UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

NOV 20 2013

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act, an environmental review has been performed on the following action.

TITLE: Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam

LOCATION: The San Joaquin River Restoration Area from Friant Dam to the confluence of the Merced River, and portions of the Central Valley.

SUMMARY: The proposed action is the designation of a nonessential experimental population (NEP) of Central Valley spring-run Chinook salmon (spring-run Chinook) under section 10(j) of the Endangered Species Act (ESA) in portions of the San Joaquin River, and to establish take exceptions for the proposed NEP for particular activities inside the experimental population's geographic range and outside of the designated boundary of the NEP area. In view of the information presented in both the Environmental Assessment (EA) and the Finding of No Significant Impact (FONSI) documents prepared for the designation of an NEP of spring-run Chinook below Friant Dam in the San Joaquin River, CA, and the conclusion reached in the NMFS Section 7 informal Consultation for the proposed action, it is hereby determined that the proposed action will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts.

RESPONSIBLE OFFICIAL: Will Stelle
Regional Administrator, West Coast Region

Point of Contact: Elif Fehm-Sullivan
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Sacramento, CA 95814
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The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A

copy of the finding of no significant impact (FONSI), including the environmental assessment, is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the Responsible Official named above.

Sincerely,

Patricia A. Montanio
NOAA NEPA Coordinator

COVER PAGE
NOVEMBER 2013

TITLE OF ENVIRONMENTAL REVIEW	Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam
RESPONSIBLE AGENCY AND CONTACT	Rhonda Reed National Marine Fisheries Service Protected Resources Division Central Valley Office 650 Capitol Mall, Suite 500 Sacramento, CA 95814
LOCATION OF PROPOSED ACTIVITIES	The San Joaquin River Restoration Area from Friant Dam to the confluence of the Merced River, and portions of the Central Valley.
PROPOSED ACTION	National Marine Fisheries Service (NMFS) proposes to designate the establishment of Central Valley spring-run Chinook salmon to the San Joaquin River between the Merced River and Friant Dam as a nonessential experimental population under section 10(j) of the Endangered Species Act (ESA). NMFS also is proposing the establishment of take provisions under section 4(d) of the ESA for the experimental population and for the spring-run Chinook salmon reintroduced to the San Joaquin River downstream of the Merced River.

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DEFINITIONS AND ACRONYMS

APCD	Air Pollution Control District
BMP	Best Management Practices
broodstock	Fish derived directly from Donor Stock which are raised to maturity from eggs, juveniles, or unripe adults, at the Conservation Facility. Offspring from the broodstock would eventually be released to the San Joaquin River.
DFG	California Department of Fish and Game
DFW	California Department of Fish and Wildlife
DWR	California Department of Water Resources
CABA	Center for Aquatic Biology & Aquaculture
cfs	cubic feet per second
CO_2	carbon dioxide
CV	Central Valley
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
^{o}F	degrees Fahrenheit
DO	dissolved oxygen
donor stock	Includes any individual Chinook collected at any life stage, from any particular donor source stream.
DSC Plan	Donor Stock Collection Plan; The proposed formal request made to NMFS via USFWS for annual donor stock collection

EA	Environmental Assessment
escapement	That portion of an anadromous fish population that escapes the commercial and recreational fisheries and reaches the freshwater spawning grounds.
ESA	Endangered Species Act
ESU	Evolutionarily Significant unit
FMP	Fisheries Management Plan
FMWG	Fisheries Management Work Group
FRFH	Feather River Fish Hatchery
FWA	Friant Water Authority
genotype	The genetic makeup, as distinguished from the physical appearance, of an organism or a group of organisms.
GHG	greenhouse gas
holding	The act of fish such as spring-run Chinook of staying within a given watershed before spawning.
HGMP	Hatchery and Genetics Management Plan
jack	salmon that returns a year early
metapopulation	Consists of a group of spatially separated populations of the same species which interact at some level
MtCO2e	Metric Tonne (1,000 kg) Carbon Dioxide Equivalent. The standard measurement of the amount of CO2 emissions.
NEP	Nonessential population
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRDC	Natural Resources Defense Council
PEIS/R	Program Environmental Impact Statement/ Report

phenotype	The set of observable characteristics of an individual resulting from the interaction of its genotype with the environment.
RM	river mile
RWQCB	Regional Water Quality Control Board
SFB	San Francisco Air Basin
SJFH	San Joaquin Fish Hatchery
SJRPCT	San Joaquin River Parkway and Conservation Trust
SJRRP	San Joaquin River Restoration Program
SJRRSA	San Joaquin River Restoration Settlement Act
SJVAB	San Joaquin Valley Air Basin
Spawning	The mass of eggs deposited by fishes, amphibians, mollusks, crustaceans, etc.
Spawner	Sexually mature individual
Spring-run Chinook	Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha)*
sorption	Used in chemistry: the taking up and holding of one substance by another. Sorption includes the processes of absorption and adsorption.
Steelhead	California Central Valley steelhead (*Oncorhynchus mykiss*)
SVAB	Sacramento Valley Air Basin
SWP	State Water Project
TDS	total dissolved solids
TMDL	Total Maximum Daily Load is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant. Pollutant sources are characterized as either point sources, or nonpoint sources.
USFWS	United States Fish and Wildlife Service
VAMP	Vernalis Adaptive Management Program

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EXECUTIVE SUMMARY

THE FOLLOWING IS NEW TEXT FROM THE DRAFT ENVIRONMENTAL ASSESSMENT AND IS PROVIDED AS AN EXECUTIVE SUMMARY OF THE REVIEW PROCESS AND DEVELOPMENT OF THE FINAL ENVIRONMENTAL ASSESSMENT

A draft Environmental Assessment (EA) for the Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam, considered jointly, prepared by the National Marine Fisheries Service (NMFS), was released by NMFS for a 30-day public comment period on January 16, 2013 (78 FR 3381). The comment period for review of the draft Environmental Assessment on this Proposed Action closed on March 4, 2013.

During the public comment period, NMFS received sixteen comment letters on the draft Environmental Assessment.

The final Environmental Assessment reflects changes from the draft Environmental Assessment based on comments received, as well as new information collected since the draft was published. To assist the reader with identification of changes to the Final Environmental Assessment, new text may be indicated in redline/strikeout format to show changes from the draft Environmental Assessment, or if a statement has been added indicating the inclusion of new text, as described under this Executive Summary. Minor editorial changes to the text that don't change the meaning of the corresponding language has not been indicated in redline/strikeout format. Comment letters and corresponding responses are located in Appendix A of this final Environmental Assessment.

Changes to the Draft Environmental Assessment

This final Environmental Assessment includes only those revisions based on public comments and new, clarifying information provided in response to the public comments period on the draft Environmental Assessment. The following summarizes key changes to the draft Environmental Assessment:

- The explanation as to why the proposed experimental population would be nonessential was expanded upon and clarified (section 1.3.1.2, The Proposed Experimental Population is Nonessential).
- Descriptions of the Source Stock Alternatives were clarified, as were the corresponding analyses of the selection process of potential source populations of spring-run Chinook (section 2.2, Stock Source Alternatives).
- Adaptive management components of the proposed action that were adopted by reference from previous environmental documentation and assessments were included (section 1.4.2, Fisheries Management Work Group Documents; section 2.1.3.1, Activities Common to Source Stock Alternatives; section 2.1.3.2, Activities Common to section 10(j) and section 4(d) Rule

Alternatives; section 4.4.1, All Source Donor Stock Alternative (preferred alternative); and section 5, Cumulative Impacts).

- Additional information describing current habitat conditions in the Restoration Area was added to clarify existing habitat.
- Additional information on the effect the proposed action would have on predation assemblages within the Restoration Area was included in section 4.3.2, Other Fish Species: *Predation*.
- Outdated information was accounted for and corrected in section 3.3.1.3, Mill Creek; Figure 3-4: Mill Creek and Figure 3-6: Clear Creek, and population abundance was updated for all waterways listed in Section 3, where information was available.
- Minor editorial changes have been made throughout the document to correct typographic or grammatical errors. Some text has been changed to maintain consistency with the text of the final rule and preamble.
- Citations have been added, and are reflected in section 6, References.
- Comments received and subsequent responses have been added as Appendix A.

1.0 SECTION 1 PURPOSE AND NEED

1.1 Introduction

NOAA's National Marine Fisheries Service (NMFS) proposes to establish rules pursuant to sections 10(j) and 4(d) of the Endangered Species Act (ESA) (16 U.S. Code of Federal Regulations [USC] 1531 *et seq*.) to allow for the release of Central Valley spring-run Chinook salmon (spring-run Chinook) as an experimental population into the San Joaquin River as part of the San Joaquin River Restoration Program (SJRRP) spring-run Chinook reintroduction process, and to define the take prohibition exceptions to section 9 of the ESA for said reintroduced fish.

1.1.1 Background

Over the past two centuries, development of water resources transformed the San Joaquin River. Since the 1880s, large areas of valley floor were converted to agricultural production with irrigation activities that modified the natural flow patterns. With the construction of Friant Dam on the San Joaquin River and the completion of Friant-Kern Canal and Madera Canal, the Friant Dam diverted San Joaquin River water supplies to over 1 million acres of highly productive farmland along the eastern portion of the San Joaquin Valley. Operation of the dam ceased flow for portions of approximately 153 miles of the river, preventing access to salmon spawning and rearing habitat, and extirpating salmon runs in the San Joaquin River upstream from its confluence with the Merced River.

The Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) (spring-run Chinook) Evolutionarily Significant Unit (ESU) is listed as threatened under the ESA. The ESU includes all naturally spawned populations of spring-run Chinook in the Sacramento River and its tributaries in California, as well as non-adipose clipped fish from the Feather River Hatchery spring-run Chinook program (June 28, 2005, 70 FR 37160). Hatchery produced, adipose fin-clipped fish are not protected under this listing (June 28, 2005, 70 FR 37204). Critical habitat was established on September 2, 2005, and became effective on January 2, 2006 (September 2, 2005, 70 FR 52488). Figure 1-1, taken from the Public Draft 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 Central Valley Steelhead (Draft Recovery Plan) (National Marine Fisheries Service 2009c) shows the current and historical distribution of spring-run Chinook and the established ESU. Note that all current spring-run Chinook watersheds are located in the Sacramento River basin.

1.1.2 Settlement and Statute

In 1988, a coalition of environmental and fishing groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging renewal of long-term water service contracts between the United States and Central Valley Project (CVP) Friant Division contractors. After more than 18 years of litigation of this lawsuit, known as *NRDC, et al., v. Kirk Rodgers, et al.*, a Settlement was reached (Settlement). On September 13, 2006, the Settling Parties, including

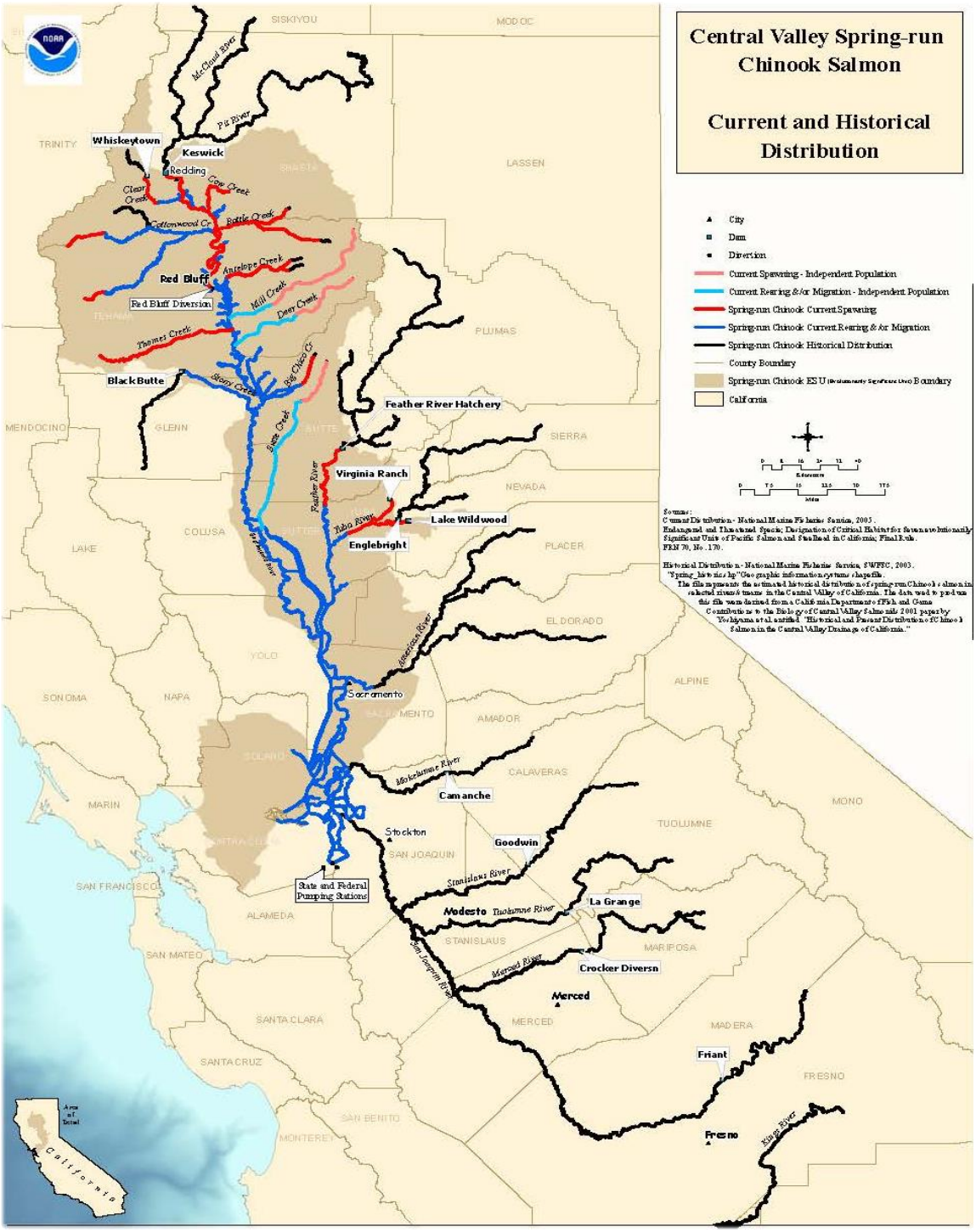


Figure 1 Current and Historical Distribution of Central Valley Spring-run Chinook Salmon (from Draft Recovery Plan (National Marine Fisheries Service 2009c)).

NRDC, Friant Water Users Authority [now the Friant Water Authority], and the U.S. Departments of the Interior and Commerce, agreed on the terms and conditions of the Settlement, which was subsequently approved by the U.S. Eastern District Court of California on October 23, 2006. Implementation of the Settlement is accomplished through the SJRRP.

The Implementing Agencies of the SJRRP are the Bureau of Reclamation (Reclamation) and U.S. Fish and Wildlife Service (USFWS) from the Department of Interior, the National Marine Fisheries Service (NMFS) from the Department of Commerce and, by Memorandum of Understanding, from the State of California, the Department of Fish and Game [now the Department of Fish and Wildlife (DFW)] and the Department of Water Resources (DWR).

The Settlement 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 of 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 on all of the Friant Division long-term contractors that may result from the Interim flows and Restoration Flows provided for in the Settlement.

Paragraph 14 of the Settlement states that the Restoration Goal "shall include the reintroduction of spring-run and fall-run Chinook salmon to the San Joaquin River between Friant Dam and the confluence of the Merced River." Because fall-run Chinook are not listed as threatened or endangered their reintroduction is not analyzed in this EA.

The Federal Implementing Agencies are authorized to carry out the Settlement by the San Joaquin River Restoration Settlement Act (SJRRSA) Pub. L. 111-11. This legislation also mandates that spring-run Chinook reintroduced into the San Joaquin River under the SJRRP shall be as an experimental population pursuant to section 10(j) of the ESA of 1973 (16 U.S.C. 1539(j)). The SJRRSA further requires NMFS to prepare a rule pursuant to 4(d) so that reintroduction shall not impose more than "*de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws." Consequently, in order to release spring-run Chinook into the wild under the SJRRP, NMFS is required to complete the rulemaking necessary to designate an experimental population for the San Joaquin River and promulgate 4(d) rules for that experimental population.

Section 10(j) and section 4(d) allows exceptions to section 9 take prohibitions, when, for the conservation of the species, regulatory flexibility would allow greater likelihood of successful introduction and reduce landowner concerns. Adoption of regulations does not require reintroduction of the species. Physical activities to implement reintroduction requires permitting of specific actions as covered by sections 10(a)(1)(A) and 4(d).

The Environmental Assessment (EA) analyzes the effects of the actions necessary to fulfill certain requirements of the SJRRSA, and the Settlement – including an analysis of the potential effects of the establishment of the experimental population (section 10(j)) area), the release of spring-run Chinook to the San Joaquin River, and the potential effects to the ESU. As a threatened species the existing population of spring-run Chinook in the Sacramento River basin has specific existing take exceptions established under section 4(d) of the ESA and set forth in 50 CFR Part 223 (NOAA, Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs, (June 28, 2005, 70 FR 37160)). The EA also analyzes the potential effects of establishing new take exceptions under section 4(d) of the ESA for the reintroduced fish.

1.2 Endangered Species Act

1.2.1 NMFS Responsibilities for Management under the Endangered Species Act

When Congress enacted the ESA, it vested responsibilities for management of species listed as threatened and endangered to the Secretaries of the Interior and Commerce (Secretaries). Most of the ESA mandates require the Secretaries to manage species and listed populations through promulgation of protective regulations and establishment of prohibited acts; development and implementation oversight of recovery plans; management of listing determinations and subsequent management decision-making; review, approval, and oversight of applicant-requested program and permit approvals and hardship exceptions; and management of inter-agency consultations on the conservation of listed species[1]. As an agency within the Department of Commerce, NMFS is responsible for the management of ESA conservation programs for marine and anadromous fish species. (http://www.nmfs.noaa.gov/pr/laws/esa/)[2].

[1] Examples of Department of Commerce management responsibilities for listed species conservation can be found throughout the ESA, including the critical habitat program definition ("…those physical or biological features… (II) which may require special management considerations or protection…") (16 USC1532 (5)(A)(i)), the basis for listing determinations ("the Secretary shall implement a system to monitor effectively the status of all species…")(16 USC 1533 (b)(3)(C)(A)(iii)), and recovery planning (The Secretary shall develop and implement plans…for the conservation and survival of endangered species and threatened species…") (16 USC 1533 (f)(1)).

[2] The mission statement for NMFS is to conserve, protect, and manage Pacific salmon, groundfish, halibut, and marine mammals and their habitats under the Endangered Species Act (ESA) and other federal laws (http://www.swr.noaa.gov/).

1.2.2 Statutory and Regulatory Framework To Be Followed

The June 2005 Federal Register notice (June 28, 2005, 70 FR 37160) presented the final listing determination for 16 ESUs of West Coast Salmon, which included Central Valley spring-run Chinook salmon. In addition to determining the status of each salmon ESU (i.e., whether it was endangered or threatened) the Federal Register notice also included an announcement that the hatchery fish populations within the specific ESU would be included in the listing determinations for the ESU. NMFS further announced that it had amended the section 4(d) protective regulations for threatened salmonid ESUs to exclude listed hatchery fish marked by a clipped adipose fin from the ESA take prohibition; and simplified existing 4(d) protective regulations so that the same set of limits apply to all threatened salmonid ESUs (September 2, 2005, 70 FR 52488). Therefore, in the case of spring-run Chinook in the Sacramento River Basin, it was determined that the population was threatened, but those fish from the Feather River Hatchery marked by a clipped adipose fin would not be included in the ESA take prohibitions according to the amended section 4(d) regulations.

The ESA section 4(d) leaves it to the Secretary of Commerce's (Secretary) discretion whether and to what extent to promulgate protective regulations for threatened species. Section 4(d) states that ''[w]henever a species is listed as a threatened species …, the Secretary shall issue such regulations as *he deems necessary and advisable* to provide for the conservation of such species [emphasis added]. ''The Secretary may … prohibit with respect to any threatened species any act prohibited under section 9(a)(1) … with respect to endangered species.'' This gives the Secretary flexibility under section 4(d) to tailor protective regulations that appropriately reflect the biological condition of each threatened ESU and the intended role of listed hatchery fish (June 28, 2005, 70 FR 37160).

For the purposes of this document, reintroduction is defined as the deliberate release of a species into the wild from captivity or relocated from other areas where the species still survives, to zones formerly inhabited by said species but from where it has disappeared for a number of reasons, with the expectation that such a release will contribute to the re-establishment of a population or populations of the species. Under the Settlement, reintroduction of spring-run Chinook in the San Joaquin River will occur as a process over a number of years. Implementation of the restoration actions planned in the Settlement are necessary to allow a reasonable expectation that a portion of those fish released into the river would complete their life cycle and contribute to future generations of the population. Reintroduction will begin with actions appropriate to existing habitat. The reintroduction actions are expected to have more likely success as the habitat improvements and accompanying actions in the Settlement are implemented.

Individuals that are used to establish the experimental population may be collected from an existing donor population, provided their removal will not appreciably reduce the likelihood of the survival and recovery of the donor population, and provided appropriate permits are issued in accordance with ESA section 10(a)(1)(A). Under section 10(a)(1)(A), Federal and non-

Federal entities may apply for permits from NMFS to take ESA-listed species under the jurisdiction of NMFS, if such taking is for scientific purposes or to enhance the propagation or survival of the affected species. Actions that may affect listed species are reviewed by NMFS through section 7 or section 10 of the ESA. Future authorization for the collection of spring - run Chinook and issuance of 10(a)(1)(A) permits would be analyzed under the ESA and NEPA when NMFS receives these permit applications, and therefore is not analyzed in this EA.

The approach for reintroduction will include use of a conservation hatchery facility to assist the establishment of the population (Bureau of Reclamation and California Department of Water Resources 2011). The USFWS submitted in December 2011 a 10(a)(1)(A) permit application for collection of broodstock from the Feather River Fish Hatchery (FRFH) for development of culturing techniques that could be used in the reintroduction of spring-run Chinook to the San Joaquin. This permit was approved by NMFS in October 2012. This permit allows a captive broodstock, but no release of these fish. Subject to additional permits these fish could be used as founding stock for release to the river.

Under section 10(j) of the ESA, 16 USC 1539(j), the Secretary can designate reintroduced populations established outside the species' current range, as "experimental" and criteria for the designation are identified. NMFS has not adopted guidance on establishing 10(j) rules. NMFS is preparing the proposed section 10(j) rule pursuant to the statue and informed by USFWS guidance for CFR 50 17.80 to 17.83. The term "experimental population" means an introduced and/or designated population (including any off-spring arising solely from the San Joaquin River) that has been so designated only when, and at such times as the population is wholly separate geographically from nonexperimental populations of the same species. Consequently, the San Joaquin River experimental population will consist of spring-run Chinook that have been released or propagated, naturally or artificially, within the defined experiemental population area in the San Joaquin River. Where part of an experimental population overlaps with natural populations of the same species on a particular occasion, but is wholly separate at other times, specimens of the experimental population will not be recognized as such while in the area of overlap. That is, experimental status will only be recognized outside the areas of overlap. The designation and release must further the conservation of the species. The designation and release must be done through rulemaking that identifies the location of the population, and must state whether the population is essential or nonessential to the continued existence of the species.

A population would be considered nonessential if the loss of the experimental population would not reduce the prospect for future survival of the species. The experimental population is designated as a threatened species regardless of the species' designation elsewhere in its range. For the purpose of section 7 interagency consultations, a nonessential experimental population (NEP) is considered a candidate species and a conference opinion is utilized (unless it occurs in a National Wildlife Refuge or National Park, where it is treated as threatened). No critical habitat can be designated for nonessential populations, while critical

habitat can be designated for those populations that are deemed to be essential. Section 7 applies to actions by Federal agencies, thus section 7 consultations are not required for activities by non-federal entities, or undertaken on private land unless they are authorized, funded, or carried out by a Federal agency.

1.3 Relationship of the Proposed Experimental Population to Recovery Efforts

The Draft Recovery Plan (National Marine Fisheries Service 2009c) has the overarching aim of recovering the spring-run Chinook ESU so that it may warrant removal from the threatened species list. The recovery strategies and actions proposed in the Draft Recovery Plan would protect and improve ecosystem functions and restore ecological processes to levels that support recovery of spring-run Chinook populations. The actions reflect direction identified in regional and local plans, recent modeling and research findings, and local expert input provided by the planning team members. Together, these strategies and actions call for maintaining high quality habitats and their productive capacity, improving ecosystem processes and habitats that are impaired, but are currently important to productive capacity, and habitat restoration through passive and active measures. The conceptual recovery strategy for the spring-run Chinook ESU incudes (1) securing extant populations by implementing key habitat restoration actions and (2) establishment of additional viable independent populations in the ESU. The introduction of the proposed experimental population of spring-run Chinook to the San Joaquin River repopulates the Southern-Sierra Nevada Diversity Group, and further supports the recovery of the species.

1.3.1 Regulatory Issues That Are to be Addressed by Designation.

In addition to actions undertaken by the SJRRP, there are many Federal and State laws and regulations that will also aid in the establishment and survival of the experimental population through the protection of aquatic and riparian habitat. Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344) requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt. This permit program provides avoidance, minimization, and mitigation for the potential adverse effects of dredge and fill activities within the nation's waterways. CWA section 401 (33. U.S.C 1341) requires an application for a federal license or permit to provide a certification for the relevant state(s) that any discharges from the facility will comply with applicable state water quality standards. In addition, CWA Section 402 (33 U.S.C. 1342) establishes the National Pollution Discharge Elimination System permit program to regulate point source discharges of pollutants into waters of the United States. Also the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. 1801 et seq.), requires that Essential Fish Habitat (EFH) be identified and Federal action agencies must consult with NMFS on any activity which they fund, permit, or carry out that may adversely affect EFH. Freshwater EFH for Pacific salmon in the California Central Valley includes waters currently or historically accessible to salmon within the Central Valley ecosystem as described in (Myers et al. 1998), which includes the area where this NEP is located.

At the state level, the California Fish and Game Code section 1600, et seq. and the California Environmental Quality Act (Pub. Resources Code sections 21000 et seq.) (CEQA) set forth criteria for the incorporation of avoidance, minimization, and feasible mitigation measures for on-going activities as well as for individual projects. Section 1600 et seq. was enacted to provide conservation for the state's fish and wildlife resources and includes requirements to protect riparian habitat resources on the bed, channel, or bank of streams and other waterways.

Section 1600 et seq. prohibits an entity from: 1) substantially diverting or obstructing the natural flow of any river, stream, or lake: 2) substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake: or 3) depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, without first notifying the California Department of Fish and Wildlife (CDFW) of the activity. CDFW (previously called California Department of Fish and Game until December 31, 2012) then has the opportunity to determine whether the activity may substantially adversely affect an existing fish or wildlife resource and, if the activity may have such an effect, to issue a final agreement that includes reasonable measures necessary to protect the resource (California Fish and Game Code Section 1602). Under CEQA, no public agency shall approve or carry out a project without identifying all feasible mitigation measures necessary to reduce impacts to a less than significant level, and shall incorporate such measures absent overriding considerations. In addition, protective measures, including programs for strategic screening and participation in habitat conservation programs, will be implemented in conjunction with SJRRP activities and are intended to provide a net benefit to the reintroduction.

1.3.1.1 Proposed Designation will Further the Conservation of the Species

The Settlement establishes a framework for accomplishing the Restoration and Water Management goals that would require environmental review, design, and construction of projects over a multiple-year period. To achieve the Restoration Goal, the Settlement calls for a combination of channel and structural modifications, and habitat improvements along the San Joaquin River below Friant Dam, releases of water from Friant Dam to the confluence of the Merced River (referred to as Interim and Restoration flows), and the reintroduction of Chinook salmon. Section 1.4.1 describes the environmental impact analysis that has been completed for these actions. With these actions, the prognosis for spring-run Chinook populations to return is good (National Marine Fisheries Service 2009c). The 10(j) designation and 4(d) rule will further the conservation of the species and will incorporate all reasonably feasible measures to avoid and minimize the impacts of any taking allowed, while also meeting the SJRRSA's commitment to not result in more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. Furthermore, NMFS will ensure, through the section 10 permitting authority and the section 7 consultation process, that the use of animals from any donor

population for these reintroductions is not likely to jeopardize the continued existence of the species.

The proposed 10(j) designation and 4(d) rule, which would establish an experimental population of spring-run Chinook in the San Joaquin River that persists into the foreseeable future, is expected to reduce the species' overall extinction risk from natural and anthropogenic factors by increasing its abundance, productivity, spatial structure, and diversity within the Central Valley. These expected improvements in the overall viability of spring-run Chinook, in addition to other actions being implemented throughout the Central Valley, would contribute to both the species recovery throughout its present range, and to the Recovery Plan objectives as stated in section 1.1.2 in this EA.

1.3.1.2 The Proposed Experimental Population is Nonessential

Under ESA section 10(j)(2)(B), before authorizing the release of any experimental population, NMFS, as the responsible agency, must determine whether or not such population is essential to the continued existence of the species. The existing ESU includes three independent wild, and one hatchery supported population. Genetic heterogeneity exists among the wild populations. Although current spring-run Chinook abundance trends have been down in recent years, restoration activities on Clear Creek, Battle Creek, and Butte Creek have allowed persistent populations of spring-run Chinook to return. In 2005, the Butte Creek population abundance exceeded 10,000 adults, and in 2012 the Butte Creek population abundance was calculated at over 16,000 adults. A comparably large run is estimated for 2013 (Howard Brown, personal comm.). In Battle Creek, spring-run Chinook returns reached the highest on record in 2012 at over 800 fish. The Mill and Deer Creek population levels were, by contrast, at a high risk of extinction in 2011 (National Marine Fisheries Service 2011), and special care and consideration would be used when considering these fish as a donor source for reintroduction into the San Joaquin River. Another factor to consider is that NMFS would use the section 10 permitting authority and the section 7 consultation process to ensure that the use of fish from any donor population for this reintroduction is not likely to jeopardize the continued existence of the spring-run Chinook ESU and would further the conservation of the species. Given the existence of several extant populations and additional restoration actions underway on Butte Creek, and other watersheds, to benefit spring-run Chinook, the continued existence of the species is not dependent on a population on the San Joaquin River. Consequently, this experimental population would be designated as a nonessential experimental population (NEP) (January 16, 2013, 78 FR 3386).

1.4 Use of Previous Environmental Documentation for the Environmental Assessment

1.4.1 San Joaquin River Restoration Program Environmental Impact Statement/Report

Implementation of the restoration program for the San Joaquin River requires an analysis of the potential environmental effects under the National Environmental Policy Act (NEPA) and for program aspects and involved parties subject to state law, the California Environmental Quality

Act. The SJRRP Program Environmental Impact Statement/Report (SJRRP PEIS/R) serves to analyze the SJRRP in accordance to NEPA by evaluating the potential direct, indirect, and cumulative impacts on the environment at a program level that could result from implementing the Settlement consistent with the SJRRSA (Bureau of Reclamation and California Department of Water Resources 2011). Furthermore, program level analysis of habitat and conveyance (channel improvement) projects, the anticipated effects of water releases, and the proposed reintroduction actions of fall-run and spring-run Chinook into the San Joaquin River is also provided in the PEIS/R (cited as (Bureau of Reclamation and California Department of Water Resources 2011)). Although the Settlement established a priority for the reintroduction of spring-run Chinook, the SJRRP PEIS/R analyzed the reintroduction of Chinook salmon which would include both fall-run and spring-run Chinook at the programmatic level. The SJRRP PEIS/R also analyzed, at a project level of detail, the potential direct, indirect, and cumulative impacts that could result from implementing certain aspects of the Settlement, including release, conveyance, and recapture of Interim and Restoration flows. In addition, the SJRRP PEIS/R included feasible mitigation measures to avoid, minimize, rectify, reduce, or compensate for adverse impacts.

As a programmatic document, the SJRRP PEIS/R provided information for use in the environmental analysis of the future site specific projects located within an area identified as the Restoration Study Area, an area that included lands above Friant Dam and north of the Merced River. An example of this information is the description of the existing conditions along the San Joaquin River. The SJRRP PEIS/R has a discussion of Biological Resources in two chapters, the first chapter for the fisheries in the region and the second covering vegetation and wildlife. In the chapter on fisheries, the SJRRP PEIS/R presented the existing conditions of all of the fisheries within the area to be restored as well as the conditions further downstream and upstream of the proposed Restoration Area where the SJRRP project would be done.

The analysis in the SJRRP PEIS/R for the most part describes the potential impacts to existing fish populations from the restoration program activities. However, the SJRRP PEIS/R included a discussion as to the possible use of fish stocks, taken from outside of the basin, and the use of hatchery stock and the development of broodstock at a hatchery facility located near Friant Dam. The SJRRP PEIS/R also analyzed reintroduction of spring-run Chinook with regard to hybridization between fall-run and spring-run Chinook, competition between reintroduced fall-run and spring-run Chinook on the San Joaquin River tributaries, and disease entering the San Joaquin from use of out-of-basin spring-run Chinook stock. However, analysis of the potential effects of the reintroduction of spring-run Chinook to the San Joaquin River was considered only at the program level. As stated in the Draft SJRRP PEIS/R (and amended in the Final SJRRP PEIS/R):

> This Draft PEIS/R identifies potential system effects associated with reintroducing salmon. … Specific environmental effects related to the reintroduction of spring-run Chinook would be addressed in the subsequent project-specific NEPA analysis, and possibly CEQA analysis, in compliance with an associated Special Rule authorizing the experimental population (Bureau of Reclamation and California Department of Water Resources 2012).

Some information from the PEIS/R was incorporated by reference in this EA.

1.4.2 Fisheries Management Work Group Documents

The SJRRP Fisheries Management Plan (FMP) was created by the Fisheries Management Work Group (FMWG) to provide a roadmap to adaptively manage efforts to restore and maintain naturally reproducing and self-sustaining populations of Chinook salmon and other fish in the San Joaquin River between Friant Dam and the confluence with the Merced River (San Joaquin River Restoration Program Fisheries Management Work Group 2009). The FMWG Genetics Subgroup developed a strategy for selection of donor stock for collection for the reintroduction of spring-run Chinook (San Joaquin River Restoration Program Fisheries Management Work Group 2010). This document provided background information for development of this reintroduction strategy. The FMP and Stock Selection Strategy were used in developing possible alternatives.

1.4.3 Central Valley Spring-run Chinook Salmon and Steelhead in the Sacramento River Basin Background Report.

The discussion of the Affected Environment (section 3 of this EA) within the Restoration Study Area used sections from the SJRRP PEIS/R. Information for those areas outside of the Restoration Study Area was taken from either the Stock Selection Strategy (San Joaquin River Restoration Program Fisheries Management Work Group 2010) or the Central Valley Spring-run Chinook Salmon and Steelhead Sacramento Basin Background Report (Sacramento Background Report) prepared by the DWR (California Department of Water Resources 2009).

The Stock Selection Strategy identified Clear Creek and Battle Creek as potential donor stock sources (see section 3.0 Action Area, below). However, the strategy document then focused on only four of the upper Sacramento River tributaries (i.e., Feather River, Deer Creek, Mill Creek, and Butte Creek). The Sacramento Background Report was used for description as to the existing conditions along Clear Creek and Battle Creek.

1.5 Purpose and Need Statement

The National Environmental Policy Act (NEPA) regulations require a statement of "the underlying purpose and need to which the agency is responding in proposing the alternatives, including the Proposed Action" (40 Code of Federal Regulations (CFR) 1502.13).

The purpose of the Proposed Action is to reintroduce spring-run Chinook into the San Joaquin River, by implementing the provisions of the SJRRSA, thereby fulfilling aspects of the Settlement, the SJRRSA, and elements of the Draft Recovery Plan. The ESA section 10(j) and 4(d) proposed rules allow for the reintroduction of spring-run Chinook, as an experimental population, into the San Joaquin River as part of the SJRRP as conditioned by the SJRRSA. The experimental population and the take exceptions directly support the terms of the Settlement.

The need for the action is to restore and maintain fish populations in the mainstem San Joaquin River, including Chinook salmon, in order to implement the provisions of the Settlement as conditioned by the SJRRSA. The action also fulfills elements of the Draft Recovery Plan. To meet these goals, NMFS is proposing to release spring-run Chinook, a species listed as threatened under the ESA, into portions of the San Joaquin River that was part of its historic range and where the species does not currently exist. At the same time, the proposed 4(d) take exceptions minimize the effect on certain otherwise lawful activities from the reintroduction of these fish. Further, the taking of spring-run Chinook from the Sacramento River Basin must be done in such a way as to not jeopardize the already threatened source populations, while providing for a founding stock that is most likely to succeed in the reintroduction area.

1.6 Description of Action Area, Study Area, and Restoration Area

The following terms are used in this EA to describe where project related activities may occur. The Action Area of this EA (Figure 1-2) is the most inclusive area. The Action Area includes portions of the Sacramento River and San Joaquin River Basins, and the Sacramento-San Joaquin Delta (Delta). As proposed, watersheds within the Sacramento River Basin would be the source of donor stock and the San Joaquin River Basin is the focal location of the reintroduction. However, some salmon may stray into accessible watersheds. Consequently the Action Area includes areas that salmon reintroduced into the San Joaquin River would use (i.e., the Delta) or may stray into.

The Sacramento River Basin supports the remaining extant spring-run Chinook populations. Sacramento River tributary watersheds that have runs include the Feather River, Yuba River, Deer Creek, Mill Creek, Butte Creek, Clear Creek, and Battle Creek (San Joaquin River Restoration Program Fisheries Management Work Group 2010). While there is a wild river spawning population, a component of the Feather River spring-run Chinook population is spawned at the FRFH. FRFH fish used for the reintroduction will be genetically screened to avoid hybrids. The FRFH will plan to produce sufficient fish to allow for eggs or juveniles to be collected for the reintroduction, in addition to the hatchery production needed for the Feather River. The consistent availability of hatchery produced fish, combined with existing protections for wild populations can allow can allow collection of fish for reintroduction of CV spring-run Chinook to the San Joaquin River with no adverse impact on the ESU.

Figure 2 Action Area: The action area that may be affected by the Proposed Action. For the area north of the Mokelumne River, the watersheds that could be affected would be inside of the spring-run Chinook ESU boundaries established by ESA regulations. The action area south of the Mokelumne River would consist of the areas established for the experimental population

under 10(j) and limited 4(d) exception area. See Figures 2-1 and 2-2 for boundary alternatives of the 10(j) and limited 4(d) exception areas.

The SJRRP PEIS/R describes the San Joaquin River and surrounding area using two terms: Study Area and Restoration Area. The Study Area of the SJRRP consists of the San Joaquin River, the Delta and those portions of the CVP that are served by the Friant Division (Figure 1-3). The San Joaquin River from Friant Dam near the town of Friant, California, to the confluence of the Merced River is identified in the SJPPR PEIS/R as the Restoration Area since it is within this area that the SJRRP projects would occur (Figure 1-4). San Joaquin River conditions including riparian vegetation, geomorphology, and channel morphology are highly variable throughout the Restoration Area. The Restoration Area is about 153 miles long, and includes an extensive flood control bypass system (bypass system). The bypass system consists of a series of dams, bifurcation structures, flood channels, levees, and portions of the main river channel; and is managed to maintain flood-conveyance capacity. The basic features of the bypass system include: Fresno Slough (also known as James Bypass), the Chowchilla Bypass and Bifurcation Structure, and the Eastside and Mariposa Bypasses.

The Delta is a region where two of California's largest rivers meet. Freshwater from the Sacramento and San Joaquin rivers mingles with saltwater from the Pacific Ocean, creating the West Coast's largest estuary. It is composed of 57 leveed island tracts and 700 miles of sloughs and winding channels (California Department of Water Resources 2012). The Delta to the Pacific Ocean is considered part of the Action Area since waters, and to some extent fish populations, from the Sacramento and San Joaquin rivers can interact. The Pacific Ocean is not included in the analysis of this EA as the effects are expected to be nominal as a result of the comparative number of fish likely to be produced through the reintroduction and the extent of the proposed rule would not apply to the ocean.

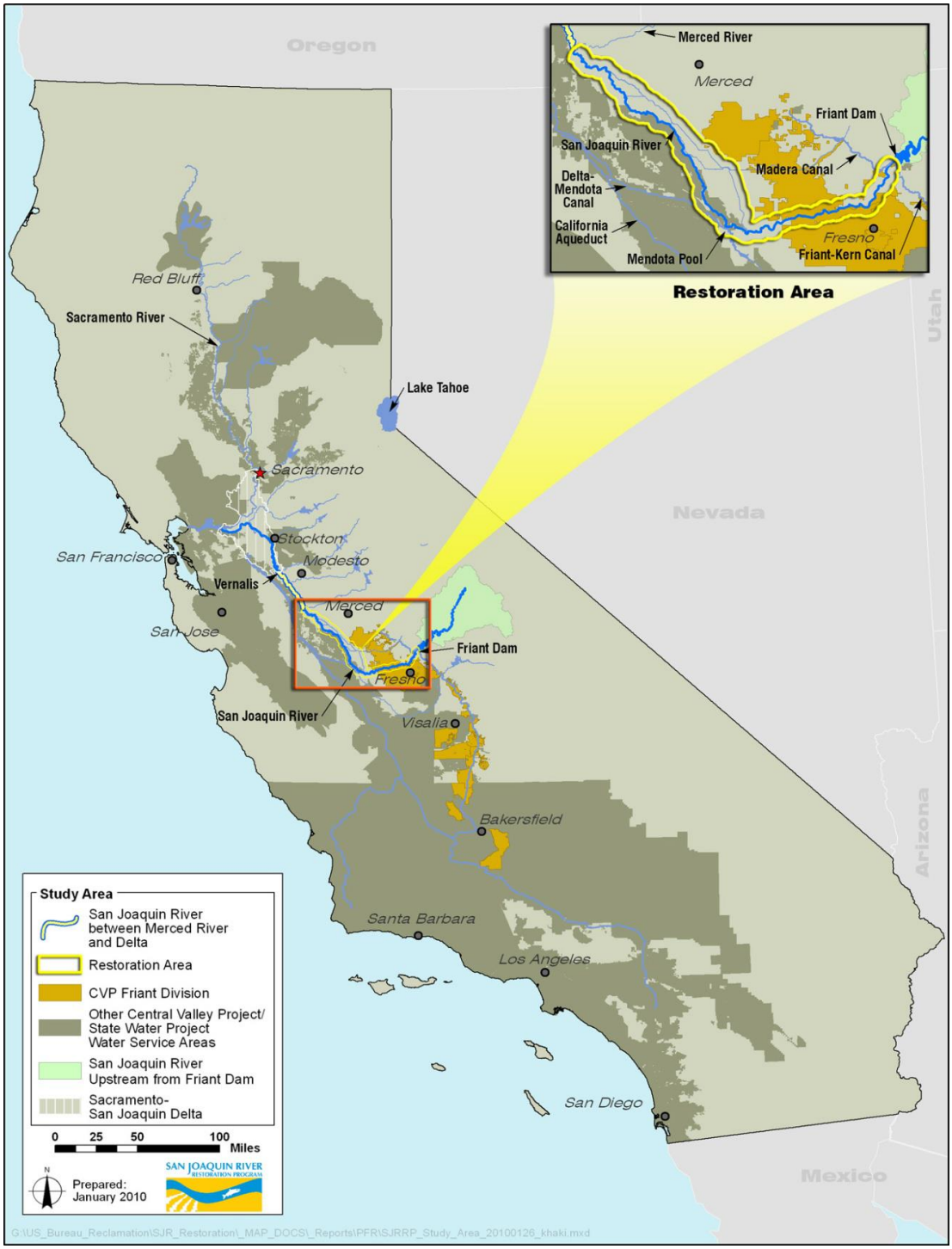
1.7 Scoping

April 21, 2010, in the Federal Register: Publication of Notice of Intent to Prepare an Environmental Assessment and Conduct San Joaquin River Chinook Salmon Scoping Meeting announced that NMFS was going to prepare an EA to analyze the potential impacts of the proposed reintroduction of spring-run Chinook to the mainstem of the San Joaquin River. The Notice of Intent also included announcement of time and location of scoping meeting for the proposed document. As part of the scoping process the following events occurred:

- On April 28, 2010, scoping meeting on proposed EA held in Fresno, California.
- On November 15, 2010, NMFS sent 10 NEPA notification letters to federally recognized tribes in accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, to inform them that NMFS had begun planning for the preparation of an environmental assessment and public scoping process regarding the permitting and rule-making for reintroduction of spring-run Chinook to the San Joaquin River and to request comment.

- On November 15, 2010, NMFS sent 74 letters to non-federally recognized tribes requesting them to comment and/or participate in the public scoping process as interested parties.
- On February 2011, NMFS released the section 10(a)(1)(A) permit application for public comment from February 4, through March 7, 2011, and held public workshops in Chico on February 3, Fresno on February 7, and Los Banos, on February 8, for the section10(a)(1)(A) permit application. Although the permit was a separate action questions on the reintroduction and the experimental population process were raised and addressed.
- On April 7, 2011, NMFS met with the Southern Sierra Miwuk Tribe to discuss the spring-run Chinook reintroduction process.
- On May 17, 2011, SJRRP Fisheries Technical Feedback Group Meeting was held at 2800 Cottage Way, Sacramento, CA. Public meeting at which the 10(a)(1)(A) permitting process and the 10(j) rule process were discussed.
- On September 29, 2011, SJRRP Fisheries Technical Feedback Group Meeting was held at 2800 Cottage Way, Sacramento, CA. The development of the Donor Stock Collection Plan for the reintroduction of spring-run Chinook into the San Joaquin River was discussed.
- On November 1, 2011, SJRRP Restoration Goal Technical Feedback Group Meeting was held in Fresno, California. Public meeting at which the 10(a)(1)(A) permit process and the 10(j) rule process were discussed.
- On January 20, 2012, SJRRP Fisheries Technical Feedback Group Meeting was held at 2800 Cottage Way, Sacramento, CA. Public meeting at which the 10(j) rule process was discussed.
- In March 2012, Focus Group meetings with State Water Contractors and flood management interests.
- On May 18, 2012, SJRRP Fisheries Technical Feedback Group Meeting was held at 2800 Cottage Way, Sacramento, CA. The spring-run Chinook ESA experimental population rules, and EA were discussed.
- On March 1, 2013, SJRRP Fisheries Technical Feedback Group Meeting was held at CSU Stanislaus, in the South Dining Room on 1 University Circle in Turlock, CA. The spring-run Chinook reintroduction rules were discussed.
- On March 1, 2013, Focus Group meeting with parties affected by *de minimus* exceptions and annual tech memo language of proposed rules.

Of the 84 letters sent to federally and non-federally recognized tribes and a presentation made to the Southern Sierra Miwuk Tribe, one response was received in support of the plan to restore salmon, and no specific tribal interests were expressed regarding reintroduction. There are no tribal treaties or fishing rights affected by the Proposed Action. As a result, no further discussion of tribal interests would be part of this document.



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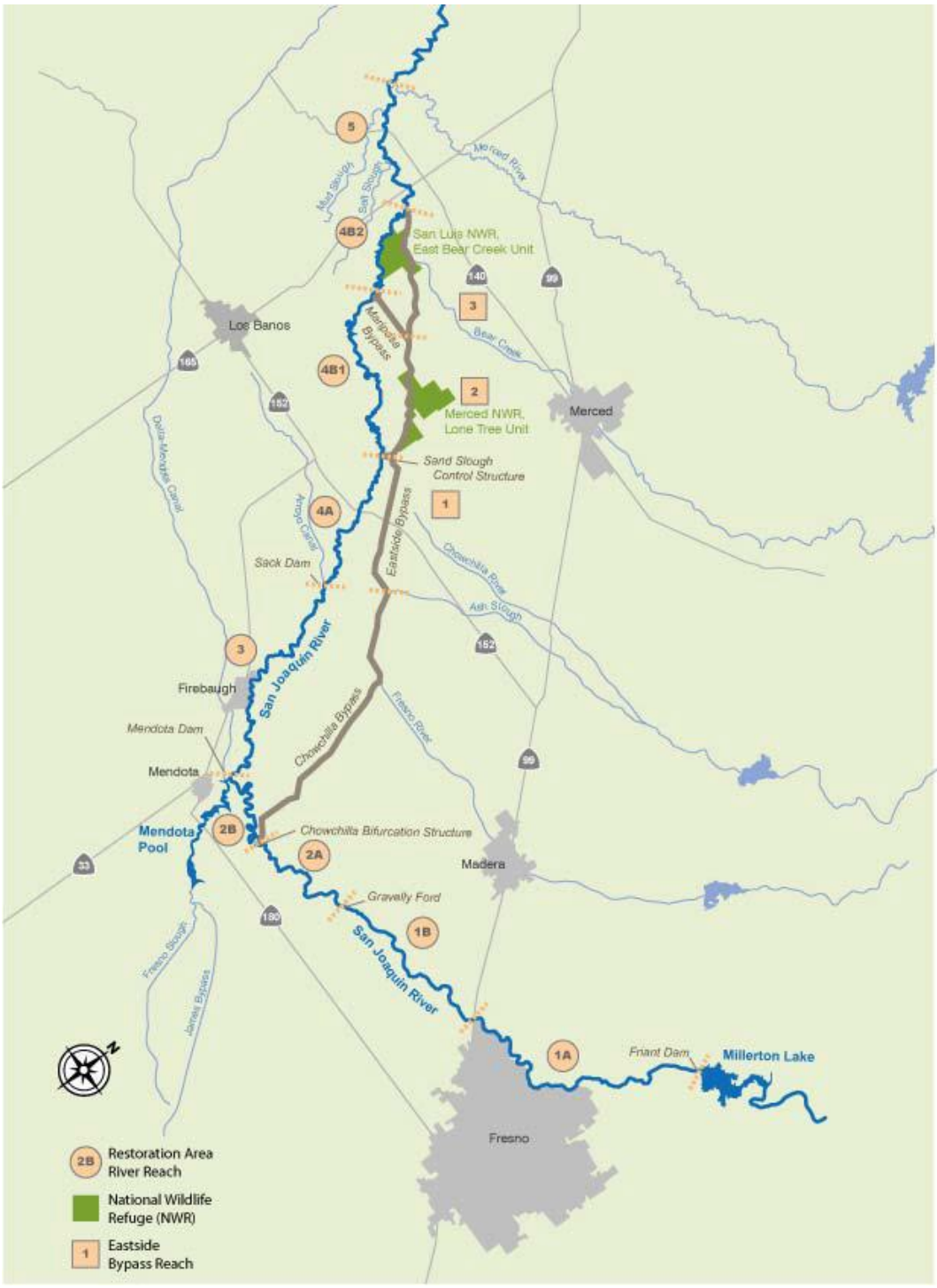
2 Source: (Bureau of Reclamation and California Department of Water Resources 2012)

3 Figure 3 San Joaquin Restoration Plan Study Area

4



Source: (Bureau of Reclamation and California Department of Water Resources 2012)

Figure 4 San Joaquin River Restoration Area

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2.0 SECTION 2 PROPOSED ACTION AND ALTERNATIVES

The Proposed Action is the reintroduction of spring-run Chinook to the San Joaquin River. As part of the action the reintroduced population would have the designation of an experimental population pursuant to section 10(j) and take exceptions in accordance to section 4(d) of the ESA. This action would allow implementation of the provisions of the Settlement as conditioned by the SJRRSA, thereby fulfilling the Settlement, the SJRRSA requirements, and elements of the Draft Recovery Plan.

As discussed in section 1, the reintroduction of spring-run Chinook is a long-term process that will require many years of collecting, propagating, and releasing of salmon into the San Joaquin River. This reintroduction is being implemented as part of the SJRRP. Modifications to the conveyance structures and habitat conditions are being led by other agencies and are in progress. It is expected that, over time, habitat conditions would improve and there would be an increase in the potential success of the reintroduced salmon. However, habitat conditions are not currently consistently beneficial for salmon in all reaches of the San Joaquin River. Also, over the course of the reintroduction process, potential donor population abundance may vary widely on an annual basis in response to a variety of conditions. Consequently, the reintroduction process would be implemented in such a way that the collection of spring-run Chinook in any given year considers both the condition of potential donor populations and the likely success of reintroduced spring-run Chinook, given the status of the habitat.

The objectives of the Proposed Action are as follows:

1. Identification of the optimal source stock(s) that is most likely to result in the successful reintroduction of spring-run Chinook to the San Joaquin River.
2. Designation of a NEP for spring-run Chinook within the San Joaquin River using section 10(j) of the ESA.
3. Promulgation of take exemption regulations using section 4(d) of the ESA for the conservation of the species, and to ensure that spring-run Chinook reintroduced to the San Joaquin River would not result in more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws, as defined under the SJRRSA section 10011(c)(1), due to such reintroduction.

2.1 Alternatives to Be Analyzed

2.1.1 No Action Alternative

Under the No Action Alternative the channel and habitat improvements proposed in the SJRRP would be implemented, however, there would be no collection of donor stock, no 10(j) designation of an experimental population, and spring-run Chinook would not be reintroduced intentionally to the San Joaquin River. Furthermore, there would be no take exceptions

established within the San Joaquin River basin under a 4(d) rule, including persons or entities diverting or receiving water pursuant to applicable State and Federal laws. Any actions involving spring-run Chinook in the San Joaquin River and associated tributaries and waterways would remain under the existing 4(d) rule for the spring-run Chinook ESU (50 CFR 223.203; June 28, 2005, 70 FR 37160).

The presence of some spring-running Chinook in the Stanislaus and Tuolumne rivers indicates that re-colonization could occur on the San Joaquin River when conditions are favorable, but the process would likely be very long and would not achieve the Restoration Goal of the Settlement in a timely manner. Under the No Action Alternative, the existing 4(d) rule would apply to any strays entering the San Joaquin River and any natural colonization of the San Joaquin River and the Restoration Area.

2.1.2 Action Alternative Development

The development of Alternatives to the Proposed Action requires that each of the components of the Proposed Action involving ESA compliance be presented as individually identifiable alternatives independent of the other parts, and may be implemented independently or in combination, with no change in the effect on the environment. This means that for the reintroduction of spring-run Chinook, the analysis is for the donor stock (i.e., Stock Source) alternatives, and the 10(j) and the 4(d) rule exceptions alternatives. It should be noted that the alternatives being developed are for the reintroduction of spring-run Chinook. Even if spring-run Chinook are not reintroduced, fall-run Chinook would be reintroduced, whether by natural recolonization or planting. Because of fall-run Chinook's status as a non-threatened or endangered species, and previous analysis done in the SJRRP PEIS/R, the reintroduction of fall-run Chinook was not analyzed in this EA. However, there is general information as to the location of fall-run Chinook populations in the San Joaquin River basin in section 3, Affected Environment. The potential effects of fall-run Chinook reentering the San Joaquin River upstream of the confluence of the Merced River are discussed in section 4 of this EA, and in the SJRRP PEIS/R..

Alternatives for the section 10(j) and 4(d) rule exceptions include the extent of the nonessential experimental population area (NEP Area Alternatives) and the length of time the rules would be enforced (Duration Alternatives). In addition to the Stock Source and the 10(j) and 4(d) rule exceptions alternatives, described below, the EA is required to consider the No Action Alternative. Under the No Action Alternative, the SJRRP projects proposed to improve the habitat, flows, and water management would be carried out; however, the experimental population would not be established and the existing 4(d) rule (50 CFR 223.203, June 28, 2005, 70 FR 37160) pertaining to spring-run Chinook would remain in force.

2.1.3 Common Activities

During the development of alternatives it was found that there were a number of activities that would be common to each of the potential NEP Area Alternatives and Stock Source Alternatives. These common activities are discussed below.

2.1.3.1 Activities Common to Source Stock Alternatives

The physical activities required to collect, transport and propagate donor stock are expected to be the same regardless of the particular stock being collected. This analysis addresses general impacts associated with removing fish from a population, but the specific analysis of the impact of particular collections and methods would be addressed in the analysis necessary for the proposed issuance of the 10(a)(1)(A) permit for that collection activity. In addition to the collection and transplantation methods, the following assumptions are common to all of the Alternatives, with the exception of the No Action Alternative.

- The SJRRP Settlement is implemented including the reintroduction of spring-run Chinook.
- Take of donor stock issued under section 10(a)(1)(A) would consider the condition of the source population, along with the San Joaquin River habitat condition.
- The Implementing Agencies are responsible for success of the SJRRP.
- DFW coordination with NMFS on fishing regulations for proposal to the California Fish and Wildlife Commission to accommodate the reintroduction.
- A conservation hatchery facility for propagation of spring-run Chinook would be utilized to minimize the number of individuals taken from existing populations.
- Release of spring-run Chinook would be from conservation hatchery facility broodstock, or from direct transfer of fish at appropriate life stages.
- Releases of spring-run Chinook will occur only within the Restoration Area.
- Voluntary actions and partnerships that contribute to the conservation of the species would be encouraged.
- The San Joaquin experimental population's nonessential versus essential designation would be considered as part of the spring-run Chinook ESU five year periodic status review.
- Monitoring activity performed through the SJRRP 10(a)(1)(A) permits, and special handling for scientific or salvage would help ensure that the affected spring-run Chinook is adequately protected, should changing conditions in procedure or outside factors occur that may alter the course of the SJRRP.

2.1.3.2 Activities Common to Section 10(j) and Section 4(d) Rule Alternatives

ESA section 10(j) requires that an experimental population be geographically isolated from other populations of the species, so as to be distinguishable for the purposes of applicable take prohibitions.

The SJRRSA directs NMFS to apply the provisions of ESA section 10(j) for the reintroduction of spring-run Chinook to the San Joaquin River. Congressional intent for the inclusion of section 10(j) in the ESA is to allow for a less restrictive regulatory condition for reintroduction of ESA listed species, specifically to reduce local resistance to such reintroductions. The mechanism for reducing the regulatory burden is to develop specific exceptions regarding take that would apply to the experimental population, and their progeny, under the authority of section 4(d). In practice these exceptions are broadly applicable, such that section 9 take prohibitions do not apply to take that occurs unintentionally and incidental to otherwise lawful activities.

The SJRRSA requires the NMFS to establish a 4(d) rule governing incidental take of reintroduced spring-run Chinook that also ensures minimal impact from reintroduction to specific third party water users. Congressional intent is clearly stated that the effect of the reintroduction shall not incur additional liabilities to specific facilities that already affect spring-run Chinook of the ESU. This 4(d) rule is considered by NMFS only in light of the need to reintroduce spring-run Chinook to fulfill the Settlement and to further recovery of the species. It must apply to the ESU in a way to account for, and to discount the incidental take of individuals generated by the reintroduction to the San Joaquin River as a result of diverting or receiving water pursuant to Federal and State water rights. Because of the scientific conditions to be met by this rule and limited definition of third parties, this rule is hereafter referred to as the "limited 4(d) rule".

For the purposes of this EA, the analysis of the section 10(j) and section 4(d) rule alternatives assumes the following common conditions:

- There would be a source of spring-run Chinook for the reintroduction.
- The experimental population would have a designated area.
- Within the experimental population designated area, direct and intentional take would be prohibited. This would include:
    - Angling
    - Take due to negligent actions
    - Take that occurs pursuant to an otherwise illegal activity.
- Exceptions of the 4(d) rule would apply equally to hatchery adipose fin-clipped fish and non-adipose-fin-clipped fish.[3]
- Within the experimental population's designated area, take exceptions would include:
    - Take incurred incidental to otherwise lawful activities, and not the intended purpose of those activities

[3] Under to the existing 4(d) rule, take of adipose fin-clipped fish would not be prohibited, but all other prohibitions of section 9 would apply to intact fish, with limits on prohibitions that are described in 50 C.F.R. §223.203.

  - Take for scientific, research, or enhancement purposes, provided that it is permitted through a designated process
  - Take that may be allowed under a Fishery Management and Evaluation Plan developed by the State of California and approved by NMFS. This may include angling at a later time
- Outside of the designated experimental population area, exceptions under 4(d) would provide take exceptions by specific third party water users of spring-run Chinook originating from the reintroduction to the San Joaquin River. Take authorizations from the other provisions of the existing 4(d) rule for spring-run Chinook continue to apply to these populations (research, rescue, etc., see 50 CFR 223.203, June 28, 2005, 70 FR 37160).
- Other state and federal regulations that protect water quality, riparian habitat, other ESA listed species, and other environmental conditions would incidentally afford some protection of reintroduced spring-run Chinook from certain classes of harm, as defined in ESA section 9. The NEP would not change requirements applicable to other laws and regulations that are protective of the environment. In complement to the above and in addition to the proposed 4(d) rule, protective measures including programs for strategic screening and participation in habitat conservation programs would be implemented in conjunction with SJRRP activities and are intended to provide net benefit to reintroduction**.**
- Salvage of fish for rescue purposes under the existing 4(d) permitting protocol and adaptive management components of the FMP and San Joaquin River Conservation Hatchery – Hatchery Genetic Management Plan (HGMP), would help ensure that the affected spring-run Chinook is adequately protected, should changing conditions in procedure or outside factors occur that may alter the course of the SJRRP.

In addition to exceptions to take prohibitions in regulations promulgated under ESA section 4(d), section 7 and section 10 of the ESA provide for exceptions or authorizations of take of listed species under certain circumstances. The consultation process under section 7 of the ESA provides an exception for incidental take of listed species under certain circumstances. Section 7(a)(2) of the ESA provides that each Federal agency shall, through consultation with and with the assistance of the Secretary of Commerce, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat designated for such species. The formal consultation process results in NMFS issuing a biological opinion with an incidental take statement. The incidental take statement, among other things, specifies the amount or extent of incidental taking of listed species as a result of the proposed action, reasonable and prudent measures that NMFS considers necessary and appropriate to minimize the impact of such incidental taking, and terms and conditions that the Federal agency or applicant must comply with in order to implement the reasonable and prudent measures. Under the terms of section 7(b)(4) and section 7(o)(2) of the ESA, any such incidental taking is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of the incidental take statement. Section 10 of the ESA

provides NMFS with authority to issue permits under certain circumstances for any otherwise prohibited act or taking. NMFS may issue permits for scientific purposes or to enhance the propagation or survival of the affected species, including, but not limited to, acts necessary for the establishment and maintenance of experimental populations pursuant to ESA section 10(j); or taking that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (i.e., incidental take permits).

2.2 Stock Source Alternatives

For the reintroduction and establishment of a spring-run Chinook population into the San Joaquin River, the SJRRP FMWG was tasked with identifying the potential donor stock sources. The FMWG Genetics subgroup developed a strategy for selection of donor stock for collection for the reintroduction of spring-run Chinook (San Joaquin River Restoration Program Fisheries Management Work Group 2010). Only spring-run Chinook from the Central Valley ESU are considered for reintroduction as an experimental population. Populations of spring-run Chinook remain in Deer, Mill, and Butte creeks. Another spring-run Chinook population occurs on the Feather River below Oroville Dam; individuals from this population also are spawned at the FRFH. Spring-run Chinook populations are re-establishing on Clear and Battle creeks (Newton and Brown 2004) and other dependent populations occur in the Sacramento River Basin (Lindley et al. 2004). The FMWG also identified the existence of periodic spring running Chinook adults from the Stanislaus and Mokelumne rivers. It is important to note that the order in which these potential source populations are mentioned throughout this EA is irrelevant. The selection of which source populations used for the SJRRP reintroduction effort would be dependent upon the genetic diversity needs of the broodstock, the specific conditions of the proposed donor population at the time, and whether the collection will jeopardize the survival and recovery of the species. Future authorization for the collection of spring -run Chinook and issuance of 10(a)(1)(A) permits would be analyzed under the ESA and NEPA when NMFS receives these permit applications, and therefore is not analyzed in this EA.

The primary goal of donor stock selection is to identify the stock(s) with the highest likelihood of establishing a self-sustaining, naturally reproducing population in the San Joaquin River Restoration Area (San Joaquin River between Friant Dam and the confluence with the Merced River). The development of the Stock Source Alternatives for analysis in this EA considers the potential risk to the existing spring-run Chinook population being used as donor stock and the benefit of reintroduction of spring-run Chinook used in the San Joaquin River.

A key component to identifying the "best" stock(s) is conducting genetic analyses of extant populations to ascertain the genetic integrity of all potential source populations. Measurement indices that are useful for analysis of potential donor stock(s) include, but are not limited to: effective population size, genetic comparisons to historic population in the upper San Joaquin River (if feasible); within population genetic diversity and inbreeding coefficient levels; among

population genetic diversity; and hatchery influence. Optimum characteristics for the chosen donor population sources include:

- Be of local or regional origin (Central Valley)
- Have life history (behavioral and physiological) characteristics that fit conditions expected to occur on the San Joaquin River, thereby maximizing the probability of successful reintroduction
- Large effective population size
- High within-population genetic diversity with low inbreeding coefficients
- Adequate representation of overall ESU genetic diversity

The independent spring-run Chinook populations on Deer, Mill, and Butte creeks and in the Feather River may be the best candidate populations for this program, having relatively large effective population size or unique genetic profiles.

In developing donor stock alternatives and the subsequent analysis the following aspects were considered: genetic diversity, current population size, availability of donor stock, and compatibility of life history characteristics to anticipated restored Restoration Area conditions. Only spring-run Chinook populations from the CV spring-run Chinook salmon ESU were considered because they experience habitat conditions most similar to expected conditions in the Restoration Area and to maintain the integrity of the common gene pool of the ESU.

Based on the Stock Selection Strategy (San Joaquin River Restoration Program Fisheries Management Work Group 2010) the following Stock Source Alternatives are analyzed in this EA.

All Donor Stock Sources Alternative (Preferred Alternative): Under the All Donor Stock Source Alternative collection of donor stock would come, over time, from all of the identified donor stock watersheds: the Feather River, Deer and Mill Creeks, and Butte Creek. Under this Alternative there could also be opportunistic collecting of spring-run Chinook in other watersheds (i.e., Clear and Battle creeks). This Alternative provides for the widest range of genetic variation in the reintroduced population and the highest likelihood of success. However, as described earlier, current habitat conditions in the Restoration Area are not consistently suitable to support salmon. Additionally, the 5 year review of spring-run Chinook ESU status (National Marine Fisheries Service 2011) identified wild spring-run Chinook abundance as being a declining trend (National Marine Fisheries Service 2011) although abundance has increased in the years since this review. Also, the conservation hatchery facility is not yet fully functional. Therefore the analysis of the All Donor Stock Sources Alternative would consist of an analysis of a phased collection of donor stock.

FRFH is a consistent source of spring-run Chinook. The facility may plan for sufficient production to allow individuals to be collected with no effect on the population abundance or the ESU, if fish collected from the FRFH are verified genetically to be spring-run Chinook and not hybridization with fall-run. Individuals would be collected at a life history stage that is most

appropriate. For example, broodstock collections may be best done at the egg stage but direct release may be more successful with juvenile fish. Initially, when channel and habitat improvements are in development, collections for direct release to the San Joaquin River would rely on FRFH eggs and juveniles. Broodstock development would also rely on FRFH eggs unless wild populations were sufficiently abundant to support collection of individuals whose genetics could be integrated into the broodstock program, guided by a NMFS approved HGMP. We would later consider diversifying the donor stock with fish from the naturally spawning population in other streams if and when those populations can sustain the removal of fish. Over time it is anticipated that the proportional representation of FRFH genotypes would be balanced with genotypes from other donor sources. Over time, broodstock at the conservation hatchery facility would produce juveniles that would be released to the river in sufficient numbers to enable, in combination with SJRRP channel and habitat improvements, the return of sufficient adults to complete their life cycle. Ultimately, the fish would establish a naturally self-sustaining population of spring-run Chinook, and the conservation hatchery contribution would be phased out. All collections of donor stock would require the application for and approval of section 10(a)(1)(A) permit(s), and associated NEPA and ESA section 7 review.

Discussion of both the phased introduction and use of all the donor stocks would include potential impacts to existing fish populations in the San Joaquin River and the donor stock populations and to achieving the goal of a naturally self-sustaining San Joaquin River population.

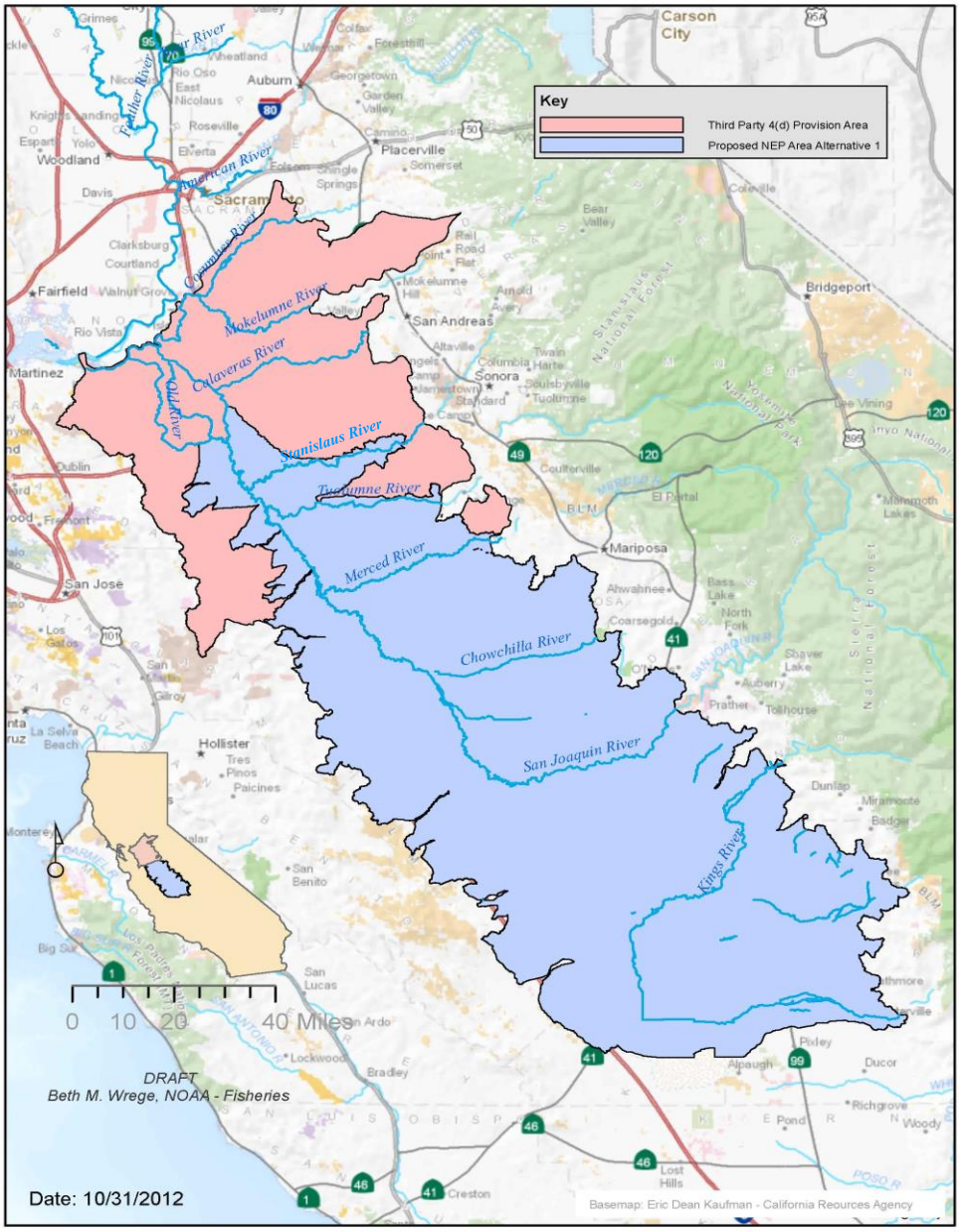
Feather River Fish Hatchery (FRFH) Source Only Alternative: During the entire enhancement period the only donor-stock collected would be spring-run Chinook from the FRFH. In contrast to the All Donor Source Stock Alternative, the analysis of the FRFH Source Only Alternative does not include collection of donor stock outside of the FRFH.

