearing system, but not more than a total of 100 fish, for fish health inspection. Additionally, up to 10 percent of juveniles may be held back and later released as yearlings.

The SJRRP will either release fish from the SCARF directly to the San Joaquin River using a volitional release channel or transport the fish to a release site using a standard fish transport tank. Fish will be released directly from the hatchery when there is adequate flow in the river side-channel and connectivity with the lower San Joaquin River outside the Restoration Area. However, additional release locations may be necessary based on the condition of the river. To minimize straying, juveniles will be released as far upstream as feasible based on river connectivity and expected survival out of the Restoration Area.

Juveniles will be released into the San Joaquin River intermittently from October through April. However, most releases will take place between January and April depending on river conditions and fish size. Adult releases into the San Joaquin River will take place intermittently from February through October.

The number of juveniles produced and released from the Conservation Facilities will increase over time as the facility reaches maximum production. However, actual production will vary year to year based on broodstock survival, fecundity, and other factors. Target releases are approximately 200,000 juveniles in 2018 and should reach maximum production of up to 1,250,000 juveniles by 2021. To appropriately manage the broodstock population, and in response to river conditions, releases may include up to 5,000 ancillary broodstock annually.

Population monitoring and evaluation may include adult monitoring by video, acoustic tracking, visual surveys, and redd and spawning surveys. Adult escapement will be used as a measure for evaluating SJRRP success. Juvenile monitoring will consist of various outmigrant traps and fry emergence monitoring. To evaluate juvenile survival and abundance, RSTs will be used throughout the Restoration Area. Once established, RST site locations will remain fixed each year unless changes in river conditions warrant moving them or if new RST sites are necessary for long-term study purposes.

Indirect mortality of spring-run Chinook salmon may also occur. Indirect mortality may occur at all life stages from egg to adult. Indirect mortality may occur during permitted activities including collection (FRFH and Butte Creek), releases, and research, monitoring, and evaluation studies. The Permit requires implementation of measures to minimize indirect mortality and harm to ESA-listed fish during the general handling, broodstock collection and mating, juvenile rearing and release, fish culture, and research, monitoring and evaluation.

Determination

CDFW has determined that the Permit will further the conservation of the species. Specifically, as authorized by Fish and Game Code 2080.3, CDFW finds that: (1) take of spring-run Chinook salmon is for the purpose of establishing or maintaining an experimental population in the San Joaquin River pursuant to Section 1539, subdivision (j) of Title 16 of the United States Code and the San Joaquin River Restoration Settlement Act; and (2) the measures identified in the 10(a)1(A) permit, as well as the accompanying BiOp and the HGMP, include methods and procedures which are necessary to bring spring-run Chinook salmon to the point at which the protections of CESA are no longer necessary.

The measures included in this determination pursuant to Fish and Game Code section 2080.3 are those in the 10(a)1(A) Permit. Those Permit conditions include, but are not limited to, the following:

<u>Avoidance, Minimization, and Mitigation Measures</u>

1. USFWS will apply measures to minimize harm to ESA-listed fish. These measures include but are not limited to: limits on the duration (hourly, daily, weekly) of trapping; limits on holding time before release; and allowance for free passage through trapping sites when those sites are not actively operated.

2. USFWS will anesthetize each ESA-listed fish that is handled for the purpose of collecting biological samples. Anesthetized fish must be allowed to recover (e.g., in a recovery tank) before being released. Fish that are assessed without handling must remain in water but do not need to be anesthetized.

3. USFWS and its agent are responsible for maintaining the biological samples collected from ESA-listed species as long as they are useful for research purposes.

USFWS may not transfer biological samples to anyone not listed in the application without obtaining prior written approval from NMFS.

4. During sampling and processing, USFWS must keep ESA-listed fish in water to the maximum extent possible. Adequate circulation and replenishment of water in holding units is required. When using methods that capture a mix of species, USFWS must process ESA-listed fish first. USFWS must conduct the transfer of ESA-listed fish using equipment that adequately holds water during transfer.

5. USFWS must not handle ESA-listed fish when water temperature exceeds 22°C (71.6°F) at the capture site. Trap operation shall cease until either temperature drops below the threshold or pending further consultation with NMFS to determine if continued trap operation poses substantial risk to ESA-listed species. Under these conditions, USFWS may only identify and count ESA-listed fish.

6. UFWS must use visual observation protocols instead of intrusive sampling methods whenever possible. This is especially appropriate when merely ascertaining the presence of anadromous fish.