Single Source Alternative: Under the Single Source Alternative, collection of donor stock would come from naturally produced fish from only one of the independent donor stock watersheds: the Feather River, Deer, Mill and Butte creeks. While Deer and Mill creeks would be used as potential donor stock sources in combination with other stock sources in the All Donor Stock Source Alternative, the potential effect on their smaller population as the single source rules them out for consideration under this Alternative. Feather River spring-run Chinook have been heavily influenced by FRFH practices for spring and fall-run Chinook. Unlike carefully managed collection of spring-run Chinook from known hatchery crosses, it would be difficult to collect known spring-run Chinook from Feather River wild fish without additional handling and genetic testing and rejection of unsuitable fish. The spring-run Chinook population in Butte Creek is considered persistent and viable and is one of the most productive spring-run Chinook streams in the California Central Valley (National Marine Fisheries Service 2009a). Therefore, the Single Source Alterative analyzes the effect of using Butte Creek as the single source of donor stock.

2.3 Section 10(j) Rule Alternatives.

2.3.1 10(j) Area Alternatives

Area 1 Alternative: Under this Alternative, the nonessential experimental population area (NEP area) would be established under the 10j of the ESA as shown on Figure 2-1. The area consists of the San Joaquin River south of Mossdale County Park, which is near the city of Manteca, to Friant Dam in Fresno County. If viewed that the mainstem of San Joaquin River forms the spine of the NEP area, the eastern side of the NEP area would include the San Joaquin River's main tributaries, the Stanislaus River to Goodwin Dam, the Tuolumne River to the La Grange Dam, and Merced River to Merced Falls Dam, their associated watersheds and any other eastern watersheds that feed directly into the San Joaquin River.



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1

2 Figure 5 10(j) Area Alternative 1 Based on HUC map for San Joaquin River
3 Note: A hydrologic unit code (HUC) is a map of a hydrological feature, therefore the map shows
4 watershed for each stream or river. Not all of these water sources would support fish.

To the west of the San Joaquin River, Del Puerto Creek, Orestimba Creek, Los Banos Creek and numerous unnamed watersheds feeding into the San Joaquin River would also be included in the NEP area. There are a number of unnamed man-made conveyances used for the irrigation of surrounding agricultural lands. While not natural waterways, salmon have been known to use canals so these would also be included. Lastly, in high water years, water from the Kings River may flow northward into the San Joaquin River using both natural and man-made conveyances such as Fresno Slough and James Bypass. During these periods of high water flows when the Kings River is connected to the San Joaquin River, the Kings River and its associated watersheds up to Pine Flat Dam would also be considered to be within the NEP area.

Additionally, outside the experimental population's geographic designation (including portions of the San Joaquin River downstream of Mossdale County Park and in the Delta) the limited 4(d) rule of the ESA would provide take exceptions for spring-run Chinook that originate from the San Joaquin River as follows:

THE FOLLOWING IS NEW TEXT FROM THE DRAFT ENVIRONMENTAL ASSESSMENT

a. Any taking of CV spring-run Chinook that originates from the reintroduction in those portions of the lower San Joaquin River downstream Mossdale County Park in San Joaquin County, that the avoidance of which would impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws.

b. Any taking of CV spring-run Chinook salmon by the CVP and SWP that originates from reintroduction to the San Joaquin River that the avoidance of which would impose more than *de minimus:* water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. NMFS will prepare a technical memorandum, that describes the methodology to ensure that CV spring-run Chinook salmon originating from reintroduction to the San Joaquin River do not cause more than *de minimus*: water supply reductions, additional storage releases, and bypass flows associated with the operations of the CVP and SWP under any biological opinion or section 10 permit that is in effect at the time for operations of the CVP and SWP.

END OF NEW TEXT

Take will not be prohibited for otherwise lawful activities relating to diverting or receiving water pursuant to applicable State and Federal laws, so that the reintroduction will not impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal Laws . .

Take will be authorized of spring-run Chinook at the CVP and SWP projects in the South Delta that originates from reintroduction to the San Joaquin River, including fish from the NEP

experimental area. NMFS will annually determine by January 15 of each year the share of take at the CVP and SWP facilities that originates from the San Joaquin River. This determination will provide a methodology for accounting for San Joaquin River origin spring-run Chinook salmon and for adjusting the operational triggers and incidental take statements associated with any biological opinion or section 10 permit that is in effect at the time for operations of the CVP and SWP facilities.

Area Alternative 2 (Preferred Alternative): Under the Area Alternative 2, the NEP area would include the Restoration Area of the San Joaquin River (Figure 2-2), from Friant Dam to upstream of the confluence of the Merced River, the drainage of the Kings River, and all sloughs, channels, floodways, and waterways connected with the San Joaquin River that allow for CV spring-run Chinook salmon access, but excluding the Merced River, as the geographic boundary for the experimental population designation. Exceptions for take within the NEP are described under the Common Activities.

Additionally, outside the experimental population's geographic designation (including portions of the San Joaquin River downstream of the Merced Confluence, tributaries to the San Joaquin River and the Delta) the limited 4(d) rule of the ESA would provide take exceptions for spring-run Chinook as follows:

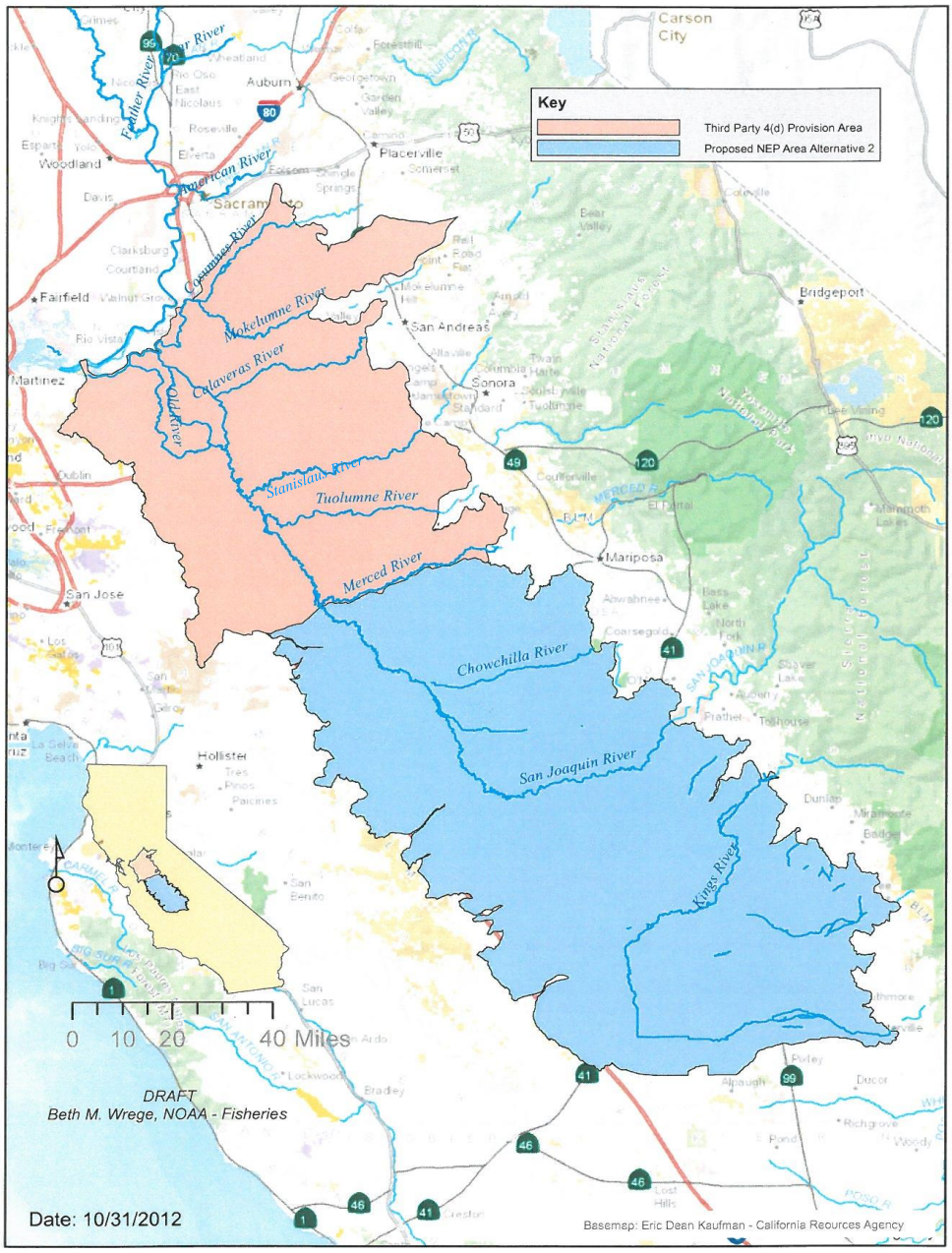

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Figure 6 10(j) Area Alternative 2: HUC map for San Joaquin River south to the Merced River and the King River drainage would be the NEP area.

THE FOLLOWING IS NEW TEXT FROM THE DRAFT ENVIRONMENTAL ASSESSMENT

a. Any taking of CV spring-run Chinook salmon in those portions of the lower San Joaquin River and its tributaries, including the Merced River, downstream from its confluence with the Merced River to Mossdale County Park in San Joaquin County, that the avoidance of which would result in more than a *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws.

b. Any taking of CV spring-run Chinook salmon by the CVP and SWP that originates from reintroduction to the San Joaquin River that the avoidance of which would impose more than *de minimus:* water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. NMFS will prepare a technical memorandum, that describes the methodology to ensure that CV spring-run Chinook salmon originating from reintroduction to the San Joaquin River do not cause more than a *de minimus*: water supply reductions, additional storage releases, and bypass flows associated with the operations of the CVP and SWP under any biological opinion or section 10 permit that is in effect at the time for operations of the CVP and SWP.

END OF NEW TEXT

Take will be exempted for spring-run Chinook originating in the San Joaquin River within the Merced River, the Tuolumne River, and the Stanislaus River for otherwise lawful activities relating to diverting or receiving water pursuant to applicable State and Federal laws, so that the reintroduction will not impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws.

Take will be authorized of spring-run Chinook at the CVP and SWP projects in the South Delta that originates from reintroduction to the San Joaquin River. NMFS will annually determine by January 15 of each year the share of take at the CVP and SWP facilities that originates from the San Joaquin River. This determination will provide a methodology for accounting for San Joaquin River origin spring-run Chinook salmon and for adjusting the operational triggers and incidental take statements associated with any biological opinion or section 10 permit that is in effect at the time for operations of the CVP and SWP facilities.

2.3.2 10(j) Duration Alternatives

10(j) Duration Alternative 1: Under the Duration Alternative 1, the 10(j) experimental population designation would be in effect until December 31, 2025. This alternative is based on the assumption that the Restoration Goal is achieved and that achieving Restoration Flows and habitat improvements would provide for re-establishment of a natural, self-sustaining salmon population. Paragraph 20(a) of the Settlement identifies that in 2025, certain terms of the Settlement, including Restoration Flows, may be revised through a court process. The SJRRSA (section 10011(e)(1)) requires the Secretary to forebear on section 18 of the Federal Power Act

(16 U.S.C. 811) prescriptions in Federal Energy Regulatory Commission proceedings on the Merced, Tuolumne, and Stanislaus rivers until 2025. The SJRRSA (section 10011(d)(1)) also requires a report to Congress in 2024 on status of the reintroduction. These three terms, singularly or in combination, could alter conditions for spring-run Chinook and the basis for the NEP designation in 2025.

10(j) Duration Alternative 2 (Preferred Alternative): Under the Duration Alternative 2, the 10(j) experimental population designation would remain in effect unless NMFS makes a determination that the level of protection afforded by the NEP no longer ensures protection and provides for conservation of the species. While there would be a formal review of the essential or nonessential status of the experimental population during future reviews of the status of the species that would occur every five years, as a whole there would be no formal review regarding the maintenance of the experimental population designation itself. Any future proposed changes to the rule would be made through the federal rule-making process.

2.4 Alternatives Considered and Eliminated from Further Consideration

2.4.1 Stock Source Alternatives

Spring Stray Alternative: Under the Spring Stray Alternative, donor stock collection would occur through opportunistic collecting of early spring-running Chinook salmon adult strays on the Yuba, Stanislaus, and Mokelumne rivers and on Battle and Clear creeks. Current data indicates that the numbers of stray spring-running Chinook would not be large enough to establish a population on the San Joaquin River (Maslin et al. 1997, Snider et al. 2001). Therefore, it is unlikely that enough fish could successfully be collected under this Alternative to meet the goal of restoring spring-run Chinook to the San Joaquin River. Additionally, collecting fish from the small developing runs on Clear and Battle creeks could prevent full establishment of these runs. Because it is likely that this alternative would not meet the goals of restoring spring-run Chinook to the San Joaquin River it has been eliminated from further consideration.

2.4.2 Section 10(j) Rule Alternatives.

2.4.2.1 10(j) Area Alternative 3

Under the Area Alternative 3, the NEP area would include only the Restoration Area of the San Joaquin River, from Friant Dam to the confluence of the Merced River as the geographic boundary for the experimental population designation. Under this alternative, the Kings River drainage would not be included. This alternative was rejected because unlike Area Alternative 2, during those years in which connectivity occurs between the San Joaquin River basin and the Kings River, any spring-run Chinook would not be considered part of the NEP, therefore it would be possible that third parties would be subject to ESA regulations under normal, legal activities in these areas. Therefore this Alternative does not give regulatory relief to third parties as intended in the Settlement and the SJRRSA.

2.4.2.2 10(j) Area Alternative 4

Under the Area Alternative 4, the NEP area would include only the main steam of the San Joaquin River from Friant Dam to Mossdale County Park as the geographic boundary for the experimental population designation. This alternative would exclude tributaries and the other waterways associated with the mainstem San Joaquin River. This alternative was not deemed to be reasonable, because Chinook salmon naturally exhibit some low levels of straying to non-natal streams, hence this NEP designation would not provide the regulatory relief to third parties that is intended in the Settlement and the SJRRSA.

2.4.2.3 10(j) Area Alternative 5

Under the Area Alternative 5, the NEP area would include, in addition to the NEP area designated in Area Alternative 1, the San Joaquin River north of Mossdale County Park. This alternative was rejected because Delta juvenile salmonid monitoring indicates that existing spring-run Chinook are likely to occur downstream of Mossdale, and according to section 10(j) an experimental population is any population authorized by the Secretary for release, but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species, i.e., isolated from other existing populations of the species. Individuals of the experimental populations would not be recognized as such while in the area of overlap with nonexperiemntal populations. That is, an experimental status would only be recognized outside the areas of overlap. Since the area north of Mossdale County Park is likely to overlap with the existing population in this area, by law, it cannot be included in the NEP area.

2.4.2.4 10(j) Duration Alternative 3

Under the Duration Alternative 3 the NEP would be monitored and the designation would be renewed and revised every five years in tandem with the status of the species review of the spring-run Chinook ESU. This alternative time period was rejected because it has limited certainty for the human environment and does not fulfill the intent of the SJRRSA.

2.4.2.5. 4(d) de minimus Exception Only for Reintroduced Spring-run Chinook

Under this alternative, in Area Alternative 2, only spring-run Chinook originating from the reintroduction would be excepted from take prohibitions in the lower San Joaquin River and its tributaries, to meet the *de minimus* requirement of the SJRRSA. This alternative was rejected it is not practicable to differentiate between spring-run Chinook that may stray into these rivers from the reintroduction to the San Joaquin River and those that may stray into these rivers from Sacramento River basin populations. There also is not presently sufficient information to determine the status or origin of the Chinook salmon present in the spring in these rivers, to be able to distinguish them from reintroduced individuals.

To summarize, Table 2-1 shows the matrix of Stock Source Alternatives and the 10(j) and 4(d) Rule Alternatives that are considered for analysis in the EA. Those alternatives that have been eliminated from further consideration are shaded.

1 Table 1 Alternatives Considered by Type (Blue Column) read left to right. Shaded alternatives were not analyzed.

No Action	Existing 4(d) take exceptions for spring-run Chinook would apply to strays and natural colonization. No new rules created				
Stock Source Alternatives	All Donors Stock Sources	Feather River Source Only	Single Source	Spring Stray	
population is any population authorized by the Secretary for release, but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species, i.e., isolated from other existing populations of the species. Individuals of the experimental populations	**Area 1** Friant Dam to Mossdale; up major tributaries to first major anadromous barrier; including appurtenant drainages and conveyance (HUC's) and including Kings River drainage. Within the NEP area, incidental take allowed incidental to otherwise lawful activity. Directed take, including adipose-clipped fish, must be under permit or within California fishing regulations. 4(d) take exceptions apply to third party water activities downstream of NEP area and include CVP and SWP export facilities for reintroduced spring-run Chinook.	**Area 2** (*Preferred Alternative*) Restoration area south of the confluence with the Merced River to first major anadromous barrier; including appurtenant drainages and conveyance (HUC's) and including Kings River drainage. Take exceptions within the NEP area are the same as Area Alternative 1. 4(d) take exceptions apply to spring-run Chinook for third party water activities on the San Joaquin River and tributaries between NEP area and Mossdale County Park and include CVP and SWP export facilities and operations for reintroduced spring-run Chinook.	**Area 3** Restoration area only excluding Kings River drainage.	**Area 4**: Mainstem only, from Friant Dam to Mossdale.	**Area 5** Area of Alternative 1 plus San Joaquin River north of Mossdale.
10(j) Duration Alternatives	**Duration 1** In effect through 2025	**Duration 2** (*Preferred Alternative*)No expiration	**Duration 3** Renewable with each 5 year spring-run Chinook status review		
4(d) *de minimus* Exception	**In the lower San Joaquin River and its tributaries, the take exception applies only to reintroduced spring-run Chinook**				

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3.0 SECTION 3 AFFECTED ENVIRONMENT

3.1 Introduction

The following section first presents a current status of spring-run Chinook within the project action area. The surrounding environment affected by this project, and thereby evaluated in this EA, this includes portions of the Sacramento River (i.e., Deer, Mill, and Butte creeks) and the Feather River. Portions of the San Joaquin River outside of the proposed Restoration Area include the following tributaries: the Merced, the Stanislaus, the Tuolumne, and Mokelumne rivers. Also included are portions of the Delta. Finally, a description of additional fish species currently present in these areas, along with the current environmental conditions that affect spring-run Chinook in these locations, is provided below.

3.2 Central Valley Spring-run Chinook Salmon

3.2.1 Life History

Spring-run Chinook generally leave the ocean and enter the Sacramento River from March to July as immature fish. Lindley *et al*. (2007) indicate that adult spring-run Chinook enter native tributaries from the Sacramento River primarily between mid-April and mid-June. Typically, spring-run Chinook utilize mid-to high-elevation streams that provide appropriate temperatures and sufficient flow, cover, and pool depth to allow over-summering while conserving energy and allowing their gonadal tissue to mature (Yoshiyama et al. 1998).

Spring-run Chinook spawning occurs between late August and early October depending on water temperatures (NMFS 2002). Between 56 and 87 percent of adult spring-run Chinook that enter the Sacramento River basin to spawn are 3 years old (Calkins et al. 1940, Fisher 1994). The eggs are deposited in the gravel, where incubation, hatching, and emergence occur. The emergence of spring-run Chinook fry occurs from November to March, depending again on water temperatures (California Department of Fish and Game 1998). Spring-run Chinook exhibit both of the freshwater life history types (i.e., stream-type and ocean-type) described by Healey (1991) (Healey 1991). The stream-type spring-run Chinook reside in freshwater for a year or more following emergence, and the ocean-type Chinook migrate to the ocean within their first year (California Department of Water Resources 2009). The fry use shallow, nearshore areas with slow current and good cover (California Department of Fish and Game 1998). Higher elevation streams such as Mill and Deer creeks generally have a higher proportion of spring-run Chinook exhibiting the stream-type life history (California Department of Water Resources 2009). These juveniles spend 9 to 10 months in their natal streams and up to 18 months in freshwater (U.S. Fish and Wildlife Service 1995, California Department of Fish and Game 1998). In lower elevation streams such as Butte Creek, the juveniles exhibit more of an ocean-type life history with a higher proportion of the production leaving the tributaries from December to February (California Department of Fish and Game 2000). These young of the year (YOY) may rear in

the bypasses, the lower Sacramento River, and the Delta until ready to enter the ocean (California Department of Water Resources 2009). DFW conducted a life history investigation on Butte Creek from 1995 to 2003 and found that spring-run Chinook that emigrated from the creek as yearlings contributed greatly to the ocean harvest rate, suggesting that yearlings survive at higher rates than YOY (California Department of Fish and Game et al. 2004). In general, spring-run Chinook spend between 1 and 4 years in the ocean before returning to spawn (Myers et al. 1998).

3.2.2 Historical Distribution

Historically spring-run Chinook were the second most abundant salmon run in the Central Valley (California Department of Fish and Game 1998). These fish occupied the upper and middle reaches (1,000 to 6,000 feet) of the San Joaquin, American, Yuba, Feather, Sacramento, McCloud and Pit rivers, with smaller populations in most tributaries with sufficient habitat for over-summering adults (Stone 1872, Rutter 1904, Clark 1929). The Central Valley Technical Review Team estimated that historically there were 18 or 19 independent populations of spring-run Chinook along with a number of dependent populations, all within four distinct geographic regions (diversity groups) (Lindley et al. 2004). Of these 18 populations, only 3 wild populations (Mill, Deer, and Butte creeks on the upper Sacramento River) currently exist (National Marine Fisheries Service 2009c). In addition to these three extant populations, there are other tributaries within the Sacramento River that are known to contain populations of spring-run Chinook, such as the Feather River (National Marine Fisheries Service 2009c). However, these populations all have low abundance, and/or are heavily influenced by hatchery origin spring-run fish from the Feather River hatchery (National Marine Fisheries Service 2009c). The Central Valley drainage as a whole is estimated to have supported spring-run Chinook runs as large as 600,000 fish between the late 1880s and 1940s (California Department of Fish and Game 1998). Before the construction of Friant Dam, nearly 50,000 adults were counted in the San Joaquin River alone (Fry 1961). After Friant Dam was constructed, numerous spring-run Chinook returned to the river below the dam during the years when the river flowed below Sack Dam (FMP 2010). Clark (1943) noted that Friant Dam first prevented upstream access in 1942, although the dam did not begin storing water until February 21, 1944 (Clark 1942). Clark (1943) estimated that there were about 5,000 spring-run fish in a holding pool immediately below the dam in 1942 (Clark 1942). This information demonstrates that the habitat directly below Friant Dam can hold and sustain a large number of spring-run fish. Construction of other low elevation dams in the foothills of the Sierra Nevada on the American, Mokelumne, Stanislaus, Tuolumne, and Merced rivers, is thought to have extirpated spring-run Chinook from these watersheds of the San Joaquin River. Observations in the last decade suggest that perhaps a naturally occurring population may exist in the Stanislaus and Tuolumne rivers (FishBio 2010, 2012). Naturally-spawning populations of spring-run Chinook currently are restricted to accessible reaches of the upper Sacramento River, Antelope Creek, Battle Creek, Beegum Creek, Big Chico Creek, Butte Creek, Clear Creek, Deer Creek, Feather River, Mill Creek, and the Yuba River (California Department of Fish and Game 1998).

3.2.3 Current Distribution

Much of the historical habitat of spring-run Chinook is currently blocked by dams (California Department of Water Resources 2009). On the Feather River, only 35 km (22 miles) of habitat on the mainstem below Oroville Dam remains, and there is no spatial or temporal separation between spring-run and fall-run Chinook (Schick et al. 2005). This has resulted in the hybridization of the two runs from in-river spawning and past hatchery operations (Yoshiyama et al. 2001). However, an early-returning population persists within both the Feather and Yuba rivers, and is supported by FRFH operations (Yoshiyama et al. 2001), (Lindley et al. 2007).

3.2.4 Viable Population Summary for Spring-run Chinook

3.2.4.1 Abundance

From 2001 to 2005, the spring-run Chinook ESU has experienced a trend of increasing abundance in some natural populations, most dramatically in the Butte Creek population (Good et al. 2005). The non-adipose clipped FRFH spring-run Chinook has been included in the ESU based on its genetic linkage to the natural population and the potential development of a conservation strategy for the hatchery program. In contrast to the first half of the decade, the next 5 years (2006 to 2010) of adult returns indicate that population abundance declined from the peaks seen in the 5 years prior for the entire Sacramento River basin (National Marine Fisheries Service 2011). The 2006-2010 declines in abundance place the Mill and Deer creek populations in the high extinction risk category due to the rate of decline and, in the case of Deer Creek, also the level of escapement (National Marine Fisheries Service 2011). Butte Creek has sufficient abundance to retain its low extinction risk classification, but the rate of population decline in the past several years was nearly sufficient to classify it as a high extinction risk based on this trend (Lindley et al. 2007). However, as noted in section 1.3.1.2, Butte Creek spring-run Chinook abundance has risen to estimates of 15,000 adults in 2012, and again in 2013. Similar trends have been apparent throughout the other proposed Donor Action Areas discussed in this EA, and spring-run Chinook escapement counts of these areas through 2012 are noted throughout section 3.3 of this EA.

3.2.4.2 Productivity

The geometric mean for the extant Butte, Deer, and Mill creek spring-run Chinook populations between 2001 and 2005 ranged from 491 to 4,513 fish, indicating increasing productivity over the short-term (Good et al. 2005). The productivity of the Feather and Yuba river populations and contribution to the spring-run Chinook ESU currently is unknown (Good et al. 2005).

3.2.4.3 Diversity

The spring-run Chinook ESU is comprised of two genetic complexes. Analysis of natural and hatchery spring-run Chinook stocks in the Central Valley indicates that the northern Sierra Nevada diversity group spring-run Chinook populations of Mill, Deer, and Butte creeks, have retained their genetic integrity, as opposed to the genetic integrity of the Feather River

population, which has been somewhat compromised. Genetic analysis of FRFH spring-run Chinook shows evidence of hybridization between spring-run and fall-run Chinook hatchery stocks, and Feather River spring-run Chinook that have strayed into the Yuba River appear to have introgressed with the fall-run Chinook also inhabiting the river. Additionally, the diversity of the spring-run Chinook ESU has been further reduced with the loss of the San Joaquin River basin spring-run Chinook population.

In the Central Valley, spring-run Chinook are genetically distinct from fall-run Chinook. A few individual fish, however, may exhibit migration patterns that differ from the norm. Phenotypic behaviors are behaviors that normally are driven by genetic background, but that are performed by individuals that do not have that normal genetic background. Adult Chinook that are observed migrating in streams where a sustaining population of spring-run Chinook is not known to exist, at times of the year typical of spring-run Chinook migration are called phenotypic spring running Chinook. The origins and background of these fish is uncertain as phenotypic spring running Chinook have not been well studied, but from a theoretical perspective, possible explanations for phenotypic spring running Chinook observed on several San Joaquin River tributaries could be: 1) Chinook of an unknown genotype that show behaviors typical of spring-run Chinook; 2) from genetically distinct spring-run Chinook parentage, but have strayed from their home streams; 3) genetically fall-run Chinook that behave like spring-run Chinook; or 4) small spring-run Chinook populations that have existed on these rivers previously, but were undocumented in the past (Workman 2002, 2003, Anderson et al. 2007). Genetic testing would be needed to confirm that these fish are naturally producing spring-run Chinook, and not hatchery strays or hybrids.

3.3 Donor Action Areas

3.3.1 Sacramento River Tributaries

The proposed Donor Stock Alternatives could take eggs or fish from the Sacramento River tributaries for use in the San Joaquin River. Therefore, the following sections describe the existing conditions present on the following tributaries: the Feather River and FRFH, and Deer, Mill, Butte, Clear, and Battle creeks. It should be noted that there is a great deal of variability as to the amount of information available for each of the tributaries. Some watersheds have more than 50 years of information whereas others have approximately 20 years plus there are differences in what information is available that describe the characteristics of each watershed. Furthermore, any removal of eggs or fish from these sources would require subsequent NEPA and permit action pursuant to section 10(a)(1)(a) of the ESA.

3.3.1.1 Feather River

The Feather River is a major tributary to the Sacramento River located at the north end of the western slope of the Sierra Nevada, with a watershed encompassing 5,900 square miles (Federal Energy Regulatory Commission 2007, National Marine Fisheries Service 2009a). The upper Feather River watershed above Oroville Dam is approximately 3,600 square miles and has four tributaries, the North, South, Middle, and West Forks. Downstream of Oroville Dam, the

watershed includes the drainage of the Yuba and Bear rivers, and the Feather River eventually meets the Sacramento River (National Marine Fisheries Service 2009a). Figure 3-1 shows the lower Feather River watershed and the locations of the FRFH.

Spring-run Chinook are spawned artificially in the FRFH, and also spawn naturally in the river during late September to late October (Reynolds et al. 1993, Yoshiyama et al. 2001) downstream from the Fish Barrier dam approximately eight miles to the Thermalito Afterbay Outlet (National Marine Fisheries Service 2009a).

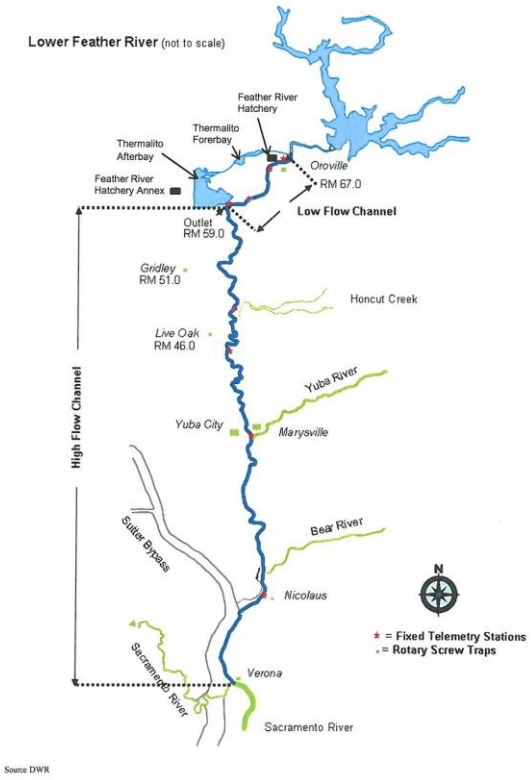


Figure 7 Lower Feather River

In most years the FRFH has met its production goal of two million spring-run Chinook smolts. To reach this target, the hatchery typically mates approximately 750 pairs to produce three million eggs (Figure 3-2). Once the production goal has been met, spring-run Chinook typically continue to enter the hatchery. In past years, these "surplus" fish have either been released back to the river, euthanized (designated as "killed, not spawned"), or allowed to die on site (designated as "Died in Tank"). The "Died in Tank" adults died while waiting to be spawned, or were allowed to die over time once production goals were met.

The number of the "surplus" fish varies from year to year. During the 2011 spawning season at FRFH the number of surplus adults was particularly large. The number of fish included 486 surplus adults (231 males and 255 females) that entered the hatchery (Table 3-1). Theoretically, these fish were capable of producing an additional one million eggs.

In June of 2012 the California Hatchery Scientific Review Group proposed a policy that all fish produced at California Hatcheries would have a purpose (i.e., no surplus) (California Hatchery Scientific Review Group 2012) this policy has been approved by DFW, USFWS and NMFS. Although there would be no "surplus" fish, under the revised operational policies for FRFH use of fish for restoration purposes in the San Joaquin River is an approved production use.

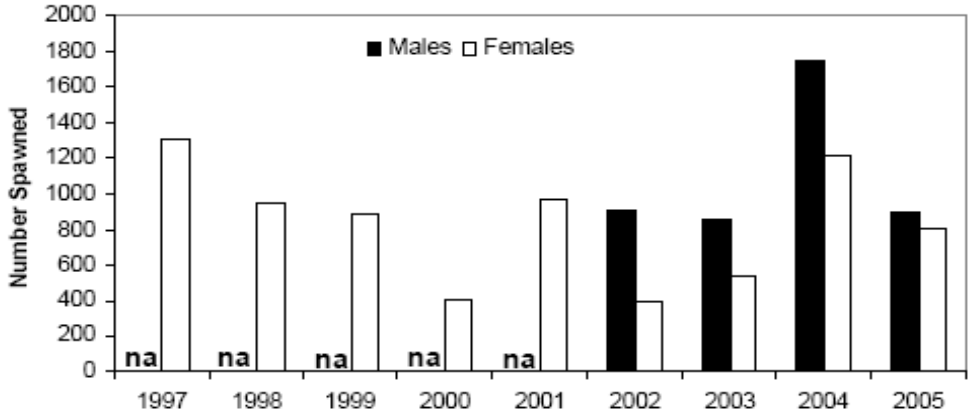


Figure 8 Number of spring-run Chinook adults spawned at the FRFH ((San Joaquin River Restoration Program Fisheries Management Work Group 2010)).

	Female	**Male**	**Jack**	**Died in Tank**
2011	255	231	No data	No data
2010	154	23	6	256
2009	0	2	34	76
2008	47, unknown gender		No data	240

Table 2. Surplus Fish Observed at Feather River Fish Hatchery in Recent Years (NMFS 2012).

Between 1967 and 2008, the highest annual hatchery spring-run Chinook escapement was 8,662, occurring in 2003 (San Joaquin River Restoration Program Fisheries Management Work Group

2010). Between 1986 and 2007, the average number of spring-run Chinook returning to the FRFH was 3,992, compared to an average of 12,888 spring-run Chinook returning to the entire Sacramento River Basin (National Marine Fisheries Service 2009a), and an average of 1,700 fish before the construction of Oroville Dam (Reynolds et al. 1993, Yoshiyama et al. 2001). More recently, FRFH spring-run Chinook escapement from 2010 through 2013 was , 1,661, 1,969, and 3,738; respectively(California Department of Fish and Wildlife 2013)). The increase in numbers since the completion of the dam (1968) is attributed to the consistent supply of cold water to both the hatchery and the Low Flow Channel and the contribution of hatchery fish (Reynolds et al. 1993, Yoshiyama et al. 2001).

3.3.1.2 Deer Creek

Deer Creek is an eastside tributary to the upper Sacramento River. Deer Creek is 60 miles long and its watershed drains 200 square miles (U.S. Fish and Wildlife Service 1995). Deer Creek originates on the northern slopes of Butte Mountain at an elevation of approximately 7,320 feet. It initially flows through meadows and dense forests and then descends rapidly through a steep rock canyon into the Sacramento Valley. Deer Creek flows for 11 miles across the Sacramento Valley floor, entering the Sacramento River at River Mile (RM) 220 (Figures 3-3 and 3-4). Along with Butte Creek and Mill Creek, Deer Creek is recognized as supporting genetically distinct, self-sustaining populations of spring-run Chinook (Garman and McReynolds 2008). The Mill and Deer creek populations appear genetically similar to each other compared to the other extant spring-run Chinook populations in the Central Valley and likely function together demographically as a metapopulation (Lindley et al. 2004).

Spring-run Chinook have been documented migrating upstream on Deer Creek from March through early July. Migrations usually end during the peak of the irrigation season when flows are insufficient to pass adults and water temperatures begin to approach lethal limits low in the watershed.

Source: (USFWS 2011)

Figure 9 Deer Creek.

Table 3-2 shows annual escapement estimates for Deer Creek spring-run Chinook. For the Central Valley Project Improvement Act (CVPIA) doubling period 1967-1991, the average spawning escapement of spring-run Chinook in Deer Creek was 1,300 (U.S. Fish and Wildlife Service 1995). From 1992 to 2012 the average is only 1,036 (California Department of Fish and Wildlife 2013).

Table 3. Annual Escapement Estimates for Deer Creek

Year	Count	Year	Count	Year	Count
1963	2,302	1980	1,500	1997	466
1964	2,874	1981	-	1998	1,879
1965	-	1982	1,500	1999	1,591
1966	-	1983	500	2000	637
1967	-	1984	0	2001	1,622
1968	-	1985	301	2002	2,195
1969	-	1986	543	2003	2,759
1970	2,000	1987	200	2004	804
1971	1,500	1988	371	2005	2,239
1972	400	1989	84	2006	2,432
1973	2,000	1990	496	2007	644
1974	3,500	1991	479	2008	140

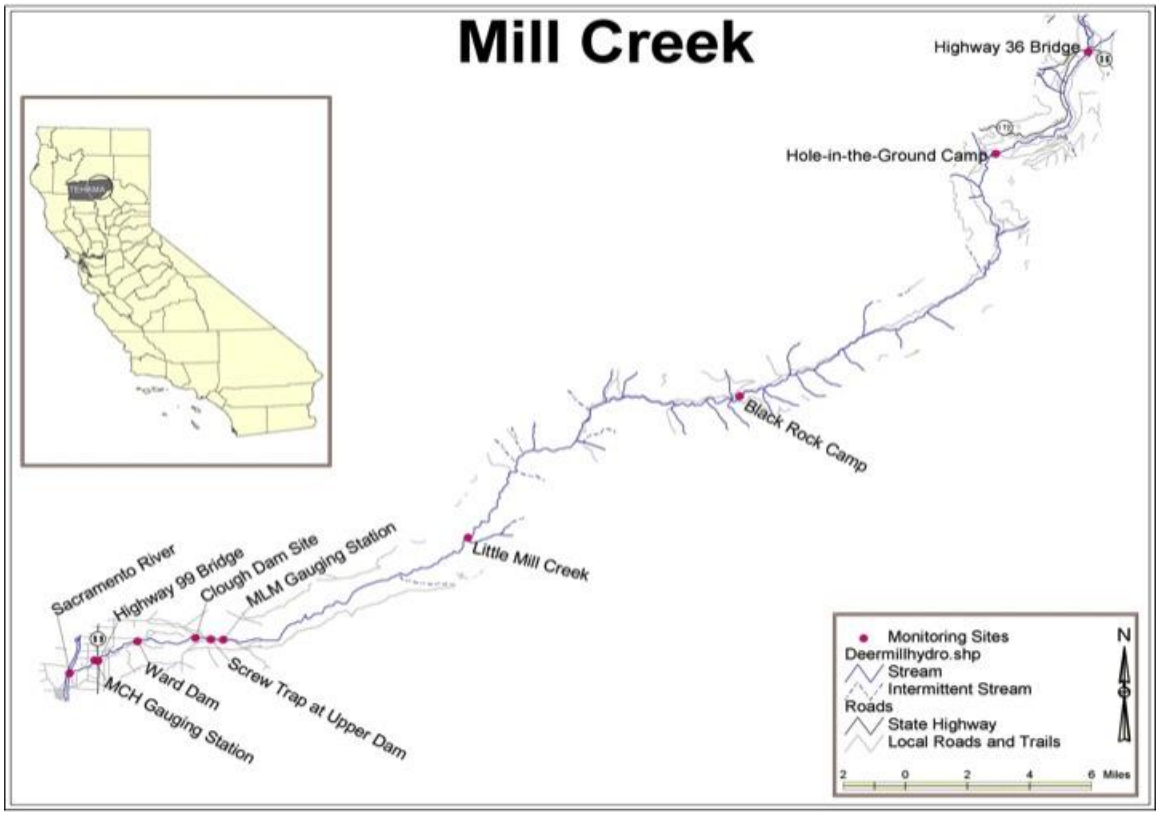
Year	Count	Year	Count	Year	Count
1975	8,500	1992	209	2009	213
1976	-	1993	259	2010	262
1977	340	1994	485	2011	271
1978	1,200	1995	1,295	2012	734
1979	-	1996	614		

Source: (California Department of Fish and Wildlife 2013)

3.3.1.3 Mill Creek

Mill Creek is a major tributary of the Sacramento River, flowing from the southern slopes of Mount Lassen and entering the Sacramento River at RM 230. The stream originates at an elevation of approximately 8,200 feet and descends to 200 feet at its confluence with the Sacramento River. Mill Creek originates from springs in Lassen Volcanic National Park (LVNP) and initially flows through meadows and dense forests. It descends rapidly through a steep canyon, and then flows eight miles across the Sacramento Valley floor. Its total length is approximately 58 miles. Nearly the entire mainstem habitat is utilized and/or available to spring-run Chinook (Figure 3-4). The Mill Creek watershed encompasses 134 square miles. During the irrigation season (mid-spring to fall), two water diversions on the lower eight miles of the stream divert most of the natural flow, particularly during dry years. Adult spring-run Chinook have been observed migrating in Mill Creek as early as February. A 10-year study from 1953 to 1964 (San Joaquin River Restoration Program Fisheries Management Work Group 2010) has documented the majority of upstream migration into Mill Creek as occurring between mid-April and the end of June.

Based on observations of spring-run Chinook adults holding and/or spawning, the known range of this habitat extends a distance of approximately 48 miles from near the Little Mill Creek confluence (San Joaquin River Restoration Program Fisheries Management Work Group 2010) upstream to within one-half mile of the LVNP boundary (San Joaquin River Restoration Program Fisheries Management Work Group 2010). Suitable spawning habitat on the mainstem of Mill Creek extends to near Morgan Hot Springs (approximately three miles downstream of LVNP), although salmon have been reported spawning in "Middle Creek" (San Joaquin River Restoration Program Fisheries Management Work Group 2010), a small tributary located approximately two miles downstream of the park boundary.



Source: (Mill Creek Conservancy 2013)

Figure 10 Mill Creek

Table 3-3 shows annual escapement estimates for Mill Creek spring-run Chinook (California Department of Water Resources 2011). For the CVPIA doubling period 1967-1991, the average spawning escapement of spring-run Chinook in Mill Creek is 800 (U.S. Fish and Wildlife Service 1995). From 1992 to 2012 the average is 653 (California Department of Fish and Wildlife 2013).

Table 4. Annual Escapement Estimates for Mill Creek

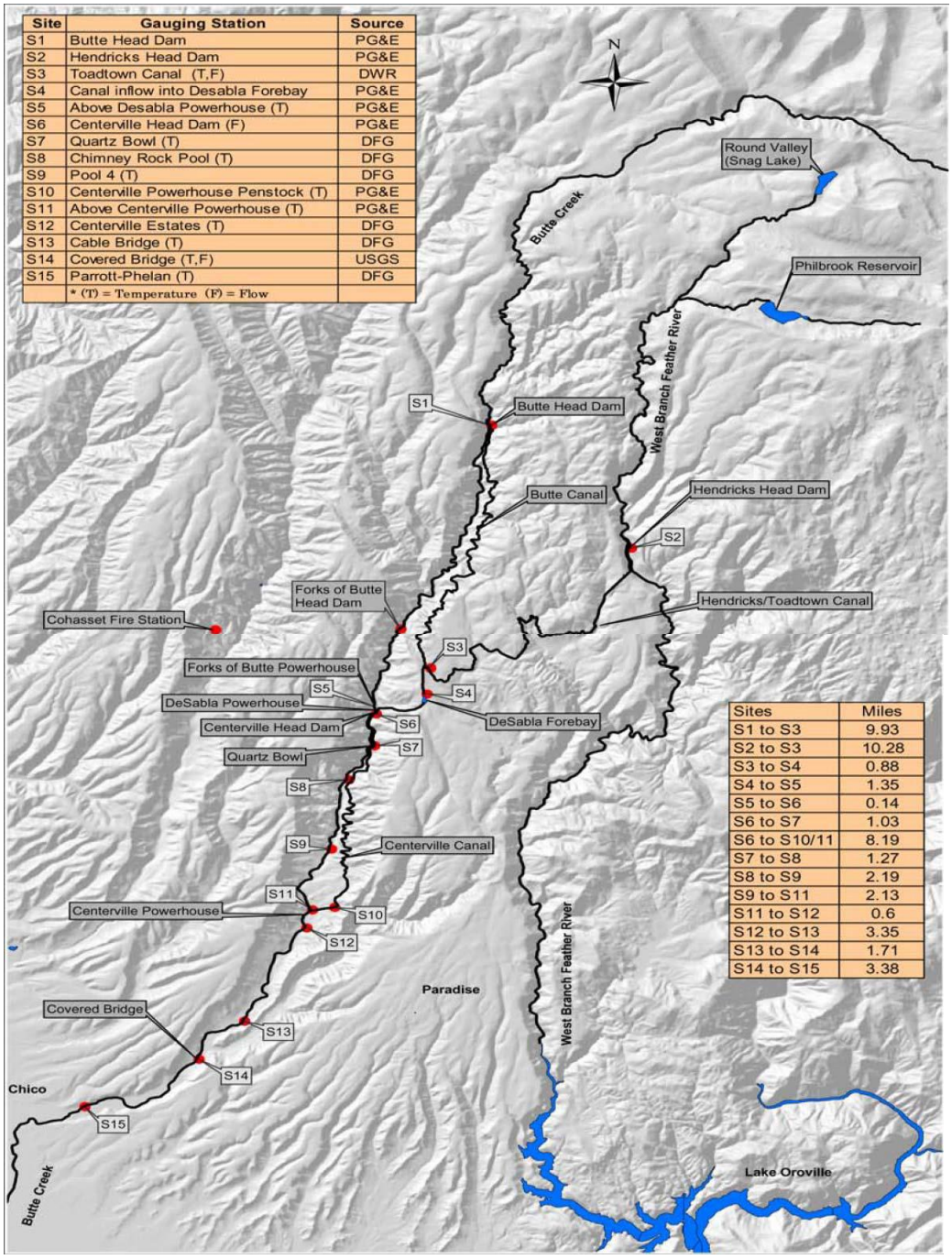
Year	Count	Year	Count	Year	Count
1960	2,368	1978	925	1996	253
1961	1,245	1979	-	1997	202
1962	1,692	1980	500	1998	424
1963	1,315	1981		1999	560
1964	1,539	1982	700	2000	544
1965		1983	-	2001	1,100
1966	-	1984	191	2002	1,594
1967	-	1985	121	2003	1,426
1968	-	1986	291	2004	998
1969	-	1987	90	2005	1,150
1970	1,500	1988	572	2006	1,002
1971	1,000	1989	563	2007	920
1972	500	1990	844	2008	362
1973	1,700	1991	319	2009	220
1974	1,500	1992	237	2010	482
1975	3,500	1993	61	2011	366
1976	-	1994	723	2012	768
1977	460	1995	320		

Source: (California Department of Fish and Wildlife 2013)

3.3.1.4 Butte Creek

The spring-run Chinook in Butte Creek are considered persistent and viable and the creek is one of the most productive spring-run Chinook streams in the California Central Valley (National Marine Fisheries Service 2009a). Lindley *et al.*, (2007) indicated that the Butte Creek population is at a low risk of extinction due to the population size, general increases in production, and low hatchery influence (Lindley et al. 2007). Butte Creek is one of only three streams to sustain a genetically distinct and viably independent population of spring-run Chinook (National Marine Fisheries Service 2009a). According to Moyle *et al.* 2008 (as cited in SJRRP, 2010) there is a high likelihood of spring-run Chinook going extinct in the next 50-100 years due to the vulnerability of a catastrophic event and due to the narrow physiological tolerances in the summer, where an increase in temperature due to climate change may drastically reduce survival (San Joaquin River Restoration Program Fisheries Management Work Group 2010). Population numbers have increased within the last two decades, and large pre-spawn mortalities have occurred on a few years (San Joaquin River Restoration Program Fisheries Management Work Group 2010). The pre-spawn mortalities were due to a high number of fish concentrated in limited holding pools with high water temperatures, resulting in an outbreak of diseases (San Joaquin River Restoration Program Fisheries Management Work Group 2010).

The entire available holding and spawning area for Butte Creek spring-run Chinook is below 931 feet elevation, due to a 15-foot waterfall barrier known as the Quartz Bowl Falls. Butte Creek spring-run Chinook adults migrate into Butte Creek from February through June, with the peak in mid-April. Adult migration is frequently impaired by low flows and high water temperatures in June, and adult spring-run Chinook that have not migrated above State Highway 99 by mid-June have a lower likelihood of surviving to spawn.



Source: (San Joaquin River Restoration Program Fisheries Management Work Group 2010)

Figure 11. Butte Creek

The data below is based on DFW escapement estimates for the years 1954 – 2012. The approximate averages for the last thirty, twenty, and ten years are 3,751; 5,379; and 4,901, respectively.

Table 5. Butte Creek spring-run Chinook Spawning Escapement Estimates for the Period 1954 through 2012.

Year	**Run Size**	**Year**	**Run Size**	**Year**	**Run Size**	**Year**	**Run Size**		
1954	830	1969	830	1984	23	1999	3679*		
1955	400	1970	285	1985	254	2000	4118*		
1956	3000	1971	470	1986	1371		Snorkel	Prespawn Mortality	Spawn
1957	2195	1972	150	1987	14	2001	9605	193	18312**
1958	1100	1973	300	1988	1300	2002	8785	3431	12597
1959	500	1974	150	1989	1300*	2003	4398	11231	6063
1960	8700	1975	650	1990	100*	2004	7390	418	10221
1961	3100	1976	46	1991	100*	2005	10625		
1962	1750	1977	100	1992	730*	2006	4579	244	6303
1963	6100	1978	128	1993	650*	2007	4943	638	6220
1964	600	1979	10	1994	474*	2008	3935		
1965	1000	1980	226	1995	7500*	2009	2059		
1966	80	1981	250	1996	1413*	2010	1160		
1967	180	1982	534	1997	635*	2011	2130		
1968	280	1983	50	1998	20212*	2012	8,615		

Source: (Bureau of Reclamation and California Department of Water Resources 2012), (California Department of Fish and Wildlife 2013)

* Surveys prior to 1989 used various methods with varying precision. Snorkel surveys implemented since 1989 are thought to significantly underestimate the actual population size and should only be used as an index. Spawning surveys results for 2001 – 2006 were generated by a modified Schaefer Model carcass survey.

** Number as reported for 2001 (22,744) in error (Ward et al. 2004).

τ Preliminary data (California Department of Fish and Wildlife 2013).

3.3.1.5 Clear Creek

Clear Creek is approximately 18.1 miles long between the confluence with the Sacramento River and Whiskeytown Dam. Whiskeytown Dam is a total barrier to salmonid migration in Clear

Creek (Figure 3-6). The elevation for this reach drops from 1,000 feet to 400 feet above mean sea level (Newton and Brown 2004). USFWS identified two predominant stream channel types in Clear Creek. The upper reaches from Whiskeytown Dam down to Clear Creek Road Bridge (RM 8.5) have steep canyon walls with falls, high-gradient riffles, and deep pools. Below Clear Creek Road Bridge, the stream channel widens into an alluvial reach with a much lower gradient.

Since 2001, the Dedicated Project Yield Program—authorized by section 3406(b)2 of the CVPIA— has provided additional water year-round to increase streamflow. The increased flows and resulting lower water temperatures improve access, holding, spawning, and rearing conditions for both spring-run Chinook and California Central Valley steelhead (steelhead) (*O. mykiss*) (San Joaquin River Restoration Program Fisheries Management Work Group 2010).

Source: (USFWS 2011). (*Note: McCormick-Saeltszer Dam was removed by Reclamation in November, 2000).

Figure 12. Clear Creek

The data below are based on DFW escapement estimates for the years 1993 – 2012. Given that yearly surveys have only occurred since 1999, the yearly average was determined from that year. From 1999 to present the average annual escapement is approximately 71.

Lindley *et al.* (2004) classified this population as a dependent population, and thus it is not expected to exceed the low-risk population size threshold of 2500 fish (i.e., annual spawning run size of about 833 fish) (Lindley et al. 2004). The status review of the ESU (National Marine Fisheries Service 2011) states that the spring-run Chinook population in Clear Creek has been increasing(National Marine Fisheries Service 2011).

Table 6. Annual Escapement Estimates for Clear Creek.

Year	Count	Year	Count
1993	1	2003	25
1994	0	2004	98
1995	2	2005	69
1996		2006	77
1997		2007	194
1998	47	2008	200
1999	35	2009	120
2000	9	2010	21
2001	0	2011	8
2002	66	2012	68

Source: (California Department of Fish and Wildlife 2013), Grand Tab 2013

3.3.1.6 Battle Creek

Battle Creek is an east-side tributary of the Sacramento River that drains from the southern Cascade Range, with attributes similar to tributaries upstream of Shasta Dam (Kier and Ward 1999, Lindley et al. 2007). Large snowfields and spring-fed creeks maintain streamflow until late summer in both the North and South Forks of Battle Creek, providing suitable holding and spawning water temperatures. Spring-run Chinook and steelhead can access approximately 14 miles of spawning and holding habitat in the North Fork and approximately 18 miles in the South Fork (San Joaquin River Restoration Program Fisheries Management Work Group 2010) (Figure 3-7). The North Fork has high-gradient stream segments, similar to those in Mill and Deer creeks, upstream of Eagle Canyon Dam and elevations over 2,000 feet occur above North Fork Battle Creek Feeder Dam. On the South Fork, similar high-gradient stream segments exist upstream of Inskip Dam; elevations over 2,000 feet occur upstream of the South Dam (Kier and Ward 1999). Access to the upper watershed is managed at the Coleman National Hatchery Weir.

The Battle Creek Restoration Project will re-establish access to approximately 48 miles of salmon and steelhead habitat in this watershed (USBOR 2013). Construction of the first projects began in 2006, and will be implemented over many years (USBOR 2013). Lindley et al. (2004) classified spring-run Chinook in Battle Creek as a dependent population, but with the implementation of the Battle Creek Restoration Project, it is expected that this population will grow from the present condition of an establishing population to an independent population. Preliminary genetic analysis has not identified a genetic group that is unique to Battle Creek (Lindley et al. 2004).

Source: (USFWS 2011).

Figure 13. Battle Creek

The data below is based on DFW spring-run Chinook escapement estimates for the years 1995 – 2012. From 1995 to present the average annual escapement is approximately 177.

Table 7. Annual Escapement Estimates for Battle Creek

Year	Count	Year	Count
1995	66	2004	90
1996	35	2005	73
1997	107	2006	221
1998	178	2007	291
1999	73	2008	105
2000	78	2009	194
2001	111	2010	172
2002	222	2011	157
2003	221	2012	799

Source: (California Department of Fish and Wildlife 2013)

3.3.2 San Joaquin River Tributaries

Three additional watersheds in the east Sacramento-San Joaquin Delta or San Joaquin River basin have reports of phenotypic spring-running Chinook. These are the Mokelumne River, an eastside tributary to the Sacramento-San Joaquin Delta, and the Stanislaus and Tuolumne rivers, both

tributaries to the San Joaquin River. As mentioned the Stanislaus and Tuolumne rivers are within the study area established by the SJRRP PEIS/EIR but that discussion of these rivers did not include details of the spring-running Chinook.

3.3.2.1 Mokelumne River

The lower Mokelumne River is considered an eastside tributary to the Sacramento-San Joaquin River Delta. Its confluence with the San Joaquin River is within the legal Delta boundaries. Flows in the Mokelumne River are regulated by a Joint Settlement Agreement (JSA) under Federal Energy Regulatory Commission License (East Bay Municipal Utility District 2008).

Camanche Dam is on RM 64 and is the upper limit to anadromy on the Mokelumne River (Figure 3-8). Camanche Dam blocks approximately 80 percent of historical Chinook spawning habitat (San Joaquin River Restoration Program Fisheries Management Work Group 2010). There are approximately 10 miles of spawning habitat downstream of Camanche Dam available for salmonid spawning, and holding habitat is limited to a few large pools in the first river mile below Camanche Dam.

Year round video monitoring on the Mokelumne River began in 2001. Since that time it has become clear that adult spring-running Chinook are ascending the Mokelumne from April through June on an irregular basis, in addition to the well-established population of fall-run Chinook (escapement from August/September through January). Low numbers of spring-running fish have passed video monitoring at Woodbridge Dam between April and June (San Joaquin River Restoration Program Fisheries Management Work Group 2010).

Source: (USFWS 2011).

Figure 14. Mokelumne River

Limited adult spring-run Chinook holding opportunities exist on the Mokelumne River. There are few large pools in the uppermost reach just below Camanche Dam. No assessments of holding or spawning have been conducted and there are no anecdotal reports of these adult fish persisting through the summer months.

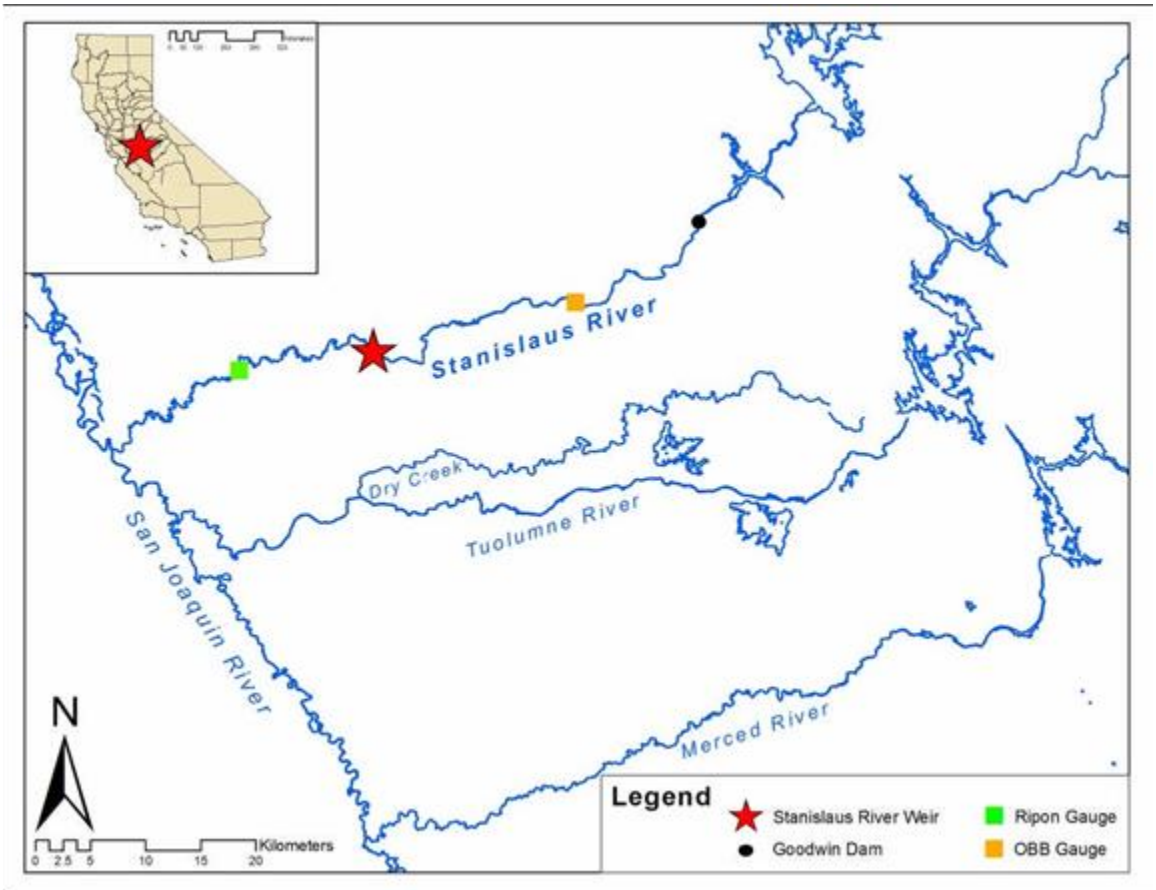
Phenotypic spring-run Chinook on the Mokelumne River have numbered as high as 114 in the spring of 2002 between April and July, with 4 adipose clipped fish observed (Workman 2002). Ninety-seven were observed in 2003 between March and July, with 21 adipose clipped fish observed (Workman 2003). The importance of adipose fin clipped fish is that the clipped fins indicate that these fish are of hatchery origin, not wild populations. None were observed in 2004, and in 2005, 2006, and 2007 when limitations in video monitoring due to construction led to carcass survey data for escapement estimates, and no estimate of phenotypic spring-run Chinook were attempted (Workman 2004, 2005, 2006, Workman and Rible 2007, Workman et al. 2008).

3.3.2.2 Stanislaus River

The Stanislaus River is one of three major tributaries to the San Joaquin River (Figure 3-9). It is snow fed and its headwaters begin at an elevation of approximately 12,000 ft. Like all San Joaquin River tributaries, multiple dams are located on the upper Stanislaus River. Historically, various life history types of Chinook inhabited the Stanislaus River, including fall-, late fall-, and spring-run Chinook (Reynolds et al. 1993). Currently, upstream migration for anadromous fish ends at Goodwin Dam RM 59. Historically, upstream migration and spawning occurred well into the Stanislaus River's three forks, but miles of spawning and rearing habitat were made inaccessible due to dam construction (Fry 1961).

In 2002, a resistance board weir was installed on the Stanislaus River to assess escapement numbers and timing of Chinook salmon and steelhead. In 2003 the weir was improved with the addition of a Vaki RiverWatcher infrared camera. The weir has been operated every year, with the exception of 2008. Phenotypic spring-running Chinook have been observed passing the weir on the Stanislaus River in April and June (Anderson et al. 2007).

Chinook have been reported in the Stanislaus River during the summer months. Snorkel surveys (Kennedy and Cannon 2005) conducted between October 2002 to October 2004 identified adults in June 2003 and June 2004 between Goodwin Dam and Lovers Leap. Snorkel surveys also observed Chinook fry in December 2003 at Goodwin Dam indicating that spawning occurred in September. This is earlier than when fall-run Chinook salmon would be spawning in the river. In 2000 DFW (unpublished data) seined a deep pool at Buttonbush Recreation Area on five occasions between June 29 to August 25, and captured 28 Chinook salmon. Of these, eight were adipose fin-clipped and five had coded wire tags. All coded wire tagged fish originated from the FRFH. Table 3-7 shows the number of adult Chinook migrating upstream on the Stanislaus River for the months February through June.



Source: (San Joaquin River Restoration Program Fisheries Management Work Group 2010)

Figure 15. Tributaries of the San Joaquin River (the Stanislaus, the Tuolumne, and the Merced Rivers).

Table 8. Weir Counts of Adult Chinook migrating upstream on the Stanislaus River

	2004	2007	2009	2010	2011	2012	2013
February	2	11	0	18	0	3	9
March	0	0	0	5	0	1	7
April	0 (Weir pulled 4/3)	0	1	1	Not Operated	Not Operated	1 (weir pulled 4/22)
May	Not operated	5	8	1	Not Operated	Not Operated	56 (weir put in 5/23)
June	Not operated	6	4	4	Not Operated	Not Operated	26
July	Not	Not	Not	Not	Not	Not	6

	operated	Operated	Operated	Operated	Operated	Operated	

Source: (FishBio 2004, 2007, 2009, 2010, 2011, 2012, 2013)

3.3.2.3 Tuolumne River

Yoshiyama, et al. (2001) reported that spring and fall salmon runs historically used the Tuolumne River. Clavey Falls (10 to 15 ft. high), at the confluence of the Clavey River, may have obstructed the salmon at certain flows, but spring-run Chinook in some numbers undoubtedly ascended the mainstem a considerable distance (Yoshiyama et al. 2001). The spring-run Chinook were most likely stopped by the formidable Preston Falls four miles above Early Intake Dam near the boundary of Yosemite National Park (about 50 mi. upstream of New Don Pedro Dam), which would have been the upstream limit of native fish distribution.

While Yoshiyama stated in (1993) that currently only the fall-run Chinook salmon use the Tuolumne River, Yoshiyama cites Reynolds and others that a late fall run may also be present based mainly on the occurrence of juveniles in the river during the summer and on observations of occasional spawning in later months (Yoshiyama et al. 2001).

In addition, there have been reports of adult Chinook in the Tuolumne River in the spring months of April and May (FishBio 2010, 2012). However, the origin of these animals remains unknown. There is limited information as to whether these fish represent a typical occurrence or an anomaly. Future monitoring is required to make a determination whether these fish are spring-run Chinook. Table 3-8 shows the number of adult Chinook that migrated upstream on the Tuolumne River between February and June for the years 2009 to 2012.

While there are questions regarding these possible spring-run Chinook and whether they are strays or a distinct population, NEPA requires Federal Agencies to take a "hard look" at such information. The potential presence of a population of spring-running Chinook on the Stanislaus River /or the Tuolumne River needs to be considered as part of the determination of the area for the NEP.

Table 9. Weir counts of Adult Chinook migrating upstream on the Tuolumne River

Source: (FishBio 2010, 2012, 2013)

	2010	2012	2013
February	14	8	5
March	3	11	30
April	Not Operated	18	48
May	Not Operated	9 (not operating 5/8 -5/21)	23

June	Not Operated	2	Not Operated
July	Not Operated	Not Operated	Not Operated

3.3.2.4 Merced River

Yoshiyama, et al. (2001) reported that spring and fall runs historically used the Merced River, but that currently spring-run Chinook are presumed to have since been extirpated (Reynolds et al. 1993). As early as 1852, a temporary barrier was erected by fishermen about ten miles below Merced Falls which blocked the spring-run salmon from their upstream spawning areas (Yoshiyama et al. 2001). In the following decades, a succession of dams was built at Merced Falls and at locations upstream up to the Yosemite National Park boundary—including the 120-foot high Benton Mills Dam at Bagby (built in 1859) and a later (1900) dam at Kittredge, four miles below Bagby (Yoshiyama et al. 2001).

Unlike the Stanislaus and Tuolumne rivers, there has been no monitoring of adult Chinook activity during the spring on the Merced River in recent years. However, the Merced is known to support California Central Valley Steelhead (Good et al. 2005). Because of similarities in habitat needs between Steelhead and spring-run Chinook, there is a likelihood that spring-run Chinook may be present in the Merced River..

3.4 Reintroduction Area

3.4.1 San Joaquin River Basin

The EA incorporates by reference information contained in SJRRP EIS/EIR regarding existing habitat descriptions and habitat conditions in the San Joaquin River and the associated Restoration Area Study Area.

3.4.2 San Joaquin River from Friant Dam to Merced River

This section summarizes aspects of the current aquatic habitat found in the five reaches (i.e., river segments) of the Restoration Area and the Restoration Area bypasses (see Figure 1-4). The Restoration Area encompasses the San Joaquin River from Friant Dam downstream to the confluence with the Merced River. Information presented in this section is compiled from the SJRRP PEIS/R (Bureau of Reclamation and California Department of Water Resources 2011).

- **Aquatic Habitat**

The San Joaquin River from Friant Dam to the confluence of the Merced River (Restoration Area) is 24 approximately 153 miles long, and includes an extensive flood control bypass system (bypass 25 system). The Restoration Area has been significantly altered by changes in land and water use over the past century. During flood flows there is connectivity from Friant Dam to the Merced River and ultimately to the Delta by way of the bypass system. This connectivity occurs

on average every 2.5 years. While most the San Joaquin River channel will have water in it during these conditions, Reach 4B remains dry, as water is routed around this river section and into the Eastside Bypass (see 10(a)1(a) permit application for more information).

- **Structural Migration Impediments**

Several structures in the Restoration Area are impediments to both upstream and downstream fish movement including the following:

• The seasonally deployed weir located at Hills Ferry (Hills Ferry Barrier), just upstream from the confluence with the Merced River, to direct migrating adult salmonids into the Merced River and prevent them from entering the San Joaquin River. The Hills Ferry Barrier has been operated by DFW since 1992.

• Eastside Bypass drop structure near its confluence with the San Joaquin River.

• Mariposa Bypass drop structure near its confluence with the San Joaquin River.

• San Joaquin River Headgate Structure at the Sand Slough Control Structure.

• Sack Dam, a low head diversion dam for Arroyo Canal.

• Mendota Dam, delivery point of the Delta Mendota Canal and diversion point for several irrigation canals and pumps.

• Radial gates and control structure on the Chowchilla Bypass Bifurcation Structure.

• At least one earthen diversion dam just downstream from Gravelly Ford.

• Friant Dam, primary storage dam on the San Joaquin River and upper limit of potential salmonid migration.

- **Non-Structural Migration Impediments**

In addition to physical barriers, false migration pathways may impede fish movement in the Restoration Area. False migration pathways lead fish away from habitats that would support reproduction, survival, and growth. False pathways also affect both upstream and downstream fish movement. During upstream movement, flow may attract fish into drains and bypasses that do not provide habitat because spawning substrate or cover, food availability, water temperatures, DO concentrations, salinity, and other environmental conditions are unsuitable. The San Joaquin River also has an extensive system of bypasses and canals that divert and carry water around the mainstem San Joaquin River channel. Bypasses may not have environmental conditions that support movement of fish to downstream habitat, especially if flow entering the bypass becomes discontinuous and fish are stranded. Canals generally do not provide habitat that can sustain populations of most fish species, and frequently end in irrigated agricultural fields.

Potential false pathways created by the bypass and canal systems are Salt Slough, Mud Slough, Bear Creek, Ash Slough, Berenda Slough, Dry Creek, Fresno River, Lone Willow Slough, Fresno Slough, James Bypass, Mariposa Bypass, Eastside Bypass, Arroyo Canal, Main Canal, other canals, and Little Dry Creek. Gravel mining ponds in Reach 1 may also be minor false pathways that can confuse downstream and upstream migrating fish and delay migration.

Most aquatic habitat in the bypasses is temporary, and its duration depends on flood flows. The bypasses are largely devoid of aquatic and riparian habitat because of hydraulic conveyance maintenance efforts (Bureau of Reclamation and California Department of Water Resources 2011). Portions of the Eastside Bypass near Merced National Wildlife Refuge are frequently wet year-round, but it is unknown whether these areas support fish. Although the bypasses provide very little perennial aquatic habitat, fish and other aquatic species may be present in the bypasses during wet conditions, including high-flow periods when a portion of the San Joaquin River flow is routed into the bypass system.

Many changes have occurred to channel morphology in the Restoration Area, with the most pronounced as follows:

• **Reach 1** – Reach 1 begins at Friant Dam and continues approximately 37 miles downstream to Gravelly Ford. This reach conveys continuous flows through an incised, gravel-bedded channel. Reach 1 typically has a moderate slope, and is confined by periodic bluffs and terraces (San Joaquin River Restoration Program Fisheries Management Work Group 2009). Riffles, runs, and holding pools exist within Reach 1, and temperature conditions are cooler and more conducive for holding and spawning on account of colder water being released from Friant Dam. In-channel and floodplain pits and exposed gravel bars and floodplains created by instream gravel mining in Reach 1 have impeded coarse sediment routing, reduced native fish habitat, increased river water temperatures, and increased habitat for nonnative species. As has been demonstrated on the Tuolumne River, these pits provide habitat conducive to nonnative predatory fish species such as largemouth and smallmouth bass (California Department of Water Resources 2011). Gravel pits have also converted what was historically lotic habitat to lentic habitat, which may provide habitat for Sacramento pikeminnow and other predatory fishes. In addition, riparian encroachment has occurred, channels have been incised, mobilization of bed material is less frequent, and possible filling of gravel interstices with fine sediment has likely occurred. Much of this sediment was redistributed, and vegetation reset throughout Reach 1 after a large flooding event occurred in 1997.

• **Reaches 2 Through 5** – Habitat conditions for fish in Reaches 2 through 5 have been substantially modified by levee/dike construction, agricultural encroachment, and water diversions. These changes have reduced the quantity of floodplain habitat, as well as reducing main channel habitat complexity and the quantity and quality of off-channel habitat in these reaches. Much of this floodplain habitat has been isolated from the river by dikes and levees, and the remaining floodplain habitat is rarely inundated under current hydrologic conditions. There are projects proposed in the SJRRP to improve habitat conditions and to support flows that would permit juvenile rearing and adult/juvenile migration. Projects in Reach 2B and Reach 4B/Eastside

Bypass are currently under development. These projects are being evaluated for their ultimate potential to provide a combination of fish habitat, flood protection, and the continuance of water supply availability.

Important factors and processes affecting aquatic habitat throughout the Restoration Area, including channel migration and avulsion, spawning gravels and sedimentation, habitat heterogeneity, river flow, and benthic macroinvertebrates and algal communities are described in more detail below.

Channel Migration and Avulsion. In the past, channel migration and avulsion were critical processes for creating and maintaining habitat for salmonids and many native fish species, as well as for riparian regeneration and recruiting large woody debris into the channel. Agricultural conversion has reduced the amount of floodplains, and levees and dikes have further isolated historical floodplains from the channel. Additionally, bank protection along channel margins and the reduced flow regime have stabilized the channel, reduced bank erosion, reduced lateral migration, and greatly reduced the processes that create complex side channels and high-flow scour channels. Undercut banks, riparian vegetation, and recruitment of large woody debris have all been reduced or eliminated as a consequence of channel stabilization, and the corresponding habitat benefits realized by these processes have been largely eliminated. Reduced channel migration has eliminated off-channel habitats, reduced complex side channels, and reduced instream habitat complexity for native fish species. The loss of undercut banks and large woody debris reduces cover and velocity refuge for salmonids and many other native fish species, increasing exposure to predation and high flows. The loss of riparian vegetation recruitment may contribute to increased stream temperatures, and reduced complexity during the now rare periods of floodplain inundation. Current conditions have minimized and mostly eliminated meander migration and oxbow creation, which can facilitate the creation of spawning areas.