7. USFWS should complete a segregation protocol 1 year after issuance of the Permit and prior to volitional adult passage in the system, that identifies how, to the greatest extent possible, to prevent introgression between fall-run and spring-run Chinook. If there is an opportunity for fall-run Chinook salmon to superimpose spring-run Chinook salmon redds, USFWS should take measures to protect spring-run Chinook salmon redds and monitor and analyze introgression rates. An acceptable segregation protocol identifies how, to the greatest extent possible, to prevent introgression between fall-run and spring-run Chinook and measure introgression rates.

8. If third-party research is to be conducted on ESA listed fish in collaboration with USFWS, the third party should follow the guidelines set for research collaboration. Those guidelines should be provided to the third party by USFWS.

9. The spring-run Chinook salmon broodstock collection target shall be limited to a maximum of 5,400 individuals annually from all potential sources (2,700 is the minimum needed to meet production targets). Sixty (60) fish from each collection event will be sacrificed for pathology screening at the time of collection and another 10 from each collection event will be sacrificed for pathology screening near the end of the quarantine period. Therefore, a maximum of 5,470 spring-run Chinook salmon eggs or juveniles will be collected for broodstock across all collections, including 70 for pathology studies from each collection event.

10. USFWS should make efforts to minimize the number of hatchery-origin spring-run Chinook salmon that are used as broodstock, to the extent possible, based on the estimated adult escapement and the presence of adequate spawning and rearing

conditions in the natural origin broodstock collection locations (i.e. the San Joaquin River and Butte Creek).

11. Each year the USFWS will submit a Donor Stock Collection Plan (DSCP) to NMFS. The DSCP will be prepared through a multi-agency technical team to describe the collection plan for each year. USFWS will submit the annual DSCP to NMFS and CDFW for review and will be developed prior to any collections from the FRFH, San Joaquin River, or Butte Creek. It will include all the expected collection actions and associated monitoring for the year. The criteria below will evaluate FRFH, San Joaquin River, and Butte Creek donor stock collections each year and the number of individuals targeted by life stage:
    a. Interim Facility or SCARF status and capacity available to rear broodstock;
    b. Resources available to collect donor stock;
    c. Genetics;
    d. Availability of donor stock.

    NMFS and CDFW will review the DSCP to ensure that any adverse effects of broodstock collection will not be substantial in the context of the overall population of each spring-run donor stock.

12. USFWS shall ensure that 100 percent of the spring-run Chinook salmon released from the Conservation Facilities (and any fish subject to direct translocation) are marked (adipose fin-clipped) and tagged (using CWTs), providing a life-long indicator of origin. Alternative marking and tagging strategies approved by NMFS may be used if determined necessary.

13. Release of spring-run Chinook salmon will only occur within the nonessential experimental population area in the San Joaquin River as defined in 50 CFR 223.301, subdivision (b). USFWS will release spring-run Chinook salmon juveniles either volitionally or downstream of major passage barriers that prevent volitional migration and in the best conditions available.

14. USFWS shall develop a Pre-Release Report annually. The report will include information on the proposed number of spring-run Chinook salmon to be released, the release location, the tentative date(s) of release, and CWT data. Each year's Pre-Release plan must be approved by NMFS, prior to its implementation.

15. USFWS will adaptively manage hatchery release strategies to improve homing fidelity of adult returns to the release site, minimize precocity rates of hatchery-origin fish, and minimize ecological interactions between hatchery- and natural-origin juveniles as described in the HGMP.

16. USFWS shall ensure that transport and quarantine of individuals will occur according to the protocols detailed the Permit application, and the associated HGMP.

17. In the event of an emergency, such as flooding, water loss to raceways, epizootic outbreak, or vandalism that necessitates early release of ESA-listed spring-run Chinook salmon to prevent catastrophic mortality, USFWS shall report any such release within 48 hours to NMFS.

18. NMFS recognizes the need for management flexibility. Therefore, changes in fish culture protocols consistent with best management practices, conforming to the intent of the hatchery program and having no substantial effects on the survival of any ESA-listed species beyond what is authorized in the Permit, may be implemented by USFWS and CDFW.

19. USFWS must submit to NMFS for approval, in writing, changes in any aspect of hatchery program implementation and operations, including broodstock collection protocols or numbers, juvenile release numbers, and marking, that could potentially result in increased amount of take, or alter the manner or effect of take of ESA-listed species covered in this permit.