Spawning Gravels and Sedimentation. The discussion within the SJRRP PEIS/R notes that Friant Dam has eliminated sediment supply from the upper watershed to the San Joaquin River downstream from the dam. Small particles on the bed surface, such as gravels less than 1.26 inches (or 32 millimeters), have likely been mobilized and deposited downstream since dam construction. The larger particles that were not mobilized remained to form an armor layer, protecting smaller gravels from being exposed to mobilization. The formation of an armor layer and blocked sediment supply has likely reduced the amount of suitable spawning habitat in Reach 1 relative to historical conditions. Although spawning gravel in the Restoration Area is no longer used by anadromous salmonids, it may still provide spawning habitat for other gravel-nesting fish species, including resident rainbow trout and lamprey species. Several historical and recent estimates of salmonid spawning gravel quantity have been made in the Restoration Area (Table 3-9).

In 2012 the SJRRP conducted an adult salmon transport study where returning fall-run Chinook were trapped and moved by truck to release points in Reach 1. Over 100 fish were translocated, 11 redds were observed in Reach 1, and a naturally spawned juvenile was recovered in a related study during spring 2013. This indicates that current conditions will support salmon spawning.

Table 10. Summary of Anadromous Salmonid Spawning Habitat Estimates in Reach 1 of Restoration Area

Source	Survey	Extent of Survey	Estimated	Estimated Suitable (square feet)
Clark (1942)	1942	Highway 41 to	417,000	266,800[1]
Fry and Hughes (1958)	1943	Gravelly Ford to Friant	1,000,000[2]	None
Ehlers, pers. com. (in Cain 1997)	1957	Gravelly Ford to Friant Dam	2,600,000	1,820,000[3]
Cain (1997)	1996	Gravelly Ford to Friant	303,000	None
Jones and Stokes Assoc./Entrix (in McBain and Trush 2002)	2001	Friant Dam to Skaggs Bridge	773,000[4]	408,000[4 5]
(McBain and Trush Inc (eds.) 2002)	2002	Friant Dam to Highway 99 Bridge	357,000[6]	281,400[1 6]

Notes: as cited in (Bureau of Reclamation and California Department of Water Resources 2011)

[1] Spawning habitat between Highway 41 and Friant Dam

[2] Estimated at 350 cfs; therefore, incorporated hydraulic suitability

[3] Seventy percent of 2,600,000 square feet was suitable; presumed criterion was quality (limit of fine sediment in gravel)

[4] Included gravel beyond the base flow channel (e.g., on point bars); probable over-estimate unless 1997 flooding event is considered

[5] Based on portion of spawning gravel with less than 40 percent fines (ocular estimate)

[6] Incorporated hydraulic suitability at potential spawning base flows

Key:

cfs = cubic feet per second

pers. com. = personal communication

In addition to altering spawning gravel dynamics, the presence of Friant Dam has likely changed sedimentation rates in areas outside the main river channel, such as floodplains and side channels. Reduced frequencies of overbank flow, combined with reduced suspended sediment

concentrations, may serve to extend the life span of off-channel habitats. The extent to which this is offset by any increase in sediment loading from agricultural runoff is difficult to determine because of a lack of data. Reduced sediment loading may have had medium to high effects on oxbow lakes, which are disconnected from the mainstem and thus may only aggrade (fill in) during the largest, most infrequent overbank flow events. Reduced bedload under post-dam conditions may be less likely to generate closed off-channel habitat areas (oxbow lakes and sloughs). In addition to locally affecting meander migration rates, gravel bar dynamics can also regulate the connectivity of off-channel habitat to the mainstem, and thus alter its quality for fish and other aquatic species.

Restoration Flows

3.4.3 San Joaquin River Tributaries

Aquatic habitat and fish presently found in the three main San Joaquin River tributaries, the Merced, Tuolumne, and Stanislaus rivers, are discussed below.

- **Aquatic Habitat**

The Merced River is accessible to anadromous fish for the first 51 river miles upstream from the San Joaquin River confluence, with access terminating at Crocker-Huffman Dam (Bureau of Reclamation and California Department of Water Resources 2011). Most anadromous fish spawning occurs within a few miles of the dam. Aquatic habitats in the Tuolumne River downstream from LaGrange Dam are influenced by several factors, many of these related to former gold mining activities and gravel mining (Bureau of Reclamation and California Department of Water Resources 2011). In the Stanislaus River, fall-run Chinook spawn in a 23-mile stretch of the Stanislaus downstream from Goodwin Dam, but most spawning occurs in the first 10 miles below the dam. Anadromous fish populations on all three tributaries are affected by flow and water temperatures, particularly during dry and critical water year types (Bureau of Reclamation and California Department of Water Resources 2011).

3.4.4 Sacramento-San Joaquin Delta

The aquatic habitat and fish presently found in the Delta are discussed below.

- **Aquatic Habitat**

The historical Sacramento-San Joaquin Delta consisted of low-lying islands and marshes that flooded during high spring flows. More than 95 percent of the original tidal marshes have been leveed and filled, resulting in loss of aquatic habitat (Bureau of Reclamation and California Department of Water Resources 2011). The current Delta consists of islands, generally below sea level, surrounded by levees to keep out water. Inflow of freshwater into the Delta has been substantially reduced by water diversions, mostly to support agriculture. Dredging and other physical changes have altered water flow patterns and salinity (Bureau of Reclamation and California Department of Water Resources 2011). Nonnative species are changing the Delta's

ecology by altering its food webs. All of these changes have had substantial effects on the Delta's biological resources, including marked declines in the abundance of many native fish and invertebrate species (Bureau of Reclamation and California Department of Water Resources 2011).

3.5 Fish Species within the San Joaquin River Basin

Fish assemblages currently found in the San Joaquin River are the result of substantial changes to the physical environment, combined with more than a century of nonnative species introductions. Areas where unique and highly endemic fish assemblages once occurred are now inhabited by assemblages composed primarily of introduced species. Primary environmental conditions that currently influence native fish species abundance and distribution (and frequently favor nonnative species) include the following:

- Highly altered flow regimes and substantial flow reductions
- Substantial reductions in the frequency, magnitude, and duration of floodplain inundation
- Isolation of floodplains from the river channel resulting from channelization and levee construction
- Changes in sediment supply and transport
- Habitat fragmentation caused by physical barriers
- Creation of false migration pathways by flow diversions
- Reduced quantity and quality of riparian habitat, including increased prevalence of invasive exotic vegetation
- Degraded water quality
- Dewatered stream reaches

Of the approximately 21 native fish species historically present in the San Joaquin River, at least 8 are now uncommon, rare, or extinct, and an entire fish assemblage – the deep bodied fish assemblage (e.g., Sacramento splittail, Sacramento blackfish) has been largely replaced by nonnative warm-water fish species (e.g., carp, catfish) (Bureau of Reclamation and California Department of Water Resources 2011). Warm-water fish assemblages, comprised of many nonnative species such as black bass species and sunfish species, appear better adapted to current, disturbed habitat conditions than native assemblages. However, habitat conditions in Reach 1 (slightly higher gradient, cooler water temperatures, and higher water velocities) seem to have restricted many introduced species from colonizing Reach 1. The occurrence of Native and Non-native fish species found within the San Joaquin River Basin.

Table 11. Native and Non-native Fish Species found in the San Joaquin River Basin

Species	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	San Joaquin River & Tributaries Merced River to Mossdale
bigscale logperch (*Percina macrolepida*)						x
black bass species						x
black bullhead (*Ameiurus nebulosus*)						x
black crappie (*Pomoxis nigromaculatus*)	X	X	X		x	x
bluegill (*Lepomis macrochirus*)	X	X	X		x	x
brown bullhead (*Ameiurus nebulosus*)	X	X	X		x	
California roach (*Hesperoleucus symmetricus*)						x
channel catfish (*Ictalurus punctatus*)	X	X	X		x	x
common carp (*Cyprinus carpio*)	X	X	X		x	x
fall-run Chinook salmon (*Oncorhynchus tshawytscha*)						x
spring-run Chinook salmon (*Oncorhynchus tshawytscha*)						?
fathead minnow (*Pimephales promelas*)						x
golden shiner (*Notemigonus crysoleucas*)	X	X	X		x	x
goldfish (*Carassius auratus*)	X	X	X		x	x
green sturgeon (*Acipenser medirostris*)						x
green sunfish (*Lepomis cyanellus*)	X	X	X		x	x
hardhead (*Mylopharodon conocephalus*)						x
hitch (*Lavinia exilicauda*)		X	X		x	x
inland silverside (*Menidia beryllina*)			X	x	x	x
kokanee (*Oncorhynchus nerka*)	X	X	X		x	
lamprey species	X					x
largemouth bass (*Micropterus salmoides*)	X	X	X		x	x
longfin smelt (*Spirinchus thaleichthys*)						x

Species	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	San Joaquin River & Tributaries Merced River to Mossdale
Pacific lamprey (*Lampetra tridentate*)						x
Pacific staghorn sculpin (*Leptocottus armatus*)						x
prickly sculpin (*Cottus asper*)			X		x	x
pumpkinseed (*Lepomis gibbosus*)					x	
red shiner (*Cyprinella lutrensis*)			X		x	x
redear sunfish (*Lepomis microlophus*)	X	X	X		x	x
river lamprey (*Lampetra ayresii*)						x
Sacramento blackfish (*Orthodon microlepidotus*)			X		x	x
Sacramento Perch (*Archoplites interruptus*)						x
Sacramento pikeminnow (*Ptychocheilus grandis*)	X				x	x
Sacramento splittail (*Pogonichthys macrolepidotus*)					x	x
Sacramento sucker (*Catostomus occidentalis*)	X				x	x
sculpin species	X					
smallmouth bass (*Micropterus dolomieu*)						x
spotted bass (*Micropterus punctulatus*)	X	X	X		x	
Starry flounder (*Platichthys stellatus*)						x
steelhead (rainbow trout) (*Oncorhynchus mykiss*)	X					x
striped bass (*Morone saxatilis*)						x
threadfin shad (*Dorosoma petenense*)						x
threespine stickleback (*Gasterosteus aculeatus*)	X					x
tule perch (*Hysterocarpus traskii*)			X		x	x
warmouth (*Lepomis gulosus*)						x
western mosquitofish (*Gambusia affinis*)	X	X	X		X	x

Species	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	San Joaquin River & Tributaries Merced River to Mossdale
white catfish (*Ameiurus catus*)						x
white crappie (*Pomoxis annularis*)		X	X		X	x
white sturgeon (*Acipenser transmontanus*)						x

Native Species
Nonnative Species

Compiled from (Bureau of Reclamation and California Department of Water Resources 2011)

In addition, fall-run Chinook inhabit the Merced, Tuolumne, and Stanislaus rivers, and are supported in part by hatchery stock in the Merced River. The average annual spawning escapement (1952 through 2005) for the three major San Joaquin River tributaries was an estimated 19,100 adults. Since 1952, fall-run Chinook populations in the San Joaquin River basin have fluctuated widely, with a distinct periodicity that generally corresponds to periods of drought and wet conditions. Escapement estimates in 2006 and 2007 indicate another period of severe declines, presumably not the result of drought, with a near record low escapement in 2007 (Bureau of Reclamation and California Department of Water Resources 2011). As discussed in the section 3.3.2, there are data that supports potential presence of spring-run Chinook in the Mokelumne, Tuolumne and Stanislaus rivers.

Nonnative species predominate the fish assemblage within the San Joaquin River and its tributaries. Moyle and Light 1996, as cited in Reclamation and DWR 2011 suggested that nonnative piscivorous fish are most likely to alter fish assemblages (Bureau of Reclamation and California Department of Water Resources 2011). Largemouth bass are documented predators of outmigrating juvenile anadromous salmonids (Bureau of Reclamation and California Department of Water Resources 2011). They may also play the role of keystone predator (i.e., species that may increase biodiversity by preventing any one species from becoming dominant) in many aquatic environments because of broad environmental tolerances and their ability to forage on a wide variety of prey under many conditions. Smallmouth bass may primarily affect hardhead through competition for food resources, and may prey on juvenile cyprinids. Striped bass may be an important predator on immature life stages of river lamprey and Sacramento splittail. Inland silversides may feed on eggs and larvae of Sacramento splittail and other fish species in floodplain spawning areas. Native species expected to be the most sensitive to predation by nonnative predators include juvenile hardhead and Sacramento splittail.

3.5.1 Federally Listed Fish Species

California Central Valley steelhead are still present in low numbers in the Tuolumne, Stanislaus, and the Merced river systems below the major dams (Bureau of Reclamation and California Department of Water Resources 2011), but escapement estimates are not available.

Several researchers have speculated that green sturgeon spawn within the San Joaquin River system. Numerous juvenile and larval sturgeon have been collected on the lower San Joaquin River, but these fish are believed to have entered the system from the Sacramento River through the lower Mokelumne River, Georgiana Slough, or the Three Mile Slough. DFW concluded "based on movement of other fishes in the Delta, young green sturgeon found in the lower San Joaquin could easily, and most likely, come from the known spawning population in the Sacramento River" (Gruber et al. 2012).

Gruber, *et al.* (2012) states that DFG Sturgeon Report Card data indicates six green sturgeon were caught within the San Joaquin River upstream of Stockton, five of which were caught in March and April (Gruber et al. 2012). Although the data indicates the presence of a limited number of green sturgeon, it is possible that some fish go unreported (e.g., poaching) or a proportion of the 143 reported white sturgeon may be misidentified. It remains unknown how and to what extent green sturgeon use the San Joaquin River. However, their reported presence coincides with the spawning migration of the Southern Distinct Population Segment of green sturgeon within the Sacramento River.

3.5.2 Predation and Disease

Predation is another threat to the spring-run Chinook ESU, especially in the lower Feather River, the Sacramento River, and in the Delta where there are high densities of nonnative (e.g., striped bass, smallmouth bass and largemouth bass) and native fish species (e.g., pikeminnow) that prey on outmigrating salmon (National Marine Fisheries Service 2011). Changes in predator success due to increased abundance and vulnerability of prey may occur at newly constructed or altered diversion intakes or access structures. Many predatory fish may be more successful at locations where prey fish are artificially concentrated or stressed, such as at dams or salvage and hatchery release sites (Bureau of Reclamation and California Department of Water Resources 2011). High predation rates are known to occur below small dams, such as the Red Bluff Diversion Dam (RBDD) in the Sacramento River and Sack Dam in the Restoration Area. As fish pass over small dams, they are subject to conditions that may disorient them, making them highly susceptible to predation by fish or birds. In addition, deep pool habitats tend to form immediately downstream from such dams, such as within the Restoration Area, creating conditions that promote congregation of Sacramento pikeminnow, striped bass, and other predators. Tucker *et al.* (1998 as cited in Reclamation and DWR 2011) showed high rates of predation by Sacramento pikeminnow and striped bass on juvenile salmon below the Red Bluff Diversion Dam on the Sacramento River (Bureau of Reclamation and California Department of Water Resources 2011).

Although not specifically mentioned in the SJRRP PEIS/R, naturally occurring pathogens may also pose a threat to the spring-run Chinook ESU, because artificially propagated spring-run Chinook are susceptible to disease outbreaks such as the Infectious Hematopoietic Necrosis Virus and Bacterial Kidney Disease (National Marine Fisheries Service 2011). No disease outbreaks at the Feather River Fish Hatchery affecting spring-run Chinook have occurred between 2006 and 2011 (National Marine Fisheries Service 2011).

3.6 Other Environmental Conditions of the San Joaquin Basin

Other environmental conditions of the San Joaquin Basin are described below. These conditions include recreational boating and fishing, commercial fishing, hatchery facilities, land use, water quality, water temperature, suspended sediment and turbidity. Portions of these discussions have been taken from the SJRRP PEIS/R. The SJRRP includes restoration actions that would address some of the conditions described here.

3.6.1 San Joaquin River Recreation

The PEIS/R describes the settings of recreation, as they pertain to implementation of the Settlement. The PEIS/R therefore contains discussion regarding all of the recreational facilities. The following is a summary of recreational opportunities and a presentation of those resources related to fishing and other river related activities.

Water from the San Joaquin River is heavily managed and is extensively distributed to benefit a variety of users. Recreation is possible in the river and adjacent to the river in some areas. However, with such extensive modification of the river's flows, some reaches are dry at most times, and only limited recreation opportunities are available. The following text briefly describes recreation uses occurring within the five project reaches of the San Joaquin River located downstream from Millerton Lake.

Recreational activities within the San Joaquin River portion of the Restoration Area include fishing, boating, nature interpretation and education, trail use, camping, hunting, picnicking, and wildlife viewing/nature observation. Fishing and boating are activities that are most directly flow-dependent, with the availability and quality of these activities closely tied to the frequency, timing, and volume of river flows. The other activities mentioned below are flow-independent but are often associated with boating and fishing, and may be enhanced by more frequent river flows.

Most of the recreation use on the river within the Restoration Area occurs in Reach 1 because this reach provides publicly accessible lands, public river access, consistent flows, and several developed facilities. Reach 2 is almost entirely dry except during high flow events, and Reaches 2 and 3 contain few public lands and have little public river access. The exceptions are the Mendota Pool, at the downstream end of Reach 2, which contains water year-round and is accessible to the public via a county park, and a gravel boat ramp and small city park on the upstream portion of Reach 3. Other use of the river or riverbed in these reaches is assumed to be by adjacent private landowners and possibly other local residents, and may include fishing, hunting, and off-highway vehicle use. Reach 4 (also generally dry) and Reach 5 include public lands that offer hunting and fishing.

Recreational Boating

A range of boating opportunities is possible in Reach 1 (Bureau of Reclamation and California Department of Water Resources 2011). The river, side channels, and old mining lakes provide

flat-water boating opportunities. The *San Joaquin River Parkway Master Plan* (Bureau of Reclamation and California Department of Water Resources 2011) describes the river as a public "canoe trail" for nonmotorized boating. The river has minimal riffles and a few small rapids at Lost Lake Park (Bureau of Reclamation and California Department of Water Resources 2011) but is generally slow enough that constant paddling is required (Bureau of Reclamation and California Department of Water Resources 2011). According to American Whitewater, the river from Friant Dam to Skaggs Bridge Park is "the safest introduction to river paddling in the Fresno area" during summer low flows and "the closest whitewater to Fresno" during high flows. Some boating hazards are present and include riparian vegetation that overhangs the river and mining causeways and culverts (Bureau of Reclamation and California Department of Water Resources 2011).

Two Stanislaus County parks provide the only developed recreation access to this segment of the San Joaquin River. The Las Palmas Fishing Access, a few miles east of the town of Patterson, is a 3-acre park providing a concrete boat ramp and day use facilities (Bureau of Reclamation and California Department of Water Resources 2011). Laird Park, 2 miles east of the town of Grayson, is a 97-acre "community park" providing river access and day use facilities (Bureau of Reclamation and California Department of Water Resources 2011).

The San Joaquin River NWR is located along the San Joaquin River between the Tuolumne and Stanislaus rivers, two major tributaries to the San Joaquin River. The refuge boundaries encompass over 7,000 acres of riparian woodlands, wetlands, and grasslands. Although the refuge is primarily undeveloped, a wildlife viewing platform has been constructed at one location at a favored location for viewing geese and other waterbirds (Bureau of Reclamation and California Department of Water Resources 2011).

The West Hilmar Wildlife Area, on the west bank of the river a few miles downstream of the Merced River confluence, is a 340-acre State wildlife area, with no facilities and accessible only by boat (Bureau of Reclamation and California Department of Water Resources 2011). The last river access before the San Joaquin River enters the Delta is Mossdale County Park (San Joaquin County) located in the City of Lathrop which provides boating access.

Not on the San Joaquin River, but in the vicinity, California Department of State Parks and Recreation (State Parks) manages two small developed park units, each less than 75 acres, on the bank of the lower Merced River in Merced County. George J. Hatfield State Recreation Area (SRA) is near the confluence with the San Joaquin River and McConnell SRA is approximately 18 miles upstream from the confluence with the San Joaquin River. Both parks provide access to the Merced River for boating, fishing, swimming, picnicking, and hiking on short trails. McConnell SRA also offers family and group camping.

Farther north, the Turlock Lake SRA furnishes camping, boating, and day use facilities at the 3,500-acre Turlock Lake and the adjacent Tuolumne River, on the eastern edge of the valley in Stanislaus County. Caswell Memorial State Park is located along the Stanislaus River in San Joaquin County, approximately 5 miles upstream from the confluence with the San Joaquin

River. This 258-acre park offers opportunities for fishing and swimming in the Stanislaus River and camping facilities and nature trails through the park's riparian oak woodland.

Lastly, as the river enters the Delta there is Mossdale County Park located in the City of Lathrop which provides boating access.

Recreational Fishing

Fishing occurs primarily in Reaches 1 and 5, which have year-round flow, and the portion of Salt Slough located in the San Luis National Wildlife Refuge (NWR) (Bureau of Reclamation and California Department of Water Resources 2011). Current California sportfishing regulations prohibit salmon fishing on the San Joaquin River from Friant Dam to Mossdale. Reach 1 is planted throughout the year with rainbow trout from DFW's San Joaquin Fish Hatchery (SJFH) located downstream from Friant Dam and is fished year-round, primarily by local anglers (Bureau of Reclamation and California Department of Water Resources 2011). Public fishing access exists along the river in Reach 1(Table 3-11) and fishing occurs in the adjacent Lost Lake, a borrow pit created during the construction of Friant Dam (Bureau of Reclamation and California Department of Water Resources 2011), and other similar pits created by gravel mining. Most of the native fish species that were present in the San Joaquin River before construction of the dam are now uncommon, rare, or extinct and have been largely replaced by warm water nonnative fish species, such as sunfish, crappie, bluegill, striped bass, largemouth bass, smallmouth bass, and catfish. Salmon have been extirpated from the mainstem San Joaquin River primarily because of a lack of continuous flow in the San Joaquin River upstream from the Merced River (Bureau of Reclamation and California Department of Water Resources 2011).

Table 12. Existing Parks and Public Lands in the San Joaquin River Parkway – Reach 1

Recreation Facility/ Park Unit	**Owner**[1]	**Area(acres)**	**Primary Recreation Opportunities**					
			Fishing	**Boat Access to River**	**Outdoor**	**Trails/Trail Access**	**Camping**	**Picnicking**
Camp Pashayan	DFW, SJRPCT	32[2]	X	X		X		X
Coke Hallowell Center for River	SJRPCT	20			X	X		
Fort Washington Beach	Private	NA	X	X			X	X
Friant Cove	SJRC	6	X	X				X
Jensen River Ranch	SJRC	167				X		X
Lost Lake Park	City of Fresno	305	X	X	X	X	X	X
San Joaquin River Ecological	DFW	800[2]			X			

Scout Island	City of Fresno	85		X	X		X	
Sycamore Island Ranch	SJRPCT	350	X	X		X		X
Wildwood Native Park	SJRPCT	22	X	X		X		
Willow Lodge (adjacent to Willow Unit of San Joaquin River	DFW	88			X	X		
Woodward Regional Park	City of Fresno	300				X		X

Notes:

Management of several of the parks is by an entity other than the owner, in some cases with the park owner. The SJRC owns and manages 2,541 acres in total, much of which is managed for conservation and future low-impact recreation. In addition, on land owned by the Conservancy, Islewood Golf Course is operated by a private entity. In addition to the properties providing the recreation opportunities in the table, DFW also owns and operates the San Joaquin Hatchery, below Friant Dam, where the public can view and feed trout in the hatchery raceways.

The ecological reserve is composed of several widely dispersed units in the parkway, which in total equal 800 acres; access is by special permit only (California Department of Fish and Game 2007).

Key:

DFW = California Department of Fish and Wildlife

NA = not applicable

SJRPCT = San Joaquin River Parkway and Conservation Trust

SJRC= San Joaquin River Conservancy

3.6.2 Commercial Fishing

Commercial fishing of Chinook and other salmon occurs off the coast of northern and central California, when open. The Central Valley Chinook salmon that are targeted by this fishery are fall-run Chinook. There also is an important recreational fishery for Chinook salmon in the ocean as well as in the inland waters, although more restrictive regulations apply in anadromous spawning areas to protect this important life stage. Current regulations on both the recreational and commercial fisheries include restrictions of time, place, and gear that are intended to reduce the take of ESA listed salmonids.

3.6.3 Hatchery Facilities

As part of the restoration process eggs or juveniles would be collected for use as broodstock or direct release. The pathogen and quarantine procedures for transporting eggs from one watershed to another watershed may require holding at the DFW holding facility. After any quarantine the collected eggs or juveniles would need a place to be held, prior to release or held until ready for breeding.

As part of its 10(a)(1)(A) permit application the USFWS proposed the Silverado holding facility and the Center for Aquatic Biology & Aquaculture (CABA) as locations to be used to quarantine the juveniles/eggs collected at FRFH. While future 10(a)(1)(A) may identify other locations,

these quarantine facilities and the hatchery facilities below are the likely facilities that would be used for restoration activities.

Silverado is located in Napa County, California, near Yountville. Silverado takes its water from Rector Reservoir on Rector Creek, a tributary of the Napa River. Silverado is permitted 1.6 million gallons of water per day. Unlike most of the hatcheries run by DFW, Silverado does not have a National Pollutant Discharge Elimination System (NPDES) permit because the quantity of fish produced is less than the biomass limit or flow limit that would require an NPDES permit for a cold-water concentrated aquatic animal production facility (NMFS 2012).

The CABA was established to provide support to University of California Davis researchers in addressing problems associated with California's cultured and wild aquatic biological resources. The CABA consists of two facilities. The first is a five-acre facility that has numerous tanks and tank systems that are available both inside and outside. Tank sizes range from small 2 ft. diameter tanks to a 24 ft. diameter tank. The second is the Putah Creek facility consisting of two buildings for inside work with an office trailer and tool room. This facility has mainly large diameter tank systems (7 ft. to 20 ft. diameter) suitable for large species of fish or for use in mesocosm studies. CABA also has on site an array of four artificial streams. There is research and student training space for a wide range of programs in aquatic vertebrate and invertebrate ecology, reproduction, behavior, nutrition, genetics, endocrinology, disease and pathology, aquaculture engineering, aquatic toxicology, and general aquatic biology (NMFS 2012) .

Both CABA facilities receive well water at 63 to 66^{o}F throughout the year. The Putah Creek facility has an additional source of ground water that varies in temperature from 50 to 68^{o}F during the year (CABA, 2012). The university has all the appropriate water use and discharge permits (NMFS 2012).

As part of the Proposed Action, the collection of spring-run Chinook eggs or juveniles to be used for broodstock would need a place to be held. In order to provide the necessary facilities for these eggs or juveniles to be held, an existing Interim Facility would first be used, followed by an additional, larger Conservation Hatchery Facility that would be constructed by DFW later.

As described in the recreational fishing section, the DFW operates the SJFH for raising trout. It is located approximately one mile downstream of Friant Dam. This location also as an existing "Interim Facility" that would be used for restoration (see below). Water for the hatchery is a continuous 35 cfs supply gravity-fed directly from Friant Dam, and then aerated at the hatchery. The existing SJFH has used this water source to successfully hatch and raise trout at the site since 1955 due to favorable water temperature and water quality conditions (NMFS 2012).

Prior to reaching the hatchery, the water passes through the Fishwater Release Hydropower Plant, which is owned by the Orange Cove Irrigation District. The flows are delivered to the power plant through two different pipelines: a 24-inch diameter pipeline from two Friant Dam penstocks, and a 30-inch diameter pipeline that takes water from the Friant Kern Canal penstock near the left dam abutment. DFW is currently in negotiations with Reclamation to secure

additional water for the Conservation Hatchery Facility. Once additional water is secured, the water supply is anticipated to be equally as reliable as the SJFH (NMFS 2012)

The small-scale, Interim Facility is located on the grounds of SJFH and would be operational until the full-scale Conservation Hatchery Facility is constructed. The full-scale Conservation Hatchery Facility is anticipated to be operational in 2014, at which time both facilities would be integrated together. Construction funding for the Interim Facility and the long-term Conservation Hatchery Facility is provided by the State of California. The DFW started to build the Interim Facility in 2010 and has been expanding and testing the system since then. Planning and permitting activities for the full-scale Conservation Hatchery Facility are in process with DFW as the lead agency.

3.6.4 Land Use

The following summarizes the land use and agricultural resources within the Restoration Area of the SJRRP and is taken from the Environmental Setting section of Chapter 16 (Land Use and Agricultural Resources) of the SJRRP PEIS/R. While there are other land uses adjacent to the San Joaquin River it is the potential use of river water by agriculture that could affect the riverine system. The SJRRP PEIS/R contains detailed information regarding land use along the five reaches of the San Joaquin River (Figure 1-3) including the amounts of land under Williamson Act contracts, the acreages for the various categories of farm land (Bureau of Reclamation and California Department of Water Resources 2011). This information is incorporated by reference. This EA does not include a discussion of the land uses and agricultural resources associated with the possible donor stock collection sites since the effects of collecting donor stock, including specific information as to the land uses surrounding the collection sites is analyzed during the section 10(a)(1)(A) permit process.

- **Agricultural and Other Land Uses**

Within the Restoration Area the SJRRP PEIS/R identified where restoration actions could affect existing land uses or agricultural resources. In addition, the SJRRP PEIS/R included a discussion of forest lands within the Restoration Area.

Most of the land in the Restoration Area is privately owned. The primary land uses are open space and agriculture. Urban land uses (e.g., residential, commercial, industrial) account for only a small percentage of land use along the San Joaquin River. This type of use is associated primarily with the small communities located near the river between Friant Dam and the confluence with the Merced River.

As described in the *San Joaquin River Restoration Study Background Report* (FWUA and NRDC 2002, as cited in Reclamation and DWR 2011), land ownership data were compiled from Reclamation and DWR's database (2001) (Bureau of Reclamation and California Department of Water Resources 2011). Data depicting lands managed by the San Joaquin River Parkway and Conservation Tract (SJRPCT) were provided by GreenInfo Network (2002). Data provided by

the SJRPCT also were reviewed. As a historic navigable river, the bed of the San Joaquin River is subject to the jurisdiction of the California State Lands Commission.

The State of California holds the fee ownership in the river bed between the two ordinary low water marks in Reach 1A (Bureau of Reclamation and California Department of Water Resources 2011). Data from the 1989 to 1992 State Lands Boundary Survey located the State's fee title (low water) and Public Trust Easement (high water) claims, and were used as a basis for defining property boundaries from Friant Dam to Herndon on both sides of the river. The 1989 to 1992 State Lands Commission surveys did not go downstream from Reach 1A. However, the California State Lands Commission initiated work in the fall of 2010 to develop an administrative decision on the ordinary low and high water marks in the remaining reaches of the Restoration Area. Land between the ordinary high water marks is subject to a Public Trust Easement. A lease is required for projects on State-owned lands under the jurisdiction of the California State Lands Commission. Land ownership was separated into two broad classifications: public and private. Public lands were classified as Federal lands, State Lands Commission public trust and fee title lands, other State and county lands, and lands owned by the SJRPCT.

In the Restoration Area, public lands are located in the jurisdictions of the following Federal, State, and local agencies, respectively: USFWS, USACE, and Reclamation; DWR and State Parks; and Fresno, Madera, and Merced counties, the cities of Fresno and Firebaugh, the Central California Irrigation District, the Columbia Canal Company, the San Luis Canal Company, the Chowchilla Water District, and the Lower San Joaquin Levee District. Available land use management plans, comprehensive plans, and general plans adopted by jurisdictions in the Restoration Area were reviewed to identify existing and future land uses. These plans are described in the Regulatory Setting section of the SJRRP PEIS/R.

The Restoration Area occupies approximately 72,581 acres along the San Joaquin River (Table 3-12). Land uses within the Restoration Area were identified, inventoried, and placed into the following broad land use categories: agricultural, open space, and urban. Table 3-12 shows the approximate acreages for each land use category along the San Joaquin River, by reach, and for the bypass areas.

Table 13. Acreage of Land Uses Along San Joaquin River in Restoration Area[1]

River Reach	Land Use (acres)[2]			
	Agricultural	**Open Space**	**Urban**	**Total**
Reach 1	7,216 (46**%**)	5,195 (33%)	3,419 (22%)	15,830
Reach 2	9,107 (99%)	37 (<1%)	28 (<1%)	9,172
Reach 3	7,218 (90%)	606 (8%)	231 (3%)	8,055
Reach 4	14,439 (100%)	0 (0%)	0 (0%)	14,439
Reach 5	5,461 (100%)	0 (0%)	0 (0%)	5,461
Bypass Areas	16,306 (83%)	0 (0%)	3,317 (17%)	19,623
Total	**59,747 (82%)**	**5,838 (8%)**	**6,996 (10%)**	**72,581**

Source: (Bureau of Reclamation and California Department of Water Resources 2011)

Notes:

[1] The width of the Restoration Area includes an area approximately 1,500 feet from the river centerline outward from both banks, for a total width of approximately 3,000 feet.

[2] Acreage numbers have been rounded to the nearest acre.

Key:

% = percent

< = less than

While the SJRRP PEIS/R includes information for each of the reaches this EA is including only the additional information for Reach 1. The Interim Facility and subsequent conservation hatcheries are in Reach 1 and much of the activities associated with reintroduction would occur within this Reach. Approximately 1,636 acres of Reach 1 of the Restoration Area are in the City of Fresno. Reach 1 also includes the town of Friant, as well as the unincorporated communities of Rolling Hills, Herndon, and Biola. The approximate acreage of land uses, as inventoried in Reach 1, is approximately 15,832 acres (see Table 3-9). The primary land use category of Reach 1 is agriculture (60 percent), followed by open space (28 percent), and urban land uses (12 percent). Approximately 93.8 percent of lands found in Reach 1 are privately owned.

Reach 1 is divided into two subreaches. Reach 1A flows to the north of Fresno and also passes near the communities of Friant and Rolling Hills and two trailer parks located adjacent to the Yosemite Freeway Bridge. Between Friant Dam and the SR 99 bridge that crosses the San Joaquin River, several roads parallel the river in this subreach, and six bridges (North Fork Road Bridge, Yosemite Freeway Bridge, West Nees Bridge, and three unnamed bridges) cross the river.

The primary nonurban land uses along the remaining areas of Reach 1A are gravel mining, agriculture, and recreation/open space. Several active gravel quarries, and related roads and other infrastructure, are located adjacent to the river. Agricultural land uses include vineyards, annual crops, and orchards.

In addition to mining and agriculture, several recreation areas are located in Reach 1A. The San Joaquin River Parkway extends upstream from, and includes, the Millerton Lake SRA and areas along both river banks of this subreach. The parkway includes multiple recreation sites and use areas, including Lost Lake Park, an approximately 273-acre recreation area along 1.8 miles of the southern bank, Fort Washington Beach, Sycamore Island Ranch, and Camp Pashayan, among others. Three private golf courses (Riverbend Golf Club, Fig Garden Golf Club, and San Joaquin Country Club) and one public golf course (Riverside Golf Course) are present in this subreach. Multiple ponds are also located in this reach. These ponds were created in abandoned mining gravel pits and are now stocked with game fish.

- **Forest Land**

Forest land is defined as native tree cover greater than 10 percent that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits (California Public Resources Code section 12220(g)). Natural forest and woodland vegetation types in the study area typically have greater than 10 percent cover by native trees (Bureau of Reclamation and California Department of Water Resources 2011). Forest land in the Restoration Area consists of riparian forest that has been classified into four major types based on the dominant species: cottonwood riparian forest, willow riparian forest, mixed riparian forest, and valley oak riparian forest. As shown in Table 3-13, forest lands total approximately 4,320 acres in the Restoration Area.

Table 14. Habitats and Acreage of Forest Land in the Restoration Area

Habitat Type	**Habitat Acreage[1]**						
	Reach 1	**Reach 2**	**Reach 3**	**Reach 4**	**Reach 5**	**Bypasses**	**Total**
Cottonwood Riparian Forest	386 (37%)	120 (12%)	452 (43%)	56 (5%)	29 (3%)	-- (0%)	1,043
Willow Riparian Forest	345 (16%)	163 (8%)	124 (6%)	777 (36%)	755 (35%)	2 (<1%)	2,166
Mixed Riparian Forest	783 (99%)	2 (<1%)	-- (0%)	6 (<1%)	1 (<1%)	-- (0%)	792
Valley Oak Riparian Forest	265 (41%)	-- (0%)	-- (0%)	23 (7%)	35 (11%)	-- (0%)	323
Total	**1,779 (41%)**	**285 (7%)**	**576 (13%)**	**862 (20%)**	**820 (19%)**	**-- (0%)**	**4,324**

Source: (Bureau of Reclamation and California Department of Water Resources 2011)

Note:

[1] Acreage numbers have been rounded to the nearest acre.

Key:

% = percent

< = less than

Table 3-13 shows those lands formally identified as the forest types present within the Restoration Area. These lands consist of habitats associated with river systems and are not considered traditional sources of timber production.

3.6.5 Water Quality

The discussion of water quality in the Restoration Area is from the Draft PEIS/R. It should be noted that one of the actions that would result from the SJRRP is that the restoration of flows to

the Restoration Area may result in changes to water quality. Any potential changes are addressed in the Draft PEIS/R, and would occur whether the Proposed Action occurs or not.

Water quality in various segments of the San Joaquin River below Friant Dam is degraded because of low flow, and discharges from agricultural areas and wastewater treatment plants. The current triennial review of the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) is anticipated to provide the regulatory guidance for Total Maximum Daily Load (TMDL) standards at locations along the San Joaquin River (Bureau of Reclamation and California Department of Water Resources 2011).

Water quality in Reach 1 is influenced by releases from Friant Dam, with minor contributions from agricultural and urban return flows. Water quality data collected from the San Joaquin River below Friant Dam demonstrate the generally high quality of water released at Friant Dam from Millerton Lake to Reach 1. Temperatures of San Joaquin River water releases to Reach 1 are dependent on the cold-water volume available at Millerton Lake (Bureau of Reclamation and California Department of Water Resources 2011). The reach from Gravelly Ford to the Mendota Pool (Reach 2) is frequently dry, except during flood releases at Friant Dam, because water released at Friant Dam is diverted upstream to satisfy water right agreements, or the water percolates to groundwater.

During the irrigation season, water released at Mendota Dam to Reach 3 generally has higher concentrations of total dissolved solids (TDS) than water in the upper reaches of the San Joaquin River. Increased electrical conductivity (salinity) and concentrations of total suspended solids demonstrate the effect of Delta contributions to San Joaquin River flows. Water temperatures below Mendota Dam are dependent on water temperatures of inflow from the Delta Mendota Canal and, occasionally, the Kings River system via James Bypass (Bureau of Reclamation and California Department of Water Resources 2011).

Water quality criteria applicable to some beneficial uses are not currently met within Reaches 3 and 4.

The Central Valley RWQCB is currently developing a Proposed Basin Plan Amendment to establish new salinity and boron water quality objectives in the lower San Joaquin River upstream from Vernalis, and a TMDL to implement the salinity and boron water quality objectives (Bureau of Reclamation and California Department of Water Resources 2011). In addition to these water quality impairments, a TMDL and Basin Plan Amendment for organic enrichment and low dissolved oxygen (DO) in the Stockton Deepwater Ship Channel portion of the San Joaquin River were adopted. However, the Central Valley RWQCB has not adopted TMDL for DO for the entire San Joaquin River Basin.

Water quality in the Delta is highly variable temporally (timing) and spatially (location) and is a function of complex circulation patterns that are affected by inflows, pumping for Delta agricultural operations and exports, operation of flow control structures, and tidal action.

3.6.5.1 Water Temperature

Most fish maintain body temperatures that closely match their environment (Bureau of Reclamation and California Department of Water Resources 2011). As a result, water temperature has a strong influence on almost every fish life-history stage, including metabolism, growth and development, timing of life-history events, and susceptibility to disease. These effects may vary depending on a fish's prior thermal history (i.e., acclimation). Reduced growth, reduced reproductive success, inhibited movement, and mortality of fish can occur when water temperature exceeds the metabolic tolerance of a particular life stage (Bureau of Reclamation and California Department of Water Resources 2011).

In the San Joaquin River, water temperature is primarily a concern for native fish that thrive in cooler water, such as salmon, steelhead, and rainbow trout (Bureau of Reclamation and California Department of Water Resources 2011), and for those species that require cooler water for specific life stages (Bureau of Reclamation and California Department of Water Resources 2011). Summer water temperatures in many Central Valley streams regularly exceed 77°F (Bureau of Reclamation and California Department of Water Resources 2011). Sustained periods of increased water temperature can impact behavioral and biological functions of all fish in the San Joaquin River system, including special status species and others that are relatively tolerant of warm temperatures. Cold water released from Friant Dam generally maintains temperatures conducive to salmonids in portions of Reach 1 all year.

3.6.5.2 Suspended Sediment and Turbidity

Suspended sediments such as clay, silt, organic matter, plankton and other microscopic organisms cause turbidity in water that can interfere with photosynthetic primary productivity, water temperature, dissolved oxygen (DO), and fish feeding habits. Turbidity generally reduces the efficiency of piscivorous (fish-eating) and planktivorous (plankton-eating) fish in finding and capturing their prey (Bureau of Reclamation and California Department of Water Resources 2011). Higher turbidity may occasionally favor the survival of young fish by protecting them from predators (Bureau of Reclamation and California Department of Water Resources 2011) at the expense of reduced growth rates for sight-feeding fish (Bureau of Reclamation and California Department of Water Resources 2011).

The San Joaquin River downstream from Reach 5 has physical habitat and water quality conditions similar to those found in Reach 5, with increased flows provided by major tributaries, including the Merced, Tuolumne, Stanislaus, and Calaveras rivers. Water management in the San Joaquin River focuses on diversion of water out of streams and rivers into canals for agricultural use, with some of the applied water returned as agricultural drainage (Bureau of Reclamation and California Department of Water Resources 2011). Flood control levees closely border much of the river but are set back in places, creating some off-channel aquatic habitat areas when inundated.

3.6.6 Air Quality

- **Air Basins for Sacramento River and San Joaquin River**

This section provides a description of the air basins in which the Proposed Action are located and a summary table of the Attainment Status within the air basin. Description of individual pollutants and the regulatory setting are found in the SJRRP PEIS/R and are incorporated by reference.

The Proposed Action is located within the Sacramento Valley Air Basin (SVAB) and San Joaquin Valley Air Basin (SJVAB). The watersheds for the potential donor stocks – Feather River, Deer, Mill, Butte, Clear, and Battle Creeks – are within the SVAB. Lastly, the Mokelumne River and the Restoration Area, which includes the San Joaquin River tributaries the Stanislaus, Tuolumne, and Merced Rivers, are within the SJVAB under the jurisdiction of the San Joaquin Valley Air Pollution Control District (APCD).

The SVAB consists of northern portion of the Central Valley of California. The SVAB contains all or part of 11 counties (Shasta, Tehama, Butte, Glenn, Colusa, Yuba, Sutter, Yolo, Placer, Sacramento, and eastern Solano). The basin is ringed by tall mountains with the Coast Range to the west, Cascade Range to the north, the Sierra Nevada to the east. Seasonally the winters in the SVAB are cool and wet with the summers being hot and dry.

The SJRRP Area is located in Fresno, Madera, and Merced counties, which are part of SJVAB. The SJVAB also comprises all of Kings, San Joaquin, Stanislaus, and Tulare counties and the valley portion of Kern County, including the Friant Division. The SJVAB occupies the southern half of the Central Valley. The SJVAB is a well-defined climatic region with distinct topographic features on three sides. The Coast Range is located on the western border of the SJVAB. The Tehachapi Mountains are located on the south side of the SJVAB. The Sierra Nevada forms the eastern border of the SJVAB. The northernmost portion of the SJVAB is San Joaquin County. No topographic feature delineates the northern edge of the basin. The SJVAB can be considered a "bowl" open only to the north and connected to the SVAB and San Francisco Air Basin.

Like the SVAB, the inland Mediterranean climate type of the SJVAB is characterized by hot, dry summers and cool, rainy winters. Table 3-14 summarizes the Attainment Status Designations for the counties of the two air basins.

3.6.7 Climate Change

- **Climate Change and Greenhouse Gas Emissions**

Chapter 7 of the SJRRP PEIS/R describes the environmental setting for climate change and greenhouse gas (GHG) emissions. The discussion of climate change and the potential impacts of the program alternatives on climate change encompasses the San Joaquin River from Friant Dam to the Merced River (the Restoration Area), the San Joaquin River from the Merced River to the Sacramento-San Joaquin Delta, and the Sacramento-San Joaquin Delta.

Scientific evidence suggests that many climatic conditions are already changing and would continue to change in the future. Therefore, expected future climate changes that have the potential to affect implementation and performance of the SJRRP were also considered in the SJRRP PEIS/R. These included changes in snowpack and the timing and magnitude of snowmelt runoff and flood flows, which would in turn influence storage, delivery, and release actions. Furthermore, sea level rise could affect San Francisco Bay and conditions in the Sacramento-San Joaquin Delta. However, the considerations in the SJRRP PEIS/R where associated with future CVP/SWP operations.

The affected environment for climate change analysis is global, with State and local implications. The SJRRP PEIS/R discussion provided a background overview of global climate change (which has been incorporated by reference), and climate trends and associated impacts at the global and State levels are then described, followed by an overview of GHG emissions sources in California and in SJVAB.

- **Global Climate Trends and Associated Impacts**

The rate of increase in global average surface temperature over the last hundred years has not been consistent; the last three decades have warmed at a much faster rate – on average 0.32°F per decade. Eleven of the 12 years from 1995 to 2006, rank among the warmest years in the instrumental record of global average surface temperature (going back to 1850) (Bureau of Reclamation and California Department of Water Resources 2011).

During the same period over which this increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen on average 1.8 mm/year; precipitation patterns throughout the world have shifted, with some areas becoming wetter and other drier; tropical cyclone activity in the North Atlantic has increased; peak runoff timing of many glacial and snow-fed rivers has shifted earlier; as well as numerous other observed conditions. Though it is difficult to prove a definitive cause and effect relationship between global warming and other observed changes to natural systems, there is high confidence in the scientific community that these changes are a direct result of increased global temperatures (Bureau of Reclamation and California Department of Water Resources 2011).

- **California Climate Trends and Associated Impacts**

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual minimum temperature averaged over all of California has increased 0.33°F per decade during the period 1920 to 2003, while the average annual maximum temperature has increased 0.1°F per decade (Bureau of Reclamation and California Department of Water Resources 2011).

With respect to California's water resources, the highest impacts of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix

between snow and rain has shifted in favor of more rainfall and less snow (Bureau of Reclamation and California Department of Water Resources 2011)

Table 15. Summary of Attainment Status Designations for the Sacramento Valley, San Joaquin Valley and Bay Area Air Basins

Pollutant	**Averaging Time**	**Attainment Status**
Ozone	1-hour	Nonattainment- Severe: San Joaquin Valley, Serious: Yolo, Sacramento, Sutter Counties Moderate: Butte, Colusa, Yuba, Glenn, Tehama, and Shasta Counties
	8-hour	–
Carbon Monoxide (CO)	1-hour	Attainment: Fresno, Stanislaus, San Joaquin, Sacramento, Napa, Yolo, Sutter, Butte Counties Unclassified: Madera, Merced, Yuba, Colusa, Glenn, Tehama, and Shasta Counties
	8-hour	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	-
	1-hour	Attainment
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-
	24-hour	Attainment
	3-hour	-
	1-hour	Attainment
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	Nonattainment
	24-hour	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment: San Joaquin Valley, Sacramento, Butte, and Napa Counties. Attainment: Sutter, Yuba, Colusa, and Shasta Counties. Unclassified: Yolo, Glenn, and Tehama Counties
	24-hour	-
Lead	30-day Average	Attainment
	Calendar Quarter	-
Sulfates	24-hour	Attainment
Hydrogen Sulfide	1-hour	Unclassified
Vinyl Chloride	24-hour	Unclassified/ Attainment
Visibility Reducing Particle Matter	8-hour	Unclassified

Sources: (Bureau of Reclamation and California Department of Water Resources 2011)

and snow pack in the Sierra Nevada is melting earlier in the spring (Bureau of Reclamation and California Department of Water Resources 2011). The average early spring snowpack in the Sierra Nevada has decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (Bureau of Reclamation and California Department of Water Resources 2011). During the same period, sea levels along California's coast rose seven inches (Bureau of Reclamation and California Department of Water Resources 2011). Sea level rise associated with global warming would continue to threaten coastal lands and infrastructure, increase flooding at the mouths of rivers, place additional stress on levees in the Sacramento-San Joaquin Delta, and would intensify the difficulty of managing the Sacramento-San Joaquin Delta as the heart of the state's water supply system.

These trends in California's water supply could impact the SJRRP by further straining the scarce resources needed to implement appropriately-timed Restoration Flows, while balancing the need to irrigate cropland and supply drinking water to large numbers of Californians. Increased surface temperatures may affect stream quality for fish and their prey, changing the biological conditions under which the SJRRP operates. In addition, increased frequency and severity of flood events could negatively or positively impact fragile or restored areas such as gravel bars and riparian habitat by either breaking down gravel bars in one area and building up in another.

- **Greenhouse Gas Emissions Sources and Inventory**

Human activities contribute to climate in many ways, but primarily by causing changes in the atmospheric concentrations of GHGs and aerosols. The largest anthropogenic contribution to climate change is the burning of fossil fuels, which releases CO2 and other GHGs to the atmosphere. Since the start of the industrial era (about 1750), the use of fossil fuels has increased through activities such as transportation, building heating and cooling, and the manufacture of cement and other goods. Land use changes, such as wide-scale deforestation, the use of fertilizers, and draining of wetlands also contribute to GHG emissions worldwide. The rate of increase in GHG concentrations has increased during the last century, with an increase of 70 percent between 1970 and 2004 alone (Bureau of Reclamation and California Department of Water Resources 2011). During this period, the two largest sectors of GHG emissions were the energy supply (with an increase of over 145 percent) and transportation (with a growth of over 120 percent) sectors. The slowest growth during the 1970 to 2004 period was in the agricultural sector with 27 percent growth and the residential/commercial buildings sector at 26 percent (Bureau of Reclamation and California Department of Water Resources 2011).

California is the 12th to 16th largest emitter of CO2 in the world (Bureau of Reclamation and California Department of Water Resources 2011). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (Bureau of Reclamation and California Department of Water Resources 2011). California produced 484 million gross metric tons (mt) of CO2 equivalent in 2004. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 35 percent of total GHG emissions in the State (Bureau of Reclamation and California Department of Water Resources 2011). This sector was followed by the electric power sector (including both in-State and out-of-State sources) (22 percent) and the industrial sector (21 percent)

(Bureau of Reclamation and California Department of Water Resources 2011). No GHG emissions inventory has been conducted for the SJVAB at this time.

4.0 SECTION 4 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

The environmental consequences of this action are related to potential impacts to salmonid populations within the Central Valley (Sacramento and San Joaquin River basins) and how an experimental population of spring-run Chinook may affect aquatic species and human activities along the San Joaquin River and its tributaries. The Proposed Action does not involve construction, changes in water diversions or flows in the Sacramento or San Joaquin river basins, or other physical changes to the environment beyond those associated with the collection of donor stock and their eventual release to the San Joaquin River. Changes in San Joaquin River flows and related projects are evaluated in the SJRRP PEIS/R. For the purposes of this EA, this section provides an analysis of the direct and indirect environmental impacts associated with the alternatives on the resources outlined in section 3. Where applicable, the relative magnitude of impacts is described using the following terms:

Undetectable – The impact would not be detectable.

Negligible – The impact would be at the lower levels of detection.

Low – The impact would be slight, but detectable.

Medium – The impact would be readily apparent.

High – The impact would be severe.

The analysis of the environmental consequences is organized starting with the No Action Alternative, and is followed with an analysis of the Proposed Action alternatives. The Donor Stock alternatives analyze the effects of collecting spring-run Chinook within the Sacramento River Basin for transfer to the San Joaquin River Basin. The effects of placing spring-run Chinook into the San Joaquin River Basin are analyzed in each of the Area Alternatives. The two Duration Alternatives will be discussed separately following the discussion of the Area Alternatives. As was initially discussed in section 2.1.2.1, the following alternatives outlined below are analyzed under the assumption that the proposed SJRRP actions are implemented and are successful. Should the reintroduction and expected long-term reestablishment of spring-run Chinook in the San Joaquin River be unsuccessful, the resulting impact to the human environment would be negligible. The NEP designation and 4(d) take exceptions in relation with the Proposed Action would remain in effect regardless as to whether or not the reintroduction effort was successful.

NO ACTION ALTERNATIVE ANALYSIS

4.2 No Action Alternative

Under this alternative the channel and habitat improvements proposed in the SJRRP would be carried out, and fall-run Chinook would be reintroduced. However, there would be no collection of listed spring-run Chinook donor stock, no 10(j) designation of an experimental population, and spring-run Chinook would not be reintroduced intentionally to the San Joaquin River. Without the experimental population designation, there would be no special take exceptions established within the San Joaquin River basin, generally, including for persons or entities diverting or receiving water pursuant to applicable State and Federal laws.

The No Action Alternative would result in no impact to the existing spring-run Chinook populations of the Sacramento River since there would be no collection of donor stock. There would be no on-going effort to restore the spring-run Chinook population to the San Joaquin River, which is an important element of the spring-run Chinook recovery plan and the Settlement. Since the terms of the Settlement, including requirements laid out in the SJRRSA, call for the restoration of the spring-run Chinook to a naturally self-sustaining level by 2025, this goal would not be fulfilled under the No Action Alternative.

While restoration of flows to the San Joaquin River make it possible that spring-run Chinook could potentially recolonize the San Joaquin River volitionally, there is no evidence that such a volunteer population could meet either the terms of the Settlement or spring-run Chinook recovery objectives. Further, without the establishment of the NEP area and associated take exceptions, any spring-run Chinook that did enter the San Joaquin River Basin would be protected under the existing ESA rules, potentially creating an unintended impact from the Settlement.

This impact would occur because persons or entities diverting or receiving water pursuant to applicable State and Federal laws could be impacted with ESA permitting requirements, since the current ESU 4(d) rule would apply for spring-run Chinook that naturally recolonize. There would likely be additional administrative and regulatory burdens to both individuals and the agencies as regulatory actions are taken on a case-by-case basis for actions that may adversely affect spring-run Chinook.

4.2.1 Federally Listed Species

4.2.1.1 Central Valley Spring-run Chinook Salmon

Under the No Action Alternative spring-run Chinook would not be released into the San Joaquin River as part of the SJRRP. A population of spring-run Chinook could only be re-established by volitional recolonization, after sufficient completion of SJRRP Restoration Goal actions such as modifications to conveyance structures and habitat conditions. Implementation actions to reintroduce spring-run Chinook to the Southern Sierra Nevada Diversity Group would need to be implemented in the Merced, Tuolumne, Stanislaus, or Mokelumne rivers in order to achieve the Draft Recovery Plan (National Marine Fisheries Service 2009c) objective of restoring two viable populations to this diversity group. With this alternative there would be no collection of fish from existing threatened donor stock populations, so there would be no potential impact from taking individuals from the populations. However, the limitation on re-

establishing spring-run Chinook on the mainstem San Joaquin River through natural recolonization or on other tributaries would delay or prevent recovery of the species.

4.2.1.2 California Central Valley Steelhead

California Central Valley steelhead (steelhead) occurs throughout the San Joaquin River basin, including its tributaries upstream of the confluence with the Merced River (National Marine Fisheries Service 2009b). Under the No Action Alternative it is assumed that the SJRRP would proceed with restoration activities related to implementing restoration flows and removing barriers to fish migration. These actions would allow for the access of fall-run Chinook and steelhead that already occur in the San Joaquin River basin.

Since the two species' habitat and food requirements are similar, any improvements made to the San Joaquin River such as those proposed in the SJRRP would also help increase steelhead distribution and abundance by enhancing habitat and food supply for most life stages. Please see the PEIS/R for further information on habitat improvements. Steelhead is federally listed as a threatened species. Therefore, steelhead already has regulations related to their protection, which are not altered by any of the alternatives, including the No Action Alternative.

The No Action Alternative would be beneficial to steelhead as an additional 153 miles of river and riparian habitat would become available for the species under the SJRRP. During salmon spawning, steelhead are known to eat loose salmon eggs. So as fall-run, and potentially eventually spring-run, Chinook reestablish within the San Joaquin River, these eggs and salmon carcasses would provide additional nutrients to the local food web.

4.2.1.3 Southern DPS of North American Green Sturgeon

As noted in section 3, there is an increased likelihood that green sturgeon is present in the San Joaquin River. If that is the case, like steelhead, green sturgeon are federally listed as threatened and have regulations related to their protection, which are not altered by the any of the alternatives including the No Action. The No Action alternative would be beneficial to green sturgeon as an additional 153 miles of river and riparian habitat would become available for the species over time.

4.2.2 Other Fish Species

The No Action Alternative does not fulfill requirements of the Settlement for the reintroduction of spring-run Chinook nor the conditions for that reintroduction specified in the SJRRSA, section 10011 (b).

Under the No Action Alternative, no eggs or juvenile spring-run Chinook would be collected. However, the improvement projects of the SJRRP could be carried out; therefore, existing barriers to salmon migration could be removed as part of the SJRRP. While it is expected that under improved conditions, some spring-run Chinook would find their way into the San Joaquin River, it is likely that there would be no large scale change from the existing fish populations, based on comparison of fish assemblages in the

Merged, Tuolumne, and Stanislaus rivers (Bureau of Reclamation and California Department of Water Resources 2012).

4.2.3 Recreation

Fishing

Under the No Action Alternative, the habitat improvements would occur; therefore, it is likely that with improved habitat, fish species that are currently present would increase and there would be a general increase in fishing opportunities and boating related activities. In addition, fall-run Chinook and steelhead could also gain access to the San Joaquin River above the Merced River. Current fishing regulations prohibit salmon fishing in the San Joaquin River upstream of Mossdale County Park. While DFW has had fishing regulations in place for the existing fish present in the San Joaquin River above the Merced River, as well as for salmon, there has been little reason to enforce any regulations for anadromous fish such as fall-run Chinook and steelhead without a connection to the sea. Even with enforcement of regulations for fall-run Chinook and steelhead, under the No Action Alternative, there would be low to undetectable impacts to recreational opportunities. There would be no change in the recreational fishery for Chinook salmon in the ocean as well as in the inland waters.

The reintroduction of fall-run Chinook salmon to the San Joaquin River would eliminate current trout planting in the San Joaquin River per California Fish and Game Commission (FGC) policy. While fishing for other species of fish would continue, the opportunity to fish for planted trout would end. This would occur with the reintroduction of fall-run Chinook salmon under the SJRRP, regardless of whether spring-run Chinook are reintroduced. Consequently, mitigation to offset any impacts is being implemented as a measure under the SJRRP PEIS/R (REC-4), so there would be no impact to recreational fishing as a result of the No Action Alternative.

Boating

Under the No Action Alternative the improvements made to the San Joaquin River by the SJRRP would improve water flows thereby improving recreational boating opportunities.

4.2.4 Commercial Fishing

Under the No Action Alternative no eggs or fish would be collected from spring-run Chinook stocks and transported to the San Joaquin River. Commercial fishing of Chinook and other salmon off the coast of northern and central California would continue. The establishment of harvest rates for these fish would continue. There would be no contribution to the fishery of salmon produced from the Proposed Action. However, implementation of the SJRRP is expected to restore habitat and connectivity which would allow existing fall-run Chinook to access suitable spawning areas near Friant Dam, which may provide a small increase in salmon available to the fishery.

Current regulations for both recreational and commercial fisheries include restrictions of time, place, and gear that are intended to reduce the take of ESA listed and non-listed salmonids. These would remain unchanged.

4.2.5 Land Use

Under the no action alternative current land use activities could continue. With the SJRRP habitat improvements it is likely that spring-run Chinook and steelhead eventually would use the upper reaches of the San Joaquin River. As these fish are federally listed any take would be subject to the exceptions of the 4(d) rules established under (70 FR 37160). There would be no regulatory relief for any taking of any naturally occurring spring-run Chinook.

4.2.6 Hatchery Facilities

Absent reintroduction of spring-run Chinook, the DFW Interim Facility could be used to support existing hatchery operations or activities related to the re-establishment of fall-run Chinook under the SJRRP. Although dependent upon the ultimate build out and design, the conservation hatchery facility could serve the reintroduction for fall-run Chinook under the SJRRP, even if the spring-run Chinook reintroduction did not occur. Production actions at the FRFH would not change under the No Action Alternative, and the hatchery would not plan to produce fish for the SJRRP. Therefore, there would be no change to either the FRFH or the SJFH operations or the environment.

4.2.7 Water quality

Under the No Action Alternative there would be no changes to the current operations of the FRFH or the SJFH. Therefore there would be no change to water quality to either the Feather River or the San Joaquin River and no impact on water quality from this alternative.

4.2.8 Air Quality

Under the No Action Alternative spring-run Chinook donor stock would not be collected or transported to the San Joaquin River or used as broodstock at the conservation hatchery facility. Therefore, under the No Action Alternative there would be no air emissions from vehicles used in collection and transportation activities. Any emissions resulting from the operation of the conservation hatchery are ultimately dependent on the construction and design of the facility. Without new emissions there would be no impacts to air quality.

4.2.9 Climate Change

Under the No Action Alternative there would be no change in greenhouse gas emissions. Therefore there would be no impact on climate change.

ACTION ALTERNATIVES ANALYSIS

The purpose of the Proposed Action is the reintroduction of spring-run Chinook to the San Joaquin River, with regulations that meet the requirements of the SJRRSA. In all Action Alternatives, this entails the collection, transport, and release of fish for the reintroduction, and development of regulations pursuant to ESA sections 10(j) and 4(d).

4.3 Proposed Action/Reintroduction of Spring-run Chinook

All of the Donor Stock Alternatives have as common activities the collection of spring-run Chinook used in the reintroduction effort and the transportation to a conservation hatchery facility or to the release point on the San Joaquin River. All of the environmental consequences resulting from the Donor Stock Alternatives are the same, except for the potential impact on spring-run Chinook. In this section, the potential impact of reintroduction of spring-run Chinook is analyzed and the potential effect of each different Donor Stock Alternative will be analyzed in section 4.4.

4.3.1 Federally Listed Species

4.3.1.1 Central Valley Spring-run Chinook salmon

Use of a conservation hatchery facility is proposed for the initial population development for reintroduction. Collections of donor stock would be used to produce broodstock in the conservation hatchery facility. As the broodstock mature, their eggs or young may be placed directly into the San Joaquin River, or retained in the conservation hatchery facility as broodstock. Individual spring-run Chinook would continue to be added to the broodstock from either the FRFH or natural populations. Conservation Best Management Practices, as outlined in a NMFS HGMP that is developed for the conservation hatchery facility would be used to make the appropriate crosses of available stocks. The Proposed Action could have a beneficial impact to the species by increasing the understanding of handling, transport and broodstock culture methods. The Proposed Action also could have a beneficial impact on spring-run Chinook by restoring a population to the Southern Sierra Nevada diversity group, to further the Draft Recovery Plan objectives for the species.

Spring-run Chinook reintroduced to the San Joaquin River would be imprinted on the San Joaquin River as their natal stream or through an imprinting procedure. Any fish produced through natural spawning in the San Joaquin River would also be imprinted to the river. It is possible that members of the reintroduced spring-run Chinook could stray into the Sacramento River or tributaries to the San Joaquin River. This is expected to be within natural straying rates. The “natural” straying rates of wild CV Chinook salmon are largely unknown but straying rates summarized in (California Department of Fish and Game - National Marine Fisheries Service Joint Hatchery Review Committee 2001) indicate rates from 2 to 5 percent. Because all donor stocks are from the Sacramento River populations, those strays would contribute, in a small way, to the abundance of those runs. Over time, evolutionary forces could favor certain genetic patterns in the reintroduced population that may be different from their Sacramento

River ancestors. A natural level of straying to non-natal watersheds may enhance the species diversity and contribute to species recovery.

The collection of broodstock, fish, or eggs from wild populations from Clear, Butte, Deer, Mill, or Battle creeks would require additional evaluation pursuant to NEPA and ESA. Prior to any collection from the Feather River, or FRFH spring-run Chinook populations, an analysis would need to be completed to determine if the collection of fish would jeopardize the continued existence of the species. The use of a conservation hatchery facility would minimize the number of individuals collected from wild sources or from the FRFH. The facility's operations in accordance with the HGMP would ensure genetic diversity and minimal domestication effects.

Existing conditions on the San Joaquin River place a number of stressors on any potential reintroduction effort. These include water flows and the other physical conditions on the San Joaquin River. Increased water flows have been implemented through the Interim Flow Study, and while there is greater understanding as to how to manage the flows on the San Joaquin River, present channel capacity and seepage issues constrain flow levels below Restoration Flow levels. Physical constraints on the San Joaquin River such as road crossings, small dams, and flood control structures also provide barriers to migration and additional stressors on returning adults or outmigration juveniles. The SJRRP includes a variety of projects to improve the physical conditions of the San Joaquin River, as described in the SJRRP PEIS/R. Until the suite of projects analyzed is constructed, the physical environment, aside from water flows, would remain unchanged. Habitat and access conditions are expected to improve over time as these projects are completed. Consequently, the likely survival of spring-run Chinook released to the San Joaquin River would be low initially, but would improve as habitat and conveyance projects are implemented. Even if expected survival in the river is low, the use of a conservation hatchery facility would prevent excessive collection from wild stocks, while providing larger numbers of individuals to offset losses.

The SJRRSA requires spring-run Chinook cannot be reintroduced to the San Joaquin River unless NMFS completes special rule exceptions for these fish from particular classes of take, pursuant to section 10(j) and 4(d) of the ESA. Such rules typically afford a lesser level of protection for the species than is provided through ESA section 9 take prohibitions. If these rules were applied to existing threatened or endangered populations, the impact to those populations could potentially be higher. However, in the case of a population reestablished within its historical range, but outside of its current range, there would be no adverse impact, because any fish produced from the reintroduction would be above and beyond abundance and productivity of the existing populations. A reestablished population would also increase the spatial diversity for the species, providing greater resilience and a higher likelihood for survival and recovery of the species. This would be a beneficial impact to spring-run Chinook. These take exceptions would allow the reintroduction of spring-run Chinook to have minimal impact on the regulatory environment and would provide sufficient protection for spring-run Chinook so as to not adversely impact the ESU but instead would benefit the ESU because of greater numbers and distribution and increased genetic diversity.

The SJRRSA established that the reintroduction of CV spring-run Chinook salmon to the San Joaquin River through the SJRRP must not impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. Because some of these affected persons or entities operate outside of the NEP area alternatives, this rule also includes limited take exceptions outside of the experimental population area. These limited take exceptions apply to fish that have been released or propagated, naturally or artificially, within the experimental population area in the San Joaquin River above the confluence with the Merced River. Outside of the experimental population area, CV spring-run Chinook salmon will continue to be covered by the take prohibitions and exceptions applicable to the non-experimental part of the ESU (50 CFR 223.203), but additional limited take exceptions will now apply to meet the *de minimus* conditions of the SJRRSA. The potential impact on spring-run Chinook of these limited take exceptions outside of the experimental population area will be analyzed under Area Alternative 1 and Area Alternative 2.

The reintroduction of spring-run Chinook would require collection of some individuals from existing populations, but the FRFH has the ability to plan for and produce sufficient stock to allow for collection without impacting any existing stocks. Therefore the collection of spring-run Chinook for reintroduction could be done with no impact to the species' abundance. However, at a population level, the manner of selecting particular populations as donor stock has the potential for adverse impacts on spring-run Chinook, for genetic considerations and the abundance of individual populations, depending on the donor stock collection strategy. These potential impacts to spring-run Chinook are analyzed below in sections 4.4.1 through 4.4.3

For purposes of an experimental population, individuals would be considered part of the experimental population once they enter into the geographic footprint delineated in the rule. Those individuals that stray outside of this footprint are not considered part of the experimental population. The reintroduction will include actions to imprint the fish on the San Joaquin River so that straying rates would be managed at a natural low level. Any impacts that stray fish from this experimental population would have on existing populations would be limited, due in part to the genetic selection process and analysis of donor broodstock, as is further explained in section 4.3.1.1 of this EA. Over time as self-sustaining populations are re-established on the San Joaquin River, it is anticipated that local environmental factors would exert evolutionary pressures on the genetically diverse founding stock and would select for a genetic combination unique to the San Joaquin River. Future low level straying would enhance the resilience of all spring-run Chinook populations.

The SJRRSA requires that NMFS report to Congress on the success of the reintroduction in 2024. The ESA requires that NMFS conduct a status review every five years for all listed species under its responsibility. These requirements would ensure that NMFS is tracking the status of the reintroduced spring-run Chinook population and would develop information to assess the effectiveness of this rule, and if necessary, would trigger revision to the regulation through the rulemaking process. This would ensure that the reintroduction of spring-run Chinook to the San Joaquin River is providing for the conservation of the species as expected. Also, it would ensure that the nonessential designation is reviewed

periodically, and updated by regulation, if necessary. These conditions are further assurance that the Proposed Action would have no impact on spring-run Chinook.

Given the existence of several extant populations and additional restoration actions underway on Butte Creek and other watersheds in order to benefit spring-run Chinook populations within the Sacramento River Basin, the continued existence of the species is not dependent on an experimental population on the San Joaquin River. However, the proposed spring-run Chinook population to be reintroduced would contribute to the recovery of the spring-run Chinook ESU, if the reintroduction is successful. Finally, if the SJRRP is not fully implemented, and the reintroduction of spring-run Chinook is unsuccessful, any spring-run Chinook introduced into the San Joaquin River that constitute the proposed NEP would pose a negligible impact to existing spring-run Chinook populations.

4.3.1.2 California Central Valley Steelhead

Steelhead occurs throughout the San Joaquin River basin, including its tributaries downstream of the confluence with the Merced River (National Marine Fisheries Service 2009b). Spring-run Chinook and steelhead historically coexisted in both the Sacramento and San Joaquin River watersheds, and their habitat and food requirements are similar. Both species are sensitive to habitat degradation, increases in stream temperatures, and fish access barriers (National Marine Fisheries Service 2009b).

Since these two species' habitat and food requirements are similar, any improvements made to the San Joaquin River such as those proposed in the SJRRP would also help increase steelhead distribution and abundance by enhancing habitat and food supply for most life stages. Please see the PEIS/R for further information on habitat improvements. Steelhead is federally listed as a threatened species. Therefore, steelhead already have regulations ensuring their protection, which are not altered by the Proposed Action.

During salmon spawning, steelhead are known to eat loose salmon eggs. Once salmon are reestablished, these eggs and salmon carcasses would provide addition nutrients to the local food web. The proposed reintroductions of spring-run Chinook and subsequent reestablishment of fall-run Chinook could have a beneficial impact on steelhead within the San Joaquin River.

4.3.1.3 Southern DPS of North American Green Sturgeon

As noted in section 3, it is likely that green sturgeon is present in the San Joaquin River. If that is the case, like steelhead, green sturgeon are federally listed as threatened, and have regulations ensuring their protection, which would not be altered by any of the proposed alternatives. Within the Sacramento River basin, fall-run Chinook, spring-run Chinook, and green sturgeon coexist. There is no evidence to suggest that these species would not also coexist in the San Joaquin River. Thus, the proposed reintroduction of spring-run Chinook would not impact green sturgeon that may be within the San Joaquin River.

4.3.2 Other Fish Species

The potential effects of reintroduction of spring-run Chinook on existing San Joaquin River fish species were assessed by evaluating the potential for reintroduced spring-run Chinook to cause changes in the way these species interact with their environment and with other species. These impacts were primarily considered in the Restoration Area and the San Joaquin River downstream from the Merced River confluence to the Sacramento San Joaquin Delta. The potential impacts that may affect biological interactions in the three major San Joaquin River tributaries (Merced, Tuolumne, and Stanislaus rivers) were also assessed for the Chinook salmon and steelhead populations that exist in those rivers.

A number of native fish species along with the spring-run Chinook were extirpated from the upper reaches of the San Joaquin River. With the return of flows and restoration of habitat it is anticipated that in subsequent years fish would again use the San Joaquin River. The reintroduction of spring-run Chinook is not expected to change the balance of fish populations in the San Joaquin River basin, such as shifting to a higher percentage of predatory fish. A return of spring-run Chinook would bring nutrients to the river that would enhance the aquatic food web, and consequently could improve food availability for all fish species. Thus, the reintroduction of spring-run Chinook would have no impact or a beneficial impact, on fish assemblages in the San Joaquin River.

Hybridization. The spawning periods of spring-run and fall-run Chinook in the Central Valley typically overlap during October, during which hybridization between reintroduced spring-run Chinook and San Joaquin River basin fall-run Chinook could occur in the Restoration Area. At present, there is no specific information on how salmon would use the spawning areas below Friant Dam. The SJRRP includes the potential for continued operation of temporary fish barrier(s) to seasonally restrict access by fall-run Chinook to the San Joaquin River in the Restoration Area to prevent hybridization with spring-run Chinook, if necessary (Bureau of Reclamation and California Department of Water Resources 2012). Therefore, should hybridization become an issue in the future, the SJRRP includes mechanisms to prevent hybridization, and therefore there would be no impact.

Predation. The assessment in the SJRRP PEIS/R of predation-related impacts evaluated the potential for the SJRRP to modify environmental conditions that could increase or decrease the vulnerability of special-status fishes, especially juvenile life stages, to predation by piscivorous fish. Fish assemblages on the tributary rivers to the San Joaquin River are similar to those found in the Restoration Area, except that Chinook salmon and steelhead are presently absent from the Restoration Area. While the SJRRP PEIS/R does indicate that restoration actions may increase predation risks for representative special-status species, especially during their juvenile life stages, implementing special-status fish conservation measures of the Conservation Strategy in the SJRRP PEIS/R would offset potential adverse effects on special-status fish species. Furthermore, the reintroduction of spring-run Chinook to the Restoration Area is not expected to result in different fish assemblages than those already seen in the tributary rivers. As a result predation rates would not be changed. The reintroduction of Chinook salmon, regardless of the run, would bring marine-derived nutrients into the system which would increase productivity of all aquatic species, with no expectation that it would differentially affect predatory species. Thus there would be no impact on predation due to the reintroduction of spring-run Chinook.

Competition. Potential fisheries impacts involving competition were assessed by evaluating the potential that the habitat improvements made by the SJRRP could increase or decrease competitive interactions among the representative fish species. The assessment in the SJRRP PEIS/R was qualitative, based on potential changes in competition that could result from altered distribution, abundance, and behavior of all fishes in the San Joaquin River, as well as potential changes in other environmental conditions such as habitat quantity and quality, food resources, and water temperature that can affect competitive interactions. Water diversions that alter the abundance or proportion of nonnative fish species relative to native species may also increase the potential for competition in aquatic systems.

Some nonnative fish species have habitat requirements that overlap with those of native special-status species. Nonnative species may be more aggressive and territorial than native species and result in the exclusion of native species from their habitats. Many nonnative species, such as green sunfish, also tolerate very high water temperatures and are better able than native fishes to persist in water with low DO, high turbidity, and pollutants (Bureau of Reclamation and California Department of Water Resources 2011). Green sunfish are among the nonnative species that currently occur at relatively high abundance in the Restoration Area (Bureau of Reclamation and California Department of Water Resources 2011).

The predicted flow increases in the San Joaquin River from the Merced River confluence to the Delta resulting from the release of both Interim and Restoration flows would increase the amount of in stream habitat available to the representative species, and could reduce interspecific (between species) and intraspecific (within species) competition, especially during spring, when modeled flow increases are largest and migrating juvenile fall-run Chinook and steelhead are most abundant in this section of the river. Therefore based on the findings of the SJRRP PEIS/R the potential impacts from either an increase or a decrease in competition are negligible, and would not be changed by the reintroduction of spring-run Chinook.

Disease. Potential fisheries impacts resulting from disease were assessed by evaluating the potential impacts of the Proposed Action on environmental conditions that could increase or decrease the incidence and impacts of disease on the representative fish species.

The assessment was qualitative, based on potential changes in disease transmission vectors, virulence, and fish susceptibility that could result from altered distribution, abundance, and behavior of all fishes in the San Joaquin River. This assessment was also based on potential changes in other environmental conditions, such as habitat quantity and quality, pollutants, and water temperature that can affect disease transmission and the impacts of disease on the representative fish species.

The improved aquatic habitat conditions created through the implementation of the SJRRP would provide access to the Restoration Area by fishes currently restricted to downstream portions of the San Joaquin River, including San Joaquin River basin fall-run Chinook and steelhead. Restored habitat connectivity could increase the potential for disease transmission among formerly isolated populations, including the hatchery-supplemented resident rainbow trout in Reach 1 of the Restoration Area, and the Central Valley steelhead that occupy the lower San Joaquin River and tributaries. The parasite *Myxobolus cerebralis*, which causes whirling disease in salmonids, including rainbow trout, steelhead, and Chinook salmon,

poses a risk to salmonid populations in the San Joaquin River. This parasite relies on tubifex worms (Tubifex tubifex) as an intermediate host (Bureau of Reclamation and California Department of Water Resources 2011), and is a concern for the San Joaquin River because there is a tubifex worm farm located in Reach 1A (Bureau of Reclamation and California Department of Water Resources 2011). However, the tubifex worm farm has been at its current location for more than 20 years and in that time no incidents of parasitic transmission has been recorded in the rainbow trout found in the area of the farm. Therefore, the potential for the transmission of this disease, and the potential impacts to either the current fish populations or to the proposed reintroduced spring-run Chinook is considered low.

Since spring-run Chinook must be translocated from outside of the San Joaquin River basin, there is the potential for eggs or fish being translocated into the San Joaquin River to increase the potential for disease transmission. Translocation of eggs or fish would be subject to section 10(a)(1)(A) permitting, which would require disease mitigation. Also the 10(a)(1)(A) issued in 2012 includes HGMP protocols for disease management. Therefore there would be no disease impacts from the Proposed Action.

4.3.3 Recreation

Fishing

The SJRRP PEIS/R includes analysis of recreational fishing impacts that is relevant to the impacts analyzed in this EA and is incorporated by reference. The SJRRP PEIS/R identified potential impacts to recreational opportunities associated with the construction projects and improved water flows. Some of these did not have any impacts or generated beneficial effects. In addition to the construction projects the SJRRP PEIS/R also identified that the reintroduction of either spring-run or fall-run Chinook could have a potentially high impact to recreational opportunities involving angling opportunities due to cessation of stocking of rainbow trout by DFW in Reach 1 and the implementation of new fishing restrictions. While fishing for other species of fish would continue, the opportunity to fish for planted trout would end. This would occur with the reintroduction of fall-run Chinook salmon under the SJRRP, regardless of whether spring-run Chinook are reintroduced. Consequently, mitigation to offset any impacts is being implemented as a measure under the SJRRP PEIS/R (REC-4) that would reduce these potential impacts to a low level, so there would be no impact to recreational fishing as a result of the Proposed Action.

The reintroduction of spring-run Chinook *per se* does not change recreational fishing regulations. These are controlled by the FGC. The proposed rule would accommodate take considerations associated with regulated fishing when fishing regulations are developed. Currently FGC has harvest protective measures benefiting spring-run Chinook. These include seasonal constraints on sport and commercial fisheries south of Point Arena. Most Central Valley salmon bearing streams, including the San Joaquin River are subject to regulation to protect Chinook salmon during spawning. California fishing regulations in anadromous waters typically include bag and seasonal restrictions to protect anadromous salmonids, but fishing is not prohibited.

In addition, the State has listed spring-run Chinook under the California Endangered Species Act (CESA), and has thus established specific in-river fishing regulations and no-retention prohibitions designed to

protect this ESU (e.g., fishing method restrictions, gear restrictions, bait limitations, seasonal closures, and zero bag limits), particularly in primary tributaries such as Deer, Big Chico, Mill, and Butte Creeks, which support spring-run Chinook.

Boating

The reintroduction of spring-run Chinook would not have any impact on boating opportunities on the San Joaquin River. The improvements to water flows that would benefit the reintroduction would also benefit boaters, by providing additional locations where they can use their boats.

4.3.4 Commercial Fishing

The impacts to commercial fishing from the reintroduction of spring-run Chinook would be low. Spring-run Chinook is a small percentage of the commercial harvest. Collections from donor stocks would have no impact because of the small number collected.

Under this alternative, the placement of spring-run Chinook in the San Joaquin River would not have an immediate impact on the commercial fishing of Chinook and other salmon. Harvest rates would still be established and would in the short-term limit the take of spring-run Chinook based on ESU conditions. Likewise, in the short-term there would be no change to management of the recreational salmon fishery, which is currently closed to angling on the San Joaquin River. However, implementation of the SJRRP is expected to restore habitat and connectivity which would allow existing fall-run Chinook to access suitable spawning areas near Friant Dam, which may provide a small increase in salmon available to the ocean fishery. In the long-term, with the restoration of spring-run and fall-run Chinook it is possible that the increased size of Chinook salmon runs would translate to improved commercial fishing.

Therefore, the short-term, adverse impacts to commercial fishing would be low. In the long-term there are potential beneficial impacts to commercial fishing.

4.3.5 Land Use

Agricultural Resources and Forestry

The SJRRSA requires that reintroduction of spring-run Chinook to the San Joaquin River shall be done only pursuant to section 10(j) of the ESA with special exceptions under ESA section 4(d). Federal and state regulations would continue to apply under this alternative including those listed in section 2.1.3.2 of this EA. Within the NEP area, NMFS's proposed 4(d) rule would provide coverage for take that is unintentional and occurs incidental to otherwise lawful activities. These take exceptions would allow the reintroduction of spring-run Chinook to have little to no impact on agricultural and forestry activities. Because of the substantial regulatory relief provided by NEP designations, NMFS does not expect this rule to have any substantial effect on recreational, agricultural, or development activities within the NEP area.

To the extent the 4(d) rule applies outside of the NEP, the rule protects agricultural and forestry resources by ensuring no more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. This exception applies to CV spring-run Chinook salmon that may occur in the lower San Joaquin River and its tributaries, and is not specifically limited to reintroduced CV spring-run Chinook salmon. This exception does not diminish current protections for CV spring-run Chinook salmon or change the regulatory environment downstream of the NEP area for the following reasons: First, past and recent status reviews have concluded that CV spring-run Chinook salmon have been largely extirpated in this area. Therefore, NMFS generally has not consulted under ESA section 7 on the effects on this species of proposed actions in the lower San Joaquin River and its tributaries. However, connectivity with the south Delta does not prohibit potential individual CV spring-run Chinook salmon from straying to these waterways. After reintroduction of CV spring-run Chinook salmon into the experimental population area, CV spring-run Chinook salmon that originate from the experimental population area will migrate through the lower San Joaquin River. In the lower San Joaquin River and its tributaries it will be difficult to differentiate whether any individual CV spring-run Chinook salmon originated from the experimental population area or strayed from the area outside the San Joaquin River. These fish will more likely have originated from the experimental population area because of the numbers of fish to be released for the reintroduction and the close proximity of the Lower San Joaquin River and its tributaries to the experimental population area. Second, steelhead, a threatened species, does occur in the lower San Joaquin River and its tributaries. Owing to similarities in habitat requirements, actions that could adversely affect CV spring-run Chinook salmon would also similarly affect steelhead. Therefore, ESA consultation and take avoidance requirements for steelhead would apply whether or not CV spring-run Chinook salmon were present. In the unusual event that CV spring-run Chinook salmon presence is indicated by new information or subsequent status reviews, and that avoidance measures were required over and above those required for steelhead, then NMFS would not require or implement these measures, if such measures would result in more than a de minimus impact on: water supply reductions, additional storage releases, or bypass flows, on unwilling third parties. This determination would be made on a case by case basis as part of the ESA section 7 or section 10 processes. Take avoidance or minimization measures that would have a de minimus or no effect on water supply reductions, additional storage releases, or bypass flows associated with the aforementioned third parties, could still be required through the ESA section 7 or section 10 processes. Such measures might include best management practices such as sediment containment, in-water work windows, or bank revegetation associated with stream construction activities, and would also apply to avoid take of steelhead..

Future donor stock could be collected from rivers and tributaries that cross a variety of landscapes from valley floor to steep mountain canyons. The specific collection locations would be identified in the individual 10(a)(1)(A) permits that are required. The Proposed Action creates no obligation for access to private property, and therefore the Proposed Action would have no impact on private property. Any collecting sites which would require crossing privately held land, would require voluntary access permission from private landowners as a condition of the permit.

If the reintroduction of spring-run Chinook is not successful because the SJRRP is not fully implemented in a manner that achieves the Restoration Goal, the resulting impacts to the existing San Joaquin River

ecosystem, and the surrounding human environment, would be undetectable. The proposed spring-run Chinook population to be reintroduced to the San Joaquin River is not essential for the continued survival of existing spring-run Chinook. Also, there would be no impact to the human environment because any remnant spring-run Chinook would not result in ESA regulatory impacts for otherwise lawful activities.

4.3.6 Water Quality

The operations of any of the Sacramento River Basin hatcheries would not change with the reintroduction of spring-run Chinook to the San Joaquin River and would remain subject to current waste water discharge permits. Collection of eggs or juveniles would be subject to analysis of water quality during the 10(a)(1)(A) permitting process, therefore the proposed collection of eggs would not affect the water quality within the Sacramento River Basin.

With the exception of occasional low dissolved oxygen levels in the discharge from the SJFH, there are no water quality issues along Reach 1 of the San Joaquin River where the Interim Facility is located and the subsequent conservation hatchery facility would be located. As discussed in the 2010 Hatchery and Stocking Program EIR/EIS (Hatchery EIR/EIS) prepared for all of DFW's hatchery operations, the discharge of lowest DO level detected of 6.4 mg/L is not optimal for coldwater fish conditions, but the level of the adverse impact would be low (ICF Jones & Stokes 2010). The analyses of the Hatchery EIR/EIS are incorporated by reference into this document. Operations of the subsequent conservation hatchery facility would require discharge permits that require monitoring and reporting to assure that discharged water would not impact water quality of the San Joaquin River. The discharge permit conditions established for the hatchery activities would require that discharges from either facility would not adversely affect ambient water quality. Any variance in the discharge from those levels established by the permit would have to be addressed by the hatcheries and confirmed by the State of California Regional Water Quality Control Board. Therefore, this alternative would have a negligible effect on water quality.

4.3.7 Air Quality

This analysis considers the potential impact of the general activities related to the reintroduction of spring-run Chinook on air quality. The specific details of collection, handling and transportation, and the potential impacts on spring-run Chinook would be specified and analyzed in the 10(a)(1)(A) permit process.

The reintroduction of spring–run Chinook would generate air emissions from vehicles used to collect and transport fish (or eggs) and from operation of the Interim Facility and later the conservation hatchery facility. Existing facilities would be used until the conservation hatchery is built by the State of California, for which a separate environmental analysis would be done. The operational emissions associated with the reintroduction process would be emissions from electrical power generation, which are anticipated to be undetectable. Other operational emissions would air emissions from vehicles used to collect and transport fish (or eggs), first to a holding area, then to the conservation hatchery facility. However, given that there would only be a small number of trips (i.e. less than 100 trips per year) to

collect and transport the collected fish or eggs the resulting emissions would have undetectable impacts to air quality.

4.3.8 Climate Change

Mandatory GHG Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (House of Representatives 2764; Public Law 110-161), that required EPA to develop "… mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy…." The Reporting Rule would apply to most entities that emit 25,000 mtCO2e (metric tonne CO2 emissions) or more per year. Starting in 2010, facility owners are required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule would also mandate recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports. As shown in Table 4-3, the amount of CO2 generated by the transportation of fish over a five-year term would be approximately 5/10ths of one percent of the yearly reporting level of 25,000 mtCO2e. Even adding the CO2 emitted by electrical generation used in the operations of the hatcheries would not bring the amount of greenhouse gas emitted near the yearly threshold. Since the emissions of GHGs for the Proposed Action would be substantially lower than the 25,000 mtCO2e reporting threshold, the impacts to Climate Change from GHG emissions of the Proposed Action would be negligible.

The analysis of potential cumulative impacts from Climate Change to the area of the Proposed Action is presented in section 5 Cumulative Impacts.

Table 16. Calculated CO2 emissions for transportation of fish between various locations

Trip	mtCO2e per trip	Number of trips per year	Total mtCO2e per year	Total mtCO2e for 5 years
FRFH to Silverado	0.178	48	8.583	42.913
Silverado to SJFH	0.271	48	13.030	65.152
FRFH to SJFH	0.311	4	1.242	6.212
Total	0.760	100	32.451	114.277
Percentage of 25,000 mtCO2e threshold			0.13%	0.46%

Calculation based on the following: Mileage (determined by Google Maps):

FRFH to Silverado Fisheries Base = 137 miles:

Silverado Fisheries Base to SJFH = 208 miles

FRRH to SJFH = 238 miles

CO2 emissions 10180 grams per gallon of diesel fuel (source EPA 2011)

Fuel usage mile/gallon: 7. 8 (personal com. Scott Hamelberg, Coleman National Fish Hatchery Complex 2012)

DONOR STOCK ALTERNATIVES ANALYSIS

4.4 Donor Stock Alternatives Introduction

The specific actions of collection of broodstock, fish, or eggs from wild populations from Clear, Butte, Deer, Mill, or Battle creeks would require additional evaluation pursuant to NEPA and ESA, including issuance of 10(a)(1)(A) permits. Prior to any collection from the Feather River, or FRFH spring-run Chinook populations, an analysis would need to be completed to determine if the collection of fish would jeopardize the continued existence of the species. The use of a conservation hatchery facility would minimize the number of individuals collected from natural sources or from the FRFH. The facility's operations in accordance with the HGMP would ensure genetic diversity and minimal domestication effects. Monitoring activity outlined through 10(a)(1)(A) permits and special handling for scientific or salvage and rescue purposes under the existing 4(d) permitting protocol and adaptive management components of the FMP or San Joaquin River Conservation Hatchery HGMP, for example, would help ensure that the affected spring-run Chinook is adequately protected, should changing conditions in procedure or outside factors occur that may alter the course of the SJRRP, including lack of funding. Finally, In accordance with the adaptive management component of the Reintroduction Goals for the SJRRP, technical teams will continue to develop monitoring techniques to address changing conditions or outside factors over time.

The below analysis is a general analysis of the potential sources of donor stock. Detailed analysis of future 10(a)(1)(A) permits for collection of the source stocks would need to be conducted prior to issuance of any 10(a)(1)(A) permits.

The environmental consequences of the Donor Stock alternatives on all resources except spring-run Chinook are the same as the impacts described above for the reintroduction of spring-run Chinook. The impacts to spring-run Chinook are analyzed below. Please refer to the analysis of the reintroduction of spring-run Chinook for impacts to the other resources.

The environmental consequences of any of the Donor Stock alternatives are the same for all resource areas as for reintroduction of spring-run Chinook, except in the resource area of federally listed species, Central Valley spring-run Chinook .

4.4.1 All Source Donor Stock Alternative (preferred alternative)

Central Valley Spring-run Chinook Salmon

Under this Alternative, collections would be made from the range of existing spring-run Chinook populations. This provides for the greatest genetic diversity for the founding stock, and consequently the greatest likelihood for successful reintroduction.

Under the All Source Donor Alternative, FRFH would plan to produce sufficient fish to allow for eggs or juveniles to be consistently collected, providing a consistent source of fish for broodstock or direct release with no impact on the source population. The proportion of FRFH eggs or juveniles is expected to decline as broodstock from the other sources develops. Stock would be collected from other sources such as Deer, Mill, Butte, Clear and Battle creeks or the Feather River, depending on the conditions and population status of each run. The specifics of these collections would be managed through section 10(a)(1)(A) permitting. The use of the conservation hatchery facility would multiply the number of fish that could be introduced into the San Joaquin River while minimizing the number required from wild donor stocks. Any request to collect stock from any donor source would require submission and approval of a 10(a)(1)(A) permit and subsequent environmental impact analysis and ESA section 7 consultation. During the initial phase the San Joaquin River habitat conditions would also improve for salmon as habitat projects are completed. While early population levels are expected to be small, with improved habitat, the fish generated and released from the broodstock or released directly to the river would have an increased likelihood of survival.

Using a conservative approach where fish from donor stock would only be collected when a hatchery has planned to have sufficient stock available (as would be the case at the FRFH), or when the removal of a limited number of individuals from a donor stock population can be shown not to jeopardize existing spring-run Chinook, the beneficial impacts from this approach would result in providing genetic diversity to the San Joaquin spring-run Chinook population. This would furthermore increase the likelihood for successful reintroduction of spring-run Chinook. It is anticipated that collection of fish would cease when sufficiently diverse broodstock is established.

The All Donor Stock Source Alternative would have a beneficial impact on spring-run Chinook by providing the highest probability of success of the reintroduction owing to high genetic diversity in the founding stock. This beneficial impact is based on the premise that collections would be made under a 10(a)(1)(A) permit.

4.4.2 Feather River Hatchery Only Donor Stock Source Alternative

Central Valley Spring-run Chinook Salmon

Under the Feather River Hatchery Only Donor Stock Source Alternative, collection of donor stock would come only from the FRFH. The hatchery would plan to produce sufficient fish to allow for fish for the SJRRP. This alternative would provide a consistent source of fish for reintroduction to the San Joaquin River without adversely affecting the threatened donor populations. These fish from the FRFH would not detract from any of the populations, including the FRFH target numbers, and would still provide fish for the reintroduction process. Until the habitat improvement projects are completed, in river survival is expected to be low, except in wet years. Any survival for these fish would have a net gain for the species. Using fish that have been purposefully designated for the SJRRP would allow for the SJRRP to satisfy the Settlement, without negatively impacting the donor population, but also providing recovery actions for spring-run Chinook.

As discussed in the Stock Selection Strategy (San Joaquin River Restoration Program Fisheries Management Work Group 2010), the long-term use of FRFH stock could result in fish which have genetic traits of both spring-run and fall-run Chinook. In other fisheries where only hatchery fish have been used there has been a reduction in the genetic vigor. Genetic analysis of FRFH spring-run Chinook has shown evidence of hybridization between spring-run and fall-run Chinook hatchery stocks. The FRFH is addressing these problems, but the use of FRFH stock could result in fish being reintroduced to the San Joaquin River with genetics of both spring-run and fall-run Chinook. It is uncertain if this combination of parental stock would be successful in the San Joaquin River. The use of FRFH stock would offer limited genetic diversity as a founding stock of spring-run Chinook. Conditions in a restored San Joaquin River would be different than the Feather River, particularly with expected warmer temperatures.

The use of FRFH fish only would have undetectable adverse impacts to the other spring-run Chinook populations. It is not the preferred alternative, because these fish may have compromised genetics for spring-run Chinook, and lower overall genetic diversity.

4.4.3 Single Source Alternative

Central Valley Spring-run Chinook Salmon

Under this Alternative, fish would be collected from just one of the non-hatchery influenced watersheds. Based on the analysis presented in the Stock Selection Strategy, Butte Creek is only population that currently has sufficient abundance and productivity to be considered as a single source.

However, even with the strongest population run, Butte Creek stocks are threatened and have been in a trend of decline (National Marine Fisheries Service 2011). For the development of broodstock, the Stock Selection Strategy proposed the representation of 50 males and 50 females in the collection. The likely effect to the Butte Creek population resulting from removal of this number of fish, in some years would have no appreciable effect on the population, but in other years this would be a major reduction in the population. Table 3-4 shows that the removal of 100 fish in 2010 would have been more than 8.5 percent of the returning population. In contrast, in 2006 it would represent less than 1/100,000 or 0.01 percent of the population. Collection of fish at other life stages (e.g. juveniles) could reduce this impact, but in some years the effect of removing sufficient juveniles could still be of high impact. The Stock Selection Strategy specifically outlines that a genetic compliment of all runs should ultimately be used for reintroduction to the San Joaquin River. The Stock Selection Strategy approach is that with greater genetic diversity there is a higher likelihood for the reintroduced fish to adapt to the San Joaquin River, and thus a more probable success in the reintroduction (San Joaquin River Restoration Program Fisheries Management Work Group 2010). Using only Butte Creek fish, like the use of only FRFH fish, does not provide the genetic diversity for the best chance for reintroduction to be successful. Unlike the FRFH only alternative, using a single source from a wild stock would be a less reliable source of fish because of natural fluctuations in abundance. This alternative has potential negative effects on the threatened donor population and variable availability of donor stock.

4.5 Area Alternative 1

For this alternative the NEP area includes the majority of the San Joaquin River basin including the main stem of the San Joaquin River from below Friant Dam to Mossdale Park, the Merced River below the Merced Falls, the Tuolumne River below the La Grange Dam and the Stanislaus River below the Goodwin Dam (Figure 2-1). Within the NEP area, take exceptions for spring-run Chinook would cover all take that occurs incidental to the course of otherwise lawful activities. Intentional and direct take is prohibited. Take for research and scientific purposes may be permitted. Adipose fin-clipped fish are included in the limited take prohibitions.

Outside of the NEP area, the rule would provide take exceptions for spring-run Chinook that originate from the reintroduction to the San Joaquin River. Take would not be prohibited if the avoidance of such take would impose more than de minimus: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws. This exception would also apply to the operations of the CVP and SWP under any biological opinion or section 10 permit that is in effect at the time for operations of the CVP and SWP.

4.5.1 Federally Listed Species

4.5.1.1 Central Valley Spring-run Chinook Salmon

The environmental consequences of implementing Area Alternative 1 on spring-run Chinook are the same as for the reintroduction of spring-run Chinook described in section 4.3.1.1.1, except that these fish reintroduced to the San Joaquin River would have less protection from take as identified by the ESA section 4(d) exceptions described in the limited 4(d) rule than under the existing 4(d) rule. Within the Restoration Area and associated waterways, the take exceptions for spring-run Chinook would be reduced from current protections already afforded, and spring-run Chinook could be incidentally taken as a result of otherwise lawful activities. This could encompass a variety of activities otherwise classified as “harm”, and direct losses such as entrainment at authorized water diversions. This broad regulatory exception could be a negative impact on spring-run Chinook. For extant populations of spring-run Chinook, these conditions would be considered an adverse impact. For the proposed reintroduced population, these fish would not otherwise exist, at the numbers proposed, in the near future without implementation of the SJRRP and the Proposed Action. The authorization for collection of fish from donor populations would be done with the awareness that some of the fish collected would die, and that some of the fish released to the river would also die, and the permits would be conditioned appropriately. Use of a conservation hatchery facility would allow the production of fish to be released to the river at a level that accounts for potential losses from the allowed incidental take, and that provides for sufficient survival to re-establish a naturally self-sustaining population. Any fish lost to these relaxed regulatory conditions associated with the reintroduction would not otherwise exist to contribute to the species.

Under the existing 4(d) rule, hatchery produced adipose fin-clipped fish are not protected (June 28, 2005, 70 FR 37204) because the purpose of these hatcheries is mitigating production lost to fisheries by dams and other water projects. Contrasted to other hatcheries the fish produced in the conservation hatchery facility are produced for reintroduction. Conservation hatchery facility produced adipose fin-clipped fish would be included within the 4(d) exceptions associated with the NEP area and would receive some additional level of protection.

At the time spring-run Chinook was listed as a threatened species, (June 28, 2005, 70 FR 37160) available evidence suggested spring-run Chinook did not occur in the San Joaquin River Basin. Based on this rationale the NEP area could be implemented to include tributaries to the San Joaquin River. However, recent observations indicate that spring-running Chinook are present in the tributaries. At this time, it is not clear as to their origin, but if assumed to be spring-run Chinook, then inclusion of the tributaries in the NEP designation is not valid (50 CFR 17.80). The spring-running Chinook now in the tributaries could have protection from take under the existing 4(d) rule even if they are not within in the boundaries of the ESU. The status quo for the area south of designated ESU has been identified as not having a spring-run Chinook population since it was deemed extirpated years ago. As such, there has been no enforcement and only recent monitoring of these rivers at times when spring-run Chinook may occur.

If these spring-running Chinook are in fact genetically spring-run Chinook of natural origin, take of these fish would be covered by the existing 4(d) provisions for the ESU. Under this alternative the take exemptions for spring-run Chinook would be reduced from current protections already afforded, and would except take that occurred incidental to any otherwise legal activity. This broad regulatory exception could be a negative impact on spring-run Chinook. However, the presence of spring-run Chinook in the tributaries would conflict with the geographic criteria for establishing the NEP.

4.5.1.2 California Central Valley Steelhead

Steelhead occurs throughout the San Joaquin River basin, including its tributaries downstream of the confluence with the Merced River (National Marine Fisheries Service 2009b). Spring-run Chinook and steelhead historically coexisted in both the Sacramento and San Joaquin River watersheds, and their habitat and food requirements are similar. Both species are sensitive to habitat degradation, increases in stream temperatures, and fish access barriers (National Marine Fisheries Service 2009b).

Since these two species' habitat and food requirements are similar, any improvements made to the San Joaquin River such as those proposed in the SJRRP would also help increase steelhead distribution and abundance by enhancing habitat and food supply for most life stages. Please see the PEIS/R for further information on habitat improvements. Steelhead is federally listed as a threatened species. Therefore, steelhead already has regulations related to their protection, which are not altered by the Proposed Action.

During salmon spawning, steelhead are known to eat loose salmon eggs. Once salmon are reestablished, these eggs and salmon carcasses would provide addition nutrients to the local food web. The proposed

reintroductions of spring-run Chinook and subsequent reestablishment of fall-run Chinook could have a beneficial impact on steelhead within the San Joaquin River.

4.5.1.3 Southern DPS of North American Green Sturgeon

As noted in section 3, it is likely that green sturgeon are present in the San Joaquin River. If that is the case, like steelhead, green sturgeon are federally listed as threatened and have regulations related to their protection, which would not be altered by any of the alternatives. Within the Sacramento River basin fall-run Chinook, spring-run Chinook, and green sturgeon coexist. There is no evidence to suggest that these species would not also coexist in the San Joaquin River. Thus, the proposed reintroduction of spring-run Chinook would not impact green sturgeon that may be within the San Joaquin River.

4.5.2 Other Fish Species

The potential effects of reintroduction of spring-run Chinook on existing San Joaquin River fish species were assessed by evaluating the potential for Area Alternative 1 to cause changes in the way these species interact with their environment and with other species. These impacts were primarily considered in the Restoration Area and the San Joaquin River downstream from the Merced River confluence to the Sacramento San Joaquin Delta. The potential impacts that may affect biological interactions in the three major San Joaquin River tributaries (Merced, Tuolumne, and Stanislaus rivers) were also assessed for the Chinook salmon and steelhead populations that exist in those rivers.

A number of native fish species along with the spring-run Chinook were extirpated from the upper reaches of the San Joaquin River. With the return of flows and restoration of habitat it is anticipated that in subsequent years fish would again use the San Joaquin River. The reintroduction of spring-run Chinook is not expected to change the balance of fish populations in the San Joaquin River basin, such as shifting to a higher percentage of predatory fish. A return of spring-run Chinook would bring nutrients to the river that would enhance the aquatic food web, and consequently could improve food availability for all fish species. Thus, the reintroduction of spring-run Chinook would have no impact or a beneficial impact, on fish assemblages in the San Joaquin River.

Hybridization. The spawning periods of spring-run and fall-run Chinook in the Central Valley typically overlap during October, during which hybridization between reintroduced spring-run Chinook and San Joaquin River basin fall-run Chinook could occur in the Restoration Area. At present, there is no specific information on how salmon would use the spawning areas below Friant Dam. The SJRRP includes the potential for continued operation of temporary fish barrier(s) seasonally restrict access by fall-run Chinook to the San Joaquin River in the Restoration Area to prevent hybridization with spring-run Chinook, if necessary (Bureau of Reclamation and California Department of Water Resources 2012). Therefore, should hybridization become an issue in the future, the SJRRP includes mechanisms to prevent hybridization, and therefore there would be no impact.

Predation. The assessment in the SJRRP PEIS/R of predation-related impacts evaluated the potential for the SJRRP to modify environmental conditions that could increase or decrease the vulnerability of

special-status fishes, particularly egg, larval, and juvenile life stages, to predation by piscivorous fish, which found that the impact was not substantial. Fish assemblages on the tributary rivers to the San Joaquin River are similar to those found in the Restoration Area, except that Chinook salmon and steelhead are absent from the Restoration Area. The reintroduction of spring-run Chinook is not expected to change these assemblages, so predation rates would not be changed. The reintroduction of Chinook salmon, regardless of the run, would bring marine-derived nutrients into the system which would increase productivity of all aquatic species, with no expectation that it would differentially affect predatory species. Thus there would be no impact on predation due to the reintroduction of spring-run Chinook.

Competition. Potential fisheries impacts related to competition were assessed by evaluating the potential that the habitat improvements made by the SJRRP could increase or decrease competitive interactions among the representative fish species. The assessment in the SJRRP PEIS/R was qualitative, based on potential changes in competition that could result from altered distribution, abundance, and behavior of all fishes in the San Joaquin River, as well as potential changes in other environmental conditions such as habitat quantity and quality, food resources, and water temperature that can affect competitive interactions. Water diversions that alter the abundance or proportion of nonnative fish species relative to native species may also increase the potential for competition in aquatic systems.

Some nonnative fish species have habitat requirements that overlap with those of native special-status species. Nonnative species may be more aggressive and territorial than native species and result in the exclusion of native species from their habitats. Many nonnative species, such as green sunfish, also tolerate very high water temperatures and are better able than native fishes to persist in water with low DO, high turbidity, and pollutants (Bureau of Reclamation and California Department of Water Resources 2011). Green sunfish are among the nonnative species that currently occur at relatively high abundance in the Restoration Area (Bureau of Reclamation and California Department of Water Resources 2011).

The predicted flow increases in the San Joaquin River from the Merced River confluence to the Delta resulting from the release of both Interim and Restoration flows would increase the amount of in stream habitat available to the representative species, and could reduce interspecific (between species) and intraspecific (within species) competition, especially during spring, when modeled flow increases are largest and migrating juvenile fall-run Chinook and steelhead are most abundant in this section of the river. Therefore based on the findings of the SJRRP PEIS/R the potential impacts from either an increase or a decrease in competition would not be substantial, and would not be changed by the reintroduction of spring-run Chinook.

Disease. Potential fisheries impacts resulting from disease were assessed by evaluating the potential impacts of this this alternative on environmental conditions that could increase or decrease the incidence and impacts of disease on the representative fish species.

The assessment was qualitative, based on potential changes in disease transmission vectors, virulence, and fish susceptibility that could result from altered distribution, abundance, and behavior of all fishes in the San Joaquin River. This assessment was also based on potential changes in other environmental

conditions, such as habitat quantity and quality, pollutants, and water temperature that can affect disease transmission and the impacts of disease on the representative fish species.

The improved aquatic habitat conditions created through the implementation of the SJRRP would provide access to the Restoration Area by fishes currently restricted to downstream portions of the San Joaquin River, including San Joaquin River basin fall-run Chinook and steelhead. Restored habitat connectivity could increase the potential for disease transmission among formerly isolated populations, including the hatchery-supplemented resident rainbow trout in Reach 1 of the Restoration Area, and the Central Valley steelhead that occupy the lower San Joaquin River and tributaries. The parasite *Myxobolus cerebralis*, which causes whirling disease in salmonids, including rainbow trout, steelhead, and Chinook salmon, poses a risk to salmonid populations in the San Joaquin River. This parasite relies on tubifex worms (Tubifex tubifex) as an intermediate host (Bureau of Reclamation and California Department of Water Resources 2011), and is a concern for the San Joaquin River because there is a tubifex worm farm located in Reach 1A (Bureau of Reclamation and California Department of Water Resources 2011). However, the tubifex worm farm has been at its current location for more than 20 years and in that time no incidents of parasitic transmission has been recorded in the rainbow trout found in the area of the farm. Therefore, the potential for the transmission of this disease is considered low and the potential impacts low to either the current fish populations or to the proposed reintroduced spring-run Chinook.

Since spring-run Chinook must be translocated from outside of the San Joaquin River basin, there is the potential for eggs or fish being translocated into the San Joaquin River to increase the potential for disease transmission. Translocation of eggs or fish would be subject to section 10(a)(1)(A) permitting, which would require disease mitigation. Also the 10(a)(1)(A) issued in 2012 includes HCMP protocols for disease management. Given the methodology of quarantining any eggs and fish prior to locating the eggs or fish into the San Joaquin River, the potential effects resulting from the introduction of disease to the existing populations on the San Joaquin River would be no greater than the existing conditions. Therefore there would be minimal potential for disease transmission from the Proposed Action.

4.5.2.1 Fisheries: San Joaquin River Tributaries (Merced, Tuolumne, and Stanislaus Rivers)

The Merced, Tuolumne, and Stanislaus rivers are the three main tributaries to the lower San Joaquin River. Each tributary supports populations of fall-run Chinook and Central Valley steelhead. In addition, recent observations on the Tuolumne and the Stanislaus have reported the presence of spring-running Chinook.

Hybridization. Reintroduction of spring-run Chinook is a high-priority restoration action, and its implementation potentially could result in interspecific hybridization with San Joaquin River fall-run Chinook. The spawning periods of spring-run and fall-run Chinook in the Central Valley typically overlap during October, during which hybridization between reintroduced spring-run Chinook and San Joaquin River basin fall-run Chinook could occur in the Merced, Tuolumne, and Stanislaus rivers. However, spring-run Chinook reintroduced to the San Joaquin River would be imprinted to the San Joaquin River to minimize straying to other waterways, so the potential for hybridization between fall-run- and spring-run Chinook on San Joaquin River tributaries would be less or no different than what

already occurs between fall-run and spring-running Chinook in these rivers. Therefore this alternative would have no impact on hybridization in the tributaries.

Competition. The potential for increased competition for Chinook spawning habitat in the Merced, Tuolumne, and Stanislaus rivers could occur following reintroduction of spring-run and fall-run Chinook to the upper San Joaquin River. This impact was assessed by evaluating the potential for reintroduced spring-run Chinook to stray into the Merced, Tuolumne, or Stanislaus rivers and superimpose their redds (i.e., nests) on those of fall-run Chinook during spawning. The assessment of potential impacts because of redd superimposition was conducted only for the existing population of San Joaquin River basin fall-run Chinook.

Redd superimposition occurs when spawning fish construct new redds on top of preexisting redds such that the eggs in the preexisting redd are either destroyed or buried under fine sediment that prevents most of the fry from emerging. Redd superimposition by fall-run Chinook has been reported in the Tuolumne River (TID/MID 1991) and in the Stanislaus River (Bureau of Reclamation and California Department of Water Resources 2011). However, it is unlikely that superimposition of fall-run Chinook redds by reintroduced spring-run Chinook would occur in the Merced, Tuolumne, or Stanislaus rivers because spring-run Chinook spawn before most fall-run, and the peak spawning periods of the two runs have a short duration overlap. Similarly the reverse could occur where fall-run would superimpose on spring-run Chinook redds. However, the levels of superimposition in other natural streams where spawning occurs, in the Sacramento Basin, has been found to be low (H. Brown pers. comm. 2012). Furthermore, recent research on fall-run Chinook indicates that redd superimposition is currently unlikely to limit adult Chinook recruitment in these San Joaquin River tributaries because many more fry are produced at high densities of spawners than can be sustained by the available rearing habitat (Bureau of Reclamation and California Department of Water Resources 2011). Therefore, there would be no impact on Chinook salmon competition for spawning areas as a result of implementing this alternative.

Disease. Reintroduced spring-run Chinook, may include or be supplemented by fish from an out-of-basin hatchery. These fish could stray into the Merced, Tuolumne, and Stanislaus rivers and increase the potential for the introduction and spread of hatchery-borne disease into San Joaquin River basin Chinook populations. However, given the methodology of quarantining any eggs and fish prior to locating the eggs or fish into the San Joaquin, the potential effects resulting from the introduction of disease to the existing populations on the Merced, Tuolumne, and Stanislaus rivers would be negligible .

4.5.3 Recreational Fishing

The impacts to recreational fishing would be the same as the impacts described for the reintroduction of spring-run Chinook/Proposed Action in section 4.3.3. There are no impacts to recreational fishing from the implementation of any of the Area Alternatives.

4.5.4 Commercial Fishing

The impacts to commercial fishing would be the same as the impacts described for the reintroduction of spring-run Chinook/Proposed Action in section 4.3.3. Under the Area Alternative 1 there would be no short-term impacts to commercial fishing and in the long-term there are potential beneficial impacts.

4.5.5 Hatchery Facilities

The impacts to hatchery facilities from the implementation of Area Alternative 1 would be the same as the impacts described for the reintroduction of spring-run Chinook/Proposed Action in section 4.3.5.

4.5.6 Land Use

If NEP Area Alternative 1 is implemented, all legal activities that would result in unintentional, incidental take would be included in the take exception for spring-run Chinook within the Restoration Area and also on the San Joaquin River and its tributaries between the confluence with the Merced River and Mossdale Landing. Within the experimental population area, persons or entities diverting or receiving water pursuant to applicable State and Federal laws would be carrying out an otherwise lawful activity. Therefore, this exception would apply to incidental take of CV spring-run Chinook salmon by those persons or entities, and this rule would not impose any water supply reductions, additional storage releases or bypass flows unwillingly on them.

Federal and state regulations would continue to apply under this alternative are listed in section 2.1.3.2 of this EA. Agricultural and forestry activities that could incidentally affect spring-run Chinook would be an exception from ESA section 9 take prohibitions. Thus there would be no impact on agricultural resources and forestry as a result of the Proposed Action.

Operations of the SWP and CVP would not be affected by the reintroduction of spring-run Chinook to the San Joaquin River. As outlined in the SJRRSA, reintroduction is required to not cause more than *de minimus*:water supply reductions on persons or entities diverting or receiving water pursuant to applicable State and Federal laws, which includes the Delta pumping facilities. The proposed rules include language that would redefine these activities as exceptions with regard to potential take of spring-run Chinook that originate from the San Joaquin River. This can be achieved by identifying San Joaquin River spring-run Chinook proportional contribution to take at the pumping facilities, relative to the take of spring-run Chinook from other watersheds, and excluding that amount from spring-run Chinook incidental take allowances established for Sacramento Valley origin fish. The method of these calculations would be identified each year by NMFS in a technical memorandum, issued by January 15th. This approach is similar to, and would be integrated with, incidental take calculations that have been applied to minimize take of other fish populations at the export facilities. Consequently the reintroduction would not add a regulatory burden to that process. Information for that calculation of proportionate take attributable to the reintroduction would be available. Additionally, until spring-run Chinook begin reproducing in the wild, all fish released into the San Joaquin River would be marked or identifiable. This would allow for several years of data on fish definitively from the reintroduction to inform methods for the calculation.

Therefore, the implementation of Area Alternative 1 would have *de minimus*, or no impact on Third Parties and their water use activities because of the reintroduction of spring-run Chinook.

However, steelhead is listed as a threatened species under the ESA. Steelhead already occurs in the San Joaquin River tributaries and areas downstream of the confluence of the San Joaquin River and the Merced River, and outside of the designated boundary of the Central Valley spring-run Chinook ESU. Actions that likely would cause take of spring-run Chinook in this area also likely would cause take of steelhead. There would be no change in the ESA regulatory environment for actions that may affect steelhead, thus the 4(d) exceptions of the NEP designation have limited effect, in this area, on potentially regulated entities because of the presence of steelhead. However, these 4(d) exceptions would ensure that the reintroduction of spring-run Chinook, alone, would have an undetectable impact on the specified water management actions.

4.5.7 Water Quality

Under Area Alternative 1, the impacts on water quality would be the same as the impacts described for the reintroduction of spring-run Chinook /Proposed Action in section 4.3.7. This alternative would not have a low effect on water quality.

4.5.8 Air Quality and Climate Change

The air quality and climate change impacts of Area Alternative 1 would only relate to the activities implemented for the reintroduction of spring-run Chinook, and would be the same as the impacts described for the reintroduction of spring-run Chinook/Proposed Action described in 4.3.8. The resulting emissions would have undetectable impacts to air quality or climate change.

4.6 Area Alternative 2 (preferred alternative)

Under Area Alternative 2, the NEP area includes the main stem of the San Joaquin River from below Friant dam to the upstream confluence of the Merced River (See Figure 2-2). Within the NEP area, take exceptions for spring-run Chinook would cover all take that occurs in the course of otherwise lawful activities. Direct take is prohibited. Take for research and scientific purposes would be allowed subject to permit requirements. Adipose fin-clipped fish are included in the limited take prohibitions.

Outside of the NEP area on the San Joaquin River and its tributaries from the confluence of the Merced River to Mossdale County Park, take of spring-run Chinook would be excepted for persons or entities engaged in diverting or receiving water pursuant to applicable State and Federal laws, when avoidance of take would impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on these third parties unwillingly. For the CVP and SWP operations and facilities in the south Delta, take of spring-run Chinook reintroduced to the San Joaquin River would be excepted if avoidance of that take would exceed the *de minimus* criteria in SJRRSA section 10011cc. The calculation to discount the contribution of these fish to existing Incidental Take authorization for spring-run Chinook would be defined by NMFS in an annual technical memorandum, as described under section 4.5.6, above.

This alternative would ensure that the experimental population designation in the San Joaquin basin would be wholly separate geographically from the remaining spring-run Chinook populations found within the Sacramento Basin and the potential spring-run Chinook populations of the Stanislaus, the Tuolumne, and the Merced Rivers, while affording the ESA regulatory relief envisioned in the SJRRSA. This area meets the wholly separate criteria of ESA section 10(j) as defined by FWS guidelines.

4.6.1 Federally Listed Species

4.6.1.1 Central Valley Spring-run Chinook Salmon

The environmental consequences of implementing Area Alternative 2 on spring-run Chinook are the same as the impacts of the reintroduction of spring-run Chinook/Proposed Action described in section 4.3.1.1, except that the area of the experimental population would be separate from the other potential populations that may be in the San Joaquin River tributaries. Spring-run Chinook that may already occur in the tributaries would not be covered by the ESA take exceptions within the NEP area for take incidental to all otherwise legal activities. However, take exceptions for persons or entities providing or diverting of water would cover incidental take of wild produced spring-run Chinook in the tributaries, as well as of reintroduced spring-run Chinook. This exception covers a limited range of activities, and these activities are already subject to ESA regulations as they apply to take for steelhead. In these areas, the habitat and life history requirements for steelhead and spring-run Chinook are similar, consequently it is expected that these take exceptions associated with the reintroduction of spring-run Chinook to the San Joaquin River would have a negligible to undetectable impact on any existing or reintroduced spring-run Chinook in the San Joaquin River tributaries.

It is likely that some reintroduced spring-run Chinook would stray into the tributaries. It is expected that straying would be within natural straying rates. Such movement would provide a normal level of genetic exchange, or of colonizing individuals in the case of an establishing or dependent population, and would not negatively affect any existing spring-run Chinook populations in these rivers.

4.6.1.2 Central Valley Steelhead

Although the area of the NEP and limited 4(d) rule would differ under Area Alternative 2, the impacts involving steelhead would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.1.2 for impacts involving Central Valley steelhead as a result of this alternative.

4.6.1.3 Southern DPS of Green Sturgeon

Although the area of the NEP and limited 4(d) rule would differ under Area Alternative 2, the impacts involving green sturgeon would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.3 for impacts involving green sturgeon as a result of this alternative.

4.6.2 Fish

Although the area of the NEP and limited 4(d) rule would differ under Area Alternative 2, the impacts involving fisheries would be the same as impacts of the reintroduction of spring-run Chinook./Proposed Action. See discussion section 4.3.2 for impacts involving fisheries as a result of this alternative**.**

4.6.3 Recreational Fishing

Although the area of the NEP and limited 4(d) rule would differ under Area Alternative 2, the impacts involving recreational fishing would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.3 for impacts involving fisheries as a result of this alternative.

4.6.4 Commercial Fishing

Although the area of the NEP and limited 4(d) rule would differ under Area Alternative 2, the impacts involving commercial fishing would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.4 for impacts involving commercial fishing Central Valley steelhead as a result of this alternative.

4.6.5 Hatchery Facilities

The impacts to hatchery facilities from the implementation of Area Alternative 2 would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action.

4.6.6 Land Use

If NEP Area Alternative 2 is implemented, fewer activities would be included in take exceptions for spring-run Chinook between the confluence with the Merced River and Mossdale Landing. However, steelhead is listed as threatened under the ESA and already occurs in this area. Actions that likely would cause take of spring-run Chinook also likely would cause take of steelhead. Hence there would be no change in the ESA regulatory environment for land use actions not included in the "Third Party" definition because such actions are already regulated by NMFS because of the presence of steelhead in the area between the proposed NEP and the spring-run Chinook ESU. However, the 4(d) exceptions would ensure that the reintroduction of spring-run Chinook, alone, would have minimal impact on the specified water management actions. Federal and state regulations that would continue to apply under this alternative including those listed in section 2.1.3.2 of this EA.

Delta pump operations would not be effected by the reintroduction of spring-run Chinook to the San Joaquin River. As outlined in the SJRRSA, reintroduction is required to have a *de minimus* effect on third party water users which includes the Delta pumping facilities. The proposed rules include language for these activities that provide exceptions to take of spring-run Chinook originating from the San Joaquin

River when avoiding such take would exceed the requirements of SJRRSA section 1001(c). One method by which this could be done would be to identify San Joaquin River spring-run Chinook proportional contribution to take, relative to the take of spring-run Chinook from other watersheds. The method of these calculations would be identified each year by NMFS in a technical memorandum, issued by January 15th. This approach is similar to, and would be integrated with, incidental take calculations that have been applied to minimize take at the export facilities for other fish populations. Consequently the program would not add a regulatory burden to that process. The SJRRP would monitor reintroduced spring-run Chinook as part of the program. Information for that calculation of proportionate take attributable to the reintroduction would be available. Additionally, until spring-run Chinook begin reproducing in the wild, all fish released would be marked or identifiable. This would allow for several years of data on fish definitively from the reintroduction to inform methods for the calculation. Therefore, the implementation of Area Alternative 1 would either have *de minimus*, or no impact on Third Parties and their water use activities because of the reintroduction of spring-run Chinook.

4.6.7 Water Quality

The impacts to water quality under Area Alternative 2 would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.7 for impacts involving water quality as a result of this alternative.

4.6.8 Air Quality

The impacts to air quality under Area Alternative 2 would be the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.8 for impacts involving air quality as a result of this alternative.

4.6.9 Climate Change

The impacts on climate change under Area Alternative 2 are the same as impacts of the reintroduction of spring-run Chinook/Proposed Action. See discussion section 4.3.8 for impacts involving climate change as a result of this alternative.

DURATION ALTERNATIVE ANALYSIS

4.7 Duration Alternative 1

Under this alternative, the 10(j) experimental population designation would be in effect through 2025; that is to say, the experimental population designation would sunset unless alternative rules are made. The environmental consequences of this alternative on all resources except Land Use are the same as the impacts described above for the reintroduction of spring-run Chinook/Proposed Action. The impacts to Land Use are analyzed below. Please refer to the analysis of the reintroduction of spring-run Chinook/Proposed Action for impacts to the other resources.

4.7.1 Land Use

If the NEP designation sunsets in 2025, the take exceptions for spring-run Chinook in the San Joaquin River would likely revert to the exceptions set forth in the existing 4(d) rule established for the ESU. Federal and state regulations would continue to apply under this alternative, including those listed in section 2.1.3.2 of this EA. The exceptions under the current 4 (d) rule are more restrictive than the associated take exceptions that would be established for the NEP or the *de minimus* exceptions established for the area between the NEP area and the designated boundary of the ESU. Activities permitted under the NEP and limited 4(d) rule would be provided take exceptions for more activities that may affect spring-run Chinook than what is permitted under the current ESU rule. If the NEP ends in 2025 and spring-run Chinook is still listed, individuals within the Restoration Area could be subjected to increased regulations. However, the SJRRSA provision that the reintroduction shall not impose more than *de minimus*: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws, does not sunset. With the sun setting of the NEP there is at minimum regulatory uncertainty whether new regulations would need to be adopted to meet the conditions of the SJRRSA. This would trigger an additional regulatory burden on the public for NMFS to prepare replacement regulations. Additionally, this would create an uncertain business environment for agricultural and forestry activities. The actual consequences of this alternative are difficult to quantify, but from a qualitative analysis this alternative could result in a negative impact to the human environment.

4.8 Duration Alternative 2 (preferred alternative)

Under the 10(j) Duration Alternative 2 there would be no pre-determined end to the experimental population designation. Therefore the take exceptions for spring-run Chinook within the NEP area would remain unless NMFS undertakes the rulemaking process to remove or otherwise modify the duration of the experimental population designation. This would only be done if and when warranted. The status of the essential or non-essential designation of the experimental population would be considered every five years during the status review of the species. The environmental consequences of this alternative on all resources except Land Use are the same as the impacts described above for the reintroduction of spring-run Chinook/Proposed Action. The impacts to Land Use are analyzed below. Please refer to the analysis of the reintroduction of spring-run Chinook/Proposed Action for impacts to the other resources.

4.8.1 Land Use

There are similar regulatory issues with Duration Alternative 2 not establishing an end point for the experimental population designation as Duration Alternative 1 set end point. In the case of closing the designation there is the possibility of having regulatory gaps which is not the case with Duration Alternative 2.

The major difference between Duration Alternative 1 and Duration Alternative 2 is that while the determination of the population's status would occur during the preparation of the 2024 Report to Congress, the existing designation of the NEP would not sunset automatically in 2025. This means that

regardless of the findings presented to Congress there would be regulatory continuity. Therefore there would be undetectable adverse impacts.

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5.0 SECTION 5 CUMULATIVE IMPACTS

NEPA defines cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts were identified for the SJRRP in the PEIS/R. However, cumulative negative impacts from NMFS' proposed designation of the NEP (via the proposed 10(j) and 4(d) Rules) and associated boundaries, would be minor, if at all measurable, on spring-run Chinook and not likely measurable on any other resource, with the exception of a negligible impact to Recreational Opportunities. Cumulative positive environmental effects are likely, owing to development and implementation of cooperative and comprehensive conservation measures to support the ongoing release, reintroduction, and reestablishment of a self-sustaining population of spring-run Chinook in the San Joaquin River.

Impacts on the environment are included in the resource analyses in section 4 Environmental Consequences. For example, the establishment of the NEP furthers the goals established by the Settlement and Draft Recovery Plan. The NEP, SJRRP restoration projects, and other activities such as construction of the conservation hatchery facility and future 10(a)(1)(A) permits would work in concert with other ongoing recovery and reintroduction efforts for spring-run Chinook and would enhance NMFS' flexibility and discretion in managing listed Central Valley salmon within the whole of the Central Valley. Monitoring activity outlined through 10(a)(1)(A) permits and special handling for scientific or salvage and rescue purposes under the existing 4(d) permitting protocol and adaptive management components of the FMP or San Joaquin River Conservation Hatchery HGMP, for example, would help ensure that the affected spring-run Chinook is adequately protected, should changing conditions in procedure or outside factors occur that may alter the course of the SJRRP, including lack of funding. Therefore, the incremental and cumulative impacts to spring-run Chinook would negligible. As noted in section 4.3.5, the individual 10(a)(1)(A) permits would need to identify collection locations and would need to also identify specific measures to reduce environmental impacts. Should collection activities occur either on private lands, or access to collecting areas crosses private land, the 10(a)(1)(A) permit would include the requirement that permission of the land owners and a discussion of what is required to access the collecting area and identification of any environmental effects. Having permission to access private land as a condition of the issuance of the 10(a)(1)(A) would ensure that any potential impacts to private landowners would be identified by the NEPA analysis required for the issuance of that permit.

Cumulatively, the NEP designation would be consistent with the goals and objectives of the numerous ongoing restoration activities in the NEP area. The area in which the NEP is to be established has been degraded in terms of fish habitat and access for salmon to spawning areas from past actions, most importantly, by the direct, indirect, and cumulative impacts from dam development and water withdrawals. The establishment of the proposed NEP and 4(d) rules is the result of long-term negotiations between the stakeholders in the region and the Settlement process. The NEP along with the establishment of take exceptions for both the area within the NEP and outside the NEP area may result in greater numbers of San Joaquin River spring-run Chinook being taken than under the more restrictive

exceptions that apply to the existing ESU. These allowances represent conditions necessary to obtain support of the local stakeholders to allow Congressional authorization to implement the Settlement. The flow and habitat improvements to be implemented by the SJRRP represent the best opportunity to have spring-run Chinook reintroduced to the San Joaquin River. With the successful reintroduction to the San Joaquin River, combined with ongoing recovery actions, there is an increased likelihood of recovery for the species as a whole.

In addition to recovery planning, Federal agencies must consult with NMFS under section 7 of the ESA on any action that is likely to adversely affect listed species under NMFS jurisdiction, including spring-run Chinook . Non-federal actions that may result in "take" of ESA listed species as defined through section 9 or 4(d) are required to obtain appropriate authorization to avoid violation of the law. Reintroduction of ESA listed species to an area where they do not currently occur could add to the regulatory requirements for Federal and non-federal actions. However, the proposed NEP designation provides substantial regulatory relief from section 9 take prohibitions, hence cumulative effects of the reintroduction as a NEP on present and future activities would be negligible. Also, when a NEP is in effect, the section 7(a)(2) consultation requirement would be suspended, but the section 7(a)(4) conference requirement would remain in effect. A conference between a Federal agency and the NMFS consists of informal discussions concerning an action that is likely to jeopardize the continued existence of the proposed species or result in the destruction or adverse modification of the proposed critical habitat at issue. The occurrence of conferences under the Proposed Action are likely to be limited, hence the cumulative effect of the reintroduction as a NEP on regulatory requirements for present and future activities would be negligible.

In the long-term, however, the designation may result in net benefits to listed spring-run Chinook if conservation measures supporting reintroduction are successfully developed and implemented during the established NEP period. Incidental take of spring-run Chinook that would continue under the NEP designation would be consistent with Congressional intent for section 10(j) of the ESA to foster improved habitat and abundance conditions in the long-term while ongoing, lawful landowner activities are occurring concurrent to the NEP designation.

As discussed, the cumulative impacts of the SJRRP were identified in the SJRRP PEIS/R. However, there are two specific impact discussions that are reproduced herein. These discussions include the analyses of Flood Management and Climate Change, along with the possible impacts of Climate Change on the fish population of the Proposed Action.

Chapter 26 of the SJRRP PEIS/R discusses flood protection actions on a project- and program-level the potential benefits and risks of the implementation of the SJRRP to the flood system. Additionally, planning is occurring, in coordination with the Central Valley Flood Protection Board (CVFPB), to address concerns and make informed decisions related to the implementation of site-specific channel and levee improvement projects under the SJRRP. This includes the formation of a Channel Capacity Advisory Group, coordination with the CVFPB on site-specific projects to specifically discuss challenges related to flood control, and coordination of preliminary design concepts with flood agencies to best implement the program in a way that does not cause adverse impacts to the flood system, its maintenance, or its operations. Climate change is predicted to bring profound changes to California's natural

environment. Hayhoe et al. (2004) describe the results of four climate change models: compared with 1960–1991, by 2070–2099 statewide average annual temperatures would 4.1°F–10.4°F higher, average annual precipitation would be reduced by >3.9 inches, sea level would have risen 7.5–16.1 inches, snowpack would have declined by 29%–89%, and change in annual inflow to reservoirs would decline by >20%. (One model predicted slight increases in precipitation, snowpack, and reservoir inflow.).

Changes in vegetation are also predicted (e.g., substantial decreases in the extent of alpine/subalpine forest, evergreen conifer forest, mixed evergreen woodland, and shrubland; and increases in mixed evergreen forest and grassland (Hayhoe et al. 2004). Climate change is likely to cumulatively affect native fishes and amphibians by increasing water temperatures (hence reducing dissolved oxygen), reducing stream flows, and increasing the likelihood of drought-related fires. A rise in sea level would lead to increasing rates of erosion, sedimentation, flooding, and inundation of low-lying coastal ecosystems. With reductions in snowmelt runoff, peak flows may come earlier as rainfall contributes more, which could affect species such as Central Valley spring-run Chinook that have evolved their life history based on predictable runoff patterns (Williams 2006). An example of this potential vulnerability is the Butte Creek population of spring-run Chinook. Butte Creek is at a lower elevation than the sources of the San Joaquin River. With reduced snowpack owing to climate change, the potential resulting flows would be at temperatures that would reduce the viability of reproduction, particularly at elevations lower than those found in the San Joaquin watershed, and if there are no upstream reservoirs that could store water at cooler temperatures. Increasing temperatures also may increase metabolic needs of fish predators and increase predation (Lindley et al. 2007, Thompson et al. 2011). Moyle et al. (2008) qualitatively assessed the potential for climate-related impacts on California's native salmonids (Table 5-1). Their analysis indicated that the majority of taxa (18 of 29, 62%) were vulnerable in all or most of the watersheds inhabited; no taxon was invulnerable to climate change.

The PEIS/R for the SJRRP found that the Restoration Program would have an undetectable impact regarding cumulative greenhouse gas emissions. As part of the overall program, the potential greenhouse gas emission for establishment of the NEP would be minimal. There is the potential that climate changes would increase pressures on fish habitat from warming trends. However, the reintroduction of spring-run Chinook to the San Joaquin River may have a beneficial effect to the species. Waters of the San Joaquin River start at higher elevations than those of the Sacramento River. Therefore, it is possible that even with reduced snowpack, the waters generated would be cooler for longer periods than the Sacramento Branch of the Central Valley. It is possible that the reintroduced population may represent a potential refugia for the ESU (Bureau of Reclamation and California Department of Water Resources 2011).

The establishment of the experimental population and other SJRRP projects would work in concert with other ongoing recovery and reintroduction efforts and would enhance NMFS' flexibility and discretion in managing listed Central Valley salmon conservation. Monitoring and adaptive management would help ensure that the experimental population of spring-run Chinook is adequately protected and supported by restoration actions implemented through the SJRRP.

Because of the best management practices identified in the HGMP, which include methods and monitoring to protect the genetic integrity and to minimize hatchery influence, there would be no

cumulative adverse impacts if experimental population salmon naturally stray at normal levels to natal streams of existing spring-run Chinook populations.

1 Table 17. Qualitative Assessment of California Salmonids' Vulnerability to Climate Change

2

Vulnerability	**Taxon**
Vulnerable in all watersheds inhabited	Klamath Mountains Province summer steelhead[SSC]; northern California coastal summer steelhead[FT, SSC]; central California coast steelhead[FT]; south-central California coast steelhead[FT, SSC]; southern steelhead[FE, SSC]; upper Klamath–Trinity Rivers spring-run Chinook salmon[SSC]; Central Valley late fall–run Chinook salmon[SC, SSC]; Sacramento winter-run Chinook salmon[FE, SE]; Central Valley spring-run Chinook salmon[FT, ST]; southern Oregon– northern California coastal Coho salmon[FT, ST]; central California coast Coho salmon[FE, SE]; McCloud River redband trout[SSC]; Eagle Lake rainbow trout[SSC]; Lahontan cutthroat
Vulnerable in most watersheds inhabited (possible refuges present)	Central Valley steelhead[FT]; upper Klamath–Trinity Rivers fall-run Chinook salmon; California coast Chinook salmon[FT]; Goose Lake redband trout[SC]; coastal cutthroat trout[SSC]
Vulnerable in portions of watershed inhabited (e.g., headwaters and lowermost reaches of coastal streams)	Northern California coastal winter steelhead[FT]; Central Valley fall-run Chinook salmon[SC]; California golden trout[SC, SSC]; Little Kern golden trout[FT]; Kern River rainbow trout[SC, SSC]; Paiute cutthroat trout[FT]; mountain whitefish
Low vulnerability due to location, cold water sources, or active management	Klamath Mountains Province winter steelhead; resident coastal rainbow trout; southern Oregon–northern California coastal Chinook salmon
Not vulnerable to medium to high population loss due to climate change	None

Notes:

FE = endangered (federal).

FT = threatened (federal).

SE = endangered (state).

ST = threatened (state).

SC = species of concern (federal).

SSC = species of special concern (state).

Source: (Moyle et al. 2008).

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Appendix 1: Comment Letters and Responses to Comments

Proposed Rule and Draft Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam

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Statement by Burt Bundy, President of Mill Creek Conservancy on February 5, 2013

1. The Endangered Species Act specifically prohibits collections that would jeopardize existing populations of Spring-run. Due to the current high risk of extinction, Mill Creek spring-run stock should be removed from consideration in the All Donor Stock Sources Alternative in establishing the San Joaquin experimental population.

Response #1

2. The Draft Environmental Assessment needs to reference population levels and rates of recovery warranting reclassifying wild spring-run populations as 'stable with a low risk of extinction', before any Mill Creek fish are considered for collection.

Response #2

3. I question the determination that San Joaquin stocks and Sacramento stocks would not mix. Conditions in the Delta are such that returning fish are confused by the many pumps, diversions and flows that affect their historic migrations. Substantial straying has occurred with several other species.

Response #3

4. Once habitat conditions in the San Joaquin can sustain populations of spring run, reassess whether wild stream-type salmon are appropriate as a genetic source.

Response #4

Our recommendation: Proceed with San Joaquin River Restoration projects proposed to improve habitat, flows and water management. Assess salmon population response using introduced surplus Central Valley hatchery fall-run and spring-run Chinook. Monitor the volitional re-colonization of wild spring-run Chinook before any collection of wild stock from a Sacramento River tributary is considered. If wild spring run populations increase and stabilize, and the habitat in the San Joaquin can support Mill Creek genetic stock, local shareholders will participate in the Section 10(a)(1)(A) permitting process, including stock selection and collection methods.

Response #5

R2

C G Spies

PO Box 171

Pequabuck CT 06781

RECEIVED

JAN 25 2013

Nat'l Marine Fisheries Svs.
Sacramento, CA

25 Jan 13

Protected Resources Div

Southwest Region

National Marine Fisheries Service

Ste 5-100

650 Capitol Mall

Sacramento CA 95814

Please send me a copy of the list of references cited in the proposed rule "Designation of a Nonessential Experimental Population of Central Valley Spring-Run Chinook Salmon Below Friant Dam in the San Joaquin River, CA", published in the 16 Jan 13 Federal Register.

Why isn't this posted at regulations.gov?

Response #6

Thank you.

C G Spies

R2

US Dept of Commerce
NOAA Fisheries, NMFS
Sacramento Office
850 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Subject: San Joaquin Restoration Program

Gentlemen:
The following negatives, both inherent and external, associated with the re-watering for salmon fishery restoration in the upper reaches of the San Joaquin are quite daunting:

- boaters even cannot find the main channel at the Mendota Pool
- flood channels are not known for friendly salmon transportation corridors
  They are not geologically or morphologically vital
  They have a lack of shading
  There is a lack of woody debris etc.
- there is a limited water supply; increasing as snowpack diminishes
- the diminished oxygen levels from the lake depth are not replenished downstream
- three hatcheries involved mean increased contagion vectors
- there is a total lack of spawning habitat; gravel dumping is anthropomorphic thinking
- dams , of course limit passage and oxygen no plans for oxygenation is projected or for ladders or other artificial passage
- poaching is already a concern in the area often using nets or multiple lines
- non- human predators from cats to catfish, or stripers, is considered; they like the warmed water
- Rural and municipal discharges are impacts to appropriate water quality.

Response #7

Considering the foregoing, it can be seen why the project operation is loathe to publish results and problems but on a 5 year cycle. Of course, this is indicative of mindset where management uses various magic bullets du jour as an adaptive management style. With the various negatives and constraints placed upon the project, it could be dismissed as being a biodoggle were it not for downstream impacts. Exotic invertebrates and weeds will be readily transported downstream. Minimum mitigation for this can occur by treating the refuges and down river areas like lakes and reservoirs treat boats now and by partnering with the California Invasive Plant Council, Boating and Waterways, Department of Water Resources and local water districts on in identification and mapping program

Sincerely,
Dennis Fox

Dennis Fox
918 Blossom St.
Bakersfield, CA 93306

KRONICK MOSKOVITZ TIEDEMANN & GIRARD
A LAW CORPORATION

March 4, 2013

BY E-MAIL: SJRSPRING.SALMON@NOAA.GOV

Protected Resources Division, Southwest Region
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re: **Comments of the San Luis & Delta-Mendota Water Authority Regarding Designation of a Nonessential Experimental Population of Central Valley Spring-Run Chinook Salmon Below Friant Dam in the San Joaquin River (NOAA-NMFS-2012-0221) (published at 78 Fed. Reg. 3381, January 16, 2013)**

Dear National Marine Fisheries Service:

We submit this letter as the comments of our clients, the San Luis & Delta-Mendota Water Authority and the Westlands Water District (together, the "Authority"). As the National Marine Fisheries Service ("NMFS") is aware, the members of the San Luis & Delta-Mendota Water Authority receive their water supply primarily through water conveyed through the Delta and pumped at the Jones Pumping Plant and the Banks Pumping Plant located near Tracy, California. Westlands Water District is a member of the San Luis & Delta-Mendota Water Authority, and serves an area encompassing some six hundred thousand acres of fertile agricultural lands in the western San Joaquin Valley.

Our clients appreciate this opportunity to comment on the proposed rule relating to designation of a nonessential experimental population of Central Valley Spring-Run Chinook salmon below Friant Dam in the San Joaquin River (NOAA-NMFS-2012-0221) ("Proposed Rule"). In this letter the Authority also provides comments on the Draft Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam ("Draft EA"), and on the NMFS Technical Memorandum regarding Considerations for Accounting of Incidental Take and Triggers at the Delta Federal and State Export Facilities of Reintroduced San Joaquin River Spring-Run Chinook Salmon (Jan. 28, 2013) ("Technical Memorandum").

The Proposed Rule is one step in the process of the reintroduction effort for spring-run Chinook salmon ("spring-run Chinook") on the San Joaquin River under the San Joaquin River Restoration Program as mandated by the stipulated settlement in *NRDC v. Rodgers* ("Stipulated

Settlement"),[1] and approved by Congress through the San Joaquin River Restoration Settlement Act, P.L. 111-11, 123 Stat. 1349 ("SJRRSA"). The SJRRSA requires the Secretary of Commerce to issue a rule under section 4(d) of the Endangered Species Act ("ESA") and mandates that the rule "provide that the reintroduction will not impose more than de minimus: water supply reductions, additional storage releases, or bypass flows on unwilling third parties due to such reintroduction." (SJRRSA, § 10011(c)(2), (3).) Under the SJRRSA, "third party" means "persons or entities diverting or receiving water pursuant to applicable State and Federal laws and shall include Central Valley Project contractors outside of the Friant Division of the Central Valley Project and the State Water Project." (SJRRSA, § 10011(c)(1).) The Authority's member agencies receive water pursuant to applicable State and Federal laws and are Central Valley Project ("CVP") contractors outside of the Friant Division of the CVP. Therefore, the Authority's member agencies are "third parties" for the purposes of the SJRRSA and the Authority is submitting these comments to ensure that the SJRRSA's "*de minimus*" mandate is implemented through the 4(d) take provisions. The SJRRSA further and more broadly provides that "[e]xcept as otherwise provided in this section, the implementation of the Settlement and the reintroduction of California Central Valley Spring Run Chinook salmon pursuant to the Settlement and section 10011, shall not result in the involuntary reduction in contract water allocations to Central Valley Project long-term contractors, other than Friant Division long-term contractors." (SJRRSA, § 10004(f).) Accordingly, it is essential that the Proposed Rule be crafted to avoid water supply impacts to the Authority members from reintroduction of spring-run Chinook.

The Authority appreciates NMFS's efforts to draft the Proposed Rule to ensure that the reintroduction of an experimental spring-run Chinook population to the San Joaquin River does not impose more than *de minimus* water supply reductions, additional storage releases, or bypass flows on unwilling third parties, as mandated by the SJRRSA. The Authority also appreciates the out reach by NMFS staff before and during the comment period to explain its program and solicit input. However, the Authority is concerned that the Proposed Rule and the draft Technical Memorandum, as currently drafted, may not adequately protect unwilling third parties against water supply impacts that could result from reintroduction of spring-run Chinook salmon to the San Joaquin River. At least, there is substantial uncertainty whether the measures identified so far will achieve the statutory mandate, and resolution of some important aspects of the problem is being deferred to annual decisions. This comment letter identifies those concerns and is responsive to NMFS's specific request for feedback on the extent to which NMFS has provided protections for third parties as required by the SJRRSA. (78 Fed.Reg. 3381, 3387.) The Authority looks forward to working with NMFS in refining the Proposed Rule and the Technical Memorandum, and on issues with implementation going forward.[2]

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[1] Stipulation of Settlement dated September 13, 2006, in *NRDC v. Rodgers*, Case No. CIV. S-88-1658-LKK/GGH, United States District Court, Eastern District of California.