20. Technical adjustments to the hatchery program, as described in the Permit, may be made, provided that such adjustments are consistent with the standards of section 10, subdivision (a)(1)(A) of the ESA, NMFS regulations governing ESA-listed species permits (50 CFR Parts 222-226), and the procedures and standards set forth in the Permit. Such program adjustments do not require modification of the Permit provided that they do not result in a level of direct or incidental take or impacts to the species in excess of that otherwise allowed by this permit and by the incidental take statement (ITS). USFWS must submit requests for such program adjustments in writing to NMFS. NMFS will consult with CDFW and USFWS to review the request and determine whether the adjustment is warranted. If NMFS and CDFW determine that the amount or extent of take or impacts to the species would not be exceeded as a result of the proposed adjustment, USFWS will be notified that the adjustment is approved. Each year, USFWS will ensure that any approved adjustments are described within the Permit Annual Report on the APPS website.

21. Annually, the Conservation Facilities will seek to achieve 85 percent survival from egg to hatching to match that experienced at FRFH in recent years, and 75 percent or better survival from egg to smolt stages over the duration of the program. The Conservation Facilities will aim to achieve greater than 49 percent survival from smolt to adulthood (as described in the associated HGMP).

22. Should NMFS determine that a sampling procedure provided for under the Permit is no longer acceptable, USFWS shall immediately cease the use of such a procedure until an acceptable replacement has been prescribed by NMFS.

23. Efforts should be made to prevent the spread of aquatic invasive species (AIS) such as New Zealand mudsnail (*Potamopygrus antipodarum*), quagga mussel (*Dreissena rostriformis bugensis*) and zebra mussel (*Dreissena polymopha*). Guidelines

presented in the *California Department of Fish And Game Aquatic Invasive Species Decontamination Protocol* (https://nrm.dfg.ca.gov/FileHandler.ashx?documentversionid=74126) should be followed when working in aquatic habitats to prevent the spread of AIS.

24. USFWS is responsible for the actions of any individual operating under the authority of the Permit. Such actions include operation of adult traps and weirs for broodstock collection and capturing, handling, holding, transporting, releasing, maintaining, and caring for any ESA-listed species authorized by the Permit.

Monitoring and Reporting Measures

1. Any activities or methodologies associated with RM&E including, but not limited to: PIT tagging, smolt trapping, spawning ground surveys, and redd surveys must be done according to the general guidelines for handling listed fish detailed above and within the direct take limits defined in Tables 1-6 of the Permit and the ITS.

2. USFWS must conduct surveys annually to determine the timing, abundance, and distribution of hatchery-origin spring-run Chinook salmon originating from the Conservation Facilities that emigrate from (juveniles) and spawn in (adults) the San Joaquin River.

3. If the authorized level of take is exceeded, USFWS must notify NMFS as soon as possible, but no later than two days after the authorized level of take is exceeded. USFWS must then submit a written report to NMFS describing the circumstances of the unauthorized take within two weeks of take exceedance. Pending review of these circumstances, NMFS may suspend or amend the permit.

4. USFWS will submit annual reports to NMFS on the Applications and Permits for Protected Species (APPS) site by January 31. Although not a condition of the Permit, CDFW requests USFWS to provide annual reports to CDFW as well.

   The annual report shall contain the following information:
   a. A detailed description of all adult ESA-listed salmon collection activities conducted under Permit 20571, including the number and composition of ESA listed fish captured and sampled for tissues, their sex/size/condition, the date of collection and disposition;
   b. The numbers, dates, average size at release, and tag/mark information of fish released into the San Joaquin River;
   c. Estimated survival rates of all life stages;
   d. Precocial maturation rate and disease occurrence;
   e. Any additional monitoring and evaluation activities occurring at the hatchery;
   f. Any problems that may have arisen during hatchery activities;
   g. A statement as to whether or not the activities had any unforeseen effects on ESA-listed fish.

Pursuant to Fish and Game Code section 2080.3, take authorization under CESA is not required for the hatchery program activities as described in the Permit for taking of spring-run Chinook salmon in order to establish or maintain an experimental population in the San Joaquin River, as identified in, and in accordance with the Federal Permit and associated BiOp and HGMP. The timing and extent of take authorization under this concurrence is limited to the terms in the federal Permit and expires upon the expiration date the federal Permit. If there are any substantive changes to the hatchery program, including changes to the measures or conditions, or if the NMFS amends or replaces the Permit, BiOp, or associated HGMP, USFWS shall be required to obtain a new concurrence or a CESA permit for the hatchery program from CDFW. (See generally Fish & G. Code, § 2080.3).

By:_____ Date: 11/26/18

Chad Dibble, Deputy Director
Ecosystem Conservation Division
California Department of Fish and Wildlife