[2] The Authority incorporates by reference its previous comments related to the San Joaquin River Restoration Program. The comments in this letter focus primarily on impacts to CVP and State Water Project ("SWP") export pumping and related operations, a matter that affects all Authority members.

A. Comments Regarding Proposed Rule

1. The Proposed Rule Is Lacking A Provision Mandated By Section 10011(c)(3) Of The SJRRSA

SJRRSA section 10011(c)(2) requires NMFS to issue a final rule pursuant to section 4(d) of the ESA. SJRRSA section 10011(c)(3) provides that "[t]he rule issued under paragraph (2) shall provide that the reintroduction will not impose more than de minimus: water supply reductions, additional storage releases, or bypass flows on unwilling third parties due to such reintroduction." The Proposed Rule, however, does not include such a provision.

Response #8

We propose that NMFS add a new paragraph (7) to the Proposed Rule. That new paragraph (7) could simply follow the words of the statute, and include its definition of the "third parties." Paragraph (7) would then provide: "The reintroduction of CV spring-run Chinook salmon shall not impose more than de minimus water supply reductions, additional storage releases, or bypass flows on unwilling third parties due to such reintroduction. A 'third party' means persons or entities diverting or receiving water pursuant to the applicable State and federal laws and shall include Central Valley Project contractors outside of the Friant Division of the Central Valley Project and the State Water Project."

2. The Proposed Rule Should Include Authorization For All Take NMFS Attributes To CVP And SWP Operations, Not Only Take "At" The Export Pumps

Paragraph (6)(ii) of the Proposed Rule provides the following "special take exemption" outside of the designated experimental population area:

> Any taking of CV spring-run Chinook salmon at the CVP and SWP projects in the Delta that originates from reintroduction to the San Joaquin River. NMFS will annually determine by January 15 the share of take at the CVP and SWP facilities that originates from the reintroduction to the San Joaquin River.

Response #9

(78 Fed.Reg. at 3389.) As drafted, this special take exemption could be interpreted to cover only take at the CVP and SWP pumps in the Delta. However, take of spring-run Chinook at the CVP and SWP Delta export pumping facilities is only one form of incidental take that NMFS has attributed to the CVP and SWP (collectively, the "Projects").

Individual Authority members, however, may be further impacted by reintroduction activities upstream of the Delta in the San Joaquin River. We expect that those member agencies will provide additional comments.

In the Biological Opinion on the Long-Term Operations of the Central Valley Project and State Water Project (June 4, 2009) ("2009 Salmonids BiOp"), NMFS described the Projects' take in the Delta as follows:

> In the Delta, incidental take in the form of death, injury, and harm to juvenile and adult . . . spring-run [Chinook salmon] . . . is anticipated due to changes in the Delta hydrology created by the operation of the DCC gates and at Jones (CVP) and Harvey Banks (SWP) export pumping plants (Delta pumping plants). This take includes reduced survival of juvenile . . . spring-run . . . diverted through the DCC into the central Delta from: (1) elevated water temperatures and poorer water quality within the central Delta; (2) losses due to entrainment at unscreened water diversions within the central Delta; (3) predation associated with the waterways of the central and southern Delta; (4) reverse flow conditions as a result of CVP/SWP pumping; and (5) direct loss at the Delta pumping facilities within the southern Delta. In addition, delays and increased straying are expected when adult salmonids encounter the backside of the DCC gates in the closed position after moving upstream through the Mokelumne River system from the San Joaquin River system.

Response #9

(2009 Salmonids BiOp, at p. 773.) Since NMFS has previously concluded that operations of the SWP and CVP result in incidental take in a variety of ways, the special take exemption for SWP and CVP operations should be broad enough to cover all the forms of incidental take of reintroduced spring-run within the Delta that NMFS may attribute to the Projects.[3]

To address the broad scope of effects that NMFS attributes to CVP and SWP operations, the Authority requests that the first sentence of the proposed special take exemption, under section 223.301(b)(6)(ii), be revised to read as follows: "Any taking of CV spring-run Chinook salmon related to CVP and SWP operations and facilities . . .." " Likewise, the second sentence should be amended to read: "NMFS will annually determine by January 15 the share of take related to the CVP and SWP operations and facilities . . .." These edits would result in including take from any CVP and SWP operations within the exemption, regardless of the geographic location where take occurs.

---

[3] The Authority disagrees with the broad scope of incidental take and other effects on spring-run Chinook that NMFS attributes to Project operations, and it has explained that disagreement in other forums. The point here is only that, correct or not, NMFS's view of take related to Project operations may result in water supply impacts through regulatory action unless that take is exempted.

3. The Exemption For CVP and SWP Operations Should Apply To All Progeny Of The Reintroduced Fish, And Any Spring-Run Chinook That Are Spawned In The San Joaquin River Or Its Tributaries

The exemption in paragraph (6)(ii) of the Proposed Rule is limited to any spring-run Chinook salmon that "originates from the reintroduction to the San Joaquin River." The preamble to the Proposed Rule explains that the "special take exemptions will apply to fish that originate in the San Joaquin River." (78 Fed.Reg. at 3386.) These two descriptions differ, and hence it is not clear precisely what fish will be included within the exemption in paragraph (6)(ii).

The phrase "originates from the reintroduction" in the Proposed Rule presumably includes spring-run Chinook that are planted in the San Joaquin River and any of their progeny within the class of fish subject to the exemption. That would include any progeny of the reintroduced fish that in later generations may stray and spawn in tributaries of the Sacramento River. The Authority agrees those fish should be included within the scope of the exemption.

However, in another respect the phrase "originates from the reintroduction" defines the fish that are within the exemption too narrowly, and more narrowly than the preamble suggests NMFS intended. The progeny of any spring-run Chinook salmon that are already in the San Joaquin River system, and the progeny of future strays from the Sacramento River system, arguably would not be fish that "originate[d] from the reintroduction." By contrast the preamble suggests those fish would be within the exemption. That is so because any spring-run Chinook that are spawned in the San Joaquin River, regardless of the origin of their parents, would "originate in the San Joaquin River."

Response #10

Paragraph 6(i) creates an exemption for take in the lower San Joaquin River and its tributaries resulting from the diversion or receipt of water. That exemption applies to take of all "CV spring-run Chinook salmon," regardless of whether the taken fish are reintroduced fish or their progeny. We understand this choice was based at least in part on the difficulty of distinguishing among spring-run Chinook salmon once they are in the San Joaquin River system.

Likewise, the fish subject to the exemption in paragraph 6(ii) for CVP and SWP operations and facilities should include all spring-run Chinook salmon that result from spawning in the San Joaquin River, regardless of parentage. That would be consistent with the choice reflected in paragraph 6(i), and with the intent expressed in the preamble. It would also serve to implement section 10004(f) of the SJRRSA, which provides that reintroduction must not result in reduced CVP or SWP contract water allocations.

In sum, paragraph (6)(ii) should be amended to include within the exemption both the spring-run Chinook salmon that are planted in the San Joaquin River fish and their progeny

(wherever they may later spawn), and also any spring-run Chinook salmon that are produced through spawning in the San Joaquin River, regardless of parentage.

Response #10

4. The Final Rule Should Be As Definite As Possible About How NMFS Will Ensure No More Than *De Minimus* Water Supply Impacts From Reintroduction

The Proposed Rule defers many of the details regarding how NMFS will avoid affecting water supply to later, annual decisions. Paragraph 6(ii) of the Proposed Rule provides that NMFS will annually determine by January 15 the share of take that originates from reintroduction of spring-run Chinook. It further provides:

> This determination will provide a methodology for deducting San Joaquin River origin spring-run Chinook salmon from the operational triggers and incidental statements associated with any biological opinion that is in effect at the time for operations of the CVP and SWP facilities.

Response #11

The preamble to the Proposed Rule further explains:

> [f]or take at the CVP and SWP facilities in the Delta, NMFS will annually calculate and document the proportionate contribution of CV spring-run Chinook salmon originating from the reintroduction to the San Joaquin River. NMFS will document this calculation by January 15 each year and will describe the method for calculating and deducting this share of CV spring-run Chinook salmon take from the operational triggers and incidental take statements associated with the June 2009 Biological Opinion on the Long-term Operations of the CVP and SWP or subsequent future Biological Opinions.

(78 Fed.Reg. at 3386.)

In addition, the Authority has reviewed the draft Technical Memorandum, which analyzes how the terms of the incidental take statement or operational triggers in the current, 2009 Salmonids BiOp may be triggered as a result of reintroduction of spring-run Chinook salmon, and NMFS's potential responses to those occurrences to prevent loss of water supply.

It is important that the regulation NMFS adopts now to prevent water supply impacts from reintroduction be as robust and definite as possible. Authority members already face substantial water supply uncertainty each year from the annual application of the 2009 Salmonids BiOp and the biological opinion regarding the delta smelt. Deferring resolution to

annual decisions about how to account for the impacts of reintroduced fish on water supply will increase uncertainty and tension each year regarding how potential impacts to water supply will be measured and avoided.

The current version of the Proposed Rule does not provide much certainty or definition. It defers to annual decisions regarding what proportion of take at the Project pumps, or fish counted under operational triggers, are of fish that resulted from implementation of the San Joaquin River Restoration Program. The method for making those determinations is not specified in the Proposed Rule, and apparently may change over time. The draft Technical Memorandum analyzes what effects the reintroduced fish may have under the 2009 Salmonids BiOp, and explores methods of accounting for the impact of the reintroduction program. But the Proposed Rule does not incorporate those or any other methods for making the annual determinations. Nor does the Proposed Rule include any criteria or standards for the methodology or annual decisions. There is no reason to postpone finalizing methods. The methods should be developed before the reintroduction occurs, and the uncertainties of the methods chosen should be disclosed and accounted for in implementation.

The Authority therefore urges NMFS to be as definite as possible in the regulation it adopts, and that the regulation minimize the scope of what NMFS will decide each year. We offer the following principles that should guide the regulation NMFS adopts:

Response #12

The Method Chosen Must Ensure NMFS Will Meet The Statutory Mandate: Whatever method NMFS adopts to account for the effects of reintroduction, that method must ensure that the agencies will meet the requirement for no more than *de minimus* water supply impacts. To the extent that the method NMFS chooses is inaccurate or incomplete, or involves substantial uncertainty, NMFS risks violating the statutory mandate. NMFS should therefore adopt a method that avoids causing water supply loss because of limited information. In implementation, it should account for uncertainty to ensure that it is meeting the *de minimus* mandate. For example, if the method chosen involves making an estimate of the number of out-migrating spring-run Chinook from the San Joaquin River system, NMFS should rely on the estimate at the higher end of the range.

Response #13

The Process For Annual Determinations Should Allow For Notice And Comment: To the extent that the regulation NMFS ultimately adopts still retains a provision for annual decisions, it should allow water users an opportunity to review and provide comment on the annual determination before the determination becomes final.

Response #14

Operational Triggers: The Proposed Rule and draft Technical Memorandum appropriately recognize that water supply impacts may result not only from exceeding the take estimated in the incidental take statement in the 2009 Salmonids BiOp, but also from "operational triggers" in the reasonable and prudent alternative. It is essential that the method adopted ensure that operational restrictions are not imposed on Project operations as a result of

Response #15

the presence of reintroduced spring-run Chinook salmon, whether under the incidental take statement or the terms of a reasonable and prudent alternative.

Response #15

Allowing For Changes In Regulations Including Biological Opinions: To comply with the statutory mandate, NMFS will have to account for changes in regulations affecting Project operations. The effects of reintroduction on water supply may change with changes in the NMFS biological opinion applicable to spring-run Chinook salmon and CVP and SWP operations. The Proposed Rule at least partially accounts for that circumstance by providing that the annual determinations will be made with reference to the "biological opinion that is in effect at the time."

Response #16

5. Specific Comments On The January 28, 2013 Draft Technical Memorandum

The Authority understands that the Technical Memorandum is in draft. It further understands that NMFS staff are seeking input on what methods to use to account for the impact of spring-run Chinook salmon on water project operations, and accomplish the *de minimus* statutory mandate. Authority staff have committed to meeting with and providing further input to NMFS on these topics. The Authority appreciates NMFS acknowledgement of its obligation to avoid water supply impacts and its willingness to accept further input from now until the time the Proposed Rule is finalized. Below, we provide some comments regarding the current version of the Technical Memorandum.

The Technical Memorandum accurately observes that under the 2009 Salmonids BiOp, the introduction of additional spring-run Chinook to the San Joaquin River may affect current water project operations through the 1) the non-clipped winter-run take level method of identification based on length at date criteria, and 2) RPA actions IV.3.1 and IV.3.3 method of identifying non-clipped "older juvenile" Chinook based on length at date criteria.

Response #17

The Technical Memorandum relies upon the Butte Creek yearling spring-run release and recapture experiments of 2005 and 2006 to conclude that it is unlikely the San Joaquin River yearling spring-run will occur within the winter-run length range. However, in those experiments there were only 5 data points total, one year was a flood event, and 1 of the 4 fish was in the winter-run length range. There are not enough data to conclude the San Joaquin River yearling spring-run would not occur within the winter-run length range. In addition, genetic analysis of Mill and Deer Creeks juvenile spring-run Chinook resulted in yearling sized fish occurring within the winter-run length range. We therefore do not agree that reintroduced fish will not trigger criteria based on salvage of winter-run length fish.

The methods NMFS proposes to account for the number of San Joaquin River yearling spring-run salvaged at the CVP and SWP pumps are incomplete due to: 1) not disclosing the variation in the point estimates of either population sizes or survival rates at the various life stages of yearling spring-run; 2) not acknowledging relatively recent information on survival

rates on San Joaquin River juvenile Chinook through the San Joaquin River and Delta; and 3) not discussing the potential effect of the large straying rates of Sacramento Chinook into the San Joaquin River in introduced spring-run.

One of the factors NMFS will have to account for in assessing salvage at the Projects' pumps is the closer proximity of fish emigrating from the San Joaquin River system to the pumps. Salvage at the pumps should therefore reflect a relatively higher percentage of fish emigrating from the San Joaquin River system than the percentage from the Sacramento River system.

The Technical Memorandum proposes the possibility of using sentinel fish as surrogates for San Joaquin River yearling spring-run. However, there are potential problems with this method that are not addressed. These issues include the source and/or availability of those hatchery fish, and the effect of introducing those sentinel fish into the San Joaquin River and the potential for interbreeding.

The Technical Memorandum proposes some monitoring to try to determine the timing of San Joaquin River yearling spring-run emigration. It does not identify the entities that would conduct the monitoring, or sources of money for that monitoring. Considering funding limitations that exist now, it is uncertain if the monitoring will be implemented.

Response #17

The Technical Memorandum observes that accounting for naturally spawned spring-run Chinook from the San Joaquin River will be more challenging. NMFS is apparently deferring a decision on the final methodology to determine what proportion of older juvenile salvage at the CVP and SWP pumps resulted from natural spawning. However, the available methods for determining the proportion of San Joaquin River yearling Chinook are already understood, and there is little likelihood methods will change significantly in the near future. As the Technical Memorandum observes, it is possible now to do a genetic analysis of parentage. Granted, it is expensive, and must be done every year on a majority of the population. But it can be done, and it can be used for real-time decisions.

In sum, the Authority has a number of concerns with the approach reflected in the Technical Memorandum, and welcomes the opportunity to provide further input and suggestions as NMFS develops a final rule prior to reintroduction.

B. Comments Regarding the Draft EA

1. The Purpose And Need Statement Should Be Revised

The Draft EA states that "The purpose of the Proposed Action is to reintroduce spring-run Chinook into the San Joaquin River, by implementing the provisions of the Restoration Act, thereby fulfilling aspects of the Settlement, the Restoration Act, and elements of the Draft Recovery Plan." (Draft EA, at 1-10.) The Draft EA states that the "need for the action is to

Response #18

restore and maintain fish populations in the mainstem San Joaquin River, including Chinook salmon, in order to implement the provisions of the Settlement as conditioned by the Restoration Act." (*Id.*) The purpose and need statement is too broad, in that it describes the overall purpose of the San Joaquin River Restoration Program. The Proposed Rule serves a narrower function within that broader program.

Response #18

The current "need" statement is overly broad as to "fish populations." Although the Stipulated Settlement states that the "Restoration Goal" is "to restore and maintain fish populations in 'good condition' in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally-reproducing and self-sustaining populations of salmon and other fish," the Proposed Action here is focused on the reintroduction of spring-run Chinook. (Stipulated Settlement, at 4.) Therefore, the "need" for the proposed action is not the broader goal of restoring and maintaining "fish populations," but rather, to restore and maintain a population of spring-run Chinook.

As a part of focusing the statement of purpose and need for the Proposed Rule, it should be revised to include the statutory mandates that NMFS adopt a rule under ESA section 4(d) governing incidental take, and that reintroduction not impose more than *de minimus* water supply reductions, additional storage releases, or bypass flows on unwilling third parties due to such reintroduction. In addition, the statement should reflect the requirement of SJRRSA section 10004(f).

2. The Proposed Rule's Take Exemption Will Need To Be Revised To Satisfy The Objective Of *De Minimus* Water Supply Reductions

Response #19

The Draft EA identifies the following as one of the objectives of the Proposed Action:

> [p]romulgation of take exemption measures using section 4(d) of the ESA for the conservation of the species, and to ensure that spring-run Chinook reintroduced to the San Joaquin River will not impose more than *de minimus* water supply reductions, additional storage releases, or bypass flows on unwilling third parties, as defined under Restoration Act section 10011(c)(1), due to such reintroduction.

(Draft EA, at 2-1.) The Authority appreciates that NMFS is identifying satisfaction of the SJRRSA's "*de minimus*" mandate as one of the objectives of the Proposed Action. However, the Authority is concerned that the proposed 4(d) take exemptions do not adequately ensure that the "*de minimus*" mandate will be satisfied. To ensure that the stated "*de minimus*" objective is satisfied, the Authority requests that NMFS revise the special take exemption for CVP and SWP facilities and operations, as described in Section A. of this comment letter.

3. The Section 4(d) Rule Alternatives Analysis Should Analyze Alternative Ways To Accomplish The "De Minimus" Mandate

The Draft EA does not discuss or analyze alternative ways to accomplish the *de minimus* mandate in the SJRRSA. By contrast, the Draft EA includes alternatives analysis regarding donor stock, defining the geographic area for the experimental population, and duration of designation. NMFS's NEPA analysis should include an analysis of alternatives for accomplishing the *de minimus* mandate. Refocusing the statement of purpose and need, as discussed above, would help drive an improved alternatives analysis.

The Draft EA states:

> The Restoration Act requires NMFS establish a 4(d) rule governing incidental take of reintroduced spring-run Chinook that also ensures minimal impact from reintroduction to specific third party water users. Congressional intent is clearly stated that the effect of the reintroduction shall not incur additional liabilities to specific facilities that already affect spring-run Chinook of the ESU . . . It must apply to the ESU in a way to account for, and to discount the incidental take of individuals generated by the reintroduction to the San Joaquin River as a result of diverting or receiving water pursuant to Federal and State water rights.

Response #20

(Draft EA, at 2-3.) This statement makes it clear that the 4(d) rule must ensure that reintroduction does not result in adverse impacts to CVP and SWP water supplies, supplies that have already been reduced by regulations intended to protect spring-run Chinook and other listed fish. To satisfy the Congressional intent of the SJRRSA, NMFS must broaden the scope of the exemption applicable to CVP and SWP facilities and operations, as described above.

4. The Draft EA's Conclusion That Reintroduction Will Not Adversely Affect Agricultural Resources Or Land Use Assumes NMFS Will Be Successful In Avoiding More Than *De Minimus* Impact To Water Supplies

The Authority's members have suffered significant loss of water supply under the requirements in the 2009 Salmonid BiOp. This experience teaches that reintroduction of spring-run Chinook poses a substantial risk of further losses of water supply if NMFS does not implement firm and definite measures to avoid that impact.

Response #21

The Draft EA finds there will be no adverse effects on agricultural resources from reintroduction of spring-run Chinook salmon. It states:

> The Restoration Act requires that reintroduction of spring-run Chinook to the San Joaquin River shall be done only pursuant to section 10(j) of the ESA with special provisions under ESA section 4(d). Within the NEP area, NMFS's proposed 4(d) rule would provide coverage for take that occurs incidental to otherwise lawful activities. To the extent the 4(d) rule applies outside of the NEP, the rule protects agricultural and forestry resources by ensuring no more than de minimus: water supply reductions, additional storage releases or bypass flows on unwilling third parties. These take exemptions will allow the reintroduction of spring-run Chinook to have little to no impact on agricultural and forestry activities. (Draft EA, at 4-12.)

Response #21

Likewise, the Draft EA finds no adverse impacts to land use:

> Delta pump operations would not be effected by the reintroduction of spring-run Chinook to the San Joaquin River. As outlined in the Restoration Act, reintroduction is required to have a *de minimus* effect upon Third Parties diverting or receiving water pursuant to applicable state and federal laws, which includes the Delta pumping facilities. The proposed rules include language to exempt these activities from take of spring-run Chinook that originate from the San Joaquin River. This can be achieved by identifying San Joaquin River spring-run Chinook proportional contribution to take at the pumping facilities, relative to the take of spring-run Chinook from other watersheds, and excluding that amount from spring-run Chinook incidental take allowances established for Sacramento Valley origin fish. The method of these calculations will be identified each year by NMFS in a technical memorandum, issued by January 15th. This approach is similar to, and will be integrated with, incidental take calculations that have been applied to minimize take of other fish populations at the export facilities. Consequently the reintroduction will not add a regulatory burden to that process. Information for that calculation of proportionate take attributable to the reintroduction will be available. Additionally, until spring-run Chinook begin reproducing in the wild, all fish released into the San Joaquin River will be marked or identifiable. This will allow for several years of data on fish definitively from the reintroduction to inform methods for the calculation. Therefore, the implementation of Area Alternative 1 have would de minimus or no impact on Third Parties and their

> water use activities because of the reintroduction of spring-run Chinook.

(Draft EA, at 4-23, 4-24; *see* Draft EA at 4-27 [similar statement regarding impacts of implementing Area Alternative 2].)

Response #21

These conclusions assume the success of NMFS's efforts to ensure no more than *de minimus* water supply impacts from reintroduction. Yet, at this juncture the method by which NMFS will accomplish the *de minimus* mandate is still undefined, and will be left to annual decisions. Without definition of methods, and specific measures to address uncertainty, it is not reasonable to assume for purposes of the Draft EA that NMFS will be successful every year in avoiding more than *de minimus* water supply impacts.

5. NMFS Must Prepare An EIS

Response #22

Under these circumstances, NMFS should prepare a detailed environmental impact statement ("EIS") rather than rely on an environmental assessment for its action. Section 6.03e.2(e) of NMFS's NEPA procedures provide that "[e]stablishment of some experimental populations may require an EIS, but that finding will be determined on a case-by-case basis or after an EA is completed on the action."[4] Those procedures further provide that "[s]ection 4(d) rules may require an EIS, but that finding will be determined on a case-by-case basis or after an EA is completed on the action." (NMFS NEPA Procedures, § 6.03e.2(a).)

NEPA requires an EIS for "major Federal actions significantly affecting the human environment." 42 U.S.C. § 4332(c). Projects "which will or may cause a significant impact on the quality of the human environment, require preparation of an EIS." (NMFS NEPA Procedures, § 6.01.) Determining significance requires a consideration of both context and intensity. (*Id.* § 6.01b.) Regarding context, the reintroduction of spring-run Chinook to the San Joaquin River is of great interest throughout the San Joaquin River watershed. The potential implications for salmon recovery and water project operations, and water users, extend through most of California. Factors considered in weighing intensity include both beneficial and adverse impacts, the degree to which impacts to the human environment are likely to be highly controversial, the degree to which effects are highly uncertain or involve unique or unknown risks, and the degree to which listed species are adversely affected. The potential impacts of the proposed action here fit the context and intensity criteria for significance.

While NMFS has expressed an intention to avoid water supply impacts, at this point the methods by which it will do so remain largely undefined. "Where an EA reveals that significant impacts will or may occur, the [responsible project manager] must prepare an EIS." (*Id.* §

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[4] Environmental Review Procedures For Implementing The National Environmental Policy Act, NOAA Administrative Order Series 216-6, May 20, 1999 ("NMFS NEPA Procedures").

6.03c.1(a).) The potential that substantial water supply impacts will result if NMFS's methods to avoid such impacts fail requires the preparation of an EIS before NMFS adopts a final rule and proceeds with reintroduction.

6. The Cumulative Impacts Analysis Should Analyze The Circumstances Under Which The Section 7(a)(2) Consultation Requirements May Be Triggered

The Draft EA states:

> In addition to recovery planning, Federal agencies must consult with NMFS under section 7 of the ESA on any action that is likely to adversely affect listed species under NMFS jurisdiction, including spring-run Chinook salmon. Non-federal actions that may result in "take" of ESA listed species as defined through section 9 or 4(d) are required to obtain appropriate authorization to avoid violation of the law. Reintroduction of ESA listed species to an area where they do not currently occur could add to the regulatory requirements for Federal and non-federal actions. However, the proposed NEP designation provides substantial regulatory relief from section 9 take prohibitions, hence cumulative effects of the reintroduction as a NEP on present and future activities will be negligible. Also, when a NEP is in effect, the section 7(a)(2) consultation requirement would be suspended, but the section 7(a)(4) conference requirement would remain in effect. A conference between a Federal agency and the NMFS consists of informal discussions concerning an action that is likely to jeopardize the continued existence of the proposed species or result in the destruction or adverse modification of the proposed critical habitat at issue. The occurrence of conferences under the proposed action are likely to be limited, hence the cumulative effect of the reintroduction as a NEP on regulatory requirements for present and future activities will be negligible.

(Draft EA, 5-2.) This statement's conclusion that "the cumulative effect of reintroduction as a NEP on regulatory requirements for present and future activities will be negligible" fails to consider that the section 7(a)(2) consultation requirement could apply to Federal actions if the experimental population is later determined to be "essential" and the proposed Federal action is likely to adversely affect spring-run Chinook within the experimental area. The Authority requests that the "Cumulative Impacts" section of the Draft EA be revised to analyze the possibility that the section 7(a)(2) consultation requirement could be triggered for Federal actions that are likely to adversely affect the reintroduced spring-run Chinook, in certain circumstances.

Response #23

Conclusion

The Authority appreciates this opportunity to comment on the Proposed Rule and the Draft EA. The Authority looks forward to working with NMFS to develop a reintroduction program that meets the restoration goal of the SJRRSA in a manner that does not cause adverse water supply impacts to the Authority's member agencies and the water users and communities they serve.

Sincerely,

Daniel J. O'Hanlon
Kronick, Moskovitz, Tiedemann & Girard,
on behalf of the San Luis & Delta-Mendota Water Authority and the Westlands Water District

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March 4, 2013

VIA EMAIL

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Re: Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"

Dear Ms. Fehm-Sullivan and Ms. Reed:

The following comments to the Draft Environmental Assessment referenced above (DEA) are offered on behalf of the San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition (referred to for convenience collectively as "Exchange Contractors"). By separate letter, the Exchange Contractors will comment on the proposed 4(d) take provisions and Section 10(j) designation of non-essential experimental population set forth in the proposed rule issued at 78 Fed. Reg. 3381 (January 16, 2013). For your convenience, a copy of that letter is appended hereto.

General Comments

1. Lack of Funding.

In comments to the Draft Programmatic Environmental Impact Statement/Environmental Impact Report (PEIS/R), the Exchange Contractors raised the concern that the Settling Parties, including the National Marine Fisheries Service (NMFS), have erroneously assumed that all necessary funding will be made available to fully implement the Settlement referred to in DEA Section 1.1.2. While perhaps historically there was some basis, however remote, that all of the funding necessary to fully implement the settlement would be forthcoming, based upon more recent information that understanding is no longer valid. This newly discovered information includes assurances from members of Congress that further federal funding will not be forthcoming as well as the substantial increase in costs of necessary expenditures identified by Reclamation in its Framework for Implementation. At the time the Settlement was presented to the United States Congress in support of the necessary implementing legislation, estimates of the cost of the San Joaquin River Restoration Program (SJRRP) ranged from $250-800 million. In the Framework for Implementation, Reclamation has identified actions that are necessary in addition to those set forth in the Settlement to assure successful reintroduction of the San Joaquin spring-run Chinook salmon. Further, Reclamation has appropriately identified in the Record of Decision (ROD) at Section 6.2 that contingencies must be developed in the event that full funding is not available. The ROD provides that Reclamation will prepare each year an Annual Work Plan of projected SJRRP activities that "will be subject to revision to respond to changing conditions, including environmental, budgetary or otherwise." Moreover, "[c]onsistent with and in the process of fulfilling the requirements set forth in the Settlement and Act, and in consideration of available resources," the ROD also establishes a list of SJRRP activities that will be expedited over other activities.

Response #24

NMFS is aware of the current level of funding available for the SJRRP, the fact that additional funding is not going to be available, that the SJRRP is currently underfunded based on original estimates, and that additional actions and costs that have been identified by Reclamation in the Framework for Implementation. In a situation such as this, where changed circumstances affect the factors relevant to the development and evaluation of alternatives, the agency "must account for such change in the alternatives it considers." (*Natural Resources Defense Council v. United States Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005) [finding that error in interpreting report affected the economic and wildlife factors that the Forest Service used in developing and evaluating the alternatives considered]; *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 723, at 730-731 ["While we cannot predict what impact the elimination of the [long-term] contract will have on the Forest Service's ultimate land use decisions, clearly it affects the range of alternatives to be considered"].) Here, the DEA violates NEPA by failing to analyze the SJRRP assuming no additional funding or the necessity for additional funds identified in the Framework for Implementation.

2. Less than Full Implementation.

The DEA does not analyze the impacts on the successful reintroduction in the event that less than all measures identified in the Settlement are implemented. Yet, in multiple sections of the DEA, NMFS states that "the flow and habitat improvements to be implemented by the SJRRP represent the best opportunity to have spring-run Chinook reintroduced to the San Joaquin River." (Page 5-1[1]). Further, the DEA does not contain any analysis of the newly identified actions beyond those set forth in the Settlement that Reclamation has identified (in close cooperation with NMFS and other Settling Parties) in the Framework for Implementation that are necessary for the successful reintroduction of spring-run Chinook salmon to the San Joaquin River.

Response #25

3. No Analysis of Individual Projects and Cumulative Effects Thereof.

Reclamation is currently pursuing two projects in furtherance of the Settlement. These are the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project and the Mendota Pool Bypass and Reach 2B Improvements Project. (*See* Mendota Pool Bypass and Reach 2B Improvements Project, Project Description Technical Memorandum and the Draft Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration for the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project.) Each of these projects are considered necessary for the successful reintroduction of spring-run Chinook salmon. Each of these projects will have a cumulative effect upon the spring-run and the human environment. There is no analysis of the effect of these projects on the reintroduction of spring-run Chinook salmon, nor is there any analysis of the effect of subsequent projects required to be implemented by the Settlement. Similarly, there is no analysis of the failure to implement either of the above projects or subsequent projects on a successful reintroduction of spring-run Chinook salmon. (*Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1988) [finding EIS inadequate for failing to address reasonably foreseeable cumulative impacts]; *Border Power Plant Working Group v. Department of Energy*, 260 F.Supp.2d 997, 1033 (S.D. Cal. 2003) [failure to analyze cumulative impact of project on water quality and quantity rendered Environmental Assessment "inherently inadequate."].) For instance, at page 1-5 the DEA acknowledges "reintroduction will begin with actions appropriate to existing habitat and to refining methods that would be used. Succeeding actions are expected to have more likely success as the habitat improvement and accompanying actions in the Settlement are implemented." Yet, no analysis is set forth in the event that the succeeding actions are implemented in whole or in part or not implemented at all.

Response #26

[1] Words of similar effect are also found on the following pages: 1-5, 2-11, 4-16 (Until the habitat improvement projects are completed, in river survival is expected to be low, except in wet years.)

4. Subsidence.

NMFS is aware that recently discovered significant subsidence has and is still occurring in the Restoration Area and adjacent thereto. The Exchange Contractors have previously commented on the subsidence problem. Please see those comments set forth in the Supplemental Comments to the Final PEIS/R Based on New Information from the San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition submitted August 15, 2012. See also, the Exchange Contractors Protest to the United States Bureau of Reclamation Petitions for Change to License 1986 and Permits 11885, 11886 and 11887 (Applications 23, 234, 1465 and 5638), pages 41-42, submitted to the State Water Resources Control Board on June 18, 2012, and the Supplemental Information to Protest of USBR Petitions for Permits 11885, 11886, and 11887 and License 1986 (Applications 23, 243, 1465, and 5638) re San Joaquin Restoration Program, pages 6-7, submitted to the State Water Resources Control Board on August 31, 2012. Those comments are incorporated herein as though fully set forth.

The subsidence is the result of recently initiated deep well pumping from under the Corcoran Clay for overlying lands. Differential subsidence on the scale of up to 0.6 feet per year has been documented within the study area of the SJRRP near Western Madera. Since 2008, subsidence in the study area has been as much as 1.2 feet. The current level of subsidence is as much as 4 feet and freeboard at Sack Dam has been reduced to but a few inches. The SJRRP will need to determine how to address existing and increasing future subsidence. The extreme rate of subsidence may have a significant impact on the SJRRP schedule to complete the planning, design and construction of the Phase I projects. To date the subsidence has resulted in a halt to the further engineering and construction of the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project. Additional Phase I facilities and river reaches that will be impacted include:

- Flow capacity of Reaches 3 and 4A
- Flood flow capacity in the Chowchilla bypass
- Flood flow capacity in the Eastside Bypass
- Modifications at the Reach 4B headgate
- Modifications to the Sand Slough Control Structure
- Modifications in the San Joaquin Reach 4B1

Response #27

Specific Comments

Section 1.3.1.1. Proposed Designation Will Further the Conservation of the Species.

This Section acknowledges that to achieve the restoration goal, the Settlement requires a combination of channel and structural modifications and habitat improvements, water releases and the reintroduction of Chinook salmon. It further states "with these actions, the prognosis for

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spring-run Chinook populations to return is good." (citation omitted). Presumably, without one or more of these actions, the prognosis for spring-run Chinook populations to return is less than good. No analysis is provided of the effect on spring-run of less than full implementation of the foregoing measures.

Section 1.4.1. San Joaquin River Restoration Program Environmental Impact Statement/Report.

This section states that the PEIS/R evaluated the "potential direct, indirect, and cumulative impacts on the environment at a program level that could result from implementing the Settlement consistent with the Restoration Act [citations omitted]." However, the PEIS/R did not provide an environmental analysis of the various structural and habitat improvements that needed to be made. Rather, it assumed those were common elements and provided no actual analysis of the impacts of implementing those measures.

Response #29

The PEIS/R analyzed reintroduction of spring run Chinook with regard to hybridization, competition and disease. This analysis was conducted at the program level. As stated in the Exchange Contractors previously submitted comments to the PEIS/R, the analysis of impacts to salmon from the SJRRP, the impacts to adjacent landowners, agricultural interests, and water supply, was at a programmatic level. Yet, the DEA does not contain the level of analysis required to assess the impact of reintroduction of salmon into the upper San Joaquin River with respect to the aforementioned interests.

Section 1.6. Action area.

Included in the action area is not only the San Joaquin River but the flood control bypasses. The 4(d) rule must cover flood control activities in the Kings River, San Joaquin River and flood control bypasses.

Response #30

Section 2.0. Proposed action and alternatives.

The section states that the reintroduction process will be implemented such that in any given year the SJRRP will consider the condition of salmon populations and the likely success of reintroduction of spring run. How will this latter analysis be done? What factors will be considered? How will varying levels of success regarding levels of river improvements be taken into account in this analysis?

Response #31

Section 2.3.1. 10(j) area alternatives.

The preferred alternative is area alternative 2. Area alternative 2 describes the NEP area as the restoration area of the San Joaquin River from Friant Dam to the Merced River and the Kings River to the San Joaquin River. Area alternative 2 excludes the Eastside tributaries on the lower San Joaquin. It is unclear why the tributaries are excluded from the NEP area given that

Response #32

there are no established populations of spring-run and only at best questionable reports of spring-run straying to these rivers. The spring-run are at best strays from the Sacramento basin.

Response #32

Within this section is a subparagraph "a", regarding take exemption on the tributary rivers. The discussion notes the legal requirement to not impose more than a *de minimis* water supply impact, etc. on unwilling third parties. The third-party designation includes the Exchange Contractors. There may not be more than a similar *de minimis* impact on the Exchange Contractors.

Section 2.3.2. 10(j) duration alternatives.

Response #33

It is essential that the 10(j) experimental population designation remain in effect well beyond 2025. It is now evident that the settlement will not be fulfilled by 2025, nor will the measures included in the Framework for Implementation. It is likely several decades before these measures will be completed. Until such time as all of these improvements or actions are taken, and it can be demonstrated that the salmon population is not only self-sustaining but thriving, the 10(j) designation should remain.

Section 3.2.1. Life history.

Response #34

The description of the life history of the spring-run Chinook is that when it swims upstream from the Delta it goes to the Sacramento River. There is no indication that spring-run migrate to the San Joaquin River. This is additional evidence that the entire San Joaquin basin should be designated as an NEP area.

Section 3.2.4.3. Diversity.

Response #35

On page 3 – 3, lines 32-36 the DEA discusses potential sources of phenotypic spring running Chinook that have been observed on the San Joaquin River tributaries. No citation is provided for the potential sources of these salmon. Please provide a citation to back up the hypotheses set forth.

Section 3.3.2.3. Tuolumne River.

Response #36

On page 3 – 18, line 6-7, no citation is provided for the assumption that spring-run Chinook in some numbers "undoubtedly" ascended the main stem a considerable distance. Similarly, no citation is provided for the statement at lines 15-17 that there have been reports of adult Chinook in the Tuolumne in the spring months of April and May.

At line 21-25 the DEA states that a “hard look” needs to be taken at information regarding the potential presence of spring-run Chinook. Yet, the statements set forth in the DEA are without any support to authoritative accounts of historical spring run. A "hard look" requires a hard look at the evidence as well as the analysis. The evidence cited is at best sparse and

Response #36

speculative. Substantiation should be provided.

Section 3.4.2. San Joaquin River from Friant Dam to Merced River.

At page 3 – 21, commencing line 1, the habitat in Reach 1 is described. The description cites concerns with existing in-channel and floodplain pits that reduce native habitat, increase river water temperatures and provide increased habitat for non-native species (which presumably leads to predation). In response to comments to the PEIS/R, Reclamation downplayed the significance of the gravel pits and the predation problem. (*See e.g.* Final Program Environmental Impact Statement/Report for the San Joaquin River Restoration Program, July 2012 ("Final PEIS/R"), pp. 3.8-260 (EC1-110), 3.8-262-63 (EC1-115), 3.8-283-84 (EC1-151f), 3.8-292-93 (EC1-164), 3.8-296-97 (EC1-174), 3.8-305-06 (EC1-191), 3.8-315-316 (EC1-205, 206a), 3.8-324-25 (EC1-222), 3.8-325-26 (EC1-223a).)

Response #37

At line 16-17 in the section which describes Reaches 2-5, it is stated that there are projects proposed for the SJRRP to improve habitat conditions and support flows that would permit juvenile rearing and adult/juvenile migration. Is there any analysis to support or quantify the extent to which improved habitat conditions or flows would permit such beneficial fish conditions? Please provide citations.

Section 3.4.3. San Joaquin River Tributaries.

At lines 19-21 it is stated that anadromous fish populations on the San Joaquin tributaries are affected by flow and water temperatures. A recent study conducted in conjunction with the hydropower relicensing on the Tuolumne River concludes that 76% to 98% of juvenile salmon are lost to predation. (Predation Study Report, Don Pedro Project FERC No. 2299 (W&AR-07), January 2013.) How does this loss to predation compare with any impacts associated with flow and temperature? It would appear if up to 98% are lost to predation, only a small percentage are affected by flow and temperature.

Response #38

Section 3.5. Fish Species Within the San Joaquin River Basin.

Table 3 – 10 catalogs the fish found in the San Joaquin River basin and in particular in Reaches 1-5. It is noted that largemouth bass appear in Reaches 1,2,3, and 5. If Reach 4 is rewetted, bass will habituate there as well. How will the presence of bass adversely impact the restoration effort given the likely high predation rate such as that recently documented on the Tuolumne River?

Response #39

Section 3.5.2. Predation and Disease.

This section discusses predation as being a significant factor affecting juvenile salmon. Yet, in the PEIS/R a contrary position was taken. (*See e.g.*, Final PEIS/R, pp. 3.8-283-84 (ECI-

Response #40

151f), 3.8-296-97 (EC1-174), 3.8-315-316 (EC1-205, 206a), 3.8-324-25 (EC1-222), 3.8-325-26 (EC1-223a).) Please explain why a different position is taken in the DEA as compared to the PEIS/R.

Response #40

Section 3.6.3. Hatchery facilities.

The Interim Facility and the full-scale Conservation Hatchery Facility must be isolated from the San Joaquin River to prevent the escape of unmarked spring-run Chinook salmon until such time as full take protection is provided.

Response #41

Section 3.6.4. Land Use.

At page 3 – 34 public agencies are identified that occur within the restoration area. The listing fails to include the local public water agencies including the Central California Irrigation District, the Firebaugh Canal Water District, Henry Miller Reclamation District, and local cities.

Response #42

Table 3 – 12 and the text that follows on page 3 – 35 appear inconsistent regarding the acreages and percentages of land-use within Reach 1.

Section 3.6.5. Water quality.

At lines 2-5 it is stated that water quality improvement would occur regardless of reintroduction of spring-run. This appears to be an inaccurate statement as the hydrographs that are called for in the Settlement are designed specifically for spring-run benefit. There would be no basis for the hydrographs without the presence of spring-run. There is no analysis of what hydrographs would be necessary for fall run Chinook.

Response #43

Section 3.6.5.1. Water Temperature.

In the PEIS/R the occurrence of high water temperatures was downplayed as a significant limiting factor. The DEA notes high temperatures that are likely to occur in the San Joaquin River in the restoration area. How will these high temperatures adversely impact restoration efforts?

Response #44

Section 3.6.7. Climate change.

There is speculation regarding the potential water temperature impact to the watershed above Friant Dam due to climate change. Please provide citations to support the notion that water temperatures in the upper San Joaquin River will somehow be spared from significant increases associated with climate change.

Response #45

Section 4.1. Introduction. (Environmental consequences).

With respect to the release of salmon to the San Joaquin River, it is stated the changes in river flow and related restoration projects are evaluated in the PEIS/R. The PEIS/R does not provide an evaluation of the numerous projects identified in the settlement.

Response #46

Section 4.2.1.3. Southern DPS of Green Sturgeon.

How will passage of green sturgeon be accomplished given the impediments that currently exist?

Response #47

Section 4.3.2. Fish.

At lines 22-29 is speculated that with increased flows and the return of spring-run Chinook salmon the number of predators in the restoration area will not increase. Please provide authority this conclusion. For example, one result of the Tuolumne Study (Predation Study Report, Don Pedro Project FERC No. 2299 (W&AR-07), January 2013.) was a finding that there was no trend relative to flow for habitat use overlap between Chinook salmon and predators. (Table 5.4-3 on page 5-21.)

Response #48

At lines 30-36 it is stated that barriers to prevent fall-run and spring-run hybridization will be developed and maintained. Where is this discussed in the PEIS/R or other authorities?

On page 4 -- 9 regarding predation on the upper San Joaquin River, it is assumed that predation will be similar to the levels on the tributaries. The recent study on the Tuolumne indicates predation rates are very high and independent of flow. If predation is this high in the Restoration area what will be the impact on spring run? What is the basis for that conclusion?

Section 4.3.5. Land-use.

Regarding the impact on agricultural resources and forestry, it is stated that if permission is granted to access private land for collection activities, that potential impacts will be reduced to a non-significant level. Whether permission to access private lands is granted or not has nothing to do with the impacts that will occur. Simply having permission to access the land does not ensure that there will not be adverse environmental impacts.

Response #49

Section 4.6. Area Alternative 2 (preferred alternative).

It is stated that on the tributaries, water activities will be exempted from the take provisions. Agricultural, municipal and similar uses should also be exempted.

Response #50

Within the NEP area, in addition to agricultural uses, will water diversion and

management uses be included in the take exemptions?

Response #50

The PEIS/R discusses impacts on water related uses, but appears to focus only on the provision within the Restoration Act regarding the *de minimis* impacts. However, the Restoration Act also prohibits the imposition of costs not otherwise voluntarily incurred. Any costs associated with restoration activities that are not voluntarily incurred must be absorbed by the SJRRP.

Section 5. Cumulative impacts.

There are multiple cumulative impacts in addition to the introduction of spring-run. Reintroduction impacts include all of the potential river improvements and habitat changes identified in the Settlement and in the Framework for Implementation. These cumulative impacts should be analyzed. They are not analyzed in the PEIS/R.

Response #51

Conclusion

Based on the above comments, the Exchange Contractors believe that a full EIS should be prepared to analyze the new discovered information that has emerged since the finalization of the PEIS/R or was not analyzed in the PEIS/R. This information includes Congressional assurances of no additional federal funding above the level already funded, new cost estimates by Reclamation that show core and levee costs at approximately $1.1 billion and total Framework costs at over $2 billion, significant subsidence that is and will continue to occur, and the new predation study results from the Tuolumne River. In addition, the Exchange Contractors have identified areas where additional analysis is required to fully assess the impacts of the reintroduction of spring-run to the San Joaquin River.

Response #52

The Exchange Contractors appreciate the opportunity to comment on the DEA. We look forward to continuing to work with NMFS to develop the SJRRP in a manner that fosters its success in a manner consistent with the Restoration Act and agreements among the Settling an Third Parties.

Sincerely yours,

Thomas M. Berliner

TMB:ccn

cc: San Joaquin River Exchange Contractors Water Authority
San Joaquin River Resource Management Coalition
San Joaquin Tributaries Authority

San Luis and Delta-Mendota Water Authority
Alicia Forsythe - USBR

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ATTACHMENT

Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition on Proposed Rule for Introduction of a Nonessential Experimental Population of Spring-Run Chinook Salmon in the San Joaquin River Pursuant to Section 10(j) of the ESA and Related Incidental Take Protection Pursuant to Section 4(d) of the ESA, NOAA-NMFS-2012-0221

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March 4, 2013

VIA E-MAIL

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Re: Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition on Proposed Rule for Introduction of a Nonessential Experimental Population of Spring-Run Chinook Salmon in the San Joaquin River Pursuant to Section 10(j) of the ESA and Related Incidental Take Protection Pursuant to Section 4(d) of the ESA, NOAA-NMFS-2012-0221

Dear Ms. Fehm-Sullivan:

The San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition (referred to hereafter collectively for convenience as "Exchange Contractors") appreciate the opportunity to submit comments on the proposed rule for introduction of an experimental population of spring-run Chinook salmon to the upper San Joaquin River as part of the San Joaquin River Restoration Program (SJRRP) and the accompanying incidental take protection.

The Exchange Contractors are very appreciative of the outreach that has been conducted by NMFS regarding the proposed rule and other issues associated with the reintroduction of spring run Chinook salmon to the upper San Joaquin River. In particular, Ms. Rhonda Reed has met with the Exchange Contractors on numerous occasions. In the course of those meetings, Ms. Reed has requested comments on both the substance of the proposed rule and the format of the rule. Accordingly, the Exchange Contractors will comment on both form and substance.

Drafting concerns

D.1. The summary should state that take exemptions include take in the upper San Joaquin River as well as the tributaries and the Delta. Further, while all lawful activities are exempted from take, in keeping with prior practice, examples of some particular activities exempted from take should be set forth.

D.2. Under the section "Statutory and Regulatory Framework for Experimental Population Design" it is stated that in order to comply with section 10011(c), NMFS considered any additional measures appropriate to address management concerns under local conditions, a process for data collection and periodic review of the status of the experimental population. It is unclear as to what provisions in section 10011(c) require these considerations. Section 10011(c) concerns protections for third parties. NMFS should explain how the foregoing considerations are relevant to protections for third parties.

D.3. Under the same section as referenced in D.2. The draft states that California Fish and Game Code section 1600, *et seq.* will help ensure the establishment and survival of the experimental population by protecting aquatic and riparian habitat. The draft states that Section 1600 *et seq.* requires that the Department of Fish and Wildlife be notified before anyone substantially diverts the natural flow of a river or stream. NMFS should explain the legal basis for contending that Section 1600 *et seq.* requires notification before someone substantially diverts the natural flow of a river or stream. In a recent court decision the Superior Court of California found that the Department of Fish and Wildlife did not have authority to restrict diversions under Section 1600 *et seq.* (*Siskiyou County Farm Bureau v. California Department of Fish and Game*, Case No. SC CV 11-00418, Siskiyou County Superior Court.) Rather, the court found that Section 1600 *et seq.* regulated physical alterations to the river bed and banks, but not simply water diversion.

D.4. The section entitled "Additional Management Restrictions, Protective Measures, and Other Special Management Considerations" should start with a summary that identifies how the 4(d) rule will be applied and which activities it covers.

D.5. Under the section entitled "Process for Periodic Review" the draft states that "while this monitoring is being conducted for purposes of making the reintroduction effort successful, we will use the information to also to determine if the experimental population designation is causing any harm to CV spring-run Chinook salmon that are part of the threatened ESU and their habitat, and then, based on this and other available information, determine if any changes to the experimental population designation may be warranted." Is this a reference to Sacramento-based spring-run? If so, the draft should be clarified to make this explicit.

D. 6. The amendment to the special rules for marine and anadromous species should be summarized at the beginning of the draft rule so that the reader knows what activities are

covered, and the geographic areas that are covered. The reader should not have to wait until the very last two pages of the rule to find out specifically what is or is not covered.

Substantive concerns

S.1. Under the section "Background Information Relevant to Experimental Population Designation" it should be stated that the proposed experimental population will occur in the San Joaquin River upstream of the confluence with the Merced River, etc. as well as the tributaries to the San Joaquin River from the Merced River on downstream. The tributaries are outside of the current range of the CV spring-run Chinook salmon ESU.

S.2. Under the same section as S.1., the draft states that NMFS' recovery plan for CV salmon characterizes the San Joaquin River basin below Friant Dam as having a high potential to support a spawning population of reintroduced salmon "with implementation of the San Joaquin River Restoration Program (SJRRP)." The SJRRP includes channel and structural modifications to the San Joaquin River. The draft rule does not state whether failure to develop all or only part of the channel and structural modifications "will create habitat conditions... sufficient to support the establishment of CV spring-run Chinook salmon populations."

Pursuant to the Record of Decision (ROD) issued by the Bureau of Reclamation, if there are insufficient funds to develop the entire plan as set forth in the "Framework for Implementation", Reclamation will rely on a contingency plan as explained in section 6.2 of the ROD. This plan will prioritize certain actions. Consistent with the types of actions to be prioritized, the Exchange Contractors recommend that the projects that should be prioritized to assure successful passage of salmonids are the improvements to Sack Dam and installation of a fish screen in the Arroyo Canal, and a bypass around Mendota Dam and the installation of a fish screen for flows into the Mendota Pool. Presumably, NMFS is also aware of the subsidence problem near Sack Dam that is affecting flow in the San Joaquin River and nearby flood control system. The effects of subsidence must also be addressed when considering the likelihood of success of the 10(j) population.

S.3. Under the same section as S.1., the draft states that programs for strategic screening and participation in habitat conservation programs will be implemented in conjunction with SJRRP activities. What types of diversions will be screened? Will diversions below 300 CFS be screened? If flows below 300 CFS are not required to be screened, they must still be covered by the 4(d) rule such that incidental take is permitted. Will all diversions above 300 CFS be screened? Are there specific locations that NMFS has identified to be screened on a priority basis?

S.4. Under the section "Identification of the Experimental Population", it states that the SJRRP includes actions to prevent or reduce straying to false pathways. What actions are assumed to be taken that will reduce straying to false pathways? In 2011, due to flood operations, fall-run salmon successfully migrated upstream of the Hills Ferry Barrier and over 70 salmon

perished in the Eastside Bypass. The Department of Fish and Wildlife did not have any measures in place to prevent straying once salmon migrated past the Hills Ferry Barrier.

S.5. The section entitled "Additional Management Restrictions, Protective Measures, and Other Special Management Considerations" states that take prohibitions would apply to the experimental population that has an intact adipose fin "as well as those that are adipose fin-clipped." It is our understanding that an agreement was reached with Reclamation and the U.S. Fish and Wildlife Service that adipose fin-clipped salmon in the experimental population area would not be subject to take prohibitions under the 4(d) rule currently in place for Sacramento spring-run Chinook salmon. This provision should stay in place until such time as adipose fin-clipped fish from the Feather River Fish Hatchery or any other facility will no longer be introduced into the San Joaquin River system.

S.6. Under the section entitled "Public Comment" NMFS requests feedback on six specific questions. The Exchange Contractors have attempted to address each of those areas in the above comments. However, we will also provide brief responses to each of the questions below.

(1) ***The geographic boundary of the designated experimental population.*** The geographical boundary should include the San Joaquin River upstream of the confluence with the Merced River, the Kings River and tributaries to the San Joaquin River from the Merced River downstream.

(2) ***The extent to which the experimental population would be affected by current or future federal, state, or private actions within or adjacent to the experimental population area.*** The experimental population will be affected by agricultural and water diversion activities, among others. These normal and lawful activities must be exempted from take prohibitions. Water diversion activities include, among others, the operation, maintenance, repair and replacement of water diversion structures including dams, intakes, pumps, canals, pipes, etc. some of these activities will occur in the San Joaquin River.

(3) ***Any necessary management restrictions, protective measures, or other management measures that we may not have considered.*** Exemption from take will cover all lawful activities. The rule should provide examples of protected activities, including diverting or receiving water, water spreading (such as to address the subsidence problems east of Sack Dam), and flood control activities.

(4) ***The extent to which we have provided protections for third parties as required by the SJRRSA.*** NMFS should address specifically how it will treat unscreened diversions on the San Joaquin River above the confluence with the Merced River as well is in false pathways, including irrigation canals and flood control channels. Examples of otherwise lawful activities that will be included under Section 223.301(B) should include activities related to diverting or receiving water including operation, maintenance, repair, and replacement of water diversion

structures including dams, intakes, pumps, canals, pipes, etc. as well as flood control operations and spreading to address subsidence problems since the latter is related to water supply.

As NMFS is aware, there are a number of water diversion facilities located along the San Joaquin River in the restoration area. The member agencies of the Exchange Contractors operate a number of facilities, including the above-mentioned dams, intakes, pumps, canals, pipes, etc. The member agencies include the Columbia Canal Company, Central California Irrigation District, Firebaugh Canal Water District, and San Luis Canal Company. In the recently adopted 4(d) rule for the Deschutes watershed (78 Fed. Reg. 2893), take of Middle Columbia River steelhead was permitted "incidental to any activities related to or associated with the operation and maintenance of the Opal Springs Hydroelectric Project..." The facilities of the member agencies are not so precisely identified. However, it is necessary that all facilities operated by these member agencies for water diversion and water management purposes be exempted from take.

NMFS has appropriately made clear it is attempting to develop a rule that will not have more than a *de minimis* water supply impact on third parties. NMFS must also ensure that no costs will be imposed on third parties that are not voluntarily incurred. (San Joaquin River Restoration Settlement Act, Sec. 10009(a)(3).)

(5) ***Whether we should propose the experimental population as nonessential.*** Yes. According to the draft rule, the nonessential population designation will be reviewed every five years. If the spring-run are re-categorized as an essential population, the provisions of the San Joaquin River Restoration Settlement Act will still be applicable regarding the protections to third parties. If the San Joaquin spring-run Chinook salmon experimental population is re-categorized as an essential population, how will NMFS ensure there will be no impacts on the water, agricultural and flood control activities that should be exempted under this rule?

(6) ***Whether the proposed designation furthers the conservation of the species and we have used the best available science in making this determination.*** The designation will further the conservation of the species and will provide necessary agency flexibility in adaptively managing the fishery. However, the failure to consider the lack of funds, increased costs as identified in the Framework for Implementation, program delays, and the new subsidence condition (see Exchange Contractors' comments to Draft Environmental Assessment that accompanies this draft rule) do not constitute consideration of the best available science.

In light of cost increases and funding deficiencies, NMFS should develop a reintroduction strategy that seeks to achieve reintroduction in light of the new financial reality. NMFS could design the strategy as a layered contingency plan with assumptions about different levels of funding. Starting at the $500-600 million range, given that that's what's available, and building from there would make sense. The Restoration Settlement Act does not compromise NMFS' independent decision-making authority. It must still apply its independent

judgment under the Endangered Species Act ("ESA") as to how best to accomplish reintroduction. (*See* San Joaquin River Restoration Settlement Act § 10011; Stipulated Settlement ¶¶ 14 and 14(a).) NMFS is not required to follow the letter of the settlement, but may develop a strategy it views as consistent with its ESA obligations. The act makes it clear that the ESA is not amended and, therefore, NMFS has its own decision-making authority under sections 10(a) and 10(j).

In conclusion, the Exchange Contractors appreciate the efforts by NMFS to reach out to the affected third parties and to attempt to fashion rule that will have *de minimis* water supply impacts to third parties. Given the uncertainties associated with implementation of the SJRRP and the application of the 4(d) rule, including Delta take of SJR spring-run, an adaptive management approach appears warranted. The Exchange Contractors support the suggestion of the State Water Contractors that a process be developed to assess the amount of take in the Delta on SJR spring-run.

Thank you for this opportunity to comment.

Sincerely yours,

Thomas M. Berliner

TMB:dls

cc: San Joaquin River Exchange Contractors Water Authority
San Joaquin River Resource Management Coalition
San Joaquin Tributaries Authority
San Luis and Delta-Mendota Water Authority
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February 26, 2013

Subject: Objection to Draft Environmental Assessment (DEA) for Nonessential Experimental Population Designation and 4(d) Take Provision for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River (SJR) below the Friant Dam

Dear Ms. Fehm-Sullivan

The Mill Creek Conservancy (MCC) was formed as a non-profit 501c 3 organization twenty years ago to protect the environmental integrity of the Mill Creek watershed. A fundamental element of our watershed and a key indicator species of the health of our watershed are the wild Mill Creek spring-run Chinook salmon. These fish have been designated an endangered species and Mill Creek is designated as critical habitat. Many federal and state grants and countless volunteer hours from the members of the MCC, Los Molinos Mutual Water Company, local landowners and local schools have been utilized to protect and foster the population of wild Mill Creek spring-run Chinook salmon,

Mill Creek offers these unique salmon a reprieve from human harassment and California's drought climate by providing pristine habitat, cold spring-fed mountain water and remote inaccessible canyons. To find habitat conditions for successful holding, spawning and rearing, these salmon must ascend to elevations in Mill Creek ranging from 1,500 to 5,000 feet. This is designated critical habitat for the survival of these fish. Neither a court order, a settlement for the San Joaquin River water users nor a charge to "reintroduce salmon" to the lower stretches of SJR can change those facts.

The proposed rule change to allow the "taking" of the wild Mill Creek spring-run Chinook salmon for an "experiment" in the San Joaquin River is totally unacceptable, bad science and a certain death sentence for each wild Mill Creek spring-run Chinook salmon utilized for this futile effort. The regulatory agencies charged with protecting our fish per the Endangered Species Act (ESA) are now attempting to create a loophole from the law from killing fish for an unwise experiment as part of a lawsuit settlement. The Mill Creek community has abided by the ESA law, consistently working to improve critical habitat and fish populations by facilitating riparian easements; promoting and participating in restoration projects; supporting water exchange programs to ensure proper passage flows for salmon; and working on a salmon management agreement. It is very disturbing to the Mill Creek community that the regulatory agencies can attempt to change the ESA rules to take/kill Mill Creek's threaten population of wild spring-run Chinook salmon.

Two years ago several members of the Mill Creek Conservancy spoke at the public forum regarding this issue and the MCC also provided a detailed comment letter that is attached. It is truly distressing to the MCC that during the past two years these comments were not incorporated into the appropriate measures for the "restoration project" or the Program Environmental Impact Statement/Report (PEISR). How can this be a restoration project if it degrades and further threatens the population of wild Mill Creek spring-run Chinook salmon? When did the Federal and State government agencies cease to be our partner in protecting the wild Mill Creek spring-run Chinook salmon and now become a threat by taking Mill Creek natal fish from their required habitat?

MCC's position on the many facets of the San Joaquin River Restoration Project SJRRP remains unchanged from two years ago and our main points are:

Response #53 Due to the current high risk of extinction, Mill Creek spring-run stock should be removed from consideration in the All Donor Stock Sources Alternative in establishing the SJR experimental population.

Response #54 The DEA needs to reference wild spring-run Chinook salmon levels and recovery rates that warrant reclassifying the wild spring-run populations on Mill Creek as stable with a low risk of extinction.

Response #55 Once habitat conditions in the SJR are restored and scientifically proven capable of sustaining populations of spring-run Chinook salmon, then and only then reassess whether wild or hatchery broodstock spring- and fall-run salmon are the appropriate genetic source for SJR.

Once wild spring-run populations increase on Mill Creek to Central Valley Project Improvement Act CVPIA target levels, and are stabilized over a 12 year cycle on Mill Creek , and the habitat in the SJR is evaluated by an independent qualified authority as able to support Mill Creek genetic stock, then involve the local stakeholders to participate in the Section 10(a)(1)(A) permitting process including stock selection and collection.

Proceed with the SJRRP projects to improve habitat, flows and water management.

Then assess if it is appropriate to introduced surplus Central Valley hatchery fall-run and local spring-run Chinook salmon to the SJRRP restored habitat.

Study and monitor the volitional recolinization of wild spring-run Chinook salmon for at least 12 years as a superior alternative to taking wild Mill Creek spring-run Chinook salmon.

The SJRRP project needs to make the Water Management Goals the first priority of the project. Water Management and Habitat Restoration must be accomplished prior to broodstock collection and fish introduction. If adequate habitat conditions exist then the fish will come on their own.

The element of this project that removes Wild Mill Creek spring-run Chinook salmon from natal high elevation mountain habitat to the almost certainly fatal warm valley floor water of a "restored" San Joaquin River will not "further the conservation" of the listed species. **As stated in the Federal Register "Reintroduction efforts have the best chance for success when the donor population has life history characteristics compatible with the anticipated environmental conditions of the habitat into which fish will be introduced."**

The National Marine Fisheries Service (NMFS) responsibilities as discussed in section 1.21 of the DEA need to be expanded to address their responsibilities to the wild Mill Creek spring-run Chinook salmon currently afforded by the Endangered Species Act ESA. The proposed legal loophole to change the ESA rule does not protect the wild Mill Creek spring-run salmon and the SJRRP needs to be amended to omit use of Wild Mill Creek spring-run Chinook salmon.

The Federal Register indicates that "The Deer and Mill Creek population levels are at a high risk of extinction and special care and consideration will be used when considering these fish as a donor source for reintroduction into the San Joaquin River." This is cold comfort to the people that do care about the Mill Creek Spring-run Salmon. What are the parameters of "special care and consideration" mentioned in the Federal Register and the DEA? We need criteria, vetted target population numbers, independent monitoring of fish and consequences for non- adherence to the rules.

The Federal Register depiction of this project and the DEA contradict each other. The Federal Register places wild-spring run populations at a high rate of extinction and the DEA lists these stocks as a preferred alterative. The DEA gives no specifics regarding when, where, how or under what conditions wild Mill Creek spring-run Chinook salmon will be utilized. The DEA is totally inadequate in its discussion of the required habitat conditions and the life cycle of the wild Mill Creek spring-run Chinook salmon. Quantifiable parameters must be set and agreed upon and adhered to by an independent technical review team with input from local stakeholders before any fish are taken from Mill Creek.

The Federal Register, the DEA and the public meetings have indicated that only a narrow focus of comments are sought for this project. This attempt to limit the scope of the comments appears to indicate that the responsible Federal agency wants to restrict their responsibility in considering all the impacts from this project. This is unacceptable since the DEA fails to address the significant adverse impacts to the existing wild Mill Creek spring-run Chinook salmon. The project is not justified to only improve SJR, it must not harm other watersheds and threaten the wild Mill Creek spring-run Chinook salmon population.

Why are the San Joaquin water users as third party to this project protected? Why are the fish and the people of Mill Creek not protected from the adverse impacts of this project? The Mill Creek Conservancy and the people of Tehama County are stakeholders in the health and safety of our wild Mill Creek spring-run Chinook salmon and we need to be included on any decisions that are made regarding these fish. When adult spring-run are migrating into Mill Creek**,** Mill Creek water users make sacrifices to ensure there is sufficient bypassed irrigation water for adult fish to have adequate passage water to their holding grounds. The Mill Creek Water Exchange Agreement provides local biologists the authority to call for additional irrigations water flows for salmon migration flows. Mill Creek water users forgo irrigation obligations and bypass water back to the creek. These "Chinook Flows", impact operations of the Los Molinos Mutual Water Company and water deliveries for local shareholders. It is not appropriate for the Federal government to propose to relocate these wild fish, label them as "nonessential" and use them for experimental purposes on the San Joaquin River which does not meet the habitat requirements of these fish. This restoration project benefits the San Joaquin water users while unfairly adversely impacting all residents (people and salmon) in Mill Creek. The proponents of the SJRRP including the San Joaquin biologists and water users will be exempted from endangered species take prohibitions without consideration of the deleterious harmful impacts to the wild Mill Creek spring-run Chinook salmon. Given your record of not

including our past letters on this matter in the public record it is essential that adequate mitigation measures are incorporated into the SJRRP to ensure that our concerns are addressed.
The DEA has purposely not considered volitional re-establishment of fish population. **This is a critical defect in the DEA and any approach to create a credible project.** Salmon researchers have a unique opportunity to study salmon response to a restored environment: start with a dry river bed, add water, stir in some gravel, plant trees, chill for a few years and allow the restoration work to become established, and then MEASURE the environmental response…see what spring-running genome recolonizes this new habitat. The SJRRP proposes to prematurely introduce Mill Creek fish with known inherited traits, adapted to an environ hundreds of miles to the north and a mile high in elevation. This approach could have lasting negative impacts that have not been addressed in the environmental documents for this project. Mill Creek fish could volitionally stray into this restored habitat rather than being "placed" in SJR. In that case the straying will be based on environmental cues of their choosing, not a geneticists forced conformity. Nature can heal and help itself if correct environmental conditions exist in the SJR. The volitional recolinization alternative must be included in any reports for this project. You can't get a quick fix on a problem that the water users and the government agencies created when the Friant Dam was built.

After restoration, the SJR below Friant Dam may be adequate spawning and rearing habitat for Fall-run Chinook salmon, however there is no evidence or requirement in the DEA that the condition of the SJR below Friant Dam meet the habitat requirements of wild Spring Run Chinook Salmon. In addition, the DEA fails to address how spatial and temporal isolation between these two runs will be assured, in perpetuity. In Mill Creek, isolation between these two runs is maintained by distance and time of spawning. Central Valley rivers with terminal dams no longer maintain a separation in spawn timing. Both fall and spring running fish ascend to the base of these dams and spawn simultaneously. In order for wild Mill Creek salmon to maintain their genetic fitness, biologists need to manage for stock separation, not stock integration. Let the wild spring Chinook stay in their natal watersheds rather than transporting them to a river system to be integrated with fall Chinook. Man altered the condition of SJR with the Friant Dam and it blocks the previous habitat of the spring run Chinook Salmon. This project only serves to have federally paid and protected biologists send Spring run Chinook Salmon to their sure death. How can you proceed with a project that will truly fail and only serve to kill fish that must have adequate habitat, water conditions and separation from fall run to survive?

The Mill Creek Conservancy submitted a 7-page letter to you and to Ronda Reed of NMFS on February 4, 2011. None of those substantial comments on our opposition to the SJRRP were included in the PEISR document on this project. It is unconscionable that public agencies would thwart the honest efforts of an impacted watershed community to protect the interests of the salmon that hold over, spawn and rear in the higher elevations of Mill Creek**. The MCC 2011 letter is attached and needs to be part of the record going forward. None of the valid concerns of the MCC expressed in this letter were included in any of these costly documents on the SJRRP prepared with tax payers dollars.** Also the request for addressing all of MCC concerns was raised again in the 3-7-2011 letter, however no response was received to any of our legitimate expressed concerns and apprehensions to this project.

The MCC objects to the wild Mill Creek spring-run Chinook salmon being designated as a non-essential population. **The arbitrary designation of Mill Creek spring-run Chinook as a nonessential population is totally contrary to the 20 years of conservation efforts of agencies, the Mill Creek Conservancy, The Nature Conservancy, the Los Molinos Mutual Water Company and numerous individual stakeholders in the watershed.**

The Mill Creek Conservancy demands that this project be amended and improved to create total protection of the wild Mill Creek spring-run Chinook salmon. It is unacceptable to utilize wild Mill Creek spring-run Chinook salmon when we have been working with United States Fish and Wildlife Services (USFWS's) Anadromous Fish Restoration Program (AFRP) to meet the objectives of the Central Valley Project Improvement Act's (CVPIA) doubling plan. Why does the DEA not mention this? Mill Creek needs to meet the target population of 4,400 returning adults before any consideration of using the wild Mill Creek spring-run Chinook salmon can be made. The CVPIA's goal of doubling the natural production of anadromous fish on Mill Creek has not been met. In fact, current population levels of wild spring-run Chinook salmon in Mill Creek are 44% below the baseline period. The baseline period population for spring-run Chinook in Mill Creek is 2,202 fish. The natural production during the doubling period was only 1,235 fish, and the target population for Mill Creek is 4,400 spring-run Chinook salmon. This means that current populations are 72% below the target goal. How can the DEA propose that even a single wild Mill Creek spring-run Chinook be removed from its natal stream, re-classified as "non-essential" and experimentally be used in a way that exempts them from take prohibitions?

To date, over $1 million public dollars have been spent thru the AFRP on Mill Creek to enhance salmon populations and meet this doubling goal. Also there has been nearly $ 1 million dollars spent from other sources on salmon habitat restoration. AFRP projects a total cost of $5 million public dollars to "fix" Mill Creek. AFRP funded projects such as stream flow gauges, thermographs, water quality monitoring, riparian restorations projects, riparian easements and geomorphology assessments, and fish ladder improvements were designed to address limiting factors contributing to low salmon returns in Mill Creek. It's working. These projects are contributing to improved Mill Creek salmon populations. So, why is one Federal Agency willing to spend up to 5 million dollars of the public's money to enhance fish populations, and another Federal Agency willing to label them as "non-essential" and relocate them to habitat where they can't survive?

The SJRRP has not used the best science available in making this determination. You must consider the appropriate actions that will not harm any of the existing wild stocks that currently have extremely low population numbers. You need to be patient and let nature determine which fish can survive in lower SJR. You could place Mill Creek fish there, but when they die without spawning, you have just reduced the number of Wild Mill Creek spring-run Chinook salmon

The Mill Creek Conservancy represents the wild spring-run Chinook in Mill Creek. What recourse do we have against a project that fails to document the significant potential harm to the at risk population of Mill Creek fish?

Which agency will be responsible and accountable for the adverse impacts to the wild Mill Creek spring-run Chinook salmon? Is it USFWS, NOAA, NMFS or the Bureau of Reclamation?

Under NEPA and CEQA, you need to incorporate all necessary mitigation measures prior to the taking of the fish. The Mill Creek Conservancy respectfully requests the following Mitigation Measures to ensure no harm to the Wild Mill Creek spring-run Chinook salmon:

1. Mill Creek Conservancy members and other Tehama County stakeholders need to be included on all actions that impact the Wild Mill Creek spring-run Chinook salmon.

Response #56

Response #57

2. The SJRRP must have peer review with at least 3 independent biologists and scientist that are regarded as experts on the Wild Mill Creek spring-run Chinook salmon to protect the interests of these fish.

Response #58

3. A comprehensive EIS/EIR document is required to assess the full adverse impacts to the wild Mill Creek spring-run Chinook salmon populations before any decisions can be made to take them from their native habitat. None of the documents on the SJRRP to date have addressed the adverse impacts to the wild Mill Creek spring-run Chinook salmon.

Response #59

4. No wild Mill Creek spring-run Chinook salmon can be utilized for the SJR until SJR conditions match that of the Mill Creek fish including spawning elevation, water temperature, quality of riparian habitat, miles of spawning habitat and habitat remoteness.

Response #60

5. No wild Mill Creek spring-run Chinook salmon can be utilized for the SJRRP until the wild Mill Creek spring-run Chinook salmon have exceeded the AFRP goal of doubling the wild Mill Creek spring-run Chinook salmon population to 4,400 fish for 12 continuous years.

Response #61

6. If condition # 5 above is met, the Mill Creek Conservancy requires notice to the issuance of permits under Section 10(a) (1) (A) of the ESA regarding the collection of the Wild Mill Creek spring-run Chinook salmon in order to provide our input.

Comments of Draft Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam

Response #62

Page 1-3, line 11 – 15
How do you proposed to meet the SJRRP restoration goal while protecting the water contracts?

Response #63

Page 1-3, line 31-35
The likelihood of successful introduction of Wild Mill Creek spring-run Chinook salmon is non-existent given the habitat requirements for spawning per Figure 1-1. This graphic does not accurately represent the elevations that are required for Mill Creek salmon.

Response #64

Page 1-7, lines 15- 28
What is the status of the channel and structural modifications and habitat improvements below the Friant Dam? What is the schedule for additional water releases? What is the time schedule for all of these noted improvements? They need to precede any introduction of fish.

Response #65

Page 1-10, lines 19-21
Wild Mill Creek spring-run Chinook salmon can only be taken without "jeopardizing the already threatened population" when there are excess fish above the 4,400 population level set by the AFRP. The SJRR could only safely "take" Wild Mill Creek spring-run Chinook salmon above that target number.

Response #66

Page 1-10 – Description of the Action Area, Study Area, and Restoration Area and Figure 1-2
The Action Area should eliminate Mill Creek since the salmon population has not met the AFRP target population numbers.

Response #67

Page 1-12, lines 1 – 3
The SJFFP PEIS/R is deficient since it did not describe or analyze the adverse impacts to the Mill Creek watershed and the distinct Wild Mill Creek spring-run Chinook salmon population.

Response #68

Figure 1-4 San Joaquin River Restoration Area
This map should show the river elevations since that is a critical component of the Spring-run Chinook Salmon habitat.

Response #69

Page 1-15, lines 1 – 19
Where there any biologist representing Wild Mill Creek spring-run Chinook salmon present at the November 1, 2011 Technical Feedback Group Meeting? We were not represented in this matter.

Response #70

Page 2-1, lines 25-29
This project is more concerned about protecting the water users than protecting Mill Creek Salmon.

Response #71

Page 2-2, lines 3-6
Stanislaus and Tuolumne river salmon are the most appropriate fish to reintroduce to the SJR. Introducing (stealing) Mill Creek salmon to meet an arbitrary deadline and population number is bad science and harmful to Mill Creek's threatened population.

Response #72

Page 2-2, lines 13-23
The SJR to the Friant Dam is fall run habitat. Why try to introduce spring run when this stretch of river is not suitable habitat and will result in inbreeding between the two runs?

Response #73

Page 2-3, line 9
Amend the settlement to exclude Spring Run Chinook Salmon

Response #74

Page 2-3, lines 25-27
Mill Creek is a third party to this project and will be harmed by the taking of our threatened fish.

Response #75

Page 2-4, lines 27-28
Is it equitable that SJR water users are exempt from take provisions but take is a prohibited activity on Mill Creek?

Response #76

Page 2-5, line 7
Why consider and list Deer and Mill Creek fish first?

Response #77

Page 2-5 lines 27 -36
Mill Creek spring-run do not meet a majority of these criteria. Mill Creek spring-run Chinook are not local or regional origin to SJR. Their habitat is the upper reaches of Mill Creek where they are born, stay for a year, migrate out as quickly through the Sacramento River to spend approximately 2 years in the ocean and then quickly return to hold over on the upper reaches of Mill Creek to spawn. They only travel through the Central Valley – it is not their origin.

The wild Mill Creek spring-run Chinook salmon life history evolved at higher elevation in spring-fed, snow melt water. The wild Mill Creek spring-run salmon currently do not have adequate population

size to support any taking of fish, nor have they ever had sufficient population numbers since they have been counted per Table 3-3 in the DEA. **Table 3-3 clearly indicates that wild Mill Creek spring-run Chinook salmon should not UNDER ANY CIRCUMSTANCES be considered as candidate for use as part of the SJRRP until the population levels reach the required 4,440 for at least 12 years.**

Response #77

Response #78

Page 2-6, lines 21-22
Why not list FRFH as the best candidate since their use will have "no effect on the population or the ESU'? Do no harm to other populations.

Response #79

Page 2-11
When will Mill Creek Salmon be safe for the duration of this project?

Response #80

Page 2-14
Why were only 2 duration periods analyzed? That is not adequate to address our valid concerns.

Response #81

Page 3-1, lines 5 -6
The Federal Register indicates that special care and consideration will be utilized with the Mill Creek Salmon, however in the EA, it continues to list the Mill Creek fish prior to Butte Creek and Feather River salmon.

Response #82

Page 3-1, lines 28-31
How is SJR below Friant Dam consistent with the habitat and life cycle described here for Wild Mill Creek spring-run Chinook salmon?

Response #83

Page 3-2, lines 9-10
Why would you threaten the last wild populations of spring-run Chinook salmon by forcing them into a foreign and unsuitable river channel below the Friant Dam?

Response #84

Page 3-3, lines 4-6
This section states that Mill Creek population is in the "high extinction risk category due to the rate of decline". That statement should disqualify Mill Creek Salmon from the SJRR project

Response #85

Page 3-8, line 11
There are two small water diversions on Mill Creek. **<u>These are not dams!</u>** Please correct this misstatement. The Clough diversion was destroyed in the 1997 flood and there is a siphon at that location. These errors make the validity of the whole report suspect. The attached U. S. Fish and Wildlife information sheets states 0 acrefeet of water storage, further evidence of no dams on Mill Creek.

Response #86

Figure 3-4
<u>Please change to reflect correct status – Ward diversion and Upper diversion to make this report reflect the true condition of Mill Creek.</u>

Response #87

Table 3-3
This data clearly shows that there are not adequate population levels or an appropriate population trend to allow any take of Mill Creek Salmon.

Response #88

Page 3-14
This section does not discuss the Coleman Hatchery Management Plan.

Page 3-15 San Joaquin River Tributaries. Line 9-11

Response #89

San Joaquin Rivers do not have adequate habitat to support Spring – run Chinook Salmon as stated in this section. Why steal/take Mill Creek salmon that require the cold spring-fed water that occurs in higher elevation, and isolation from hatchery fall Chinook that spawn at similar times? The SJRRP is going through an exercise to meet a settlement that will kill Mill Creek Salmon.

Response #90

Page 3-16, line 4
What adult spring-run Chinook holding opportunities exist below Friant Dam that will support Mill Creek spring-run salmon?

Response #91

Page 3-16, line 23-24
Why should Mill Creek sacrifice our fish for SJRRP and a dam system that does not benefit wild Mill Creek spring-run Chinook salmon?

Response #92

Table 3-7 and Table 3-8
You need to take a hard look at these tables and determine if spring-run salmon can survive in SJR below the Friant Dam.

Response #93

Page 3-37 Water Quality
The SJR needs to duplicate the water quality of the upper reaches of Mill Creek prior to any take

Response #94

Page 3-38 Water Temperature
The SJR needs to duplicate the water temperature of the upper reaches of Mill Creek prior to any take.

Response #95

Page 3-38 Suspended Sediment and Turbidity
The SJR needs to duplicate the suspended sediment and turbidity of the upper reaches of Mill Creek prior to any take.

Response #96

Page 3-39, line 27-29
The upper reaches of the holding habitat of Mill Creek are much cooler and has shaded riparian habitat with numerous volcanic formations that create springs with cold pure water throughout the summer and fall months that do not exist in the SJR or the Sacramento Valley.

Response #97

Page 4-1, lines 6-9
The SJRR will not have any success on any level (except spending public tax dollars) without changes to water flows and infrastructure.

Response #98

Page 4-1 – Section 4.2 No Action
Mill Creek Conservancy supports channel and habitat improvements and no collection of wild Mill creek salmon.

Response #99

Page 4-6, lines 16-17
What additional evaluation will be required for the collection of Mill Creek salmon? Why is this not included in the DEA? The MCC requests to be informed of any and all actions pursuant to NEPA, ESA and CEQA.

Response #100

4-6, lines 37-38
MCC wants to be notified on the NMFS special rule changes.

Response #101

4-7, lines20-28
Congress should be notified each year about the impacts/results of this project and the annual costs. The proposed reporting requirement does not prevent impacts to fish as stated in this section.

Response #102

4-8 Hybridization
There is not adequate science information in the DEA that addresses the hybridization risk to Wild Mill Creek spring-run Chinook salmon.

Response #103

4-14 Donor Stock Alternatives Analysis
There is not adequate data in the DEA regarding impacts to Donor Stock.

SJRRP specific questions –

These questions are too narrow in scope to adequately determine adverse impacts to **wild Mill Creek spring-run Chinook salmon. We request that you take the totality of all the comments contained in this and past letters referenced in the attachments. Use of only the response to these restricted issues would not be in the best interest of a fair and comprehensive analysis of the adverse impacts of the SJRRP to the wild Mill Creek spring-run Chinook salmon.**

Response #104

(1) The geographical boundary of the designated experimental population
MCC response: not directly applicable to Mill Creek

Response #105

(2) The extent to which the experimental population would be affected by current or future Federal, State or private actions within or adjacent to the experimental population area.
MCC response: not directly applicable to Mill Creek

Response #106

(3) Any necessary management restrictions, protective measures that we may not have considered.
MCC response: Revise project to include and utilize volitional reintroduction to SJR.

Response #107

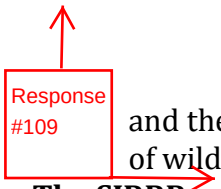
(4) The extent to which we have provided protections for third parties as required by the SJRRSA.
MCC response: SJRRP has provide NO protection for the Mill Creek Spring-run Chinook salmon or the Mill Creek Conservancy, Los Molinos Mutual Water Company and local stakeholders that have spent 20 years of volunteer efforts to promote salmon population on Mill Creek. In addition the Los Molinos Mutual Water Company and shareholders have voluntarily bypassed irrigation water for the benefit of migrating salmon.

Response #108

(5) Whether we should propose the experimental population as nonessential.
MCC response: MCC opposes the use of Wild Mill Creek spring-run Chinook salmon for experimental purposes and the designating Mill Creek descendants as nonessential. This is a protected species in Mill Creek and these fish deserve protection under the current ESA.

Response #109

(6) Whether the proposed designation furthers the conservation of the species and we have used the best available science in making this determination.
MCC response: The SJRRP has the potential to adversely impact Mill Creek Spring-run Chinook salmon by utilizing any fish before the AFRP target numbers are met in Mill Creek. Also, as a species, Mill Creek fish cannot survive in the proposed habitat of the San Joaquin



and the threat of hybridization with fall Chinook. Hybridization will degrade the conservation of wild stream-type spring-run Chinook salmon

The SJRRP only serves the interest of SJR and their water users. It does not protect or promote the interest of the Wild Mill Creek spring-run Chinook salmon. This project is a misuse of government funds since it utilizes public money to export wild Mill Creek spring-run Chinook salmon to a river environment that will not support them. The use of Mill Creek Spring –run Chinook salmon was not an intended out come of the initial lawsuit and our salmon should not be the solution to the problem that the SJR water users created.

The Mill Creek Conservancy has worked for twenty years to promote the integrity of our watershed including substantial work on protecting the wild Mill Creek spring-run Chinook salmon. It is unfortunate that the MCC Board of Directors and members of the MCC find themselves spending numerous hours on "defense" against the SJRRP's ill-advised use of wild Mill Creek spring-run Chinook salmon rather than the more rewarding "offensive efforts" of volunteer activities that benefit Mill Creek. The positive MCC projects that benefit wild Mill Creek spring-run Chinook salmon include but are not limited to:

Creation of the Mill Creek Watershed Management Strategy Report in collaboration With landowners, agencies and stakeholders
Numerous re-vegetation projects with Los Molinos school children,
Promoting the establishment of numerous Conservation Easements on Mill Creek with The Nature Conservancy,
Supporting Los Molinos Mutual Water Company's Water Exchange agreements to provide spring flows for the spring-run Chinook,
Allowing and seeking access for Fish and Wildlife and other agencies on private lands for conservation efforts consistent with the MCC Mission Statement
Seeking grants from USFWS to remove fish passage impediments in Mill Creek
Encouraging riparian fencing along Mill Creek
Spearheading and sponsoring the reduction and removal of the feral cattle population from Mill Creek that damages habitat critical to spawning spring-run Chinook salmon
Assisting with the annual monitoring/granting of access for spring-run Chinook spawning surveys
Allowing water quality and temperature monitoring on private property in Mill Creek
Endorsing the road reduction programs for Lassen National Forest

It is regrettable that a restoration project for San Joaquin River needs to involve a very selective species of fish from Mill Creek, Tehama County with very specific habitat requirements. Please carefully consider the devastating harm of seizing spring-run Chinook from Mill Creek when their population requires the continued efforts mentioned above. If the regulatory agencies seize Mill Creek fish for a flawed project that adversely impacts Wild Mill Creek spring-run Chinook salmon for an almost fatal fate before they are able to spawn in the SJR, how many future volunteer hours do you think the MCC can attract? Has all the MCC work been for naught if the regulatory agencies can TAKE the Wild Mill Creek spring-run Chinook salmon from their natal stream? If you capture and use the Mill Creek fish against the will of the local providers and guardians of healthy wild Mill Creek spring-run Chinook salmon, then you have robbed the future and the drive to continue our good works on behalf of the salmon. That is too high of a price to pay to meet the terms of the a settlement that did not consider the impacts to Wild Mill Creek spring-run Chinook salmon nor the people that do their level best for their survival.

MCC and the wild Mill Creek spring-run Chinook salmon are not a third-party to the SJRRP and we have earned the right to speak for the natal Mill Creek fish that want to be NO part or party to this project. The proponents of this project need to amend their proposed actions to eliminate any use of wild Mill Creek spring-run Chinook salmon. We have worked too hard for their benefit in their natal habitat to have them removed and sent to an unsuitable habitat.

Sincerely,

Burt Bundy, President MCC

Attachments:

MCC letter dated 2-5-2013
Kerry B. Hanna letter dated 3-7-2011
MCC letter dated 2-14-2011
MCC brochure
U.S. Fish and Wildlife 3-28-2011 information on $ 2 Million dollars of restoration projects in Mill Creek

CC: Natural Resources Defense Council
Los Molinos Mutual Water Company
Tehama County Board of Supervisors
The Nature Conservancy
Tehama County Fish and Game Commission
California Fish and Wildlife
California Trout Unlimited
Chico Enterprise News
Red Bluff Daily News
Redding Searchlight
Sacramento Bee
San Francisco Chronicle

Mr. & Mrs. Gary Martin
P.O. Box 686, Firebaugh CA 93622

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

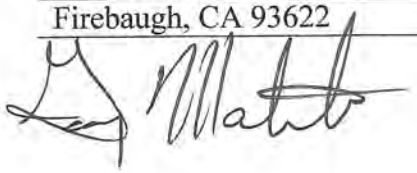
As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Response #110

Sincerely yours,

Name: Mr & Mrs Gary Martin
Address: 2155 E Cardella
P.O. Box 686
City, State Zip: Firebaugh, CA 93622



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March 4, 2013

VIA E-MAIL

Ms. Elif Fehm-Sullivan, Fisheries Biologist
Protected Resources Division, Southwest Region
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

Re: Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition on Proposed Rule for Introduction of a Nonessential Experimental Population of Spring-Run Chinook Salmon in the San Joaquin River Pursuant to Section 10(j) of the ESA and Related Incidental Take Protection Pursuant to Section 4(d) of the ESA, NOAA-NMFS-2012-0221

Dear Ms. Fehm-Sullivan:

The San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition (referred to hereafter collectively for convenience as "Exchange Contractors") appreciate the opportunity to submit comments on the proposed rule for introduction of an experimental population of spring-run Chinook salmon to the upper San Joaquin River as part of the San Joaquin River Restoration Program (SJRRP) and the accompanying incidental take protection.

The Exchange Contractors are very appreciative of the outreach that has been conducted by NMFS regarding the proposed rule and other issues associated with the reintroduction of spring run Chinook salmon to the upper San Joaquin River. In particular, Ms. Rhonda Reed has met with the Exchange Contractors on numerous occasions. In the course of those meetings, Ms. Reed has requested comments on both the substance of the proposed rule and the format of the rule. Accordingly, the Exchange Contractors will comment on both form and substance.

Drafting concerns

D.1. The summary should state that take exemptions include take in the upper San Joaquin River as well as the tributaries and the Delta. Further, while all lawful activities are exempted from take, in keeping with prior practice, examples of some particular activities exempted from take should be set forth.

Response #111

D.2. Under the section "Statutory and Regulatory Framework for Experimental Population Design" it is stated that in order to comply with section 10011(c), NMFS considered any additional measures appropriate to address management concerns under local conditions, a process for data collection and periodic review of the status of the experimental population. It is unclear as to what provisions in section 10011(c) require these considerations. Section 10011(c) concerns protections for third parties. NMFS should explain how the foregoing considerations are relevant to protections for third parties.

Response #112

D.3. Under the same section as referenced in D.2. The draft states that California Fish and Game Code section 1600, *et seq.* will help ensure the establishment and survival of the experimental population by protecting aquatic and riparian habitat. The draft states that Section 1600 *et seq.* requires that the Department of Fish and Wildlife be notified before anyone substantially diverts the natural flow of a river or stream. NMFS should explain the legal basis for contending that Section 1600 *et seq.* requires notification before someone substantially diverts the natural flow of a river or stream. In a recent court decision the Superior Court of California found that the Department of Fish and Wildlife did not have authority to restrict diversions under Section 1600 *et seq*. (*Siskiyou County Farm Bureau v. California Department of Fish and Game*, Case No. SC CV 11-00418, Siskiyou County Superior Court.) Rather, the court found that Section 1600 *et seq.* regulated physical alterations to the river bed and banks, but not simply water diversion.

Response #113

D.4. The section entitled "Additional Management Restrictions, Protective Measures, and Other Special Management Considerations" should start with a summary that identifies how the 4(d) rule will be applied and which activities it covers.

Response #114

D.5. Under the section entitled "Process for Periodic Review" the draft states that "while this monitoring is being conducted for purposes of making the reintroduction effort successful, we will use the information to also to determine if the experimental population designation is causing any harm to CV spring-run Chinook salmon that are part of the threatened ESU and their habitat, and then, based on this and other available information, determine if any changes to the experimental population designation may be warranted." Is this a reference to Sacramento-based spring-run? If so, the draft should be clarified to make this explicit.

Response #115

D. 6. The amendment to the special rules for marine and anadromous species should be summarized at the beginning of the draft rule so that the reader knows what activities are

Response #116

covered, and the geographic areas that are covered. The reader should not have to wait until the very last two pages of the rule to find out specifically what is or is not covered. Response #116

Substantive concerns

S.1. Under the section "Background Information Relevant to Experimental Population Designation" it should be stated that the proposed experimental population will occur in the San Joaquin River upstream of the confluence with the Merced River, etc. as well as the tributaries to the San Joaquin River from the Merced River on downstream. The tributaries are outside of the current range of the CV spring-run Chinook salmon ESU. Response #117

S.2. Under the same section as S.1., the draft states that NMFS' recovery plan for CV salmon characterizes the San Joaquin River basin below Friant Dam as having a high potential to support a spawning population of reintroduced salmon "with implementation of the San Joaquin River Restoration Program (SJRRP)." The SJRRP includes channel and structural modifications to the San Joaquin River. The draft rule does not state whether failure to develop all or only part of the channel and structural modifications "will create habitat conditions… sufficient to support the establishment of CV spring-run Chinook salmon populations." Response #118

Pursuant to the Record of Decision (ROD) issued by the Bureau of Reclamation, if there are insufficient funds to develop the entire plan as set forth in the "Framework for Implementation", Reclamation will rely on a contingency plan as explained in section 6.2 of the ROD. This plan will prioritize certain actions. Consistent with the types of actions to be prioritized, the Exchange Contractors recommend that the projects that should be prioritized to assure successful passage of salmonids are the improvements to Sack Dam and installation of a fish screen in the Arroyo Canal, and a bypass around Mendota Dam and the installation of a fish screen for flows into the Mendota Pool. Presumably, NMFS is also aware of the subsidence problem near Sack Dam that is affecting flow in the San Joaquin River and nearby flood control system. The effects of subsidence must also be addressed when considering the likelihood of success of the 10(j) population.

S.3. Under the same section as S.1., the draft states that programs for strategic screening and participation in habitat conservation programs will be implemented in conjunction with SJRRP activities. What types of diversions will be screened? Will diversions below 300 CFS be screened? If flows below 300 CFS are not required to be screened, they must still be covered by the 4(d) rule such that incidental take is permitted. Will all diversions above 300 CFS be screened? Are there specific locations that NMFS has identified to be screened on a priority basis? Response # 119

S.4. Under the section "Identification of the Experimental Population", it states that the SJRRP includes actions to prevent or reduce straying to false pathways. What actions are assumed to be taken that will reduce straying to false pathways? In 2011, due to flood operations, fall-run salmon successfully migrated upstream of the Hills Ferry Barrier and over 70 salmon Response # 205

perished in the Eastside Bypass. The Department of Fish and Wildlife did not have any measures in place to prevent straying once salmon migrated past the Hills Ferry Barrier.

S.5. The section entitled "Additional Management Restrictions, Protective Measures, and Other Special Management Considerations" states that take prohibitions would apply to the experimental population that has an intact adipose fin "as well as those that are adipose fin-clipped." It is our understanding that an agreement was reached with Reclamation and the U.S. Fish and Wildlife Service that adipose fin-clipped salmon in the experimental population area would not be subject to take prohibitions under the 4(d) rule currently in place for Sacramento spring-run Chinook salmon. This provision should stay in place until such time as adipose fin-clipped fish from the Feather River Fish Hatchery or any other facility will no longer be introduced into the San Joaquin River system.

Response #121

S.6. Under the section entitled "Public Comment" NMFS requests feedback on six specific questions. The Exchange Contractors have attempted to address each of those areas in the above comments. However, we will also provide brief responses to each of the questions below.

(1) ***The geographic boundary of the designated experimental population.*** The geographical boundary should include the San Joaquin River upstream of the confluence with the Merced River, the Kings River and tributaries to the San Joaquin River from the Merced River downstream.

Response # 206

(2) ***The extent to which the experimental population would be affected by current or future federal, state, or private actions within or adjacent to the experimental population area.*** The experimental population will be affected by agricultural and water diversion activities, among others. These normal and lawful activities must be exempted from take prohibitions. Water diversion activities include, among others, the operation, maintenance, repair and replacement of water diversion structures including dams, intakes, pumps, canals, pipes, etc. some of these activities will occur in the San Joaquin River.

Response #190

(3) ***Any necessary management restrictions, protective measures, or other management measures that we may not have considered.*** Exemption from take will cover all lawful activities. The rule should provide examples of protected activities, including diverting or receiving water, water spreading (such as to address the subsidence problems east of Sack Dam), and flood control activities.

Response #125

(4) ***The extent to which we have provided protections for third parties as required by the SJRRSA.*** NMFS should address specifically how it will treat unscreened diversions on the San Joaquin River above the confluence with the Merced River as well is in false pathways, including irrigation canals and flood control channels. Examples of otherwise lawful activities that will be included under Section 223.301(B) should include activities related to diverting or receiving water including operation, maintenance, repair, and replacement of water diversion

Response #126

structures including dams, intakes, pumps, canals, pipes, etc. as well as flood control operations and spreading to address subsidence problems since the latter is related to water supply.

Response #126

As NMFS is aware, there are a number of water diversion facilities located along the San Joaquin River in the restoration area. The member agencies of the Exchange Contractors operate a number of facilities, including the above-mentioned dams, intakes, pumps, canals, pipes, etc. The member agencies include the Columbia Canal Company, Central California Irrigation District, Firebaugh Canal Water District, and San Luis Canal Company. In the recently adopted 4(d) rule for the Deschutes watershed (78 Fed. Reg. 2893), take of Middle Columbia River steelhead was permitted "incidental to any activities related to or associated with the operation and maintenance of the Opal Springs Hydroelectric Project…" The facilities of the member agencies are not so precisely identified. However, it is necessary that all facilities operated by these member agencies for water diversion and water management purposes be exempted from take.

Response # 207

NMFS has appropriately made clear it is attempting to develop a rule that will not have more than a *de minimis* water supply impact on third parties. NMFS must also ensure that no costs will be imposed on third parties that are not voluntarily incurred. (San Joaquin River Restoration Settlement Act, Sec. 10009(a)(3).)

(5) ***Whether we should propose the experimental population as nonessential.*** Yes. According to the draft rule, the nonessential population designation will be reviewed every five years. If the spring-run are re-categorized as an essential population, the provisions of the San Joaquin River Restoration Settlement Act will still be applicable regarding the protections to third parties. If the San Joaquin spring-run Chinook salmon experimental population is re-categorized as an essential population, how will NMFS ensure there will be no impacts on the water, agricultural and flood control activities that should be exempted under this rule?

Response # 120

(6) ***Whether the proposed designation furthers the conservation of the species and we have used the best available science in making this determination.*** The designation will further the conservation of the species and will provide necessary agency flexibility in adaptively managing the fishery. However, the failure to consider the lack of funds, increased costs as identified in the Framework for Implementation, program delays, and the new subsidence condition (see Exchange Contractors' comments to Draft Environmental Assessment that accompanies this draft rule) do not constitute consideration of the best available science.

Response #124

In light of cost increases and funding deficiencies, NMFS should develop a reintroduction strategy that seeks to achieve reintroduction in light of the new financial reality. NMFS could design the strategy as a layered contingency plan with assumptions about different levels of funding. Starting at the $500-600 million range, given that that's what's available, and building from there would make sense. The Restoration Settlement Act does not compromise NMFS' independent decision-making authority. It must still apply its independent

Response #123

judgment under the Endangered Species Act ("ESA") as to how best to accomplish reintroduction. (*See* San Joaquin River Restoration Settlement Act § 10011; Stipulated Settlement ¶¶ 14 and 14(a).) NMFS is not required to follow the letter of the settlement, but may develop a strategy it views as consistent with its ESA obligations. The act makes it clear that the ESA is not amended and, therefore, NMFS has its own decision-making authority under sections 10(a) and 10(j).

Response #123

In conclusion, the Exchange Contractors appreciate the efforts by NMFS to reach out to the affected third parties and to attempt to fashion rule that will have *de minimis* water supply impacts to third parties. Given the uncertainties associated with implementation of the SJRRP and the application of the 4(d) rule, including Delta take of SJR spring-run, an adaptive management approach appears warranted. The Exchange Contractors support the suggestion of the State Water Contractors that a process be developed to assess the amount of take in the Delta on SJR spring-run.

Response #122

Thank you for this opportunity to comment.

Sincerely yours,

Thomas M. Berliner

TMB:dls

cc: San Joaquin River Exchange Contractors Water Authority
San Joaquin River Resource Management Coalition
San Joaquin Tributaries Authority
San Luis and Delta-Mendota Water Authority
Rhonda Reed - NMFS
Alicia Forsythe – USBR

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ATTACHMENT

Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"

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March 4, 2013

VIA EMAIL

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Re: Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"

Dear Ms. Fehm-Sullivan and Ms. Reed:

The following comments to the Draft Environmental Assessment referenced above (DEA) are offered on behalf of the San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition (referred to for convenience collectively as "Exchange Contractors"). By separate letter, the Exchange Contractors will comment on the proposed 4(d) take provisions and Section 10(j) designation of non-essential experimental population set forth in the proposed rule issued at 78 Fed. Reg. 3381 (January 16, 2013). For your convenience, a copy of that letter is appended hereto.

General Comments

1. Lack of Funding.

In comments to the Draft Programmatic Environmental Impact Statement/Environmental Impact Report (PEIS/R), the Exchange Contractors raised the concern that the Settling Parties, including the National Marine Fisheries Service (NMFS), have erroneously assumed that all necessary funding will be made available to fully implement the Settlement referred to in DEA Section 1.1.2. While perhaps historically there was some basis, however remote, that all of the funding necessary to fully implement the settlement would be forthcoming, based upon more recent information that understanding is no longer valid. This newly discovered information includes assurances from members of Congress that further federal funding will not be forthcoming as well as the substantial increase in costs of necessary expenditures identified by Reclamation in its Framework for Implementation. At the time the Settlement was presented to the United States Congress in support of the necessary implementing legislation, estimates of the cost of the San Joaquin River Restoration Program (SJRRP) ranged from $250-800 million. In the Framework for Implementation, Reclamation has identified actions that are necessary in addition to those set forth in the Settlement to assure successful reintroduction of the San Joaquin spring-run Chinook salmon. Further, Reclamation has appropriately identified in the Record of Decision (ROD) at Section 6.2 that contingencies must be developed in the event that full funding is not available. The ROD provides that Reclamation will prepare each year an Annual Work Plan of projected SJRRP activities that "will be subject to revision to respond to changing conditions, including environmental, budgetary or otherwise." Moreover, "[c]onsistent with and in the process of fulfilling the requirements set forth in the Settlement and Act, and in consideration of available resources," the ROD also establishes a list of SJRRP activities that will be expedited over other activities.

NMFS is aware of the current level of funding available for the SJRRP, the fact that additional funding is not going to be available, that the SJRRP is currently underfunded based on original estimates, and that additional actions and costs that have been identified by Reclamation in the Framework for Implementation. In a situation such as this, where changed circumstances affect the factors relevant to the development and evaluation of alternatives, the agency "must account for such change in the alternatives it considers." (*Natural Resources Defense Council v. United States Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005) [finding that error in interpreting report affected the economic and wildlife factors that the Forest Service used in developing and evaluating the alternatives considered]; *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 723, at 730-731 ["While we cannot predict what impact the elimination of the [long-term] contract will have on the Forest Service's ultimate land use decisions, clearly it affects the range of alternatives to be considered"].) Here, the DEA violates NEPA by failing to analyze the SJRRP assuming no additional funding or the necessity for additional funds identified in the Framework for Implementation.

2. Less than Full Implementation.

The DEA does not analyze the impacts on the successful reintroduction in the event that less than all measures identified in the Settlement are implemented. Yet, in multiple sections of the DEA, NMFS states that "the flow and habitat improvements to be implemented by the SJRRP represent the best opportunity to have spring-run Chinook reintroduced to the San Joaquin River." (Page 5-1[1]). Further, the DEA does not contain any analysis of the newly identified actions beyond those set forth in the Settlement that Reclamation has identified (in close cooperation with NMFS and other Settling Parties) in the Framework for Implementation that are necessary for the successful reintroduction of spring-run Chinook salmon to the San Joaquin River.

3. No Analysis of Individual Projects and Cumulative Effects Thereof.

Reclamation is currently pursuing two projects in furtherance of the Settlement. These are the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project and the Mendota Pool Bypass and Reach 2B Improvements Project. (*See* Mendota Pool Bypass and Reach 2B Improvements Project, Project Description Technical Memorandum and the Draft Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration for the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project.) Each of these projects are considered necessary for the successful reintroduction of spring-run Chinook salmon. Each of these projects will have a cumulative effect upon the spring-run and the human environment. There is no analysis of the effect of these projects on the reintroduction of spring-run Chinook salmon, nor is there any analysis of the effect of subsequent projects required to be implemented by the Settlement. Similarly, there is no analysis of the failure to implement either of the above projects or subsequent projects on a successful reintroduction of spring-run Chinook salmon. (*Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1988) [finding EIS inadequate for failing to address reasonably foreseeable cumulative impacts]; *Border Power Plant Working Group v. Department of Energy*, 260 F.Supp.2d 997, 1033 (S.D. Cal. 2003) [failure to analyze cumulative impact of project on water quality and quantity rendered Environmental Assessment "inherently inadequate."].) For instance, at page 1-5 the DEA acknowledges "reintroduction will begin with actions appropriate to existing habitat and to refining methods that would be used. Succeeding actions are expected to have more likely success as the habitat improvement and accompanying actions in the Settlement are implemented." Yet, no analysis is set forth in the event that the succeeding actions are implemented in whole or in part or not implemented at all.

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[1] Words of similar effect are also found on the following pages: 1-5, 2-11, 4-16 (Until the habitat improvement projects are completed, in river survival is expected to be low, except in wet years.)

4. Subsidence.

NMFS is aware that recently discovered significant subsidence has and is still occurring in the Restoration Area and adjacent thereto. The Exchange Contractors have previously commented on the subsidence problem. Please see those comments set forth in the Supplemental Comments to the Final PEIS/R Based on New Information from the San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition submitted August 15, 2012. See also, the Exchange Contractors Protest to the United States Bureau of Reclamation Petitions for Change to License 1986 and Permits 11885, 11886 and 11887 (Applications 23, 234, 1465 and 5638), pages 41-42, submitted to the State Water Resources Control Board on June 18, 2012, and the Supplemental Information to Protest of USBR Petitions for Permits 11885, 11886, and 11887 and License 1986 (Applications 23, 243, 1465, and 5638) re San Joaquin Restoration Program, pages 6-7, submitted to the State Water Resources Control Board on August 31, 2012. Those comments are incorporated herein as though fully set forth.

The subsidence is the result of recently initiated deep well pumping from under the Corcoran Clay for overlying lands. Differential subsidence on the scale of up to 0.6 feet per year has been documented within the study area of the SJRRP near Western Madera. Since 2008, subsidence in the study area has been as much as 1.2 feet. The current level of subsidence is as much as 4 feet and freeboard at Sack Dam has been reduced to but a few inches. The SJRRP will need to determine how to address existing and increasing future subsidence. The extreme rate of subsidence may have a significant impact on the SJRRP schedule to complete the planning, design and construction of the Phase I projects. To date the subsidence has resulted in a halt to the further engineering and construction of the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project. Additional Phase I facilities and river reaches that will be impacted include:

- Flow capacity of Reaches 3 and 4A
- Flood flow capacity in the Chowchilla bypass
- Flood flow capacity in the Eastside Bypass
- Modifications at the Reach 4B headgate
- Modifications to the Sand Slough Control Structure
- Modifications in the San Joaquin Reach 4B1

Specific Comments

Section 1.3.1.1. Proposed Designation Will Further the Conservation of the Species.

This Section acknowledges that to achieve the restoration goal, the Settlement requires a combination of channel and structural modifications and habitat improvements, water releases and the reintroduction of Chinook salmon. It further states "with these actions, the prognosis for

spring-run Chinook populations to return is good." (citation omitted). Presumably, without one or more of these actions, the prognosis for spring-run Chinook populations to return is less than good. No analysis is provided of the effect on spring-run of less than full implementation of the foregoing measures.

Section 1.4.1. San Joaquin River Restoration Program Environmental Impact Statement/Report.

This section states that the PEIS/R evaluated the "potential direct, indirect, and cumulative impacts on the environment at a program level that could result from implementing the Settlement consistent with the Restoration Act [citations omitted]." However, the PEIS/R did not provide an environmental analysis of the various structural and habitat improvements that needed to be made. Rather, it assumed those were common elements and provided no actual analysis of the impacts of implementing those measures.

The PEIS/R analyzed reintroduction of spring run Chinook with regard to hybridization, competition and disease. This analysis was conducted at the program level. As stated in the Exchange Contractors previously submitted comments to the PEIS/R, the analysis of impacts to salmon from the SJRRP, the impacts to adjacent landowners, agricultural interests, and water supply, was at a programmatic level. Yet, the DEA does not contain the level of analysis required to assess the impact of reintroduction of salmon into the upper San Joaquin River with respect to the aforementioned interests.

Section 1.6. Action area.

Included in the action area is not only the San Joaquin River but the flood control bypasses. The 4(d) rule must cover flood control activities in the Kings River, San Joaquin River and flood control bypasses.

Section 2.0. Proposed action and alternatives.

The section states that the reintroduction process will be implemented such that in any given year the SJRRP will consider the condition of salmon populations and the likely success of reintroduction of spring run. How will this latter analysis be done? What factors will be considered? How will varying levels of success regarding levels of river improvements be taken into account in this analysis?

Section 2.3.1. 10(j) area alternatives.

The preferred alternative is area alternative 2. Area alternative 2 describes the NEP area as the restoration area of the San Joaquin River from Friant Dam to the Merced River and the Kings River to the San Joaquin River. Area alternative 2 excludes the Eastside tributaries on the lower San Joaquin. It is unclear why the tributaries are excluded from the NEP area given that

there are no established populations of spring-run and only at best questionable reports of spring-run straying to these rivers. The spring-run are at best strays from the Sacramento basin.

Within this section is a subparagraph "a", regarding take exemption on the tributary rivers. The discussion notes the legal requirement to not impose more than a *de minimis* water supply impact, etc. on unwilling third parties. The third-party designation includes the Exchange Contractors. There may not be more than a similar *de minimis* impact on the Exchange Contractors.

Section 2.3.2. 10(j) duration alternatives.

It is essential that the 10(j) experimental population designation remain in effect well beyond 2025. It is now evident that the settlement will not be fulfilled by 2025, nor will the measures included in the Framework for Implementation. It is likely several decades before these measures will be completed. Until such time as all of these improvements or actions are taken, and it can be demonstrated that the salmon population is not only self-sustaining but thriving, the 10(j) designation should remain.

Section 3.2.1. Life history.

The description of the life history of the spring-run Chinook is that when it swims upstream from the Delta it goes to the Sacramento River. There is no indication that spring-run migrate to the San Joaquin River. This is additional evidence that the entire San Joaquin basin should be designated as an NEP area.

Section 3.2.4.3. Diversity.

On page 3 – 3, lines 32-36 the DEA discusses potential sources of phenotypic spring running Chinook that have been observed on the San Joaquin River tributaries. No citation is provided for the potential sources of these salmon. Please provide a citation to back up the hypotheses set forth.

Section 3.3.2.3. Tuolumne River.

On page 3 – 18, line 6-7, no citation is provided for the assumption that spring-run Chinook in some numbers "undoubtedly" ascended the main stem a considerable distance. Similarly, no citation is provided for the statement at lines 15-17 that there have been reports of adult Chinook in the Tuolumne in the spring months of April and May.

At line 21-25 the DEA states that a "hard look" needs to be taken at information regarding the potential presence of spring-run Chinook. Yet, the statements set forth in the DEA are without any support to authoritative accounts of historical spring run. A "hard look" requires a hard look at the evidence as well as the analysis. The evidence cited is at best sparse and

speculative. Substantiation should be provided.

Section 3.4.2. San Joaquin River from Friant Dam to Merced River.

At page 3 – 21, commencing line 1, the habitat in Reach 1 is described. The description cites concerns with existing in-channel and floodplain pits that reduce native habitat, increase river water temperatures and provide increased habitat for non-native species (which presumably leads to predation). In response to comments to the PEIS/R, Reclamation downplayed the significance of the gravel pits and the predation problem. (*See e.g.* Final Program Environmental Impact Statement/Report for the San Joaquin River Restoration Program, July 2012 ("Final PEIS/R"), pp. 3.8-260 (EC1-110), 3.8-262-63 (EC1-115), 3.8-283-84 (EC1-151f), 3.8-292-93 (EC1-164), 3.8-296-97 (EC1-174), 3.8-305-06 (EC1-191), 3.8-315-316 (EC1-205, 206a), 3.8-324-25 (EC1-222), 3.8-325-26 (EC1-223a).)

At line 16-17 in the section which describes Reaches 2-5, it is stated that there are projects proposed for the SJRRP to improve habitat conditions and support flows that would permit juvenile rearing and adult/juvenile migration. Is there any analysis to support or quantify the extent to which improved habitat conditions or flows would permit such beneficial fish conditions? Please provide citations.

Section 3.4.3. San Joaquin River Tributaries.

At lines 19-21 it is stated that anadromous fish populations on the San Joaquin tributaries are affected by flow and water temperatures. A recent study conducted in conjunction with the hydropower relicensing on the Tuolumne River concludes that 76% to 98% of juvenile salmon are lost to predation. (Predation Study Report, Don Pedro Project FERC No. 2299 (W&AR-07), January 2013.) How does this loss to predation compare with any impacts associated with flow and temperature? It would appear if up to 98% are lost to predation, only a small percentage are affected by flow and temperature.

Section 3.5. Fish Species Within the San Joaquin River Basin.

Table 3 – 10 catalogs the fish found in the San Joaquin River basin and in particular in Reaches 1-5. It is noted that largemouth bass appear in Reaches 1,2,3, and 5. If Reach 4 is rewetted, bass will habituate there as well. How will the presence of bass adversely impact the restoration effort given the likely high predation rate such as that recently documented on the Tuolumne River?

Section 3.5.2. Predation and Disease.

This section discusses predation as being a significant factor affecting juvenile salmon. Yet, in the PEIS/R a contrary position was taken. (*See e.g.*, Final PEIS/R, pp. 3.8-283-84 (EC1-

151f), 3.8-296-97 (EC1-174), 3.8-315-316 (EC1-205, 206a), 3.8-324-25 (EC1-222), 3.8-325-26 (EC1-223a).) Please explain why a different position is taken in the DEA as compared to the PEIS/R.

Section 3.6.3. Hatchery facilities.

The Interim Facility and the full-scale Conservation Hatchery Facility must be isolated from the San Joaquin River to prevent the escape of unmarked spring-run Chinook salmon until such time as full take protection is provided.

Section 3.6.4. Land Use.

At page 3 – 34 public agencies are identified that occur within the restoration area. The listing fails to include the local public water agencies including the Central California Irrigation District, the Firebaugh Canal Water District, Henry Miller Reclamation District, and local cities.

Table 3 – 12 and the text that follows on page 3 – 35 appear inconsistent regarding the acreages and percentages of land-use within Reach 1.

Section 3.6.5. Water quality.

At lines 2-5 it is stated that water quality improvement would occur regardless of reintroduction of spring-run. This appears to be an inaccurate statement as the hydrographs that are called for in the Settlement are designed specifically for spring-run benefit. There would be no basis for the hydrographs without the presence of spring-run. There is no analysis of what hydrographs would be necessary for fall run Chinook.

Section 3.6.5.1. Water Temperature.

In the PEIS/R the occurrence of high water temperatures was downplayed as a significant limiting factor. The DEA notes high temperatures that are likely to occur in the San Joaquin River in the restoration area. How will these high temperatures adversely impact restoration efforts?

Section 3.6.7. Climate change.

There is speculation regarding the potential water temperature impact to the watershed above Friant Dam due to climate change. Please provide citations to support the notion that water temperatures in the upper San Joaquin River will somehow be spared from significant increases associated with climate change.

Section 4.1. Introduction. (Environmental consequences).

With respect to the release of salmon to the San Joaquin River, it is stated the changes in river flow and related restoration projects are evaluated in the PEIS/R. The PEIS/R does not provide an evaluation of the numerous projects identified in the settlement.

Section 4.2.1.3. Southern DPS of Green Sturgeon.

How will passage of green sturgeon be accomplished given the impediments that currently exist?

Section 4.3.2. Fish.

At lines 22-29 is speculated that with increased flows and the return of spring-run Chinook salmon the number of predators in the restoration area will not increase. Please provide authority this conclusion. For example, one result of the Tuolumne Study (Predation Study Report, Don Pedro Project FERC No. 2299 (W&AR-07), January 2013.) was a finding that there was no trend relative to flow for habitat use overlap between Chinook salmon and predators. (Table 5.4-3 on page 5-21.)

At lines 30-36 it is stated that barriers to prevent fall-run and spring-run hybridization will be developed and maintained. Where is this discussed in the PEIS/R or other authorities?

On page 4 – 9 regarding predation on the upper San Joaquin River, it is assumed that predation will be similar to the levels on the tributaries. The recent study on the Tuolumne indicates predation rates are very high and independent of flow. If predation is this high in the Restoration area what will be the impact on spring run? What is the basis for that conclusion?

Section 4.3.5. Land-use.

Regarding the impact on agricultural resources and forestry, it is stated that if permission is granted to access private land for collection activities, that potential impacts will be reduced to a non-significant level. Whether permission to access private lands is granted or not has nothing to do with the impacts that will occur. Simply having permission to access the land does not ensure that there will not be adverse environmental impacts.

Section 4.6. Area Alternative 2 (preferred alternative).

It is stated that on the tributaries, water activities will be exempted from the take provisions. Agricultural, municipal and similar uses should also be exempted.

Within the NEP area, in addition to agricultural uses, will water diversion and

management uses be included in the take exemptions?

The PEIS/R discusses impacts on water related uses, but appears to focus only on the provision within the Restoration Act regarding the *de minimis* impacts. However, the Restoration Act also prohibits the imposition of costs not otherwise voluntarily incurred. Any costs associated with restoration activities that are not voluntarily incurred must be absorbed by the SJRRP.

Section 5. Cumulative impacts.

There are multiple cumulative impacts in addition to the introduction of spring-run. Reintroduction impacts include all of the potential river improvements and habitat changes identified in the Settlement and in the Framework for Implementation. These cumulative impacts should be analyzed. They are not analyzed in the PEIS/R.

Conclusion

Based on the above comments, the Exchange Contractors believe that a full EIS should be prepared to analyze the new discovered information that has emerged since the finalization of the PEIS/R or was not analyzed in the PEIS/R. This information includes Congressional assurances of no additional federal funding above the level already funded, new cost estimates by Reclamation that show core and levee costs at approximately $1.1 billion and total Framework costs at over $2 billion, significant subsidence that is and will continue to occur, and the new predation study results from the Tuolumne River. In addition, the Exchange Contractors have identified areas where additional analysis is required to fully assess the impacts of the reintroduction of spring-run to the San Joaquin River.

The Exchange Contractors appreciate the opportunity to comment on the DEA. We look forward to continuing to work with NMFS to develop the SJRRP in a manner that fosters its success in a manner consistent with the Restoration Act and agreements among the Settling an Third Parties.

Sincerely yours,

Thomas M. Berliner

TMB:ccn

cc: San Joaquin River Exchange Contractors Water Authority
San Joaquin River Resource Management Coalition
San Joaquin Tributaries Authority

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March 4, 2013

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RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Response #127

Sincerely yours,

Name:	Pikalok Farming
Address:	P.O. Box 549
City, State Zip:	Firebaugh CA 93622

Pikalok Farming by Mari Locke Martin

State of California – Natural Resources Agency
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4017
www.wildlife.ca.gov

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

March 4, 2013

Elif Fehm-Sullivan
Fisheries Biologist, Protected Resources Division
Southwest Region, National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, California 95814

Subject: Comments to Proposed Rule NOAA-NMFS-2012-0221 and Draft Environmental Assessment

Dear Ms. Fehm-Sullivan:

The California Department of Fish and Wildlife (CDFW) greatly appreciates the opportunity to review and comment on the National Marine Fisheries Service "Designation of a Nonessential Experimental Population of Central Valley Spring-Run Chinook Salmon Below Friant Dam in the San Joaquin River," proposed rule and related Draft Environmental Assessment (Draft EA). CDFW recognizes the important role that the proposed rule plays in the implementation of the San Joaquin River Restoration Settlement Act and the federal standards that guide the rule's development.

As you know, if the Secretary of Commerce designates an experimental population of spring-run Chinook salmon in the San Joaquin River and publishes regulations specifying the management restrictions, protective measures, prohibitions and exceptions to the prohibitions for the population that meet certain standards in California Fish and Game Code, section 2080.4, CDFW has the authority to determine that no further authorization is necessary under state law for any person to take members of that experimental population.

The Department's concurrence with the federal regulations relies on the Department's determination that: 1) the regulations will further conservation of the species; 2) the regulations contain all reasonably feasible management restrictions, protective measures, prohibitions, and exceptions to the prohibitions to avoid and minimize the impacts of any taking allowed by the regulation; and 3) the regulations will not jeopardize the continued existence or recovery of spring-run Chinook salmon, and will not jeopardize the restoration of spring-run Chinook salmon in the San Joaquin River. (See Cal. Fish & G. Code §2080.4(b).)

We are sharing our comments to the proposed rule and Draft EA in light of that statutory background. Further, the Department appreciates the opportunity to assist in the implementation of the San Joaquin River Restoration Program and in the achievement of the Restoration Goal to restore and maintain fish in good condition in the main stem

of the San Joaquin River, including naturally-reproducing and self-sustaining populations of salmon and other fish.

Comments to Proposed Rule:

- Under the section of the preamble entitled "Is the experimental population essential to the continued existence of the species," at page 3385, the preamble states that NMFS will use as a source population "FRFH fish in excess to what is needed for Feather River operations." We suggest that this be revised clarify that in order to support the program, the Feather River Fish Hatchery will "plan to produce sufficient fish to allow for eggs or juveniles to be collected," rather than indicating, as it does currently, that there are excess fish at FRFH. Response #128

- Section 4.3.1.1 of the Draft EA currently describes the five-year status review of the species using the following language: "The ESA requires that NMFS conduct a status review every five years for all listed species under its responsibility. These requirements will ensure that NMFS is tracking the status of the reintroduced spring-run Chinook population and will develop information to assess the effectiveness of this rule, and if necessary, will trigger revision to the regulation through the rulemaking process. This will ensure that the reintroduction of spring-run Chinook to the San Joaquin River is providing for the conservation of the species as expected, and that the population is not essential to the continued survival of the species." We believe this language provides helpful background to the public about ESA requirements, and would suggest including similar or identical language in the preamble to the rule, under the section entitled "Process for periodic review." We believe it will be valuable for NMFS, in collaboration with CDFW and other partners, to have opportunities to review implementation of this rule and respond to new information. Response #129

- We suggest that the preamble summarize that: "This rule incorporates all reasonably feasible management restrictions, protective measures, prohibitions, and exceptions to the prohibitions to avoid and minimize the impacts of any taking allowed by this regulation. The combination of SJRRP actions, implemented to achieve the Restoration Goal, as well as compliance with existing laws, statutes, and regulations, including in particular those that provide specific protections for aquatic and riparian habitats, provide these measures." Response #130

- Paragraph (b)(6) of the rule is entitled "Special Take Exemption Outside of the Experimental Population Area." We suggest changing the word "special" to "limited" to more accurately indicate that this paragraph provides take exemptions under more limited circumstances than the preceding paragraphs, that is, only to persons or entities diverting or receiving water pursuant to applicable State and Federal laws. Similarly, under the section of the preamble entitled, "Special Take Exemptions Outside of the Experimental Population Area," we suggest removing the word "special" and replacing it with "limited" in the title and throughout the text. This change would be consistent with the description of these provisions in the Draft EA. Response #131

- Paragraph (b)(6)(i) exempts any take "by otherwise lawful activities related to diverting or receiving water pursuant to applicable State and Federal laws." We suggest using the language of the federal Settlement Act exactly, and revising the language to say "Any taking…by persons or entities diverting or receiving water pursuant to applicable State and Federal laws." The Draft EA in various places uses the "relating to" phrase, and we would also suggest changing this to repeat the language of the federal law.

Response #132

Comments to EA:

- At page 2-3, line 13-14, the Draft EA mentions potential changes to fishing regulations to accommodate reintroduction. We would suggest revising this to indicate that the California Fish and Game Commission is ultimately responsible for any changes to fishing regulations. For example, the bullet point could state "DFW coordination with NMFS on fishing regulations, for proposal to the California Fish and Game Commission, to accommodate the reintroduction."

Response #133

- The list of conditions that are common to all alternatives, in section 2.1.3.2, is very helpful. However, at page 2-4, lines 25-30, some additional detail about the proposed regulatory setting for fish in the area between the current Central Valley spring-run salmon ESU and the NEP area would be helpful for public understanding. Specifically, we recommend an insert on page 2-4 stating that under to the existing 4(d) rule, take of adipose fin-clipped fish would not be prohibited, but all other prohibitions of section 9 would apply to intact fish, with limits on prohibitions that are described in 50 C.F.R. §223.203.

Response #134

- Section 2.1.3.2, at page 2-4, lines 31-39, explains that under all alternatives, certain state and federal regulations would continue to apply. We suggest that the discussions of the environmental consequences for Land Use, 4.3.5, 4.5.6, 4.6.6, 4.7.1, should include this information as well. This would provide helpful context and analysis to the public and clarify that the management restrictions, protective measures, prohibitions, and exceptions to the prohibitions imposed through these state and federal laws would continue to apply under these alternatives.

Response #135

- Chapter 3 contains outdated information in several places. Specifically:
  - **Section 3.3.1.3, line 11.** Only 2 dams now exist on lower Mill Creek. A third Dam, Clough, washed away in 1997 and was not re-built.
  - **Section 3.3.1.3.** Figure 3-4 should be corrected. Clough Dam does not exist anymore
  - **Section 3.3.1.5.** Figure 3-6 should be corrected. McCormick-Saeltzer Dam does not exist anymore.

Response #136

- We suggest in Section 4.6.1.1, page 4-25, line 18, changing the word "provisions" to "exemptions" for clarity. In this same section, lines 27-29 indicate that some reintroduced fish would stray into the tributaries. We suggest also for clarity that this text should state that because of the existing 4(d) rule, take of clipped fish would not be prohibited.

Response #137

We look forward to continued collaboration with NMFS in this process and in working toward the Restoration Goal. If you have any questions or require any clarification regarding our comments, please contact Gerald Hatler, at (559) 243-4014, ext. 259 or Gerald.hatler@wildlife.ca.gov.

Sincerely,

Jeffrey R. Single, PhD.
Regional Manager

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
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March 4, 2013

Ms. Elif Fehm-Sullivan
Fisheries Biologist
Protected Resources Division
Southwest Region
National Marine Fisheries Service
650 Capitol Mall, Suite 5 –100,
Sacramento, California 95814

Subject: Comments on Proposed Rule NOAA-NMFS-2012-0221
50 CFR Part 223 [Docket No. 121210693–2693–01] RIN 0648–BC68 Endangered and Threatened Species: Designation of a Nonessential Experimental Population of Central Valley Spring-Run Chinook Salmon Below Friant Dam on the San Joaquin River, California

Dear Ms. Fehm-Sullivan:

While flood protection is the Central Valley Flood Protection Board's (Board) primary objective, the Board supports collaborative multi-benefit solutions to the restoration of year-round flows and habitat in the San Joaquin River, and looks forward to its continued involvement with the National Marine Fisheries Service and other stakeholder partners in this effort.

The Board staff has reviewed the Proposed Rule and provides the following comments:

The Board is responsible for flood risk reduction and public safety within California's Central Valley and maintains the integrity of existing flood control systems, regulated streams, and designated floodways through the Board's regulatory authority. The Board has provided assurances to the U.S. Army Corps of Engineers to operate and maintain the San Joaquin River Flood Control Project, including project levees along the San Joaquin River, Fresno River, Berenda and Ash Sloughs, Chowchilla Canal, Eastside and Mariposa Bypasses, Sand Slough Control Structure, and appurtenant structures in these floodways. In turn, the Board has assigned the operations and maintenance responsibilities of these facilities to the Lower San Joaquin Levee District. These flood control facilities are in the proposed project area and could be impacted by this proposed rule.

Response # 144

Speculative Evidence. Significant environmental changes have occurred in areas where the proposed experimental population will be regulated under the proposed rule. In our opinion, the proposed rule does not provide sufficient evidence to support that the existing conditions of the floodways in the project area would provide conditions conducive to the Central Valley (CV) spring-run Chinook salmon.

Response # 143

Page 3382 of the proposed rule states:

"The proposed experimental population will occur in the San Joaquin River from its confluence with the Merced River upstream to Friant Dam and will include all sloughs,

channels, and water ways that allow for CV spring-run Chinook salmon passage along the San Joaquin River and will also include portions of the Kings River, when high water years hydraulically connect the Kings River with the San Joaquin River."

Section 10(j) of the Endangered Species Act (16 USC 1539(j)) (ESA 10(j)) states:

Experimental populations

(1)For purposes of this subsection, the term "experimental population" means any population (including any offspring arising solely there from) authorized by the Secretary for release under paragraph (2), but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species.

(2)(A)The Secretary may authorize the release (and the related transportation) of any population (including eggs, propagules, or individuals) of an endangered species or a threatened species outside the current range of such species if the Secretary determines that such release will further the conservation of such species.

(B)Before authorizing the release of any population under subparagraph (A), the Secretary shall by regulation identify the population and determine, on the basis of the best available information, whether or not such population is essential to the continued existence of an endangered species or a threatened species.

(C)For the purposes of this chapter, each member of an experimental population shall be treated as a threatened species; except that—
(i) solely for purposes of section 1536 of this title (other than subsection (a)(1) thereof), an experimental population determined under subparagraph (B) to be not essential to the continued existence of a species shall be treated, except when it occurs in an area within the National Wildlife Refuge System or the National Park System, as a species proposed to be listed under section 1533 of this title; and

(ii) critical habitat shall not be designated under this chapter for any experimental population determined under subparagraph (B) to be not essential to the continued existence of a species.

(3)The Secretary, with respect to populations of endangered species or threatened species that the Secretary authorized, before October 13, 1982, for release in geographical areas separate from the other populations of such species, shall determine by regulation which of such populations are an experimental population for the purposes of this subsection and whether or not each is essential to the continued existence of an endangered species or a threatened species."

In our opinion, there is insufficient detail to include all sloughs, channels, and water ways that allow for CV spring-run Chinook salmon passage along the San Joaquin River. ESA 10(j) states:

Response # 142

"(ii) critical habitat shall not be designated under this chapter for any experimental population determined under subparagraph (B) to be not essential to the continued existence of a species."

Further consideration should be given to establishing a limited and focused geographic area at an early time that will provide greater flexibility to deal with basic flood control problems and cumulative impacts to facilities of the State Plan of Flood Control in the project area under Board jurisdiction.

Response # 141

Adverse Fiscal Impacts. The Board adopted the 2012 Central Valley Flood Protection Plan (CVFPP) which provides a framework to develop new multi-benefit flood risk reduction projects and improvements to existing facilities. The proposed rule could increase the cost of and delay these future projects and improvements needed to better protect lives and property in the Central Valley.

Response # 140

The 2013-14 Budget: Resources and Environmental Protection, California Legislative Analyst, February 2013 Report, page 3 states:

> *"Billions in Appropriated Bond Funds Unspent. Our analysis finds that in many cases, departments in the resources and environmental protection area (such as DWR) have not spent appropriated funds in particular fiscal years as planned."*

In our opinion the proposed rule could increase environmental permitting rules, delay project timelines, and cause flood project costs to increase. As a result, it is likely that fewer flood risk reduction projects would be constructed to reduce the residual risks to public safety due to flooding.

Response # 139

Flood Project Priorities. The proposed rule will likely accelerate planning of future environmental restoration projects as the Board is just now beginning to develop project plans and request approvals for flood protection projects. The Lower San Joaquin Levee District is leading the local effort to develop a Regional Flood Management Plan in areas which include all waterways within your proposed project boundary. Our Board holds flood protection projects which improve public safety as its highest priority. The proposed rule should consider flood protection and environmental restoration as co-equal priorities and include alternatives that best fit with and which would allow the State to construct cost effective flood protection projects.

Response # 138

Maps depicting all tributaries and distributaries of the San Joaquin River regulated streams, and designated floodways under the Board's jurisdiction can be accessed at the Department of Water Resources Best Available Maps website at http://gis.bam.water.ca.gov/bam/. Click on the "View Floodway Data" button at the lower right portion of the screen.

Thank you for providing the opportunity to comment on your proposed rule. Please contact Mr. Len Marino, Chief Engineer, at (916) 574-0698, or via email at lmarino@water.ca.gov if you have any questions.

Sincerely,

Jay S. Punia

Jay S. Punia
Executive Officer

Name	Address	Telephone #	E-mail Address	Affiliation

Comment: Elizabeth Leeper on behalf of San Luis & Delta-Mendota Water Authority & its member agencies. eleeper@kmtg.com

Comment

1) Does rule adequately address relationship between section 7 consultation & de minimis water supply impact w/ respect to experimental fish outside the experimental area? Response Number 145

2) Does 4(d) take exemption provide for exemption for activities that result in indirect take in the Delta (e.g. changes in flow patterns, etc.)? Response Number 146

3) Does rule provide enough detail re notice & comment procedure for technical memorandum re accounting for % of SJ river salmon salvaged in Delta? Response Number 147

4/28/2010

Kerry Burke Hanna
40652 Highway 36 E
Mill Creek, CA 96061

Elif Fehm-Sullivan
Protected Resources Division
National Marine Fisheries Service
650 Capitol Mall # 5-100
Sacramento, CA 95814-4706
SJR Spring.Salmon@noaa.gov

March 7, 2011

Subject: Opposition and concerns of any use of Mill Creek wild Spring-run Chinook Salmon for the San Joaquin River Settlement Agreement Project

Dear Ms. Fehm-Sullivan,

Per my address at the meeting in Chico last month, I am opposed to the use of any form of Mill Creek wild Spring-run Chinook Salmon at this early stage of the San Joaquin River Restoration Project. The project needs to:

1. Secure adequate water flows to support spring-run Chinook Salmon,
2. Need to restore the riparian area in order to support fish,
3. Need to monitor the area to determine what fish can survive in the lower San Joaquin River and what fish will natural migrate to the area if the conditions warrant survival.

All of these tasks will take decades to determine if Spring Run Chinook salmon could survive in the lower San Joaquin River.

Response # 148

Response # 149

Response # 150

Please address all the concerns raised the Mill Creek Conservancy letter. That expresses my overall issues to date with the approach of this project. Restoration takes a long time, and you can't rush results. Proposing to place genetically different fish that have totally adapted to a high elevation, cold water habitat in Mill Creek is a risk to our native fish population that I can not support.

Response # 151

I appreciate that your agency is trying to explore alternatives, however use of the Mill Creek wild Spring Run Chinook salmon is not appropriate given the numerous risk.

Respectfully submitted,

Kerry B Hanna

Kerry Burke Hanna

March 4, 2013

Ms. Elif Fehm-Sullivan
Fisheries Biologist
Protected Resources Division
Southwest Region
National Marine Fisheries Service
650 Capitol Mall
Suite 5-100
Sacramento, CA 95814

Re: Comments on Proposed Rule; Endangered and Threatened Species: Designation of a Nonessential Experimental Population of Central Valley Spring-Run Chinook Salmon Below Friant Dam in the San Joaquin River, CA

Dear Ms. Fehm-Sullivan,

Please accept the following comments on the above-referenced 10(j)4(d) rule on behalf of the Kings River Water Association (KRWA) along with its member units (listed in Appendix A), and the Kings River Conservation District (KRCD). Please include these comments in the administrative record for the Proposed Rule.

The KRWA is an organization representing the 28 public districts and canal companies with Kings River water rights. The KRWA is responsible for the administration of those entitlements and water release operations. The KRCD is a multi-county special district created in 1951 to manage resources within the watershed on the lower Kings River. KRCD serves constituents in an area comprising 1.2 million acres in portions of Fresno, Kings and Tulare counties. These two agencies partner with the California Department of Fish and Wildlife (CDFW) in the Kings River Fisheries Management Program (KRFMP) which is dedicated to improving and enhancing the Kings River watershed and fishery habitat while maintaining its beneficial uses.

A fundamental premise of the San Joaquin River Restoration Program (SJRRP) is that the Program is to have no impacts on parties other than Friant Division contractors and their water users. That core principle is embedded in the stipulation that resulted in the SJRRP, the legislation that implemented that stipulation, and in a number of other agreements and assurances provided as the SJRRP was being developed. The KRWA and KRCD provide these comments as potentially affected third parties.

Kings River Conservation District
4886 E. Jensen Avenue
Fresno, CA 93725 (559) 237-5567

Kings River Water Association
4888 E. Jensen Avenue
Fresno, CA 93725 (559) 266-0767

First of all, the KRWA and KRCD would like to commend the National Marine Fisheries Service (NMFS) for the process in developing this proposed rule. The numerous public meetings, general staff availability, and all materials provided were extremely helpful in understanding the proposed rule itself. NMFS is to be commended for adhering to the public process, and the KRWA and KRCD are very appreciative of all the hard work and time that NMFS staff has dedicated to ensuring the public fully understands the proposed rule. It is the desire of the KRWA and KRCD that these processes continue to be followed for development of potential future rules affecting or relating to the SJRRP.

As per the text in the proposed rule itself, the KRWA and KRCD will structure our comments based on the seven requested categories:

1) *The geographical boundary of the designated experimental population*. The KRWA and KRCD are in agreement with the geographical boundary of the designated experimental population in the proposed rule as proposed by NMFS.

Response # 152

2) *The extent to which the experimental population would be affected by current or future Federal, State, or private actions within or adjacent to the experimental population area*. The KRWA and KRCD remain concerned with the potential for redirected impacts on the Kings River Fishery due to the eventual re-introduction of a threatened species into the San Joaquin River to the north. In chapter 21.0 of the SJRRP Programmatic EIS/EIR, closures are suggested as a possibility on the San Joaquin River with re-introduction of Spring-Run Salmon, and it is suggested that the Kings River could be a potential fishery for anglers to relocate to. Obviously, the KRWA and KRCD are very concerned about this conclusion, considering no mitigation measures for the potential significant increase in fishing pressure on the Kings River were proposed.

Response # 153

In the current proposed rule, the language states "As noted above, we propose to prohibit the intentional take of CV spring-run Chinook salmon in the experimental population area by angling. We intend to work with CDFW to review fishing regulations in the geographic area in order to minimize the impact of this prohibition on current angling on other species..." This language suggests that a total closure may not be necessary and, if that is the case, at least a few of the KRWA and KRCD concerns regarding redirected fishing pressure may be mitigated to some extent. The KRWA and KRCD recognize that NMFS does not have the final authority on this decision, as the local fishing regulations are the responsibility of the Fish and Game Commission and CDFW, but we still wanted our concerns on this process documented appropriately. Any material increase in fishing pressure on the Kings River due to angling restrictions on the San Joaquin River could have extremely detrimental impacts on the Kings River fishery that has been the target of so much investment via the KRFMP.

Response # 154

3) *Any necessary management restrictions, protective measures, or other management measures that we may not have considered.* The KRWA and KRCD are in concurrence with the management measures utilized in the development of this proposed rule. In addition, the

Response # 155

KRWA and KRCD would like to see this proposed rule used as a template for developing other rules within the SJRRP area of influence regarding additional threatened or listed species of concern. It is the hope of the KRWA and KRCD that the same public process that has been observed in this case will be followed for rule development for these other listed species.

4) *The extent to which we have provided protections for third parties as required by the SJRRSA.* The KRWA and KRCD feel that the proposed rule provides adequate protections for us as third parties while the rule is in effect, with the exceptions noted in the comments provided. However, we continue to be concerned about impacts upon any termination of modification of the rule and feel that physical barriers to migration of anadromous species into the Kings River during flood events is a superior approach. See below.

Response # 156

Response # 157

5) *Whether we should propose the experimental population as nonessential.* Based on the evidence presented, the KRWA and KRCD concur with the findings of NMFS that the designation of Experimental nonessential is appropriate. The time frame of the proposed rule and the proposed process for periodic review are also equally appropriate.

6) *Whether the proposed designation furthers the conservation of the species and we have used the best available science in making this determination.* The KRWA and KRCD have no comment.

7) Additional Comments. The following is text extracted from the proposed rule as published in the Federal Register, Volume 78, Number 11 on Wednesday, January 16, 2013:

In addition, protective measures, including programs for strategic screening and participation in habitat conservation programs, will be implemented in conjunction with SJRRP activities and are intended to provide a net benefit to the reintroduction. The SJRRP restoration actions, in combination with the protective measures proposed in this rule, as well as compliance with existing Federal, State and local laws, statutes, and regulations, including those mentioned above, are expected to ensure the survivability of the experimental population in the San Joaquin River into the foreseeable future.

Response # 158

This language concurs with NMFS staff public presentations that state that the proposed rule assumes the habitat enhancement actions proposed under the SJRRP will take place. In comments on previous SJRRP documents, the KRWA and KRCD have expressed concern over the potential for straying of species into the Kings River during times of connectivity in flood years, and have pushed for a barrier to be installed to ensure the survival of the CV Chinook Salmon in their intended channel which will be improved for that very purpose. The KRWA and KRCD would like to reiterate this position that a barrier to direct returning adults to the proper main San Joaquin River Channel during times of flood should be considered a high priority for the SJRRP as a whole. It is the position of the KRWA and KRCD that a barrier, in addition to the proposed rule would be the best solution for ensuring the survival of these species.

Thank you for your consideration of our comments. If you have any questions in regards to these comments, please direct these to:

Clifton Lollar
Resource Analyst
Kings River Water Association
4888 E. Jensen Ave.
Fresno, CA 93725
(559) 266-0767
clollar@kingsriverwater.org

Sincerely,

David Orth, General Manager
Kings River Conservation District

Steve Haugen, Watermaster
Kings River Water Association

cc: Representative Jim Costa
Representative Devin Nunes
Representative Tom McClintock
Representative David Valadao
Senator Dianne Feinstein
Senator Barbara Boxer
The Ferguson Group Inc.

Appendix A

The members of the KRWA are as follows:

ALTA IRRIGATION DISTRICT, an irrigation district
BURREL DITCH COMPANY, a corporation
CLARK'S FORK RECLAMATION DISTRICT NO. 2069, a reclamation district
CONSOLIDATED IRRIGATION DISTRICT, an irrigation district
CORCORAN IRRIGATION COMPANY, a corporation
CRESCENT CANAL COMPANY, a corporation
EMPIRE WEST SIDE IRRIGATION DISTRICT, an irrigation district
FRESNO IRRIGATION DISTRICT, an irrigation district
JAMES IRRIGATION DISTRICT, an irrigation district
JOHN HEINLEN MUTUAL WATER COMPANY, a corporation
KINGS RIVER WATER DISTRICT, a water district
LAGUNA IRRIGATION DISTRICT, an irrigation district
LAST CHANCE WATER DITCH COMPANY, a corporation
LEMOORE CANAL & IRRIGATION COMPANY, a corporation
LIBERTY CANAL COMPANY, a corporation
LIBERTY MILL RACE COMPANY, a corporation
LOVELACE WATER CORPORATION, a corporation
PEOPLES DITCH COMPANY, a corporation
REED DITCH COMPANY, a corporation
RIVERDALE IRRIGATION DISTRICT, an irrigation district
SOUTHEAST LAKE WATER COMPANY, a corporation
STINSON CANAL & IRRIGATION COMPANY, a corporation
STRATFORD IRRIGATION DISTRICT, an irrigation district
TRANQUILLITY IRRIGATION DISTRICT, an irrigation district
TULARE LAKE BASIN WATER STORAGE DISTRICT, a water storage district
TULARE LAKE CANAL COMPANY, a corporation
TULARE LAKE RECLAMATION DISTRICT NO. 761, a reclamation district
UPPER SAN JOSE WATER COMPANY, a corporation

March 4, 2013

Ms. Elif Fehm-Sullivan
Fisheries Biologist
Protected Resources Division
Southwest Region
National Marine Fisheries Service
650 Capitol Mall
Suite 5-100
Sacramento, CA 95814

Re: Draft Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam.

Dear Ms. Fehm-Sullivan,

Please accept the following comments on the above-referenced Environmental Assessment on behalf of the Kings River Water Association (KRWA) along with its member units (listed in Appendix A), and the Kings River Conservation District (KRCD). Please include these comments in the administrative record for the Environmental Assessment.

The KRWA is an organization representing the 28 public districts and canal companies with Kings River water rights. The KRWA is responsible for the administration of those entitlements and water release operations. The KRCD is a multi-county special district created in 1951 to manage resources within the watershed on the lower Kings River. KRCD serves constituents in an area comprising 1.2 million acres in portions of Fresno, Kings and Tulare counties. These two agencies partner with the California Department of Fish and Wildlife (CDFW) in the Kings River Fisheries Management Program (KRFMP) which is dedicated to improving and enhancing the Kings River watershed and fishery habitat while maintaining its beneficial uses.

A fundamental premise of the San Joaquin River Restoration Program (SJRRP) is that the Program is to have no impacts on parties other than Friant Division contractors and their water users. That core principle is embedded in the stipulation that resulted in the SJRRP, the legislation that implemented that stipulation, and in a number of other agreements and assurances provided as the SJRRP was being developed. The KRWA and KRCD provide these comments as potentially affected third parties.

Kings River Conservation District
4886 E. Jensen Avenue
Fresno, CA 93725 (559) 237-5567

Kings River Water Association
4888 E. Jensen Avenue
Fresno, CA 93725 (559) 266-0767

First of all, the KRWA and KRCD would like to commend the National Marine Fisheries Service (NMFS) for the process in developing this Environmental Assessment. The numerous public meetings, general staff availability, and all materials provided were extremely helpful in understanding the Environmental Assessment itself. NMFS is to be commended for adhering to the public process, and the KRWA and KRCD are very appreciative of all the hard work and time that NMFS staff has dedicated to ensuring the public fully understands the role of the Environmental Assessment. It is the desire of the KRWA and KRCD that these processes continue to be followed for development of future Environmental Assessments affecting or relating to the SJRRP.

As per the requests of SJRRP staff at the public meetings, the KRWA and KRCD will structure our comments based on five requested categories:

1) *Factual Information and Errors.* Two minor errors were located. On page 1-12, lines 11-12, the text states "The basic features of the bypass system include: Fresno Slough (also known as James Bypass)..." Later on in the document, on page 3-20, lines 22-24 state "Potential false pathways created by the bypass and canal systems are Salt Slough, Mud Slough, Bear Creek, Ash Slough, Berenda Slough, Dry Creek, Fresno River, Lone Willow Slough, James Bypass..." For the sake of consistency, Fresno Slough should probably be utilized in this location as it was on page 1-12. On page 5-2, line 24, the text states "... statewide average annual temperatures will be 36-42F higher,.." This is likely a factual error as well.

Response #159

2) *Affected Environment or Action Area.* The KRWA and KRCD are in agreement with the geographical boundary of the designated experimental population in the Environmental Assessment as well as the Affected Environment analysis with one caveat. With the recognition of the Fresno Slough/James Bypass as a potential false pathway for Central Valley Spring-Run Chinook Salmon as identified on Page 3-20 in Section 3 of the document, the KRWA and KRCD would like to reiterate this position that a barrier to direct returning adults to the proper main San Joaquin River Channel during times of flood should be considered a high priority for the SJRRP as a whole.

According to the Environmental Assessment, it is assumed under the action alternatives that all the habitat enhancement actions proposed under the SJRRP will take place. In comments on previous SJRRP documents, the KRWA and KRCD have expressed concern over the potential for straying of species into the Kings River via the Fresno Slough during times of connectivity in flood years, and have pushed for a barrier to be installed to ensure the survival of the CV Chinook Salmon in their intended channel which will be improved for that very purpose. It remains the position of the KRWA and KRCD that a barrier at this location, in addition to the proposed regulations this Environmental Assessment discusses, would be the best solution for ensuring the survival of these species.

Response #160

3) *Impacts Not Identified.* The KRWA and KRCD remain concerned with the potential for redirected impacts on the Kings River Fishery due to the eventual re-introduction of a threatened species into the San Joaquin River to the north. In chapter 21.0 of the SJRRP Programmatic EIS/EIR, closures are suggested as a possibility on the San Joaquin River with re-introduction of Spring-Run Salmon, and it is suggested that the Kings River could be a potential fishery for anglers to relocate to. Obviously, the KRWA and KRCD are very concerned about this conclusion, considering no mitigation measures for the potential significant increase in fishing pressure on the Kings River were proposed.

Response #161

In the current Environmental Assessment, the language states on page 4-10, lines 35-36 "While fishing for other species of fish would continue, the opportunity to fish for planted trout would end." The elimination of stocking on the San Joaquin River will likely reduce the trout population significantly, and if that is indeed the case, the KRWA and KRCD remain extremely concerned regarding unmitigated redirected fishing pressure of trout fisherman to the Kings River fishery.

The KRWA and KRCD recognize that NMFS does not have the final authority on this regulatory decision, as the local fishing regulations are the responsibility of the Fish and Game Commission and CDFW, but we still wanted our concerns on this process documented appropriately. Any material increase in fishing pressure on the Kings River due to angling restrictions and stocking changes on the San Joaquin River could have extremely detrimental impacts on the Kings River fishery that has been the target of so much investment via the KRFMP.

4) *Are impacts adequately analyzed and addressed?* With the exceptions noted above, the KRWA and KRCD are satisfied with the analysis presented in the Environmental Assessment.

Response #162

5) *Additional Comments.* At this time the KRWA and KRCD offer no additional comments.

Thank you for your consideration of our comments. If you have any questions in regards to these comments, please direct these to:

Clifton Lollar
Resource Analyst
Kings River Water Association
4888 E. Jensen Ave.
Fresno, CA 93725
(559) 266-0767
clollar@kingsriverwater.org

Sincerely,

David Orth, General Manager
Kings River Conservation District

Steve Haugen, Watermaster
Kings River Water Association

cc: Representative Jim Costa
Representative Devin Nunes
Representative Tom McClintock
Representative David Valadao
Senator Dianne Feinstein
Senator Barbara Boxer
The Ferguson Group Inc.

Appendix A

The members of the KRWA are as follows:

ALTA IRRIGATION DISTRICT, an irrigation district
BURREL DITCH COMPANY, a corporation
CLARK'S FORK RECLAMATION DISTRICT NO. 2069, a reclamation district
CONSOLIDATED IRRIGATION DISTRICT, an irrigation district
CORCORAN IRRIGATION COMPANY, a corporation
CRESCENT CANAL COMPANY, a corporation
EMPIRE WEST SIDE IRRIGATION DISTRICT, an irrigation district
FRESNO IRRIGATION DISTRICT, an irrigation district
JAMES IRRIGATION DISTRICT, an irrigation district
JOHN HEINLEN MUTUAL WATER COMPANY, a corporation
KINGS RIVER WATER DISTRICT, a water district
LAGUNA IRRIGATION DISTRICT, an irrigation district
LAST CHANCE WATER DITCH COMPANY, a corporation
LEMOORE CANAL & IRRIGATION COMPANY, a corporation
LIBERTY CANAL COMPANY, a corporation
LIBERTY MILL RACE COMPANY, a corporation
LOVELACE WATER CORPORATION, a corporation
PEOPLES DITCH COMPANY, a corporation
REED DITCH COMPANY, a corporation
RIVERDALE IRRIGATION DISTRICT, an irrigation district
SOUTHEAST LAKE WATER COMPANY, a corporation
STINSON CANAL & IRRIGATION COMPANY, a corporation
STRATFORD IRRIGATION DISTRICT, an irrigation district
TRANQUILLITY IRRIGATION DISTRICT, an irrigation district
TULARE LAKE BASIN WATER STORAGE DISTRICT, a water storage district
TULARE LAKE CANAL COMPANY, a corporation
TULARE LAKE RECLAMATION DISTRICT NO. 761, a reclamation district
UPPER SAN JOSE WATER COMPANY, a corporation

Mill Creek Conservancy
40652 Highway 36 E
Mill Creek, CA 96061

Elif Fehm-Sullivan
Protected Resources Division
National Marine Fisheries Service
650 Capitol Mall # 5-100
Sacramento, CA 95814-4706
SJR

February 14, 2011

Subject: Mill Creek Conservancy opposition and concerns of any use of Mill Creek wild Spring-run Chinook Salmon for the San Joaquin River Settlement Agreement Project

Dear Ms. Fehm-Sullivan,

Mill Creek Conservancy organization and position

The Mill Creek Conservancy is a 501-c3 organization dedicated to the continued preservation of the Mill Creek Watershed Ecosystem. Our non-profit organization is a group of landowners, members of the local community and others committed to the protection of the Mill Creek watershed for future generations. In our nearly 20 year history we have devoted thousands of volunteer hours to the goal of understanding the dynamics of resource planning and management and working for long term improvement and protection of this unique and important watershed. Our diverse group of landowners, neighbors, and various agencies have worked together over these past numerous years to benefit the distinct natural and cultural values that are contained within our treasured watershed, including very specific efforts for the survival of the wild Mill Creek Spring-run Chinook salmon, steelhead and other wildlife.

Some of our successful actions to protect and enhance our wild spring-run Chinook Salmon include:

- Initiated AB 1413 to protect Mill and Deer Creek from additional dams or water impoundments
- Initiated, completed and have continued to implement the Mill Creek Watershed Management Strategy with the help of the community, numerous public agencies and other resource protection groups
- Partnered with local landowners, The Nature Conservancy and Los Molinos Unified School District on several riparian vegetation restoration and enhancement projects
- Coordinated with local Department of Fish and Game wardens on a Spring-Run Salmon Protection Program specifically for Mill Creek

- Secured funding for feral cow removal in sensitive spring-run Chinook Salmon holding, spawning and rearing areas on Mill Creek
- Supported Water Exchange Agreements for fish passage flows in lower Mill Creek
- Secured Federal Bureau of Reclamation grant for Lower Mill Creek Restoration Flow Management Agreement, completing a CalPoly Water Use Efficiency Study, a Department of Water Resources groundwater conjunctive use study and a Department of Fish and Game Surface Flow Criteria for Salmon Passage Study
- Pursuing the purchasing of water rights to be used for the benefit of Chinook flows in Mill Creek
- Supporting Conservation Easements on Mill Creek that limit development and activities that could be harmful to the habitat quality
- Assisted with Dr. Matthew Kondolf with Fluvial Geomorphic study of Mill Creek
- Support Department of Fish and Game Spring-Run Chinook monitoring activities and funding for Mill Creek

These actions are proving beneficial to ensuring survival and productivity of our salmon resource in the Mill Creek Watershed. We therefore oppose any efforts by any individual, group or agency that could compromise wild Mill Creek Spring-run Chinook Salmon.

We have reviewed the numerous documents that have been provided regarding this issue. It is very disturbing that a lawsuit and settlement regarding a specific environmental issue that is hundreds of miles from Mill Creek and completely unrelated to it, proposes solving a portion of San Joaquin watershed problem by extracting a protected endangered species from our watershed.

The Mill Creek Conservancy has been partners with the California Department of Fish and Game, U. S. Bureau of Land Management, Lassen National Forest, Department of Water Resources, Lassen Volcanic National Park, California Department of Forestry, The Nature Conservancy, The Tehama County Natural Resource Conservation Service, Pacific Coast Federation of Fishermen's Association, Los Molinos Mutual Water Company, Los Molinos Unified School District, U. S. Bureau of Reclamation, Spring-Run Work Group, Sierra Pacific Industries and many other organizations. We have worked directly with the U. S. Fish and Wildlife Service on several projects to improve Mill Creek Spring-run Chinook Salmon and steelhead habitat. We are deeply concerned that our precious and imperiled population of wild salmon are proposed to be utilized in a manner that could threaten their survival in their natal habitat, Mill Creek.

No scientific documentation or potential mitigation measures provided in these documents that offers any comfort to the Mill Creek Conservancy. All our efforts over the years could be for naught if this misguided long-distance raid on our natural heritage is carried out. With all due respect for the attempt to improve the situation in the San Joaquin River, depleting Mill Creek's run of wild Spring-run Chinook Salmon is a monumentally wrong-headed solution to your predicament. Numerous public agencies, studies, grants and earnest enterprise by countless individuals have been committed to the preservation of the wild Mill Creek Spring-run Chinook Salmon. How can a responsible public agency suggest a proposal that is so contrary to the stated goals of the U. S. Fish and Wildlife Service Anadromous Fish Doubling program, which has sought to increase the wild Mill Creek Spring-run Chinook Salmon population but as yet has not come close to meeting that laudable aim?

The Mill Creek Conservancy Board of Directors has met regarding this issue and several Board members made presentations at the Public Workshop held on February 3, 2011 in Chico, California. Our voice is loud and clear. You must seek and secure alternatives to your proposal of utilizing wild Mill Creek Spring Run Chinook Salmon. The proposed San Joaquin River habitat will not sustain Mill Creek Spring Run Chinook Salmon that primarily spawn in protected habitat from 2,700 – 5,200 feet in elevation. The project documents are woefully deficient on numerous topics discussed further in this letter that would also impact the survival of any relocated Mill Creek fish. Therefore your agencies should not be allowed to take any eggs, smolts or adult fish from Mill Creek endangered stocks.

Settlement

NOAA, FWS, BOR, DFG, the attorneys for the San Joaquin settlement, or another appropriate party should have coordinated with the Mill Creek Conservancy and other "donor" watersheds before designing a terminally flawed solution dependent upon a source that is at risk of extinction in it's natal habitat. In fact it is very disturbing that neither the Mill Creek Conservancy nor other "donor" creek representatives were invited or present at the April 28, 2010 meeting regarding this project.

The Mill Creek Conservancy is opposed to the wild Mill Creek Spring-run Chinook Salmon being utilized as an "experimental population." We have worked hard for decades to ensure that wild Mill Creek Spring-run Chinook Salmon remain genetically pure, unmolested by humans and given the best opportunity to thrive in their native watershed. The San Joaquin's long, convoluted lawsuit and eventual settlement should not include a remedy from a totally unrelated party, namely our wild Mill Creek Spring-run Chinook Salmon.

Response #163

On page 6, section 7, line 17 – 19 of the Notice of Lodgment of Stipulation of Settlement it states that "The Parties neither intend or believe that the implementation of this Settlement will have a material adverse effect on any third parties or other streams or rivers tributary to the San Joaquin River." However the Settlement did not consider the potential material adverse effect to the donor fish population. The Mill Creek Conservancy believes that this proposed implementation of the Settlement could have a materially adverse effect on our wild Mill Creek Spring-run Chinook Salmon and therefore would not be considered for use in this project.

Response #163

CEQA / NEPA, "Reintroduction Strategies" document

Why are there no CEQA or NEPA documents with the "Enhancement of Species Permit Application? You need to address appropriate alternatives and not just the stated plan that would take fish before the necessary habitat conditions are secure and determined adequate for wild Spring-run Chinook Salmon survival. ***How can you have a Permit Application prior to the preparation of a NEPA document?***

Response #164

It is also disturbing that the "Reintroduction Strategies" has only a draft outline and is not available for public review at this time. These documents should be included in your permit process. Calling your project an "Enhancement of Species" does not encompass the potential adverse and devastating impacts to the donors continued existence in their native habitat.

Enhancement of Species Permit Application

This Enhancement of Species Permit Application will have an adverse impact to an endangered species, namely the wild Mill Creek Spring-run Chinook Salmon. That is of paramount concern to the Mill Creek Conservancy. You need to secure an experimental salmon population for the purposes of reintroduction that does not involve using threatened wild Mill Creek Spring-run Chinook Salmon populations and putting them at further risk of extinction.

Response #165

Our current fish population is well below any level that could even conceivably justify any "donation or taking" of our wild Mill Creek Spring-run Chinook Salmon. Page 77 of the permit application clearly indicates that the wild Mill Creek Spring-run Chinook Salmon has never met the AFRP production target in 17 years of monitoring, and that in fact there has been a 40% reduction in the average population in the noted time period. It should be abundantly clear from this that wild Mill Creek Spring-run Chinook Salmon are not currently or in the foreseeable future a candidate donor to the San Joaquin project.

As figure 10 on page 78 indicates, the natural production of the wild Mill Creek Spring-run Chinook Salmon is at its lowest point in 16 years. The target AFRP population is 4,500 fish, but only 362 were counted in 2008 and 220 in 2009 (page 98). Therefore we should not be included in this program that will threaten our precarious fish population. How can you even suggest that wild Mill Creek Spring-run Chinook Salmon be used since we have never come close to meeting the USFWS population target since fish have been counted?

Response #165

Also, our fish should not be grouped with Deer Creek stock as mentioned on page 96 of the permit application. Numerous sources indicate that wild Mill Creek Spring-run Chinook Salmon are distinct both genetically and phenotypically, from other Spring-run Chinook stocks in the Central Valley. Mill Creek is generated from the southern slopes of a 10,500 foot volcano with an annual snowpack, natural springs and undisturbed, protected habitat that other spring-run Chinook streams don't have and can not replicate. Mill Creek's wild Chinook evolved to maximize survival in these unique habitat attributes of our watershed. This difference should be protected from dilution and distress.

Draft Stock Selection Strategy

The Draft Stock Selection Strategy, Draft 2010 should also be completed prior to any decision is made regarding this important topic. The risks and uncertainties for the entire program are huge and do not warrant the use of any life stage of wild Mill Creek Spring-run Chinook Salmon. Table 6-4 on page 6-9 is inaccurate in the depiction of the status of wild Mill Creek Spring-run Chinook Salmon. It is over simplified and is in direct conflict with other agencies' determinations regarding the risk of extinction. As stated in this same report on page 7-2, lines 29 – 30: "**For the past two years the Deer and Mill Creek adult escapement estimates have been below the 250 threshold that puts them at high risk of extinction.**" Please heed these facts and their serious warning. Do not use wild Mill Creek Spring-run Chinook Salmon for your donor stocks. This would be an irresponsibly dangerous squandering of a precious natural resource that we have worked very hard to protect.

Response #166

Separation of Runs

What measures are in place to ensure genetic isolation of introduced spring-run Chinook with other Chinook runs? Specifically, how will late arriving Spring Run Chinook salmon be separated from early arriving Fall Run? Will these measures be implemented prior to fish introduction and full settlement flows releases?

Response #167

Hybridization issues

How will any of the donor stocks be protected from hybridization?

Response #168

Hatchery concerns

Response #169

Since there is no hatchery on Mill Creek for salmon, steelhead or trout we are very concerned about impacts to our native, wild fish from Mill Creek. There are no planted fish on Mill Creek either. There is a concern that some hatchery fish may return to Mill Creek and have the potential to contaminate our native, wild fish in Mill Creek.

Delta Survival

Response #170

What measures are being proposed to ensure that the reintroduced San Joaquin salmon will survive in the Delta? Are these fish being raised just to meet a court order but will have no chance of survival in the Delta, ocean or in the lower San Joaquin River designated (not actually proven) spawning area?

Required water flows and temperatures

Response #171

It seems prudent to study the San Joaquin watershed's condition once the legally required flows are secured and maintained for several life cycles of the Spring-run Chinook Salmon. Perhaps 20 years of the additional flows could provide an indication if the water temperatures would be sufficient to support Spring Run Chinook salmon. The Mill Creek Spring Run Chinook Salmon have very specific water temperature requirements from the Mill Creek watershed and Lassen Volcanic National Park. How can the San Joaquin River provide an appropriate water climate for the wild Mill Creek Spring Run Chinook Salmon. The wild Mill Creek Spring Run Chinook Salmon habitat includes a very distinct water chemistry that orientates directly from Lassen Volcanic National Park that the fish utilize to navigate back to their natal stream. How can the Reintroduction project utilize the wild Mill Creek Spring Run Chinook Salmon given their specific habitat and water requirements. Have any studies been performed to determine the potential impacts from climate change on this proposal?

Habitat restoration

Response #172

When will habitat restoration of proposed spring Chinook habitat be completed? Has a survey been completed to ascertain if adequate spawning gravel exists in the riverbed? Has funding been secured for continual gravel supplementation, even after full restoration has been completed? How much shaded riparian habitat is being proposed? How will interfacing with humans be minimized when the proposed spawning area is in a flat exposed area?

Different Options, Approaches and Concerns

The risks are entirely too great at this time given the lack of protection for any Mill Creek Spring run Chinook salmon to be utilized in this endeavor. The wild Mill Creek Spring-run Chinook Salmon are celebrated as holding and spawning at the highest elevation (5,000') in California, if not North America. The Mill Creek watershed is protected by public land ownership over 50% of the land area, numerous volunteer conservation easements on private land and the majority of the watershed is very remote without road access. Our watershed and creek are distinctly different from the San Joaquin river system. There is no analysis regarding this difference and how it would impact the chance of survival of wild Mill Creek Spring-run Chinook Salmon in the "hot, flat and crowded " environs of the San Joaquin River. It is hard to imagine the **geo-shock** that would occur to any species relocated to such a seemingly hostile environment given the current condition of the Mill Creek watershed. There is no justification of using wild Mill Creek Spring-run Chinook Salmon in the San Joaquin River project due to the mountain of risk to our endangered species that is currently at very low numbers.

The Mill Creek Conservancy recommends that you:

Secure and complete the legally required flow restoration
Reintroduce water to the San Joaquin River
Reestablish riparian vegetation and complete habitat restoration
Study and monitor water temperatures, flows, chemistry
Study and monitor riparian vegetation
Study and monitor any salmon that return to the restoration area over several salmon life cycles

Then, and only if the conditions warrant fish survival, consider utilizing nearby hatchery fish.

Response #173

The Mill Creek Conservancy hopes that these valid concerns and questions are heard by your agencies and that additional efforts are made to seek a more prudent course of action to promote fish in the yet to be restored San Joaquin River.

Respectfully yours,

Burt Bundy, President
Mill Creek Conservancy

Monty Schmitt, NRDC
Neil Manji, DFG
Dr. Mark Hanna, PhD, PE
Rhonda Reed, NOAA, NMFS
Stephanie Rickabaugh, USFWS

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

January 15, 2013

Mr. Rodney R. McInnis, Regional Administrator
U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service – Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Response # 174

Sent by U.S. Mail
No. Pages: 24

Re: Tribal Consultation per NEPA Requirements under NHPA, Section 106, 36 CFR Part 800 for the **"Draft EA for Nonessential Experimental Population Designation for Reintroduction of Central Valleyu Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam Project ;"** located in the Central Valley County, California

Dear Mr. McInnis

The Native American Heritage Commission (NAHC) is the California State 'Trustee Agency' pursuant to Public Resources Code §21070 for the protection of California's Native American Cultural Resources. The NAHC is also a 'reviewing agency' for environmental documents prepared under the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq*), 36 CFR Part 800.3, .5 and are subject to the Tribal and interested Native American consultation as required by the National Historic Preservation Act, as amended (Section 106) (16 U.S.C. 470; Section 106, [4f], 110 [f] [k], 304). The provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001-3013) and its implementation (43 CFR Part 10.2), and California Government Code §27491 may apply to this project if Native American human remains are inadvertently discovered. Since a General Plan Amendment may be required this project then would be subject to California Government Code Section 65352.3 *et seq.*

The NAHC is of the opinion that the federal standards, pursuant to the above-referenced Acts and the Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq*) are similar to and in many cases more stringent with regard to the 'significance' of historic, including Native American items, and archaeological, including Native American items at least equal to the California Environmental Quality Act (CEQA.). In most cases, federal environmental policy require that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Statement (EIS).

The NAHC Sacred Lands File Inventory of the Native American Heritage Commission is established by the California Legislature pursuant to California Public Resources Code §§5097.94(a) and 5097.96. The NAHC Sacred Lands Inventory is populated by submission to the data by Native American tribes and Native American elders as a repository of *indigenous*

knowledge. In this way it differs from the California and National Register of Historic Places under the jurisdiction of the U.S. Secretary of the Interior.

The NAHC, pursuant to Appendix B of the Guidelines to the California Environmental Quality Act (CEQA) is designated as the agency with expertise in the areas of issues of cultural significance to California Native American communities. Also, in the 1985 California Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites.

Culturally affiliated tribes are to be consulted to determine possible project impacts pursuant to the National Historic Preservation Act, as amended. Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. The NAHC recommends as part of 'due diligence', that you also contact the nearest Information Center of the California Historical Resources Information System (CHRIS) of the State Historic Preservation Office (SHPO) for other possible recorded sites in or near the APE (contact the Office of Historic Preservation at 916-445-7000).

Attached is a list of Native American contacts is attached to assist you pursuant to Section 800.2(c)(1)(i) and Section 800.2(c)(2); they may have knowledge of cultural resources in the project area. It is advisable to contact the persons listed and seek to establish a 'trust' relationship with them; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area.

Lead agencies should consider avoidance, in the case of cultural resources that are discovered. A tribe or Native American individual may be the only source of information about a cultural resource; this is consistent with the NHPA (16 U.S.C. 470 *et seq* Sections. 106, 110, and 304) Section 106 Guidelines amended in 2009. Also, recommended for serious consideration are the federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) NAGPRA (25 U.S.C. 3001-3013) as appropriate. In addition, consider the 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes and are supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

NEPA regulations provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Even though a discovery may be in federal property, California Government Code §27460 should be followed in the event of an accidental discovery of human remains during any groundbreaking activity; in such cases California Government Code §27491 and California Health & Safety Code §7050.5 will apply and construction cease in the affected area.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contacts list

California Tribal Government List
California Counties
December 31, 2012

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Diegueno
Lakeside , CA 92040
sue@barona-nsn.gov
(619) 443-6612

Benton Paiute Reservation
Billie (Jake) Saulque, Chairperson
25669 Highway 6 PMB I — Paiute
Benton , CA 93512
numic@qnet.com
(760) 933-2321

Ewiiaapaayp Tribal Office
Robert Pinto Sr., Chairperson
4054 Willows Road — Diegueno/Kumeyaay
Alpine , CA 91901
wmicklin@leaningrock.net
(619) 445-6315 - voice

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
PO Box 1120 — Diegueno/Kumeyaay
Boulevard , CA 91905
gparada@lapostacasino.com
(619) 478-2113

Manzanita Band of Kumeyaay Nation
Leroy J. Elliott, Chairperson
PO Box 1302 — Kumeyaay
Boulevard , CA 91905
ljbirdsinger@aol.com
(619) 766-4930

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
PO Box 365 — Diegueno
Valley Center , CA 92082
allenl@sanpasqualband.com
(760) 749-3200

Iipay Nation of Santa Ysabel
Virgil Perez, Spokesman
PO Box 130 — Diegueno
Santa Ysabel , CA 92070
brandietaylor@yahoo.com
(760) 765-0845

Sycuan Band of the Kumeyaay Nation
Daniel Tucker, Chairperson
5459 Sycuan Road — Diegueno/Kumeyaay
El Cajon , CA 92019
ssilva@sycuan-nsn.gov
619 445-2613

Viejas Band of Kumeyaay Indians
Anthony R. Pico, Chairperson
PO Box 908 — Diegueno/Kumeyaay
Alpine , CA 91903
jrothauff@viejas-nsn.gov
(619) 445-3810

Alturas Rancheria of Pit River Indians
Philip Del Rosa, Chairperson
P.O. Box 340 — Pit River
Alturas , CA 96101 — Achomawi - Atsugewi
tiwamarcus@aol.com
disconnected

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Section 65352.3. and 65362.4. et seq.

California Tribal Government List
California Counties
December 31, 2012

Pit River Tribe of California
Juan Venegas, Chairperson
36970 Park Ave
Burney , CA 96013

(530) 335-5421

Pit River
Achumawi - Atsugewi
Wintun

Bishop Paiute Tribe
Chad Delgado, Chairperson
50 Tu Su Lane
Bishop , CA 93514
(760) 873-3584

Paiute - Shoshone

Big Lagoon Rancheria
Virgil Moorehead, Chairperson
P. O. Box 3060
Trinidad , CA 95570
vmoorehead@earthlink.net
(707) 826-2079

Yurok
Tolowa

Blue Lake Rancheria
Claudia Brundin, Chairperson
P.O. Box 428
Blue Lake , CA 95525

(707) 668-5101

Wiyot
Yurok
Tolowa

Big Pine Band of Owens Valley
Virgil Moose, Chairperson
P. O. Box 700
Big Pine , CA 93513
bigpinetribaladmin@earthlink.
760- 938-2003

Owens Valley Paiute -

Bridgeport Paiute Indian Colony
John L. Glazier, Chairperson
P.O. Box 37
Bridgeport , CA 93517
chair@bridgeportindiancolony.
(760) 932-7083

Paiute

Big Sandy Rancheria of Mono Indians
Elizabeth Hutchins Kipp, Chairperson
P.O. Box 337 / 37302
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003

Western Mono

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs Parkway
Indio , CA 92203-3499
(760) 342-2593

Cahuilla

Big Valley Rancheria of Pomo Indians
Anthony Jack, Chairperson
2726 Mission Rancheria
Lakeport , CA 95455
ajack@big-valley.net
(707) 263-3924

Pomo

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo , CA 91906
chairgoff@aol.com
(619) 478-9046

Diegueno/Kumeyaay

This list is current only as of the date of this document.

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This list is applicable only for consultation with Native American tribes under Government Code Section 65352.3. and 65362.4. et seq.

California Tribal Government List
California Counties
December 31, 2012

Cedarville Rancheria of N. Paiute Indians
Cherie Rhoades,Chairperson/Cultural Resources
300 West 1st Street — Northern Paiute
Alturas , CA 96101
cedranch@citlink.net
(530) 233-3969

Coyote Valley Band of Pomo Indians
John Feliz Jr.,Chairperson
P.O. Box 39/ 7901 Hwy 10, — Pomo
Redwood Valley , CA 95470
johnfeliz21@aol.com
(707) 485-8723

Chicken Ranch Rancheria of Me-Wuk
Lloyd Mathiesen, Chairperson
P.O. Box 1159 — Miwok - Me-wuk
Jamestown , CA 95327
chixrnch@mlode.com
(209) 984-4806

Dry Creek Rancheria of Pomo Indians
Harvey Hopkins, Chairperson
P.O. Box 607 — Pomo
Geyserville , CA 95441
(707) 522-4290

Mechoopda Indian Tribe of Chico Rancheria
Dennis E. Ramirez, Chairperson
125 Mission Ranch Blvd — Mechoopda Maidu
Chico , CA 95926 — Concow
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Fort Independence Community of Paiute
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California Tribal Government List
California Counties
December 31, 2012

Greenville Rancheria of Maidu Indians
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Wailaki
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Colusa Indian Community Council
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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
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California Tribal Government List
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California Tribal Government List
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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
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December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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California Tribal Government List
California Counties
December 31, 2012

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Ohlone / Costanoan

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Patwin

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California Tribal Government List
California Counties
December 31, 2012

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209-470-8688

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

DEC 0 5 2012

JAN 1 1 2013

Dear Interested Party:

The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), under the National Environmental Policy Act (NEPA), will be making available for public review and comment the *Draft Environmental Assessment (EA) for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam*. A Notice of Availability (NOA) of the Draft EA is expected to be published in the *Federal Register* by January 15, 2013.

As part of efforts by NMFS to reach out to potentially interested parties prior to the NOA being published, we would like to give you the opportunity to request copies of the EA so that you may begin your review as soon as possible after publication of the NOA. Once the NOA is published, the documents will also be accessible electronically through the NMFS Southwest Region websites: http://swr.nmfs.noaa.gov/sjrrestorationprogram/salmonreintroduction.htm or http://swr.nmfs.noaa.gov/nepa.htm

Upon publication of the NOA, the EA will be available for review upon written request or by appointment in the following office: the Protected Resources Division, NMFS, 650 Capitol Mall, Suite 5–100, Sacramento, CA 9581.

This EA is for the designation of an Endangered Species Act section 10(j) nonessential experimental population and reintroduction of spring-run Chinook. It includes information on the geographic location and the associated take provisions associated with the nonessential population designation, and the effects associated with the release of spring-run Chinook in the San Joaquin River.

If you would like to express your interest, have any questions or need further information, please contact Ms. Elif Fehm-Sullivan, National Marine Fisheries Service at (916) 930-3723 or elif.fehm-sullivan@noaa.gov.

Sincerely,

Kevin Chu

for Rodney R. McInnis
Regional Administrator

NOAA
National Marine Fisheries Service
Announces:

Public Workshops
Spring-run Salmon Experimental Population Designation

All are invited to discuss the proposed rule for designation of an experimental population and section 4(d) take provisions for reintroduction of Central Valley spring-run Chinook salmon to the San Joaquin River below Friant Dam and the Draft Environmental Assessment for the Proposed Action

- **Fresno:** **January 29, 2013; 5:30 pm – 7:30 pm**
  Fresno Metropolitan Flood Control District Board Room, 5469 E. Olive Avenue, Fresno, CA 93727. **(Public should park in the front parking area and enter the door located on the west side of the front building. The rear parking closes 5:30 with no exit after that time.**

- **Los Banos:** **January 30, 2013; 2:00 – 4:00 pm**
  Los Banos Community Center, 645 7th Street, Los Banos, California 93635

- **Chico:** **February 5, 2013; 5:30 pm – 7:30 pm**
  Chico Area Recreation and Park District
  545 Vallombrosa Avenue, Chico, California 95926

NMFS Website:
http://swr.nmfs.noaa.gov/sjrrestorationprogram/salmonreintroduction.htm

If you have questions or comments please contact Elif Fehm-Sullivan at:
Elif.Fehm-Sullivan@noaa.gov **or 916-930-3723**

Science, Service, Stewardship

PARAMOUNT
FARMING COMPANY

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

Paramount Farming Company, as agent for Paramount Land Company, LLC and Paramount Pomegranate Orchards ("Paramount") who are landowners along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

Response #175

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Sincerely yours,

William D. Phillimore

Executive Vice President

Mill Creek Conservancy
40652 Highway 36 E
Mill Creek, CA 96061

Elif Fehm-Sullivan
Protected Resources Division
National Marine Fisheries Service
650 Capitol Mall # 5-100
Sacramento, CA 95814-4706
SJR Spring.Salmon@noaa.gov

February 5, 2013

Subject: Continued opposition and concerns of any use of wild Mill Creek Spring-run Chinook Salmon for the San Joaquin River Settlement Agreement Project

Dear Ms. Fehm-Sullivan,

The Mill Creek Conservancy letters and public comments of two years ago opposing the use of any form of Mill Creek wild Spring-run Chinook Salmon remain valid and unchanged. It is disappointing that our legitimate expressed concerns were not addressed in the Draft Environmental Assessment.

Due to the current high risk of extinction, Mill Creek spring-run stock should be removed from consideration in the All Donor Stock Sources Alternative in establishing the SJ experimental population.

Response # 176

2. The Draft EA needs to reference populations levels and rates of recovery warranting reclassifying wild spring-run populations as stable with a low risk of extinction.

Response # 177

3. Once habitat conditions in the San Joaquin can sustain populations of spring run, reassess whether wild stream-type salmon are appropriate as a genetic source.

Response # 178

4. At such time that wild spring run populations increase and stabilize and the habitat in the San Joaquin can support Mill Creek genetic stock, local shareholders will participate in the Section 10(a)(1)(A) permitting process including stock selection and collection methods.

Response # 179

Acceptable first actions for the SJRRP:
Proceed with SJRRP projects proposed to improve habitat, flows and water management.
Assess salmon population response using introduced surplus Central Valley hatchery fall-run and spring-run Chinook.
Monitor the volitional re-colonization of wild spring-run Chinook.

All of these tasks may take decades to determine if Spring Run Chinook salmon could survive in the lower reaches of the San Joaquin River. The DEA does not address the impacts of sending wild Mill Creek Spring- run Chinook salmon to their sure death at the face of Friant Dam. The average population of Mill Creek Spring-run Chinook Salmon over the past 5 years is 306. It is a misuse of public funding to find a legal loophole to take endangered Mill Creek Salmon from their natal stream. The DEA is very distressing example of legal gymnastics being performed by a public agency to avoid upholding the existing law that is suppose to protect the Mill Creek Salmon.

Response # 180

The Mill Creek Conservancy will make formal written comments however it is very disappointing how this amply public funded project has clouded the judgment of biologist that should be concerned about the health and welfare of the existing salmon stocks that have distinct and adequate habitat, namely the Mill Creek Salmon.

Response # 181

We appreciate that your agency is trying to explore alternatives, however use of the Mill Creek wild Spring Run Chinook salmon is not appropriate given the numerous risk to our endangered from being relocated to a hot stretch of the San Joaquin River

Response # 182

Respectfully submitted,

R. Judd Hanna

Secretary, Mill Creek Conservancy

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Email: SJRspring.salmon@noaa.gov

RE: *Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"*

Dear Ms. Reed:

As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the abovereferenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Sincerely yours,

Name: Charles H. Clayton
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March 4, 2013

Elif Fehm-Sullivan, Fisheries Biologist
Protected Resources Division
Southwest Region
National Marine Fisheries Service
650 Capitol Mall Suite 5-100
Sacramento, California 95814

Re: Draft Environmental Assessment for Nonessential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-run Chinook Salmon to the San Joaquin River Below Friant Dam

Dear Ms. Fehm-Sullivan:

This letter is written on behalf of my client, the Lower San Joaquin Levee District. The Levee District operates and maintains the flood protection system between Gravelly Ford and the confluence of the San Joaquin River and the Merced River. This letter contains the District's comments with regard to the above-referenced environmental document, (the draft EA). The draft EA relies heavily on the Program Environmental Impact Statement/Report, (PEIS/R), and even incorporates by reference some information contained in the PEIS/R, (EA, 1.4.1). The Levee District submitted detailed comments on the PEIS/R when it was circulated in draft form, and those comments and the response to those comments are contained in the Final PEIS/R. This process did not afford the Levee District with an opportunity to comment on the Final PEIS/R itself.

As a part of the San Joaquin River Restoration Program, the Bureau of Reclamation filed a petition with the State Water Resources Control Board in the summer of 2012. The initial petition was for a long-term change to Reclamation's Water Rights Permits in order to allow it to divert water from Friant Dam for the River Restoration Program[1]. The long term permit

[1]It is my understanding that the petition for the long term modification of the Water Rights Permit is still pending but that, at the request of Reclamation, the State Water Board has issued a temporary permit which, I believe, expires later this month. All references in this letter and the enclosure are to the petition for the long-term change in the place and purpose of use.

application also relies heavily on the PEIS/R. The Levee District therefore took the opportunity presented by Reclamation's application to analyze and comment on the final PEIS/R, and submitted those comments to the Division of Water Rights of the State Water Resources Control Board. A copy of the Levee District's letter is enclosed and incorporated herein by this reference.

In reviewing the EA the Levee District was heartened to see that finally a public agency in considering the environmental consequences of the River Restoration Program considered the consequences of the Program if it succeeds, beyond the scheduled termination of the Program itself. It has been one of the principal concerns of the Levee District for some time that these longer term consequences needed to be considered as a part of any environmental assessment of the Program and, specifically, of the re-operation of Friant Dam and the introduction of any endangered fish. The EA correctly recognizes the need for a designation of this population of endangered fish in some way that insulates those who work on the River, (such as the Levee District), from liability both up to and after the end of the River Restoration Program in 2025. However, the EA never directly addresses some important consequences to the reintroduction of spring run Chinook salmon to flood control.

The PEIS/R was designed to analyze the differences between two groups of alternatives. The difference between the two groups turns on how Restoration Flows are handled once they reach the upper end of Reach 4 B of the San Joaquin River. That reach of the River is so choked at present that it cannot accept any water. One proposed course of action is to reconfigure Reach 4 B so that it allows the passage of 475 cfs, with the balance of the restoration flows going into the Eastside and Mariposa Bypasses. The other alternative would be to reconfigure Reach 4 B so that it would carry 4,500 cfs. The flood control consequences of these two alternatives are significantly different. The Levee District believes that the consequences for the survival of the experimental population of spring run Chinook salmon are also significant.

The Eastside Bypass and Mariposa Bypass are both broad, flat waterways which have no vegetation between the levees. Part of the District's maintenance of these facilities requires it to remove any vegetation which does begin to grow there. Because these bypass water ways are so broad, flat and free of vegetation, the temperature of the water frequently is gets to be too high to allow Chinook salmon to survive. The PEIS/R does not definitively state how or if this situation is to be addressed, even though it is the principal difference between the two groups of alternatives supposedly analyzed in the PEIS/R. The settlement agreement calls for "pulse flows" of water during the spring and fall months. These pulse flows are thought to be necessary in order to allow migrating salmon to traverse the San Joaquin River in order to spawn. The alternative described in the PEIS/R of increasing the capacity of Reach 4 B of the River to only

475 cfs. provides that the balance of the restoration flows, (including, presumably, the balance of the pulse flows), will be carried by the bypass system. Presumably this would mean that the Spring pulse flows would be largely in the River while the water in this reach of the River would remain constant. What would be the effect of this on the long term viability of the fish?

Unfortunately the EA does not discuss or analyze the differences between the two groups of alternatives which were to have been considered in the PEIS/R. It is hard to understand why the choice between these two dramatically differing alternative approaches would apparently have no significant impact on the survival of the fish which NMFS intends to release. The PEIS/R seems to take the approach in the Project level analysis of the re-operation of Friant Dam that any consequences to the fish population is outside the scope of the Project. The EA seems to take the opposite position that the ability of the fish to survive is a function of how the River and bypass system are configured. As a consequence, this issue is not examined sufficiently in either the EA or the PEIS/R. This is the very sort of piecemeal approach which both CEQA and NEPA are intended to discourage.

Response # 184

In fact, the EA does not seem to recognize flood protection as an area to be considered in evaluating the environmental impacts of the proposed action. For example, when Section 4.6 discusses Alternative 2, (the preferred alternative), summarizes the NEP area as including the "main stem of the San Joaquin River from below Friant dam to the confluence of the Merced River", it does not even acknowledge that Reach 4 B of the main stem of the River may not carry all of the restoration flows nor mention the bypass system. In this regard, the EA is inadequate.

Response # 184

Very truly yours,

Linneman, Burgess, Telles,
Van Atta, Vierra, Rathmann,
Whitehurst & Keene

Thomas J. Keene

cc: Lower San Joaquin Levee District
Thomas Berliner, Duane Morris
San Joaquin River Exchange Contractors Water Authority
Central Valley Flood Protection Board

Enclosure

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August 31, 2012

Ms. Kathy Mrowka
Division of Water Rights
State Water Resources Control Board
Post Office Box 2000
Sacramento, California 95812-2000

Re: United States Bureau of Reclamation's petition to change certain of its permits as a part of the implementation of the San Joaquin River Restoration Program.

Dear Ms Mrowka:

This letter is written on behalf of my client, the Lower San Joaquin Levee District which operates and maintains the flood protection system between Gravelly Ford and the confluence of the San Joaquin River and the Merced River. It is the District's understanding that there is currently pending before the State Water Resources Control Board an application by the Bureau of Reclamation to chance certain of its permits as a part of the San Joaquin River Restoration Program's implementation. The District is familiar with the draft and final versions of the Program Environmental Impact Statement \ Environmental Impact Report for the San Joaquin River Restoration Program, (referred to hereinafter as the PEIS/R). The PEIS/R is both a programmatic document for the overall River Restoration Program and also a project document for the release of interim and restoration flows from Friant Dam.

Presumably, the State Water Resources Control Board will rely upon the PEIS/R as the appropriate environmental document for the individual project of the release of interim and restoration flows. However, this project is inseparable from the program itself and so the District's comments will be directed at both project level and program level provisions of the PEIS/R.

I. Negative Impacts considered in the PEIS/R

While the PEIS/R identifies five potential impacts at the programmatic level and five others at the project level, there were only a total of four which are considered to be within the District's area of concern.

A. Increased flood risk at the Programmatic Level

FLD-1 The first of these, FLD-1, is that the program exposes people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, (Draft PEIS/R, page 11-31, lines 29 - 31). Program-level activities include "development of floodplain and riparian habitat in Reaches 2 B and 4 B 1, which would increase vegetation or change sediment deposition patterns within these river reaches." (Draft PEIS-R, page 11-31). However, the reader is assured that hydraulic modeling of these actions shows that there will be "little to no changes in water level frequencies throughout the system", and so these impacts are considered less than significant. However, because of a "lack of recent and consistent information regarding channel and levee conditions[1]... this impact is considered **potentially significant."** (Draft PEIS/R page 11-31; Emphasis is in the original.)

The document goes on to say that the hydraulic modeling contains preliminary representations of potential levee modifications in Reaches 2 B and 4 B 1, but that a number of "additional program-level structures and modifications" are "not included in the hydraulic model", (Draft PEIS/R page 11-35, lines 18 - 21). However, "designs and impacts of all program-level actions would be further refined under site-specific studies." (Draft PEIS/R page 11-35, lines 23 - 24). In other words, the hydraulic model is not reliable because there are a number of improvements which will be made to the River and flood control systems which the model does not consider because the program has not been developed to the point that the design parameters of these improvements are known in sufficient detail to build them into the model.

This is one of the fundamental defects in the PEIS/R's approach to flood impacts: The analysis, insofar as there is any, relies on models which are incomplete or unreliable. In its letter of comment on the PEIS/R, the Levee District noted that

> "an evaluation of the potential performance of the levees will require, among other things, evaluation of the composition of the levees and foundation materials,

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[1]Having spent a number of years and several million dollars, it is not clear at all why there is a lack of "recent and consistent information regarding channel and levee condition". It is also unclear why this lack of information is sufficient on the programmatic level to make this a potentially significant negative impact but that, in the analysis of FLD-6, there seems to be sufficient recent and consistent information to determine that there is potentially significant negative impact on the project level for the re-operation of Friant dam. The two conclusions would appear to be inconsistent with each other.

> analysis of several modes of potential slope stability failure, as well as evaluation of seepage through and under the levees . . . Considering the potential for differences in interpretation of criteria, it is recommended that a more detailed and site specific summary of design criteria considering all potential failure modes and considering specific USACE District requirements be established." (Final PEIS/R, page 3.8-497 LSJLD 2-20)

Reclamation itself admits that it lacks "recent and consistent information regarding channel and levee conditions" (Draft PEIS/R page 11-31), to such an extent that there is a potentially significant impact for flood protection. It is impossible to create a reliable model of how the river will react to physical changes which will be constructed at the project level if you do not know both the present condition of the levees and channels *and* the parameters of those changes. This makes the entire approach of using models unreliable at the programmatic level,

The discussion in the PEIS/R of this impact goes on to point out that the floodplain restoration in Reaches 2 B and 4 B 1, "could increase vegetation and alter sediment deposition patterns . . ." (Draft PEIS/R Page 11-35, lines 26 - 27). The design of the floodplain restoration would be completed concurrently with the levee and channel improvements (Page 11-35, lines 27 - 28). In other words, we will not know whether and to what degree the proposed modifications in Reaches 2 B and 4 B 1, will increase vegetation and deposits of silt in the River before the Bureau of Reclamation designs and actually starts physically altering the River. While these improvements in Reaches 2 B and 4 B 1 would increase the capacity of those reaches, because of the unreliability of the models, there is no way of determining, (either before or after the design of the flood plain) whether those increases in capacity would be adequate to offset the losses which will result for increased vegetation and increased sedimentary deposits which will result from the speed of the river slowing. This is taking an unnecessary risk. If the program level impacts could be developed far enough to reveal the design parameters and current, reliable data concerning the conditions of the existing system can be obtained, then a computer model might be able to predict the extent to which the river will increase vegetation and deposit silt to a degree that the amount of capacity required to off set this in Reaches 2 B and 4 B 1 could be determined. The floodplain restoration for Reaches 2 B and 4 B 1, could then be designed so that the additional carrying capacity produced would off set the capacity lost due to vegetation and silt deposition.

FLD-1 is the only identified impact for which the PEIS/R has a mitigation measure. The measure is to "implement design standards to minimize risk of loss, injury or death involving flooding." The reader is assured that "site-specific projects that cannot or do not reduce redirected flood impacts to less than significant levels will not be implemented as part of the"

River Restoration Program, (Draft PEIS/R, page 11-40, lines 9 - 10). It goes on the provide that, "Because the details of the program-level actions are not known at this time, there is insufficient information available to describe specific actions that would reduce this impact to less than significant levels." (Page 11-40, lines 11-12). However, the reader is assured that these problems will be addressed in the design of each of the projects within the program. (Draft PEIS/R, Page 11-40). This discussion of what is admitted to be a potentially significant impact, in practice, defers a meaningful examination of the mitigation measure to FLD-1 until after the PEIS/R becomes final. This is impermissible under the California Environmental Quality Act, *Sundstrom v. County of Mendocino* (1988) 202 CalApp3d 296. Once an impact is determined to be significant, if the project is to proceed, there must either be a statement of overriding consideration adopted or there must be a mitigation measure adopted which will mitigate the negative impact to the point of insignificance, *Fairview Neighbors v. County of Ventura,* (1999), 70 CalApp4th 238. Because there was found to be a potentially significant impact but no statement of overriding consideration was adopted, the mitigation measure must not defer its analysis until after the PEIS/R became final.

B. Increased flood risk at the Project Level

FLD-6 The first of the potential impact identified at the project level, FLD-6, is that the project of releasing the interim and restoration flows exposes people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, (Draft PEIS/R, page 11-43, lines 3 - 5). Initially, the interim and restoration flows would be limited to the then-existing channel capacities. This coupled with the promise that under Alternatives A1 through C2, all projects would be designed to minimize risk of loss, injury or death involving flooding, would reduce this impact to **"less than significant."** (Draft PEIS/R, page 11-43) because,

> "Under Alternatives A 1 through C 2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to under-seepage, through-seepage, erosion, or landside slope stability issues. . . These three measures are: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities, as needed; (2) maintaining Interim and Restoration flows below estimates then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. Because measures to minimize flood risk by not significantly increasing risk of

levee failure due to under-seepage, through-seepage, or associated landside slope stability mechanisms are included in all action alternatives, Impact FLD-6 is found to be less than significant."[2]

The verb "establishing" accurately reflects the fact that no such Channel Capacity Advisory Group currently exists. The discussion of this measure is largely found in Chapter 2.0 of the Draft PEIS/R, at pages 2-22 to 2-28. The Channel Capacity Advisory Group will consist of five members – one each from Reclamation, California Department of Water Resources, the Army Corps of Engineers, the Central Valley Flood Protection Board. Tellingly, Reclamation would only be required to report to the Channel Capacity Advisory Group "annually or whenever Reclamation contemplates increasing the upper limit of releases for Interim or Restoration Flows." (Page 2-25, lines 10 - 11). The first annual report is not due until one year after the PEIS/R Record of Decision is signed, (page 2-25, lines 20 - 21). However, the Channel Capacity Advisory Group is relied upon to, "provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria." (See response to comment LSJLD2-4, Final PEIS/R page 508).

Pages 2-22 to 2-28 of the Draft PEIS/R make it plain that the three cited measures are only for the purpose of allowing "the safe release and conveyance of Interim and Restoration flows throughout ***the duration of the Settlement implementation***." (Draft PEIS/R, Page 2-23, lines 13 - 14). (Emphasis added). "Reclamation would convene the Channel Capacity Advisory Group as required until 2030, but may stop earlier." (Page 2-25, lines 26 - 27). "If after 2030 the channel capacities decrease such that full Restoration Flows cannot be conveyed, the Channel Capacity Advisory Group would be reconvened . . ." (Page 2-25, lines 29 - 30). If the River Restoration Program achieves its purpose, there will be a population of salmon in the river and bypass system for the indefinite future. The PEIS/R needs to examine the environmental consequences of the permanent changes to the environment which the River Restoration Program (and, in this case, the project of re-operation of Friant Dam), are likely to bring about – not just the changes which may take place while the program is being implemented. The PEIS/R needs to be more definitive as to the degree and duration of Reclamation's involvement in the re-

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[2]This same language is repeated frequently, in whole or in part, in response to comments concerning flood control. See responses to LSJLD 2 -3b, -16, -69 and -75, pages 3.8-507 to 3.8-535 of the Final PEIS/R. . It is also noted that most of the Levee District's comments after 2-15, which address technical flood control issues, are repeated in the comments of the Exchange Contractors and the responses to those comments where repeated are identical to the responses given to the Levee District's comments.

operation of Friant Dam.

The Bureau of Reclamation will make annual field surveys at potential erosion sites on the San Joaquin River between Friant Dam and the Merced River, (Draft PEIS/R, page 2-27, lines 18 - 19). This will apparently provide the information for the annual reports to the Channel Capacity Advisory Group which would allow it to achieve the third purpose identified above, ("closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts"). The PEIS/R notes that the Lower San Joaquin Levee District currently maintains the Lower San Joaquin River Flood Control Project, but it then provides that, if

> "increased maintenance activities and costs are required as a result of implementing the Settlement, including additional erosion management actions identified through the monitoring activities . . .Reclamation would conduct or enter into an agreement with others to conduct such additional maintenance activities." (Draft PEIS/R Page 2-28, lines 18 - 22).

What happens when there is no longer a River Restoration Program? Who will maintain the system in order to avoid the negative impacts from erosion? If the Program is over, where will the funding come from in order to perform the erosion maintenance? Will Reclamation continue to have any sort of presence in the flood control and River restoration area? Will it continue to either conduct or pay someone else to conduct such additional maintenance activities as are made necessary by the erosion caused by the continuing need to release enough water from Friant Dam to keep the population of endangered fish alive? None of these questions are answered by the document.

Other than these provisions on the Channel Capacity Advisory Group and the vague prospect of Reclamation possibly entering into agreements with the Levee District (or some one else) in the future, there is nothing else in the PEIS/R about the relationship between the Levee District and the River Restoration Program.[3] The PEIS/R's treatment of FLD- 6 does not technically violate the precedent provided in *Sundstrom v. County of Mendocino* (*supra*), in that the PEIS/R does not find that FLD-6 will have a significant adverse environmental impact.

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[3]"The appropriate level of involvement by [the Lower San Joaquin Levee District] and other stakeholders for implementation of program-level actions would be determined during subsequent site specific studies." Final PEIS/R, page 3.8-521, Response to LSJLD 2-29. While the District is aware of Master Comment Response 8, (Final PEIS/R pages 2-36 - 2-39), it does not warrant any change the text of this letter.

However, it certainly violates the principal set out in the *Sundstrom* case. But for the proposed Channel Capacity Advisory Group proposal and the recognition of the need to provide additional maintenance (whether by the Bureau of Reclamation itself, the Levee District under a reimbursement agreement with Reclamation or someone else under contract with Reclamation), FLD - 6 would clearly be considered a significant adverse environmental impact. In essence, the PEIS/R is saying that these measures mitigate this impact to a less than significant level. As noted above, the PEIS/R does not provide vital information about either one of these two would-be mitigation measures. It does not specify who will provide the maintenance or, after the end of the Restoration Program, who will pay for the maintenance required as a consequence of the re-establishment of the endangered species and their habitat. It does not specify who will pay for the activities of the Channel Capacity Advisory Group, whether all of the proposed members of that group will be willing to participate or what happens to that group after the end of the Restoration Program. It does not analyze the long term economic viability of the Levee District if, in fact, the Levee District does provide the maintenance of the system.

C. Reduced Maintenance at the Programmatic Level

The second of the program-level impacts identified (FLD-2) is that the program would substantially reduce opportunities for levee and flood system facilities inspection and maintenance, (page 11-40). The Levee District has repeatedly pointed out that the program itself and the proposed projects within it would and have been reducing opportunities for levee and flood system facilities maintenance. (See LSJLD 2-8, Final PEIS/R pages 3.8-492 to 3.8-493, for example). The PEIS/R, however, at the programmatic level, only examines this impact during the actual construction of the various improvements contemplated by the program and concludes that, while program-level construction may temporarily limit access for maintenance, the duration of this impact would not completely impeded these maintenance activities "but rather require minor coordination of such activities. This impact would be **less than significant."** (Draft PEIS/R, page 11-40, line 25).

D. Reduced Maintenance at the Project Level

The seventh project-level impact identified, (FLD-7), is that the project of the re-operation of Friant dam would substantially reduce opportunities for levee and flood system facilities inspection and maintenance, (Draft PEIS/R, page 11-49, lines 5 - 6). Similar to the conclusion reached with regard to FLD-2 the PEIS/R finds that, for FLD-7, "Because regular maintenance activities within the Restoration Area maintain levee access for inspection and

maintenance, this impact would be **less than significant."** (Draft PEIS/R page 11-49, lines 16 - 17). However, in stark contrast to this conclusion, the final PEIS/R contains all or a part of the following language in response to many[4] of the comments made with reference to flood issues:

> "The change in operations at Friant Dam and the routing of Interim and Restoration flows could increase operations and maintenance activities regardless of the alternative selected for implementation, including increased flap gate inspection and debris removal, operation of flow control structures, levee patrols, vegetation control and sand excavation. . . Additionally flows would change the nature of operations and maintenance activities; those activities performed in a dry channel, would be performed in wet channel conditions. Reclamation would conduct or enter into agreements with others to perform such additional maintenance activities and assist the local maintaining agencies in the transition from dry to wet working conditions made necessary as a result of implementing the Settlement."

Because this same language is used repeatedly, it makes some sense to analyze it in detail, piece by piece.

"The change in operations at Friant Dam and the routing of Interim and Restoration flows *could* increase operations and maintenance activities regardless of the alternative selected for implementation . . ."

This does not amount to an outright recognition that the re-operation of Friant Dam *will* result in increased operations and maintenance activities, only that it could. However, no further analysis is provided to suggest which of the alternatives considered will not result be an increase in operation and maintenance activities. While the nature of the increase is identified, (changes in the frequency of flap gate inspection and debris removal, operation of flow control structures, levee patrols, etc.) the degree of the increase is not. Nor is the question examined as to whether these increases would, in fact, result in a diminishment of the level of flood protection provided if it were to remain unmitigated.

" . . .flows would change the nature of operations and maintenance activities; those

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[4] See responses to LSJLD 2 -10, -11, -28, -55, -56 and -86, pages 3.8-514 to 3.8-537 of the Final PEIS/R. As noted in a prior footnote, those technical comments of the Levee District with numbers above LSJLD 2-15, are repeated in the comments of the Exchange Contractors and the same response is provided.

activities performed in a dry channel, would be performed in wet channel conditions. . . ."

Having recognized a change which has the potential to significantly impact the level of flood protection, the PEIS/R then fails to examine or analyze it. How much more expensive is it to control vegetation using herbicides which can to used in a wet channel than it has been to control vegetation using herbicides which can only be used in a dry channel? How much more time consuming will it be? As pointed out in the Levee District's comments, (See LSJLD2-7, Final PEIS/R page 3.8-492,) the degree of this impact would be significantly different if Reach 4 B of the River is reconfigured to allow the passage of 4,500 cfs than if it is reconfigured to allow the passage of only 475 cfs, with the balance of the restoration flows going into the Eastside and Mariposa Bypasses. This is the fundamental difference between the two groups of alternatives considered but no attempt is made at differentiating the impact on flood protection caused by these two fundamental differences. Once again, even though the PEIS/R is a project level environmental document for the re-operation of Friant Dam, it fails to differentiate between the alternatives which it is supposedly considering with regard to flood issues.

"Reclamation would conduct or enter into agreements with others to perform such additional maintenance activities and assist the local maintaining agencies *in the transition* from dry to wet working conditions made necessary as a result of implementing the Settlement."

This has two aspects. First, it is clear from the use of the verb form, "would conduct or enter into", that no such agreement currently exists. While Reclamation and the Lower San Joaquin Levee District have entered into an agreement for one year and are negotiating an agreement for an additional two year period, there is no promise of any agreement after that. Secondly, the sentence is ambiguous in that it refers to assisting in the transition from dry to wet working conditions, but it is unclear if it means that there will be an agreement for any time beyond some initial transitional period.

The Levee District, in its comments on the Draft PEIS/R, pointed out that the Draft did refer to "long-term agreements" but did not specify whether the agreement would continue beyond the planned termination of the River Restoration Program, (see the Final PEIS/R, page 3.8-494 LSJLD 2-11)). The Bureau of Reclamation's response was to the remove the words "long-term", (Final PEIS/R page 3.8-514). This, if anything, makes matters worse.

The Levee District's understanding of the River Restoration Program is that it is designed to re-establish populations of certain threatened or endangered species. While the program is in effect, the representatives of these species which will be present in the Program area, are

considered to be experimental populations and, therefore, the incidental taking of one of them or of their habitat, does not constitute a violation of either the State or federal Endangered Species Acts. However, if the program is successful, when it ends, there will be new, self sustaining populations of these species in the project area. At that point, the "experimental" designation will be withdrawn and the people who work on and near the River (and possibly the bypass system), will be left to fend for themselves.

II. Need for analysis of the Levee District's continued viability.

One of the realities which the PEIS/R does not address is the continued financial viability of the Lower San Joaquin Levee District. It is clear that some portion of the River Restoration Program will result in widening the foot print of the River and/or the bypass system in order to accommodate additional vegetation and silt deposition caused by the creation of a riparian habitat for the salmon. This almost undoubtedly means that there will be less land within the District's boundaries which is in private ownership and productive. This erodes the District's tax base. On the other hand, it is clear that there will be increased costs in order to maintain the present level of flood protection. This is due to the fact that, as acknowledged by the PEIS/R, the District will have to work in a wet channel rather than a dry channel and that, with water in the system more often, there will be an increase in the operation and maintenance level necessary just to keep the present level of flood protection, (see the District's comments, in the Final PEIS/R pages 3.8-493 to 3.8-494). In essence, the District will have to do more work with a smaller tax base. While the PEIS/R recognizes, at various points, that this will be the case, it still leaves open a number of disturbing possibilities. Chief among them is that, once the River Restoration Program is completed, whether in 2025, as originally planned, on in 2030, as seems to be the current plan, Reclamation will withdraw from the program area and any subsidy which it has been providing to the Levee District will stop.

When the District attempted to raise this concern in its letter of comment, (Final PEIS/R page 3.8-494, See LSJLD 2-11), it was told that the reference in the Draft PEIS/R to a "long-term" maintenance agreement should have not had the words "long-term". It was referred to the discussion of the Channel Capacity Advisory Group, (Final PEIS/R response to comment LSJLD 2 - 12, page 3.8-515) even though that is described in the document itself as existing only for the duration of the settlement's implementation, (Draft PEIS/R, Page 2-23, lines 13 - 14). In response to the District's concerns of its disappearing tax base, it was told to read Chapter 16.0, on land use, (which says nothing about the District's loss of revenue), and Chapter 20.0 on Socioeconomic impacts, (which also says nothing about the District's financial condition). (See Final PEIS/R, response to comment LSJLD 2-6 b, page 3.8-511).

III. Summary & Conclusions

Practically speaking, the PEIS/R, in at least one sense, is premature. There is no adequate information concerning the status of the existing levees, nor have the projects which are anticipated to be a part of the program developed far enough to determine their parameters, so that the PEIS/R's reliance on computer models is misplaced. Similarly, there is no agreement with the Levee District (or anyone else), as to the maintenance of the system during the implementation of the program, (which Reclamation admits needs to happen), nor is there any agreement with the Levee District or anyone else as to the maintenance of the system after the completion of the program. For all of the reliance the PEIS/R places on the Channel Capacity Advisory Group which reclamation hopes to create, the PEIS/R does not exist and, once it comes into existence, will need some time to get up and running.[5] Each of these things should have been accomplished before attempting a PEIS/R for the program or for the project of re-operating Friant dam or at least started between the deadline for comments to the Draft PEIS/R, which was September of 2011, and the Final PEIS/R, in July of 2012.

The Levee District has called for the Settling Parties to revise their time schedules in order to approach the program more effectively and the Final PEIS/R does point out that, after the publication of the Draft PEIS/R and the deadline for the submission of comments, the Settling Parties did reconsider their time schedule. The result was the *Framework for Implementation,* (See the Final PEIS/R, pages 3.8-510 - 511, Response to comment LSJLD 2-6a, and page 3.8-513, Response to comment LSJLD 2-9).

> "While the *Framework for Implementation* presents a revised schedule for implementation of the Settlement, it does not result in new significant environmental impacts, a substantial increase in the severity of an environmental impact, or create a feasible project alternative or mitigation measure that would

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[5]The Levee District's letter of comment pointed out that, "The proposed Channel Capacity Advisory Group must have a clear authorized purpose and there must be agreed upon procedures, protocols and performance standards in place to guide the review and response to comments provided by the group. There must be a formal process for Reclamation to responde to and resolve comments provided by the group." (Final PEIS/R page 3.8-497, comment LSJLD 2-21). Reclamation's response was that, "The group, once convened, and Reclamation would establish any additional procedures necessary within the context of the structure set forth in the PEIS/R." (Final PEIS/R, page 3.8-518, response to Comment LSJLD 2-21).

clearly lessen environmental impacts."[6] (Final PEIS/R, page 3.8-513, Response to comment LSJLD 2-9).

Unfortunately, the adoption of such a schedule apparently did not trigger any significant revision to the Final PEIS/R such that a survey of the condition of the existing levees could be performed or the proposed projects within the River Restoration Program could be developed enough to know their parameters and then integrate those parameters into the existing computer models or the Channel Capacity Advisory Group could be convened. Nor, unfortunately, has there been any movement on the part of Reclamation to negotiate a reimbursement agreement with the Levee District for a period longer than the present water year and the next water year.

IV. Subsidence

Since the Final PEIS/R was released, the Levee District has become aware of a pattern of significant land subsidence within its jurisdictional boundaries. This subsidence is so severe that it has the potential to turn portions of the Flood Project into lakes. The Levee District has formally asked the Bureau of Reclamation and the Department of Water Resources to consider either decertifying the PEIS/R or immediately initiating a subsequent or supplemental EIR to address this issue. The Levee District believes that the construction projects which are contemplated in the River Restoration Program should not proceed until this issue has been studied since it could have a substantial impact on whether some or all of those projects as currently envisaged, should proceed and, if they do proceed, how they should be designed.

V. Requests and Recommendations

The Levee District has reviewed the Draft Proposed Conditions published by the Division

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[6]This is not quite an accurate statement. As the Levee District noted in its letter commenting on the *Framework for Implementation*, the fourth alternative in Section 4.3, (at page 26) suggests that Reach 4B be improved to the point that it will take restoration flows of up to 1,500 cfs but that the pulse flows will go into the bypass system. This is inconsistent with the way the program has been presented both at the time of the approval of the Settlement and in the legislation. The pulse flows will not serve their purposes if they are not in the same waterway as the restoration flows. This alternative then makes no sense and should not be considered. We are encouraged that this alternative does not appear in the PEIS/R.

of Water Rights staff. In light of the forgoing discussion of the short comings of the PEIS/R, the District has a number of suggested changes to the Proposed Conditions:

1. Clarify what is meant in paragraph 14 by the "then-existing channel capacities". The Draft PEIS/R refers to capacities determined by the computer models used. The Final PEIS/R changed that reference to the USACE 2003 *San Joaquin River Mainstem, California Reconnaissance Report Sacramento District, Sacramento, California*, (Final PEIS/R page 4-216, Table 11-1). Or does this language in paragraph 14 refer to "public drafts and final reports of updated estimates" referred to in paragraph 15?

2. Amend paragraph 17, so that Reclamation's duty to coordinate its operations applies not only to the Central California Irrigation District and the San Luis Canal Company, but also to the Lower San Joaquin Levee District with reference to those facilities which are operated and maintained by the Levee District.

3. Modify paragraph 19, to separately list the Lower San Joaquin Levee District as among the agencies with which the River Restoration Program is to consult.

4. Require Reclamation to take the following steps prior to it being allowed to use its amended water permits for the San Joaquin River Restoration Program:

    a. Perform a physical examination of all of the levees and channels within the Flood Project and rank their condition using the USACE standards as to what maintenance must be performed on them, and actually perform that maintenance;

    b. Develop the program improvements to a point that the design parameters are determined;

    c. Integrate the design parameters and the current condition of the levees into the computer models used in developing the PEIS/R and use that data to determine the amount of excess capacity which will be necessary to design into the flood plains in order to offset the capacity which will be consumed due to the deposit of silt and the recruitment of vegetation, *before* designing or constructing the flood plains in Reaches 2 B and 4 B 1 of the River.

    d. Require Reclamation to perform an economic analysis of the Lower San Joaquin Levee District to determine its continued economic viability in light of the removal of land from its tax base caused by the San Joaquin River Restoration

Program and the additional costs of maintaining the channels in a wet condition rather than a dry condition.

e. Require Reclamation either to enter into a financial assistance agreement with the Lower San Joaquin Levee District or some other agency or that Reclamation itself make a legally enforceable commitment to provide the additional maintenance of the Flood Protection Project which is caused by the River Restoration Program, including but not limited to those required due to the potential for erosion during the implementation of the River Restoration Program but also those necessitated by the permanent changes which the River Restoration Program brings about to the Flood Protection Project. Such a commitment must be made to last until there is no longer a population of endangered salmon in the River.

5. Require Reclamation to implement the "three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to under-seepage, through-seepage, erosion, or landside slope stability issues" described on pages 2-22 to 2-28 of the Draft PEIS/R.

6. Either prepare or require Reclamation to prepare a subsequent PEIS/R to consider the impact of subsidence on the San Joaquin River Restoration Program.

Thank you for the opportunity to comment on the draft order.

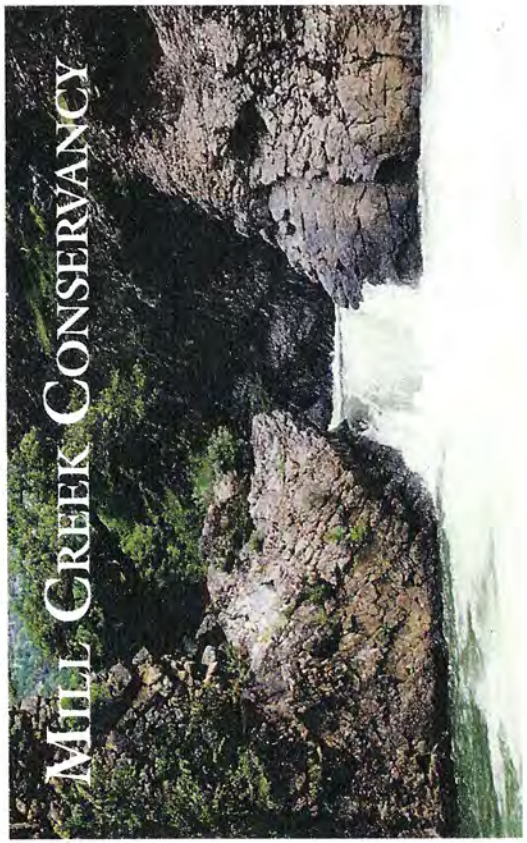
Very truly yours,

Linneman, Burgess, Telles,
Van Atta, Vierra, Rathmann,
Whitehurst & Keene

Thomas J. Keene

cc: Reggie Hill, Lower San Joaquin Levee District
Steve Chedester, San Joaquin River Exchange Contractors Authority
Jay Punia, Central Valley Flood Protection Board.

Please join us



Black Rock Pool

BECOME A GUARDIAN OF MILL CREEK

PARTNERS

Response # 185

Los Molinos Unified School District

Los Molinos Mutual Water Company

California Department of Fish & Game

Lassen National Forest

The Nature Conservancy

Department of Water Resource

Tehama County Natural Resource Conservation Service

Tehama County Resource Conservation District

California Department of Forestry

US Bureau of Land Management

Sierra Pacific Industries

Collins Pine Company

Lassen Volcanic National Park

Pacific Coast Federation of Fishermen's Assoc.

Tehama County Board of Supervisors

MILL CREEK CONSERVANCY

DEDICATED TO THE CONTINUED PRESERVATION OF THE MILL CREEK WATERSHED ECOSYSTEM

March 4, 2013

Mr. Elif Fehm-Sullivan
Protected Resources Division
Southwest Region, National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re: Comment on Proposed Rule for Introduction of Experimental Population of Spring-Run Chinook Salmon in the San Joaquin River, NOAA-NMFS-2012-0221

Dear Mr. Fehm-Sullivan:

The State Water Contractors (SWC) appreciates this opportunity to comment on the proposed rule for the introduction of an experimental population of spring-run Chinook salmon into the San Joaquin River ("Proposed Rule"). [1] Due to the ability of the upstream introduction of a state and federally listed species to negatively affect the operation of the State Water Project and the Central Valley Project ("SWP-CVP"), thereby interrupting the water supply of millions of Californians and hundreds of thousands of acres of farmland, the SWC have a direct interest in this rulemaking.

The SWC appreciates the language in section 223.301(b)(G)(6)(ii), explicitly exempting the operation of the SWP-CVP from the federal Endangered Species Act ("ESA") prohibition against "take" of San Joaquin River spring-run Chinook salmon, a listed species. We further support the determination that the San Joaquin River spring-run are a nonessential experimental population, and therefore no critical habitat shall be designated. The SWC feels that the National Marine Fisheries Service ("NMFS") has made a good faith effort to satisfy the requirements of the federal legislation directing that the program, "shall provide that the reintroduction will not impose more than de minimus: water supply reductions, additional storage releases, or by pass flows on unwilling third parties[2] due to such reintroduction." (San Joaquin River Restoration Act, §10011 (C)(3)).

[1] The SWC represents 27 public agencies that contract with the State of California for water from the State Water Project ("SWP"). These agencies are each organized under California law and provide water supplies to nearly 25 million Californians and 750,000 acres of prime farmland.

[2] "DEFINITION OF THIRD PARTY- For purposes of this subsection, the term 'third party' means persons or entities diverting or receiving water pursuant to applicable State and Federal laws and shall include Central Valley Project and State Water Project." (San Joaquin River Restoration Act, §10011 (C)(1).

At the same time, we recognize that NMFS will be faced with technical challenges in developing methods for identifying San Joaquin River spring-run and distinguishing them from other runs of Chinook salmon, particularly Sacramento winter-run, at the SWP-CVP facilities. We have reviewed the technical memorandum "Considerations for accounting of incidental take and triggers at the Delta Federal and State export facilities of reintroduced San Joaquin River spring-run Chinook salmon (Technical Memorandum)." The SWC believes there are likely more efficient and accurate ways of identifying San Joaquin River spring run at the SWP-CVP that those identified in the Technical Memorandum. Under the current NMFS biological opinion, the SWC could be affected by a San Joaquin River experimental population in two ways: the seasonal take levels, and the density based restrictions for OMR. The current BiOp relies on size ranges to distinguish the different Chinook salmon runs. The SWC are concerned that juvenile spring-run from the San Joaquin River will be similar in size to winter-run from the Sacramento River. For this reason, the SWC ask that NMFS adopt genetic testing to distinguish salmon runs. Genetic testing would be useful for accurately calculating salvage under the seasonal requirements, but would require a commitment by agencies to more intensive genetic testing procedures with increased costs. Under the density based restrictions, the SWC could experience several days of pumping restrictions before the influence of the San Joaquin River spring-run could be determined. The SWC are seeking a more reliable approach to the density based calculation as well, either through genetic testing or other means. For these reasons, the SWC would like to work with NMFS in developing methods for estimating take of San Joaquin River spring-run.

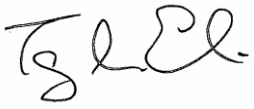
Response # 186

The SWC are seeking a formal role in the development of methods to be used in the annual Technical Memorandums. The SWC propose that the rule be amended at Section 6(ii) to facilitate this participation with language as follows:

> (ii) Any takings of CV spring-run Chinook salmon at the CVP and SWP projects in the Delta that originates from reintroduction to the San Joaquin River. NMFS, the Bureau of Reclamation, the California Department of Water Resources, the State Water Contractors, and the San Luis and Delta Mendota Water Authority will collaborate to develop the most effective methods for distinguishing San Joaquin River spring-run Chinook salmon from other salmonid species. NMFS shall annually determine by January 15 the share of take at the CVP and SWP facilities that originates from the reintroduction to the San Joaquin River. This determination shall provide a methodology for distinguishing San Joaquin River origin spring-run Chinook salmon from other salmonid species in calculating the operational triggers and incidental take statements associated with any biological opinion that is in effect at the time for operations of the CVP and SWP facilities.

The SWC look forward to working with NMFS in the future. If you have any questions please do not hesitate to contact me at 916-447-7357 ext. 203.

Sincerely,



Terry Erlewine
General Manager

Steve Carson 530-893-5735 Scarson@sunset.net

Name	Address	Telephone #	E-mail Address	Press Affiliation
				Butte County F&G Comm.

Comment:

Consideration given to; (?)

① Any possible effect on recreational effort/seasons due to incidental take in ocean?

② Any possible effect on recreational effort/seasons on non-salmonid species during restoration period?

③ Assuming restoration success – when (what criteria) might recreational take be allowed in river?

④ Stray rate "in" of alternate river populations

⑤ Marine pinniped depredation

Response #187

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Response # 188

Sincerely yours,

Name:	The Forbes, Yore & McGinn Corporation
Address:	PO Box 2985
City, State Zip:	Merced, CA 95344

Stockton Fish and Wildlife Office

Pacific Southwest Region

About AFRP
- Overview
- Strategy
- Definitions

Projects
- Development
- Selection
- Considerations

Watersheds

Documents
- Final Rest. Plan
- Working Paper
- CVPIA
- FONSI

Partners

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Acronyms

Production

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MILL CREEK -- WATERSHED INFORMATION

PRODUCTION

Species	1967-1991 Baseline	Target	1992-2009 Average	Increase	Percent Change
fall-run Chinook salmon	2,118	4,200	2,038	-80	-3.8
spring-run Chinook salmon	2,202	4,400	1,269	-933	-42.4

WATERSHED STATISTICS

Watershed area: 134 square miles
Watershed Priority: high
Total storage: 0 acre-feet

ANADROMOUS HABITAT

Historic: 44 miles
Current: 44 miles (100 %)

COORDINATORS

Brenda Olson

Response # 189

RESTORATION

Projected number of restoration projects: >6 **Projected total cost of restoration:** $5,000,000.00

Total invested to date: AFRP $1,014,000.00 **other** $885,000.00

MARCH 28, 2011

PUBLIC SUBMISSION

As of: May 08, 2013
Received: January 26, 2013
Status: Pending_Post
Tracking No. 1jx-83bv-uwxe
Comments Due: March 04, 2013
Submission Type: Web

Docket: NOAA-NMFS-2012-0221
Designation of a Non-essential Experimental Population of Central Valley spring-run Chinook salmon below Friant Dam in the San Joaquin River, California.

Comment On: NOAA-NMFS-2012-0221-0001
Endangered and Threatened Species: Designation of a Nonessential Experimental Population of Spring-run Chinook Salmon, San Joaquin River, CA

Document: NOAA-NMFS-2012-0221-DRAFT-0002
Comment from Quanza Kent

Submitter Information

Name: Quanza Kent
Address:
Fontana, CA,

General Comment

This is a wonderful rule to implement. Salmon has become an endangered or threatened species within this geographic area and rules to reintroduce salmon in the area would generate growth and activity for the Chinook salmon. The reintroduction of the Chinook salmon in the Central Valley area is a perfect choice. This area provides great space to experiment, has adaptive traits for successful growth, low risk and feasible to remove the experimental salmon if needed. To implement this rule would be successful if properly conducted. If the salmon was to progressively adapt to the area it would create habitat conditions, merge with Friant Dam and Merced River causing an abundant of nonessential activity.

Response # 191

When using the experimental source fish for this rule I believe the naturally spawning population is a good choice to adapt to Central Valley area. The naturally spawning salmon would offer a sufficient number of eggs and juveniles to support the reintroduction and develop a more stable environment for populations in surrounding basins. This expansion would reintroduce hatchery from San Joaquin River to Sacramento River but would not interact with the existing salmon population already there. I like that this experiment is independent and does not sacrifice testing of any other marine species or waters that are not significant to the experiment.

PUBLIC SUBMISSION

As of: May 08, 2013
Received: January 17, 2013
Status: Pending_Post
Tracking No. 1jx-835i-652s
Comments Due: March 04, 2013
Submission Type: Web

Docket: NOAA-NMFS-2012-0221
Designation of a Non-essential Experimental Population of Central Valley spring-run Chinook salmon below Friant Dam in the San Joaquin River, California.

Comment On: NOAA-NMFS-2012-0221-0001
Endangered and Threatened Species: Designation of a Nonessential Experimental Population of Spring-run Chinook Salmon, San Joaquin River, CA

Document: NOAA-NMFS-2012-0221-DRAFT-0001
Comment from Richard Marks

Submitter Information

Name: Richard Marks
Address:
3 Longbrook Rd.
Byfield, MA, 01922
Email: stimman@comcast.net
Phone: 603-930-7760

General Comment

Gentle Men and Women,

Response # 192

This is a terrible idea! What's wrong with concentrating our efforts on helping the native Trout population thrive within this watershed?
I believe that any introduction of non-native fish species would undermine the success of our native fishes.

Thank you for considering my objection,

Rich Marks

PUBLIC SUBMISSION

As of: May 08, 2013
Received: March 04, 2013
Status: Pending_Post
Tracking No. 1jx-840i-ryb7
Comments Due: March 04, 2013
Submission Type: Web

Docket: NOAA-NMFS-2012-0221
Designation of a Non-essential Experimental Population of Central Valley spring-run Chinook salmon below Friant Dam in the San Joaquin River, California.

Comment On: NOAA-NMFS-2012-0221-0001
Endangered and Threatened Species: Designation of a Nonessential Experimental Population of Spring-run Chinook Salmon, San Joaquin River, CA

Document: NOAA-NMFS-2012-0221-DRAFT-0003
Comment from William Paris, III

Submitter Information

Name: William C Paris, III
Address:
PO Box 9259
Chico, CA, 95927
Email: bparis@olaughlinparis.com
Phone: (530) 899-9755
Fax: (530) 899-1367
Organization: O'Laughlin & Paris LLP

General Comment

See attached file(s)

Attachments

NMFS letter re Proposed Rule Under Section 10(j) of ESA 3.4.13

SENT VIA FEDERAL ERULEMAKING PORTAL

March 4, 2013

National Oceanic and Atmospheric Administration
Office of Protected Resources
1315 East-West Highway
Silver Spring, Maryland 20910
www.regulations.gov

RE: **Comments of the San Joaquin Tributaries Authority on the Proposed Rule to Designate A Nonessential Experimental Population of Central Valley Spring-run Chinook Salmon Under Section 10(j) of the Endangered Species Act**

Dear NMFS:

The San Joaquin Tributaries Authority and its individual members, the City and County of San Francisco, Merced Irrigation District, the Modesto Irrigation District, the Oakdale Irrigation District, the South San Joaquin Irrigation District and the Turlock Irrigation District (collectively "SJTA"), have reviewed the proposed rule to designate a nonessential experimental population of Central Valley spring-run Chinook salmon under section 10(j) of the Endangered Species Act (hereinafter "the Proposed Rule") published on January 16, 2013, in the Federal Register. Below are the SJTA's comments to NMFS on the Proposed Rule.

1. NMFS Must Clarify the Special Take Exemptions Applicable Outside of the Experimental Population Area.

NMFS properly identifies that under the San Joaquin River Restoration Settlement Act ("SJRRSA"), the reintroduction of an experimental spring-run Chinook salmon population to the San Joaquin River cannot result in more than a *de minimis* impact on unwilling third parties, including water supply reductions, additional storage releases or bypass flows. To effectuate this requirement, NMFS proposes to amend part 223, subpart B of Chapter 1, Title 50 of the Code of Federal Regulations, to provide, in part, that

> "(i) Any taking of CV spring-run Chinook salmon in those portions of the lower San Joaquin River and its tributaries downstream from its confluence with the Merced River to Mossdale County Park in San Joaquin County, by otherwise lawful activities related to diverting or receiving water pursuant to applicable State and Federal laws." (78 FR 3389)

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Sacramento, California 95816
(916) 993-3962
(916) 993-3688-fax

117 Meyers Street, Suite 110
Chico, California 95928
(530) 899-9755
(530) 899-1367-fax

Mailing Address:
Post Office Box 9259
Chico, California 95927

As unwilling third parties that divert, store, convey, deliver and/or treat water from tributaries to the lower San Joaquin River, the SJTA believes that the above language is appropriate and would effectuate the meaning and intent of the *de minimis* provision of the SJRRSA. However, the SJTA is concerned that the application of the above language may not be as clear as it would otherwise appear.

Specifically, while the above language would apply to the take of any CV spring-run Chinook salmon found in the tributaries of the lower San Joaquin River, the specific discussion of the protections for unwilling third parties focuses not on "any" CV spring-run Chinook salmon, but rather on CV spring-run Chinook salmon "that originate from the San Joaquin River." (*See*, *e.g.*, 78 FR 3386). Indeed, NMFS specifically states that

> "The proposed special take exemptions for spring-run Chinook salmon that originate from the San Joaquin River would address areas downstream from the confluence of the Merced and San Joaquin Rivers, including all tributaries to the San Joaquin River and in the South Delta." (78 FR 3386).

Importantly, the proposed special take exemption applicable to take that occurs in the Delta applies, as the above discussion suggests, only to CV spring-run "that originates from reintroduction to the San Joaquin River." (78 FR 3389).

The SJTA is concerned that in practice, the proposed special take exemption applicable in the lower San Joaquin River and its tributaries will only apply to those CV spring-run Chinook salmon that are considered to have "originated" in the San Joaquin River. The practical (or stated) limitation of such special take exemption has three problems. First, it is not at all clear, either in the language of the Proposed Rule or based upon common sense, what the phrase "originate from the San Joaquin River" means. As the Proposed Rule recognizes, there are no CV spring-run Chinook salmon in the San Joaquin River Basin, and reintroduction will be accomplished by use of hatchery fish from the Feather River Hatchery initially, and perhaps augmented by naturally spawning fish from Butte Creek and other Sacramento River Basin locations. (78 FR 3383, 3385). By definition, these fish do not "originate" from the San Joaquin River.

Response # 193

NMFS indicates that the experimental population will be marked by fin clips, coded wire tags or genetic testing and, presumably, it is these "marked" fish that will be considered to "originate from the San Joaquin River." (78 FR 3384). What if there is a release of fish, intentional or otherwise, that are not properly marked? How is genetic testing going to be of assistance, as the fish will have the same genetics, at least for some period of time, as those fish from the Feather River Fish Hatchery or the naturally spawning populations from the Sacramento River Basin?

Second, assuming a natural spawning population develops during the experimental stage, how will those fish be differentiated from CV spring-run Chinook salmon that may "originate" from the Sacramento River Basin?

Response # 194

Third, while NMFS expects that such fish will result in naturally spawning fish in the upper San Joaquin River that will imprint on the San Joaquin River and not stray into or interact with other Sacramento River Basin fish (78 FR 3385), there is no discussion of the possibility of Sacramento River Basin fish straying into the San Joaquin River Basin as a result of the additional flows and other actions of the SJRRSA. The Proposed Rule should discuss this potential, and provide protection to unwilling third parties located on the lower San Joaquin River and its tributaries.

Response # 195

The *de minimis* requirement of the SJRRSA protects against any unwanted impact associated with the reintroduction effort. Therefore, the Proposed Rule should be clear that during the experimental period, the take of **any** CV spring-run Chinook salmon in the lower San Joaquin River and its tributaries via otherwise lawful activities related to the diversion and receipt of water under State and Federal law, as is currently provided in the proposed amendment to part 223, is exempt from take. Such special take exemption should not, in language or practice, be limited to CV spring-run Chinook salmon that "originate" from the San Joaquin River.

The SJTA requests that NMFS confirm that the language of the proposed special take exemption applicable to the lower San Joaquin River and its tributaries will apply to any CV spring-run Chinook salmon, and not just those that are considered to have "originated" from the San Joaquin River.

2. NMFS Must Clarify the Activities Associated With the Special Take Exemptions Applicable Outside of the Experimental Population Area.

The Proposed Rule states that a special take exemption will apply to areas outside of the experimental population areas if the take is caused by "otherwise lawful activities related to diverting or receiving water pursuant to applicable State and Federal laws." (78 FR 3389). The quoted phrase is extremely vague, and needs to be more specific to properly guide the conduct of those diverting and receiving water, as well as those charged with enforcing the prohibitions on take.

Response # 196

For example, does the phrase "related to" include things like flood control, restoration actions, monitoring, counting, studying and/or evaluating fish and other riparian plant and animal species, maintenance, repair and/or replacement of existing facilities, recreation or the generation of hydroelectric power? Broadly speaking, all of these activities are lawful and are undertaken in association with the diversion and use of water in the lower San Joaquin River and its tributaries. In fact, many of these activities are required as a condition of permits issued under Federal and/or State law to divert water, store water or generate hydroelectric power. The SJTA agrees with the intent of the Proposed Rule as written, but contends that additional specificity is needed to ensure that the intent is effectuated, both by the regulators and the regulated.

3. NMFS Must Clarify the Scope and Extent of the Experimental Population Area.

The Proposed Rule indicates that the experimental population area will be designated as "the San Joaquin River from its confluence with the Merced River upstream to Friant Dam, including all sloughs, channels and water ways that connect the San Joaquin River and provide passage for the species." (78 FR 3384). Later, in the proposed special take exemption applicable outside the experimental population area, NMFS indicates that such special take exemption applies to the "lower San Joaquin and its tributaries downstream from its confluence with the Merced River…" (78 FR 3389). Both descriptions utilize the phrase "confluence with the Merced River" as a geographic demarcation, but nowhere in the Proposed Rule is that phrase defined. Such a definition is critical to know whether the Merced River is included within the experimental population area, or if the Merced River is outside of the experimental population area and included within the special take exemption.

Response # 197

Having followed this process from the beginning, it seems clear that the Merced River itself is not included in the experimental population area, and that the proposed special take exemption will apply to the Merced River. However, the Proposed Rule needs to be clear on this point. To prevent any confusion, the Proposed Rule must provide a definition for the phrase "confluence with the Merced River" and must clearly indicate whether or not the Merced River is included within the experimental population area.

The SJTA appreciates the opportunity to comment. Please let me know if you have any questions.

Very truly yours,

O'LAUGHLIN & PARIS LLP

WILLIAM C. PARIS, III

WCP/tlb
cc: San Joaquin Tributaries Authority

D.T. Locke Ranch, Inc.
P.O. Box 126, Firebaugh CA 93622

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

Response # 198

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Sincerely yours,

Name: D.T. Locke Ranch, Inc.
Address: P.O. Box 126
City, State Zip: Firebaugh CA 93622

Dayward Locke Jr
President of Corp.

FRANK A.
LOGOLUSO FARMS, INC.

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

As a farmer along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Response # 199

Sincerely yours,

Jamie Logoluso
CEO

7567 Road 28 ▪ Madera, CA 93637 ▪ 559 674-8897 ▪ FAX 559 674-5384 ▪ 559 227-5834 (Fresno)

Los Molinos Mutual Water Company
P.O. Box 211
Los Molinos, CA 96055

Elif Fehm-Sullivan
Protected Resources Division
National Marine Fisheries Service
650 Capitol Mall # 5-100
Sacramento, CA 95814-4706
SJRSpring.Salmon@noaa.gov

March 1, 2013

Subject: Objection to using Mill Creek salmon stock for San Joaquin River reintroduction efforts, and failure of the Federal Register (FR) and the Draft Environmental Assessment (DEA) documents to address third party impacts to LMMWC and its shareholders.

Dear Ms. Fehm-Sullivan,

Since the 1920's, LMMWC has maintained a cooperative working relationship with local fisheries agencies. We release water when fish need it. We assist in upgrading the fish ladders on our dams. We assist in installing fish screens. We grant permission for fish traps and counting cameras to be placed on our property. We allow agency biologists, engineers and geologists to inspect every aspect of our operations to improve irrigation efficiency. All told, LMMWC takes great pride in being an active player and collaborator in managing and restoring Mill Creek's wild spring-run Chinook salmon.

Therefore, we find it unacceptable for the San Joaquin River Restoration Project to request and exemption from the Endangered Species Act to take Mill Creek wild spring-run Chinook salmon stock, re-locate them to the San Joaquin, re-label them as nonessential, and use them for an experiment on the San Joaquin River. Furthermore, exempting water users and shareholders outside the Mill Creek watershed from take prohibitions on Mill Creek fish is against the very laws written to protect these endangered wild spring-run Chinook salmon. Los Molinos Mutual Water Company (LMMWC) objects to the Draft Environmental Assessment's (DEA) preferred alternative of using Mill Creek's wild spring-run Chinook salmon to meet court ordered reintroduction efforts on the San Joaquin River.

Response # 200

The Federal Register (FR) and the DEA fail to address the third party impacts to LMMWC and its shareholders. LMMWC has cooperated with Resource Agencies in implementing state-of-the-art irrigation practices to ensure our water delivery facilities meet current State and Federal Fish Passage Criteria for all life stages of Mill Creek's Chinook salmon. The actions we have taken to insure our facilities don't harm Chinook salmon include:

Response # 201

- Voluntarily bypass irrigation water back into the creek to benefit salmon passage.
- Participate in ground-water conjunctive use studies and provide surface and groundwater exchanges to improve flows for salmon migrations

- Participate in irrigation water use efficiency studies, obtain grants and implement the recommended "best practices" for water management for the benefit of both irrigation and the restoration efforts of Chinook salmon on Mill Creek.

- Track and account for water rights dedicated for Chinook salmon passage.
- Educate our shareholders and community on efforts to improve Mill Creek's salmon populations.
- Support efforts by United States Geological Survey (USGS) and California Department of Water Resources (CDWR) to keep flow and temperature monitoring stations funded and operational,

We insist that all water users, shareholders and agencies be held to the same standards in **protecting the wild spring-run Chinook salmon IN Mill Creek.** We disapprove of any plan proposing to remove these wild spring-run salmon from their natal habitat for experimental purposes on another river system.

Response # 202

Sincerely,

Darrel Mullins,
General Manager
Los Molinos Mutual Water Company

Cc : Mill Creek Conservancy

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

As a landowner (and/or farmer) along the San Joaquin River, I am interested in the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding. Please include this letter and comments for the record in this environmental review process.

I hereby join in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC). The purpose of this letter is to fulfill my obligation to exhaust administrative remedies. Whether or not I choose to raise all issues raised by the Exchange Contractors, RMC or others will be determined at a later time.

Response # 203

Sincerely yours,

Name:	Robert D Kelley
Address:	P O Box 818
City, State Zip:	Newman, CA 95360

March 4, 2013

Ms. Rhonda Reed
National Marine Fisheries Service
Protected Resources Division
Central Valley Office
650 Capital Mall, Suite 500
Sacramento, CA 95814
Email: SJRspring.salmon@noaa.gov

RE: ***Comments of the San Joaquin River Exchange Contractors Water Authority and San Joaquin River Resource Management Coalition to the November 2012 "Draft Environmental Assessment for Non-Essential Experimental Population Designation and 4(d) Take Provisions for Reintroduction of Central Valley Spring-Run Chinook Salmon to the San Joaquin River below Friant Dam"***

Dear Ms. Reed:

San Luis Canal Company having water rights on the San Joaquin River, is very concerned about the 4(d) and 10(j) rule setting and environmental review process for the above-referenced proceeding.

San Luis Canal Company hereby joins in the comments submitted by the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors). The purpose of this letter is to fulfill our obligation to exhaust administrative remedies.

Response # 204

Sincerely yours,

Palmer McCoy
Executive Assistant
San Luis Canal Company

11704 W. HENRY MILLER AVE.
DOS PALOS, CA 93620
(209) 826-5112 ** (209) 387-4305

"A MUTUAL WATER COMPANY SINCE 1913"

Appendix 1: Responses to Comments

#1 Mill Creek fish are included in the collection possibilities because the best available science determined that broad genetic input from spring-run Chinook populations to the founding stock will give the best chance for reintroduction of spring-run Chinook to the San Joaquin River (see section 3.3.1.2 in the EA). Consequently, inclusion of this stock in the alternatives analysis is appropriate. Collection of Mill Creek spring-run Chinook would be subject to approval of a 10(a)(1)(A) permit that includes NEPA review and ESA section 7 jeopardy analysis (see sections 1.2.2 and 2.2 in the EA). No collection would occur on Mill Creek if such collection would jeopardize the continued existence of spring-run Chinook. This analysis will utilize the 5-year status reviews for the ESA listed spring-run Chinook, which includes updated assessment of extinction risk. The latest review occurred in 2011 and is cited in the EA. (see section 3.2.4.1 in the EA).

Mill Creek fish can provide genetic diversity critical to the successful reintroduction of spring-run Chinook to the San Joaquin River. Successful reintroduction to the San Joaquin River is necessary to meet recovery objectives for the species. Consequently, inclusion of this stock in the alternatives analyses is appropriate. The ESA analysis associated with any proposed collection of spring-run Chinook will consider the extinction risk of the proposed source population, at the time of the proposed collection (see section 1.3.1.2).

#2 The EA does include historic and current levels of potential donor stocks (see section 3 of the EA). Although the 2005 status review for spring-run Chinook and Lindley et al's (2007) assessment found that Central Valley spring-run Chinook were at a moderate to low risk of extinction in Mill Creek, the more recent 2011 Central Valley Recovery Domain 5-Year Review concluded that recent declines in abundance of Mill and Deer creek populations (particularly from 2006-2010) place the Mill and Deer creek populations in the high extinction risk category due to their rate of decline, and in the case of Deer Creek also the level of escapement (see section 3.2.4.1 of the EA). See response to comment 1 regarding ESA analysis associated with and proposed collection of spring-run Chinook.

#3 Straying is a natural part of salmonid life history, but largely Chinook salmon will return to the rivers where they were spawned. Higher straying rates are known to occur when hatchery salmon are not released to their natal streams, especially if they are released in the Delta. Section 2.1.3.1 has been edited to clarify that all releases will occur within the Restoration Area. See section 4.3.1.1 of the EA for the straying analysis.

#4 Please see response to comment 1. In addition the reintroduction process will be implemented in an adaptive management framework (see FMP) and will consider habitat conditions in the restoration area. In addition, the use of a conservation hatchery facility (currently an ISCARF and plans for a permanent SCARF), which will house broodstock will enable reintroduction to occur with fewer fish being required to be collected from existing populations. Those fish collected from donor streams will be collected and used as broodstock; their offspring will then be either used for the next generation of broodstock, or be placed into the river. See section 2 in the EA..

#5 Local stakeholders and interested parties are invited to participate in the section 10(a)(1)(A) permitting processes, which include public input, and they have been included in the extensive public outreach process undertaken during this rule making process (see section 1.7).

#6 Copy of references cited was sent.

#7 The commenter is referring to issues that are associated with the terms of the Settlement. Actions identified in the Settlement are required obligations to be implemented by the Department of Commerce and Department of Interior, and are authorized by Public Law 111-11 (San Joaquin River Restoration Settlement Act [SJRRSA]). The purpose of the program is to implement at the SJRRP and study, implement, and fund actions defined in the Settlement and the Act. A feasibility-level of analysis will not be performed for required actions provide forth in the legal Settlement and Act. The Settlement does not require a feasibility study, as defined in Reclamation's Directive and Standards, CMP-05-02(2000) for any part of the SJRRP or the SJRRP as a whole. The Act requires feasibility studies for specific Water Management actions, but does not authorize or direct the Secretary to conduct facility studies on other parts of the SJRRP (including actions to achieve the Restoration Goal), to assess the SJRRP, or as a condition of implementing the SJRRP.

#8 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. Paragraphs (5)(i) and (5(ii)of the regulation have been modified to connect, more explicitly, the purpose of these take exceptions to section 10011(c)(3) of the SJRRSA

#9 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. The SJRRSA section 10011(c)(3) requires that the 4(d) rule shall provide that the reintroduction of spring-run Chinook to the San Joaquin River will not impose more than de minimus: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to applicable State and Federal laws due to such reintroduction. It does not require that all take be an exception. Paragraphs (5)(i) and (5)(ii) of the regulation take exceptions that may exceed the de minimus threshold in the specified areas, and the text has been modified to connect, more explicitly, the purpose of these take exceptions to section 10011(c)(3) of the SJRRSA.

#10 The regulation has been edited to more clearly relate to the population of spring-run Chinook reintroduced to the San Joaquin River. This would not include progeny of adult spring-run Chinook that were spawned in the San Joaquin River, but that strayed as adults to Sacramento River basin streams to spawn. Some straying occurs naturally in all salmonid populations, but at naturally low levels, to the degree that it is NMFS' determination that this would not exceed the de minimus criterion of SJRRSA section 10011 (c)(3). Imprinting procedures for spring-run Chinook released to the San Joaquin River will further assure more natural, low levels of straying of adults. However, should this calculation be proven to be incorrect in the future, the annual methodology produced by NMFS to account for the proportionate share of the take by the CVP and SWP can be adjusted to ensure the de minimus standard is met.

#11 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. The proposed regulation has been modified in Paragraph 5(ii) to define the purpose of the annual technical memo, and NMFS commitment to coordinate with parties outside the agency in the development of this document. The schedule for this document was not changed, because we believe that an annual assessment of the effectiveness of the methodology to achieve the de minimus impact requirement is warranted. NMFS acknowledges that over some periods there may be no need to revise this document, but in other years, conditions may change or the progress of the reintroduction may require a change in the methodology

#12 See response to comment 11

#13 See response to comment 11

#14 See response to comment 11

#15 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. The proposed regulation has been modified in Paragraph 5(ii) to define the purpose of the annual technical memo, and NMFS commitment to coordinate with parties outside the agency in the development of this document.

#16 Agreed that the annual determination of the methodology will address changing conditions and be responsive to current and future ESA consultations.

#17 The Technical Memorandum does not conclude that reintroduced spring-run Chinook will not fit in this category. On page 8, we identify that "The question remains whether these fish would fall into the older juvenile Chinook salmon category and contribute to the trigger." The document cites the Butte Creek as an indication that San Joaquin River fish may not fit into this size category, but the discussion continues with a recommended approach for collecting similar information on spring-run Chinook reintroduced to the San Joaquin River.

#18 We agree that inclusion of "other fish" into the purpose and need statement renders it overly broad. The EA has been modified in response to this comment. Further, we then analyzed whether the range of alternatives required modification once the goal of restoration and maintenance of "other species" was omitted from the need statement. We concluded that no additional changes were needed to the alternatives (e.g., deletions, additions, or modifications) because they accurately meet the revised purpose and need statement and continue to represent a full range of reasonable alternatives.

We disagree, however, that the purpose and need statement be revised to include the regulatory scheme and related mandates necessary to reintroduce, restore, and maintain spring-run Chinook . The purpose and need statement should be read as "the purpose and need for implementing the major federal action;" the major federal action is reintroduction via an ESA section 10j rule. Further, including the regulatory requirements into the purpose and need would render the range of alternatives too restrictive since the only alternatives to analyze could then be no-action and the proposed action (i.e., no other alternative would meet the regulatory mandates outlined by the commenter). The regulatory

requirements are, however, necessary as context for the purpose and need statement, and can be found in sections 1.3.1 through 1.3.1.2.

#19 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. Paragraphs (5)(i) and (5)(ii) of the regulation take exceptions to address the de minimus threshold in the specified areas, and the text has been modified to connect, more explicitly, the purpose of these take exceptions to section 10011(c)(3) of the SJRRSA.

#20 NMFS requested input on how to address the de minimus requirement in the SJRRSA from the public, including the commenters or their representatives, at more than 10 public workshops, small group meetings, and public SJRRP technical feedback group meetings between April 28, 2010 and the release of the proposed rule in January 2013. NMFS proposed to use the language for the 4(d) rule requirement in the SJRRSA, and we suggested the concept of a methodology to calculate and deduct the relative contribution of spring-run Chinook produced from the Restoration Area from incidental take allowances at the export facilities.

#21 The draft technical memorandum (posted Jan 28, 2013, updated Feb. 23, 2103) identifies ways in which spring-run Chinook reintroduced to the San Joaquin River could impact the required de minimus outcomes under current operational conditions, and how such impacts could be managed to achieve a de minimus level of impact. The language of paragraph (5)(iii) has been modified to include input from parties outside of NMFS in the development of the annual technical memorandum.

#22 For clarification, NOAA's NEPA implementing regulations state "Establishment of experimental populations pursuant to section 10(j) of the ESA requires and EA….Establishment of some experimental populations may require an EIS, but that finding will be determined on a case-by-case basis or after an EA is completed on the action" (NAO 216-6, 6.03(e)(2)(e)) [emphasis added]. Similarly, NOAA's NEPA implementing regulations state "Promulgation of special management rules pursuant to section 4(d) of the ESA requires and EA…section 4(d) rules may require and EIS, but that finding will be determined on a case-by-case basis or after an EA is completed (NAO 216-6, 6.03(e)(2)(a)) [emphasis added]. As such, an EIS is not a requirement to analyze the effects of a proposed experimental population designation or promulgation of the related section 10(j) rule.

NMFS adequately assessed the potential environmental consequences of the proposed action on the human environment, and concludes that no significant impact will occur. Consequently, no additional information necessary to inform the decision-maker regarding impacts of the experimental population designation or related rule implementation would be garnered from preparation on an EIS on this proposed action.

#23 Cumulative Impacts can only analyze the circumstances based on the potential impacts that may result from the proposed action. Changing the proposed rule from non-essential to essential will require another federal action, which will then trigger NEPA. The impact would be analyzed at that time.

#24 To analyze the potential effects on the human environment from a proposed action, NMFS correctly makes assumptions that other related factors such as compliance with other laws, plans, and

policies and adequate funding to carry out the proposal will occur. Further, NMFS analyzed a no-action alternative, which effectively addressed conditions if the proposed action were not implemented. Lack of implementation could result from a suite of potential factors including lack of funding or non-compliance with a related law. Finally, NMFS incorporates adaptive management components from the FMP and the San Joaquin River Conservation Hatchery HGMP into its alternative analyses to address changing conditions in procedure or outside factors that may alter the course of the proposed action, including lack of funding (see sections 1.4.2, 2.1.3.1, 2.1.3.2, 4.1, and section 5 of the EA). If the reintroduction program were halted because of a lack of funding, NMFS would then reevaluate the program and make necessary adjustments through its regulatory processes.

The EA analyzes the potential impact associated with establishing the 10(j) rule area and associated 4(d) take exceptions. The establishment of rules and take exceptions for an endangered species and any associated impacts are not dependent on project funding. The exceptions of the 10(j) and 4(d) rules will limit potential ESA regulatory impacts to human activities from the placement of spring-run Chinook in the San Joaquin River. If funding issues prevent the completion of some SJRRP actions, there would be no impacts to these parties from the reintroduction of spring-run Chinook (see section 4.3.5).

#25 The Draft EA analyzed the potential impacts associated with establishing the 10(j) rule area and associated 4(d) take exceptions (see section 4.3.1.1 of the EA). The exceptions of the 10(j) and 4(d) rules will limit potential ESA regulatory impacts to human activities from the placement of spring-run Chinook in the San Joaquin River (see section 4.3.6). If funding issues prevent the completion of some SJRRP actions there would be no impacts to these parties from the reintroduction of spring-run Chinook. Further, as discussed in the EA the collection of spring-run Chinook and placement in the San Joaquin River would not impact the overall status of the species (see section 4.1 of the EA).

#26 These projects were programmatically analyzed by the PEIS/R and will subject to further NEPA analysis as site-specific projects are proposed (see section 1.3.1.1 and 1.4.1 of the EA). The EA analyzed the potential impacts associated with establishing the 10(j) rule area and associated 4(d) take exceptions; future site-specific actions are speculative at this time and, therefore, not within the scope of this review.

#27 The EA and proposed rule only focus on the designation of an experimental population. This comment relates to the implementation of the Settlement Phase I actions. Questions related to subsidence are not an appropriate scope of inquiry related to the Proposed Action. Subsidence concerns are being accounted for in SJRRP site-specific projects, such as the Reach 4B, Eastside Bypass, and Mariposa Bypass Improvement Project and the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project. These issues are being addressed through data collection and design to account for subsidence. The comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA.

#28 For the purposes of this EA, NMFS assumes that all channel and structural modifications, habitat improvements, and water releases, will be implemented as required by the Settlement. Implementing only some of these measures would not achieve the restoration goal, and thereby would not fulfill the

terms and conditions of the Settlement. The exceptions of the 10(j) and 4(d) rules will limit potential ESA regulatory impacts to human activities that may occur as a result of the placement of spring-run Chinook in the San Joaquin River. If funding issues prevent the completion of some SJRRP actions there would be no impacts to these parties from the reintroduction of spring-run Chinook. Further, as discussed in the EA the collection of spring-run Chinook and placement in the San Joaquin River would not impact the overall status of the species.

#29 The cumulative impacts of the potential river improvements and habitat changes are discussed in Chapter 26 of the PEIS/R and section 5 of the EA. The EA states that a program level analysis of habitat and conveyance (channel improvement) projects, the anticipated effects of water releases and the proposed reintroduction actions of fall and spring-run Chinook into the San Joaquin River is also provided in the PEIS/R (see section 1.4.1 of the EA).

The comment does not provide sufficient explanation as to why the EA analysis is deficient in the resource areas identified.

#30 The proposed 4(d) rule does provide regulatory relief to lawful flood control activities to these locations commented on. Please see the proposed NEP area map (Figure 1) in section 1.1.2.

#31 As outlined in the preamble, monitoring and analysis is necessary to gauge the progress of the proposed reintroduction program and to provide information for decision-making and adaptive management (see section 4.4 of the EA). Fish passage, fish biology, aquatic habitat, and conservation hatchery facility operations will be the primary focus of the monitoring (FMP, 2010). Also see the preamble to the Rule for more detail regarding specific monitoring procedures. Monitoring activity outlined through 10(a)(1)(A) permits and special handling for scientific or salvage and rescue purposes under the existing 4(d) permitting protocol and adaptive management components of the FMP or San Joaquin River Conservation Hatchery HGMP, as is incorporated into the reintroduction process of the SJRRP, would help ensure that the affected spring-run Chinook is adequately protected, should changing conditions in procedure or outside factors occur that may alter the course of the SJRRP.

#32 Recent video weir data on the Stanislaus and Tuolumne rivers for the past few years indicate that there are a fair number of salmon returning annually to these systems, which historically would coincide with spring-run Chinook timing. This information is sufficient for NMFS to assume potential populations in these water ways. Hence these areas would not meet the geographically separate condition for ESA section 10(j).

Within the NEP area take exceptions apply to take that occurs incidental to otherwise lawful activities. Persons or entities, like the Exchange Contractors, who divert or receive water pursuant to applicable State and Federal law would be conducting this activity in a lawful manner, thus the de minimus result will be met on the Exchange Contactors or on any unwilling persons or entities . Refer to section 1.3.1.1.

#33 Thank you for the comment on length of the rule. The rule as proposed has no date of termination.

#34 Recent video weir data on the Stanislaus and Tuolumne rivers for the past few years indicate that there are a fair number of salmon returning annually to these systems, which historically would coincide with spring-run Chinook timing. This information is sufficient for NMFS to assume potential populations in these water ways.

#35 The EA has been modified in response to this comment (see section 3.2.4.3).

#36 The EA has been modified in response to this comment (see sections 3.3.2.3 and 3.3.2.4). Historical accounts of spring-run Chinook on the Tuolumne River are documented in detail and referenced in (Yoshiyama et al. 2001), from 1848 to 1946. With these historical accounts and the current documentation of spring-run Chinook, NMFS cannot include the Tuolumne River in the experimental population designation, as by definition, and experimental population must be separate from other populations of the same species. The experimental population area for experimental CV spring-run Chinook salmon population would be defined as the San Joaquin River from its confluence with the Merced River upstream to Friant Dam, including all, sloughs, channels, floodways, and water ways that connect the San Joaquin River and provide access for the species. In addition, the experimental area includes portions of the Kings River in high water years that provide connectivity between the Kings River with the San Joaquin River. The experimental population area is within the species historical range, but it is presently unoccupied by CV spring-run Chinook salmon and is outside the currently defined freshwater and estuarine boundary of the CV spring- run Chinook salmon ESU.

#37 The Settlement identifies filling and/or isolating the highest priority gravel pits in Reach 1 based on the relative potential for reducing juvenile salmon mortality. This action was analyzed in the April 2011 PEIS/R for Impact FSH-8, page 5-72. This analysis states that for program-level actions, improved instream and floodplain habitat conditions and isolating or filling gravel pits in Reach 1 would likely reduce largemouth bass populations and subsequently decrease predation on representative special-status fish species, which would be beneficial for native fish populations. Additionally, projects in Reach 2B and Reach 4B/Eastside Bypass are currently under development. These projects are being evaluated for their ultimate potential to provide a combination of fish habitat, flood protection, and the continuance of water supply availability (See section 3.4.2 in the EA).

#38 All fish are subject to flow and temperature impacts in addition to any other impacts that they are subject to, including predation. Both the PEIS/R and the EA address predation risks on salmon, particularly during its juvenile stage. Should the proposed Restoration actions be carried out, the impact on predation rates on Chinook salmon, including juvenile salmon, would not be changed from those predation rates and fish assemblages already seen in the tributary rivers adjacent to the San Joaquin River (see section 4.3.2 of the EA) Program-level actions are identified in the PEIS/R for Impact FSH-8. Restoration actions, such as constructing fish passage structures, restoration of habitat, isolation of high priority gravel pits, and the creation of floodplain would be beneficial for fish. While there could be predation in some facilities or backwater areas, the avoidance of disturbing riparian vegetation or replacement of riparian vegetation will create shelter for juvenile salmonids, as identified in the PEIS/R Conservation Strategy, Table 2-7, CVS-1 and CVS-2. The EA has been modified in response to this comment (see section 4.3.2).

#39 Predation is a factor in any restoration action within the entire Central Valley. The effects of predation have been discussed in the PEIS/R. Many modifications to the habitat as outlined in the Settlement are targeted at addressing some of these issues. However this EA is specific to the designation of an experimental population and take exception regulations. Furthermore, both of the fish assemblages and predation rates within the Restoration area are not expected to change as a result of the reintroduction action (see section 4.3.2 of the EA). Predation of largemouth bass is further analyzed on page 5-72 and 5-73 of the PEIS/R, and it is determined that for program-level actions, improved instream and floodplain habitat conditions and isolating or filling gravel pits in Reach 1 would likely reduce largemouth bass populations and subsequently decrease predation on representative special-status fish species, which would be beneficial for native fish populations. The EA has been modified in response to this comment (see section 4.3.2).

#40 Both the PEIS/R and the EA address predation risks on salmon, particularly during its juvenile stage, and find that there would be no change in predation rates on spring-run Chinook. The EA language has been modified in section 4.3.2 for consistency. .Program-level actions are identified in the PEIS/R for Impact FSH-8. Restoration actions, such as constructing fish passage structures, restoration of habitat, isolation of high priority gravel pits, and the creation of floodplain would be beneficial for fish. While there could be predation in some facilities or backwater areas, the avoidance of disturbing riparian vegetation or replacement of riparian vegetation will create shelter for juvenile salmonids, as identified in the PEIS/R Conservation Strategy, Table 2-7, CVS-1 and CVS-2.

#41 Comment noted, the proposed rule will provide take exceptions.

#42 The local cities owning land located within the Restoration Area are listed. This section is dealing with land/use ownership only (see section 3.6.4 of the EA)

#43 The Settlement requires implementation of Interim and Restoration Flows as further defined in Exhibit B. These hydrographs were developed to restore a variety of fish species and habitat functions, including spring-run and fall-run Chinook.

#44 Reviewer's comments noted. Water temperature, as noted by the commenter, was discussed in the PEIS/R in relation to fish survival and SJRRP implementation in the Fish and Wildlife chapter. Further discussion of water temperature can also be found in section 3.6.5.1 of the EA. Any comments on that document should be addressed to the Department of the Interior. The commenter notes that this was "downplayed" in the PEIS/R, but does not provide a specific reference as to the context or the specific temperature analysis to which they are referring. Therefore, there is no particular item that can be accurately and succinctly addressed in response to the issue raised. The EA only analyzes the designation of an experimental population. The comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA.

#45 The EA does not state that water temperatures in the upper San Joaquin River will be spared from impacts from climate change (see Hayhoe et al. as referenced in section 5 of the EA). However, as most climate change models from Hayhoe et al. 2004 predict elevated water temperatures coupled with declines in precipitation and snowpack during the latter half of this century, spring-run Chinook may

have higher viability in reproduction in the upper San Joaquin River than where they currently exist (the EA uses Butte Creek as an example in section 5), since water runoff flowing into the upper San Joaquin comes from comparatively higher elevations, and because the upper San Joaquin has the added benefit of having an upstream reservoir to store water at cooler temperatures over time (see section 5 in the EA).

#46 The PEIS/R addressed all project and program level actions associated with the implementation of the Settlement, as authorized by the Act, for the SJRRP. The PEIS/R discussed at a program-level the release of Chinook salmon to the San Joaquin River and the designation of an experimental population. The Draft EA provides the project-level analysis to the designation of an experimental population, as outlined at a program-level in the PEIS/R. Each of the site specific projects as identified in the settlement with have their own NEPA and ESA processes.

#47 The EA and proposed rule only focuses on the designation of an experimental population in relation to spring-run Chinook . The comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA.

#48 Both the PEIS/R and the EA agree that predation risks on salmon, particularly during its juvenile phase, is an important factor to address when determining whether or not proposed project-level actions for the SJRRP would either increase or decrease these risks. While the PEIS/R does indicate that restoration actions may increase predation risks for representative special-status species, especially during their juvenile life stages, implementing special-status fish conservation measures of the Conservation Strategy in the PEIS/R will offset potential adverse effects on special-status fish species. Furthermore, the reintroduction of spring-run Chinook to the Restoration Area is not expected to result in different fish assemblages than those already seen in the tributary rivers. As a result predation rates will not be changed (See section 4.3.2 in the EA). Program-level actions are identified in the April 2011 PEIS/R for Impact FSH-8. Restoration actions, such as constructing fish passage structures, restoration of habitat, isolation of high priority gravel pits, and the creation of floodplain would reduce predation on juvenile salmon. While there could be predation in some facilities or backwater areas, the avoidance of disturbing riparian vegetation or replacement of riparian vegetation will create shelter for juvenile salmonids, as identified in the PEIS/R Conservation Strategy, Table 2-7, CVS-1 and CVS-2. To the barrier discussion, section 4.3.2 of the EA discusses barriers to prevent fall and spring-run Chinook hybridization.

#49 The EA has been modified in response to this comment (see section 4.3.5, and section 5).

#50 Within the NEP area, take exceptions would cover take that occurs incidental to all otherwise lawful activities. This would include lawful water diversion and management uses. The proposed action addresses the requirements of SJRRSA section 10011(c)(3).

#51 The cumulative impacts of the potential river improvements and habitat changes are discussed in Chapter 26 of the PEIS/R. Cumulative effects associated with the proposed designation of an experimental population are analyzed in the EA in section 5.

#52 Cumulative impacts were identified for the SJRRP in the PEIS/R and the section 5 of the EA. The PEIS/R evaluates the environmental impacts of implementing the Settlement and available funding is not presented within the NEPA/CEQA document, nor are those environmental impacts that should be considered in the PEIS/R. Availability or lack of funding in an EIS or EIR is not required under NEPA or CEQA. However, throughout Settlement implementation, the Implementing Agencies will remain cognizant of funding availability and the need to prioritize individual actions in recognition of their anticipated costs and effectiveness.

#53 See response to comment 1.

#54 See response to comment 2. Also, see section 3.2.4.1 of the EA.

#55 See response to comments 1 and 3, and section 3.4 of the EA.

#56 See response to comment 5.

#57 Comment noted.

#58 Collection of Mill Creek spring-run Chinook would be subject to approval of a 10(a)(1)(A) permit, which would include NEPA review and ESA section 7 jeopardy analyses prior to any decisions regarding take of these fish (See sections 1.2.2 and 2.2 in the EA). No collection would occur on Mill Creek if such collection would jeopardize the continued existence of spring-run Chinook . Mill Creek fish are included in the collection possibilities because the best available science determined that broad genetic input from spring-run Chinook to the founding stock will give the best chance for reintroduction of spring-run Chinook to the San Joaquin River, especially as habitat conditions are developing.

#59 See response to comment 1.

#60 The statutory requirements for the AFRP doubling goals are different than those stated in the ESA and are not applicable in this case. See response to comment 1 and section 3.3.1.2 of the EA.

#61 See response to comment 5.

#62 This comment is directed at the PEIR\S, which has already addressed this issue, and the issue of water rights is addressed section 2.1.3.2 of the EA. Please see Chapter 2 of the Final PEIS/R.

#63 The purpose of Figure 1 in section 1.1.2 of the EA is only to illustrate the documented current and historical distributions of spring-run Chinook . There are various locations, especially in Reach 1, that would contain suitable spawning habitat for spring-run Chinook, as water temperatures in these locations within the Restoration area are comparable to those water temperatures found at elevations used by Mill Creek salmon. The EA has been modified to clarify existing habitat conditions (see sections 3.4.2 and 3.6.5.1 of the EA).

#64 The EA states in section 1.4.1 that a program level analysis of habitat and conveyance (channel improvement) projects, the anticipated effects of water releases, and the proposed reintroduction

actions of fall and spring-run Chinook into the San Joaquin River is also provided in the PEIS/R. Furthermore,

anticipated schedules for implementation of the SJRRP are outlined in the PEIS/R, the Draft Framework for Implementation, and the Settlement. Success for the reintroduction process is anticipated to increase as river conditions improve as part of the greater SJRRP, which is discussed in section 4.3.1.1 of the EA.

#65 See response to comments 1 and 60, along with section 3.3.1.2.

#66 See response to comment 1.

#67 The SJRRP PEIS/R analyzes impacts on a project- and program-level. Project level impacts from the implementation of the SJRRP are addressed in detail in the PEIS/R for flows and flow-related actions Program-level impacts associated with the SJRRP, such as the release of Chinook salmon or site-specific channel improvement projects, are addressed at a broader program-level of impact. The EA provides project-level analyses that further refine information on the program-level of analyses presented in the PEIS/R. Therefore, a specific detail, such as source stock selection, is beyond the scope of review for a program-level analysis, such as the analyses in the PEIS/R, and is being provided here for the project-level analyses.

#68 While NMFS is in agreement that river elevations can play a critical component when identifying suitable spring-run Chinook habitat, and that the elevations of Mill Creek and the Restoration Area differ from each other, there are various locations within the Restoration Area, especially in Reach 1, that contain suitable spring-run Chinook habitat comparable to that of Mill Creek, despite differences in elevation between the two locations.

#69 The November 1, 2011, Restoration Goal Technical Feedback Group meeting was publicly noticed, and attendance was at the discretion of the public, including the Mill Creek Conservancy. The EA has been revised with a more complete list of publicly noticed, technical feedback opportunities provided to discuss spring-run Chinook reintroduction (see section 1.7). In addition, these meeting notices, past presentations, and summaries are published on the SJRRP website http://restoresjr.net. Biologists from CDFW Region 2, representing northern California streams have been present at several of these meetings, as indicated in the meeting summary attendance lists.

#70 The proposed action is designation of an experimental population to release spring-run Chinook into historical habitat where they do not presently occur (see section 2 of the EA). The end objective for implementation of the proposed action is to achieve a self-sustaining population of spring-run Chinook in the San Joaquin River. If reintroduction is successful, it would aid in recovery of the entire ESU of Central Valley spring-run Chinook , not just that of Mill Creek.

#71 The spring-run Chinook on the Stanislaus and Tuolumne Rivers are of unknown genetic origin and are even less abundant than Deer and Mill Creek populations. NMFS will consider Deer and Mill Creek populations for reintroduction once their genetics are known. These fish are important on the

Stanislaus and Tuolumne Rivers as possible remnants or recolonizers of possible spring-run Chinook populations (See sections 3.3.2.2 and 3.3.2.3 of the EA). Any collection activity would be subject to approval of an ESA section 10(a)(1)(A) permit that includes NEPA review and ESA section 7 clearance ((See section 1.2.2 of the EA). No collection would occur on Mill Creek if such collection would jeopardize the continued existence of Central Valley spring-run Chinook .

#72 After Friant Dam was constructed (but before water diversions were fully implemented), numerous spring-run Chinook returned to the river below the dam during the years when the river flowed below Sack Dam (FMP 2010). Text has been added to the EA to include information that demonstrates that the habitat directly below Friant Dam can hold and sustain a large number of spring-run Chinook (See section 3.2.2 of the EA). The Fisheries Management Plan (SJRRP 2010) includes management considerations to avoid potential hybridization or spring-run and fall-run Chinook within the Restoration Area, and further discussion of barriers to prevent hybridization can be found in section 4.3.2 in the EA.

#73 Comment noted.

#74 See response to comment 1

#75 See response to comment 1. Further information regarding take exceptions for the proposed NEP is outlined in section 2.1.3.2 of the EA.

#76 Deer and Mill creeks are not intended as potential collection sites for donor stock before other potential collection sites are first considered. The EA has been modified to reflect that the order of listing does not imply prioritization (see sections 2.1.4 and 2.2 of the EA). The consideration process regarding collecting donor stock for the purposes of the SJRRP is further explained in section 2.2 of the EA. Deer and Mill Creek fish would not automatically be considered better collection sites than other locations as the commenter suggests.

#77 NMFS agrees with the first half of the comment regarding life history cycles for Mill Creek spring-run Chinook but, in regards to adequate population size this will be considered in the ESA evaluation of any section10(a)(1)(A) permit application and all section 7 consultations on actions that may affect Central Valley spring-run Chinook . See response to comment 1.

#78 FRFH is a consistent source of spring-run Chinook. Initially, when channel and habitat improvements are in development, collections of captive broodstock for direct release to the San Joaquin River would rely on FRFH fish. Broodstock development would also rely on FRFH eggs unless wild populations were sufficiently abundant to support collection of individuals whose genetics could be integrated into the broodstock program, guided by a NMFS approved HGMP. We would later consider diversifying the donor stock with fish from the naturally spawning population in other streams if and when those populations can sustain the removal of fish. Over time, broodstock at the conservation hatchery facility would produce juveniles that would be released to the river in sufficient numbers to enable, in combination with SJRRP channel and habitat improvements, the return of sufficient adults to complete their life cycle. Ultimately, the fish would establish a naturally self-sustaining population of

spring-run Chinook, and the conservation hatchery contribution would be phased out. All collections of donor stock would require the application for and approval of section 10(a)(1)(A) permit(s), and associated NEPA and ESA section 7 review. See section 2.1.4 of the EA and section 2.2 of the EA under the Subheading All Donor Stock Sources Alternative (Preferred Alternative), for further clarification.

#79 See response to comment 1.

#80 The EA analyses concluded that the duration alternatives/periods would have limited certainty for the human environment, and would not fulfill the intent of the SJRRSA. The comment does not indicate what specific concern is related to duration alternatives.

#81 See response to comment 76.

#82 Consistent opportunities for spring-run Chinook life cycle completion will be present in the San Joaquin River below Friant Dam due to mandated flow and habitat improvements outlined in the San Joaquin River Restoration Program (PEIS/R) (see section 3.4 of the EA). NMFS does not expect the conditions to exactly duplicate any one of the existing spring-run Chinook streams, which is why providing broad genetic diversity in the founding stock is important for the successful reintroduction to the San Joaquin River.

#83 See response for comment 82 (see sections 3.4 and 3.6.5.1 of the EA).

#84 See response to comments 1, 2.

#85 The EA has been modified in response to this comment (see section 3.3.1.3 and Figure 10 in the EA).

#86 The EA has been modified in response to this comment (see section 3.3.1.3 and Figure 10 in the EA).

#87 See response to comment 1.

#88 The Coleman Hatchery Management Plan is not discussed in this section because the Coleman National Fish Hatchery does not produce CV spring-run Chinook. Text was modified in section 3.3.1.6 of the EA to include the role of the hatchery weir , and the Battle Creek Restoration Program, along with the present and future of this population.

#89 See response to comments 1, 72, 82.

#90 See response to comment 72.

#91 Reintroduction effort and Restoration Goals of the SJRRP would help with the overall recovery of the species, including those populations found through the species current range, including Mill Creek spring-run Chinook (see sections 1.3.1.1 and 4.3.1.1 in the EA).

#92 Comment noted.

#93 An exact duplication of water quality is not possible, but conditions that are conducive of salmon survival will be present in the San Joaquin River prior to take.

#94 See response to comment 93 and section 3.6.5.1 of the EA.

#95 See response to comment 93.

#96 Comment noted.

#97 Water flow and infrastructure/habitat modifications are part of the SJRRP, and are analyzed in detail in the PEIS/R (see section 1.4.1 of the EA) .

#98 Comment noted.

#99 Any collections of fish from Mill Creek would only be authorized under an ESA section10(a)(1)(A) collection permit (See section 1.2.2 of the EA). Issuance of this permit requires additional NEPA analyses and ESA determinations, which include analyses of proposed actions to determine if they have adverse impacts on the human environment (See sections 1.2.2 and 2.2 in the EA). NEPA and ESA reviews are public processes with public notification.

#100 See response to comment 5.

#101 The Restoration Act requires NMFS to report to congress on the spring-run Chinook reintroduction in December 2024. Congress has not requested an annual report on the program from NMFS.

#102 In section 4.3.2 of the EA, it is stated that although there is presently no specific information on how salmon will use the spawning areas below Friant Dam the SJRRP includes the potential for continued operation of temporary fish barrier(s) to seasonally restrict access by fall-run Chinook to the San Joaquin River in the Restoration Area to prevent hybridization with spring-run Chinook if necessary (an analysis of straying and potential hybridization risks is also discussed in the 4d rule). The commenter did not provide scientific information on additional species requiring analyses of potential hybridization impacts.

#103 Site-specific data regarding impacts to Donor Stock will be analyzed during the process of considering issuance of a 10(a)(1)(A) permit for collections and subsequent NEPA analysis and ESA section 7 consultation (See sections 1.2.2 and 2.2 in the EA).

#104 Comment noted.

#105 Comment noted.

#106 Volitional reintroduction of spring-run Chinook to the SJR was considered and discussed in the No Action Alternative Analysis of the EA (See section 4.2 of the EA).

#107 The SJRRSA requires that reintroduction of spring-run Chinook to the San Joaquin River be done pursuant to section 10(j) of the ESA. Mill Creek does not meet ESA section 10(j) statutory requirements to be designated an experimental population. The parties listed in the comment would not be affected by the reintroduction of spring-run Chinook with respect to water supply, storage releases, or bypass flows pursuant to SJRRSA section 10011(c).

#108 Spring-run Chinook in the NEP area will be protected from directed take, unless allowed by permit. Outside of the NEP area, these fish will be protected from unpermitted take, except for a limited set of activities. All other laws and regulations that protect salmonid and riparian habitat will remain in effect, both in the NEP area and beyond. (see section 1.3.1.2 of the EA for additional information).

#109 See response to comments 1, 48, 60, and 82.

#110 Comment noted.

#111 The summary has been revised to clarify this intent. For the area where unintentional take resulting from lawful activities is exempted, some examples have been included in the preamble to the rule, as suggested.

#112 The preamble has been revised to refer to section 10011. All of the requirements of section 10011 were considered in developing the regulation, including how section 10011(c) exceptions for particular third parties could be achieved, while also meeting ESA requirements.

#113 The findings of this lawsuit apply to Siskiyou County only. The preamble language to the regulation has been edited to specifically cite the California statutory language.

#114 Some examples were moved from the regulation text to this section of the rule supplemental information and flood management and water management activities were added. Otherwise the text of this section has not been changed

#115 Comment noted, language was changed.

#116 The amendment to the CFR is included at the end of the proposed rule due to precedent of previous Federal Register notices. The preceding language to the proposed rule outlines the steps and considerations taken to arrive at the final proposed rulemaking. There is a summary of the proposed rule and take exceptions at the beginning of the proposed rule language.

#117 The experimental population designation does not extend downstream of the confluence of the Merced and San Joaquin Rivers. One requirement for experimental populations is that they are wholly geographically isolated from other individuals of their species. Fish weir counts indicate that there may be remaining spring-run Chinook on the Stanislaus and Tuolumne rivers (see EA sections 3.3.2 through 3.4). Therefore we are unable to include the tributaries or the Delta within the experimental population designation geographic footprint. The ESU designation does not depict the range of the species. It defines a population of organisms that is considered distinct for conservation purposes. As an example,

spring-run Chinook commonly occur in the south Delta, the San Francisco Bay, and the ocean, all of which are outside of the ESU boundary.

#118 The Implementing Agencies will continue to coordinate with stakeholders to assess priorities and identify potential funding sources and ability to implement SJRRP actions. However, the information provided by the comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA.

#119 The rule identifies that existing authorities and programs provide the opportunity for NMFS and other SJRRP Implementing Agencies to encourage strategic screening of diversions. This would include a plan to identify unscreened diversions and criteria for prioritization. These have not been developed at this time. The rule allows incidental take exceptions that may occur at any unscreened diversion that is operated in an otherwise lawful manner.

#120 This issue would be analyzed if and when the nonessential designation were proposed to be changed.

#121 The existing 4(d) rule excepting take for adipose fin clipped spring-run is not limited to the Sacramento River. This rule applies to all Central Valley spring-run Chinook , and was intended to except harvest-related take of hatchery fish, thus permitting hatcheries to fulfill the purpose of mitigating lost harvest opportunities resulting from dams. The purpose of the hatchery facility for the SJRRP is to produce spring-run Chinook to assist in establishing a naturally self-sustaining spring-run Chinook population, not to offset harvest losses. The NEP take exceptions do not allow directed take of spring-run Chinook without additional permitting. Hence, the exception for take of adipose fin-clipped fish has been excluded from to the NEP area. When these fish leave the NEP area, they will be excepted from take.

The “agreement” referred to was a process for establishing a common understanding that adipose fin-clipped spring-run Chinook would carry the take exception with them to the conservation facility, if they were moved there. This experimental population designation and associated take exceptions provide equivalent regulatory relief for take incidental to otherwise lawful activities.

#122 Comment noted.

#123 NMFS is a party to the Settlement and is acting within its decision making authorities to implement actions called for in the Settlement and by the SJRRSA. (see footnote in EA section 1.2.1)

#124 The comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA. Text has not been revised. (see response to comment 118 above related to similar concerns over funding and comment responses 25 through 28)

#125 See response to comment #114

#126 The rule identifies that existing authorities and programs provide the opportunity for NMFS and other SJRRP Implementing Agencies to encourage strategic screening of diversions. The rule allows

incidental take exceptions that may occur at any unscreened diversion within the NEPA area that is operated in an otherwise lawful manner. See also response to comment #114.

#127 Comment noted.

#128 Text has been revised as suggested.

#129 Comment noted.

#130 The preamble summary has been edited as suggested.

#131 The suggested change has been made in the text (see section 2.1.3.2).

#132 Suggested text has been modified.

#133 Suggested text has been modified. See sections 2.1.3.1 and 4.3.3 in the EA.

#134 Suggested text has been modified. See section 2.1.3.2 in the EA.

#135 The EA has been modified to reflect this comment (see sections 4.3.5, 4.5.6 and 4.6.6 of the EA).

#136 The EA has been modified in response to this comment (see section 3.3.1.3, Figure 12, and Figure 13).

#137 The EA has been modified to reflect this comment (see section 4.3.1.1).

#138 The cumulative effects of flood protection and environmental restoration are discussed in section 5 of the EA.

Chapter 26 of the PEIS/R discusses flood protection actions on a project- and program-level the potential benefits and risks of the implementation of the SJRRP to the flood system. Additionally, planning is occurring, in coordination with the Central Valley Flood Protection Board (CVFPB), to address concerns and make informed decisions related to the implementation of site-specific channel and levee improvement projects under the SJRRP. This includes the formation of a Channel Capacity Advisory Group, coordination with the CVFPB on site-specific projects to specifically discuss challenges related to flood control, and coordination of preliminary design concepts with flood agencies to best implement the program in a way that does not cause adverse impacts to the flood system, its maintenance, or its operations. These plans are not within the scope of the proposed action analyzed in this EA, but as related planning efforts, are appropriate for the cumulative effects analysis, and have been included in section 5 of the EA to address this concern.

#139 Comment noted.

#140 The proposed rule will decrease the requirement for permitting and therefore costs and amount of time to permit these projects located within the experimental population area. The purpose of an experimental population designation is to provide significant regulatory relief to stakeholders located

within designated area. All otherwise legal activities are an exception from take incidental to these activities when conducted within the designated area.

#141 Comment noted.

#142 These areas are included in the population designation to provide regulatory relief to those stakeholders located along these sloughs, channels, floodways, and waterways.

#143 The comment does not raise issues or concerns specific to the environmental analysis within the scope of the EA. Text has not been revised. The proposed rule would not discuss the suitability of habitat conditions. However, the Mendota Pool Bypass and Reach 2B Channel and Structural Improvements Project and the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel Improvement Projects aim to provide additional fish habitat opportunities without reducing the overall capacity of the flood system or impeding its operations. Recent juvenile fall-run Chinook salmon releases for study purposes in the San Joaquin River indicate that conditions in the floodways can be conducive for aspects of spring-run Chinook life history needs.

#144 Those flood control facilities, which are located within the proposed experimental populations area, will be positively impacted by this proposed rule as they will have take exceptions to be able to continue their current and lawful operations due to the experimental population designation.

#145 Yes.

#146 The 4(d) take exceptions are intended to provide that the reintroduction will not impose more than de minimus: water supply reductions, additional storage releases, or bypass flows on unwilling persons or entities diverting or receiving water pursuant to state and Federal water rights, due to such reintroduction.

#147 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. Language has been added to section (5)(ii) to include outside parties in the development of the technical memorandum

#148 This is being done and currently evaluated in accordance with the SJRRP flow schedule as explained in the Settlement and associated Exhibit B..

#149 This is being done and currently evaluated in accordance with the SJRRP flow schedule as explained in the Settlement and associated Phase I projects.

#150 The EA states in sections 2.1.3.1 and 4.6.6 that “the SJRRP will monitor reintroduced spring-run Chinook as part of the program” (also see section 4.4 of the EA). Further, the EA states in Section 5 that monitoring and adaptive management will help ensure that the experimental population of spring-run Chinook is adequately protected and supported by restoration actions implemented through the SJRRP. In addition, technical teams continue to develop monitoring techniques to address this concern.

#151 Comment noted.

#152 Comment noted.

#153 This issue is a possibility under the No Action Alternative. The PEIS/R conservation measures to address recreational effects.

#154 Discussions in regards to fishing regulations will consider this information as well as the status of the PEIS/R conservation measures to address recreational effects.

#155 Comment noted, thank you.

#156 Comment noted, thank you.

#157 Comment noted, thank you.

#158 The barrier is being discussed in further detail in the site specific projects. You are encouraged to become engaged with those processes.

#159 The Final EA has been corrected in section 3.4.2 to state the following: "Potential false pathways created by the bypass and canal systems are Salt Slough, Mud Slough, Bear Creek, Ash Slough, Berenda Slough, Dry Creek, Fresno River, Lone Willow Slough, Fresno Slough (James Bypass)..." The commenter is correct the statewide average annual temperature should have read "... statewide average annual temperatures will be 4.1- 10.4°F higher..." Text has been corrected in section 5 of the EA.

#160 Comment noted

#161 Comment noted.

#162 Comment noted.

#163 See response 1, 2, and 5. The April 28, 2010 meeting was noticed in the Federal Register. See section 2.1.4 of the EA.

#164 A permit application, such as an ESA section 10(a)(1)(A) permit request is required to trigger NEPA. NEPA is the environmental review of a major federal action, such as the action of issuing a permit. Consequently, a federal agency does not conduct a NEPA analysis prior to receipt of a permit or authorization request because there is no action to analyze. See response to comment 1.

This EA does include a full range of reasonable alternatives in addition to the proposed action. Eight alternatives were analyzed in the EA, including no permit issuance under the No-action Alternative. Further, several potential alternatives were considered for analysis in section 2.4 of the EA , but were dismissed because they did not meet the stated purpose and need for the action.

#165 See responses to comments 1, and 60. Also, see section 2.1.4 of the EA.

#166 See responses to comments 1 and 53.

#167 As recommended in the FMP, the SJRRP is evaluating the risk of hybridization and spawning interference between fall- and spring-run Chinook to determine what measures will be necessary. The SJRRP is determining where fall-run and spring-run Chinook will spawn, the timing of spawning in the Restoration Area for each run, and evaluating exclusion methods (e.g. fall-run exclusion weir). The results of these evaluations will help the program determine if a physical separation weir is necessary to protect spawning spring-run Chinook and their eggs. Currently, Hills Ferry Barrier is maintained to prevent fall-run Chinook salmon from entering the Restoration Area.

#168 Other than concerns over hybridization with fall-run Chinook, the program will not attempt to maintain the genetic purity of the donor stocks within the system. The multi-stock approach is designed to maximize the genetic diversity of the founding stock. The salmon that successfully return as adults will spawn in the system and contribute to development of a locally adapted San Joaquin River stock of spring-run Chinook. Section 4.3.2 includes a discussion of methods to prevent hybridization in the Restoration Area.

Clarifying language was added to EA section 1.3.1.2, and the stock selection alternatives are further explained in section 2.2 of the EA.

#169 Limited straying is a natural part of salmonid life history and evolution. Currently there is likely straying to Mill Creek of fish from the Feather River Hatchery, and vice versa Other than concerns over hybridization with fall-run Chinook, the program will not attempt to maintain the genetic purity of the donor stocks within the system. The multi-stock approach is designed to maximize the genetic diversity of the founding stock. The salmon that successfully return as adults will spawn in the system and contribute to development of a locally adapted San Joaquin River stock of spring-run Chinook.

Clarifying language was added to EA section 1.3.1.2, and the stock selection alternatives are further explained in section 2.2 of the EA.

#170 Other efforts, outside the program, continue to assess and manage Delta conditions for salmon survival. The SJRRP coordinates with these activities on an ongoing and collaborative basis. There are various locations, especially in Reach 1, that would contain suitable spawning habitat for spring-run Chinook, as water temperatures in these locations within the Restoration area are comparable to those water temperatures found at elevations used by Mill Creek salmon.

#171 The determination that a restored San Joaquin River will support spring-run Chinook was conducted through extensive analysis of historic, present, and potential restored conditions presented during the legal proceedings leading up to the Settlement. Expert legal testimony, extensive background studies on water supply and salmon needs may be reviewed at http://restoresjr.net/program_library/05-Pre-Settlement/index.html . The SJRRP is formulated from the Settlement actions which are based on information gathered through the legal proceedings and supplemented by extensive additional temperature and hydrologic modeling that is ongoing since the Settlement was signed, and since Interim Flows were initiated in 2009 and can be reviewed at http://restoresjr.net/flows/index.html . This ongoing evaluation will allow the SJRRP to be implemented

in an adaptive management framework, as described in the PEIS/R, to maintain suitable conditions for spring-run Chinook.

It is true that certain habitat conditions on Mill Creek are unique to that watershed and the general habit of salmon returning to their natal stream, over time, can create a unique genetic makeup of that population. However, spring-run Chinook inhabit other streams in the central valley where adequate conditions occur. It is a natural tendency for salmon to stray at a low level which maintains the genetic diversity and resilience of the species. Inclusion of Mill Creek fish in the genetic complement of spring-run Chinook reintroduced to the San Joaquin River will simulate the natural straying tendency of Mill Creek spring-run Chinook.

#172 The SJRRP is currently in the process of developing and implementing activities associated with the restoration of Chinook salmon habitat between Friant Dam and the Merced River confluence (monitoring activities mentioned in sections 2.1.3.1 and 4.4 included). These projects are large and complex and will take several years to complete. Timeframes, while subject to change, associated with these actions are identified in the Draft Framework for Implementation (http://restoresjr.net/program_library/02-Program_Docs/20120619_SJRRP_Framework_for_ImplDRAFT.pdf)/ Surveys for gravel suitability, temperatures, egg survival, and other fisheries elements have been occurring and are available by referencing the SJRRP Monitoring and Analysis Plan, http://restoresjr.net/flows/ATR/index.html. Specific actions, such as quantity of riparian habitat, are part of the site-specific channel improvement projects identified in the Settlement and are not within the scope of this EA review for a proposed experimental population designation. Interfacing with humans related to location of spawning area is also not specifically addressed in detail within the scope of this EA, because specific effects are speculative at this time. This issue is identified within the SJRRP's FMP, whose adaptive management components will be utilized as part of the Reintroduction Action (see section 5 of the EA). Funding related to the SJRRP for future gravel augmentation has not been addressed at this time. However, activities such as gravel augmentation may be addressed as part of the Phase 2 Improvements called for in the Settlement, which acknowledges the likely additional channel or structural improvements (such as augmentation of spawning gravel) which may further enhance the success of achieving the Restoration Goal.

#173 See response to comment 1. Also, see section 2.1.4 of the EA.

#174 NMFS made direct contact with all potentially affected tribes for development of this EA (see section 1.7).

#175 Comment noted.

#176 See responses to comments 1 and 2.

#177 See response to comment 2.

#178 See response to comment 4.

#179 Comment noted.

#180 See response to comment 1

#181 Comment noted

#182 See responses to comments 1, 82, 171, and 172.

#183 Comment noted.

#184 In section 4.1 of the Draft EA, it is stated that "The proposed action does not involve construction, changes in water diversions or flows in the Sacramento or San Joaquin river basins, or other physical changes to the environment beyond those associated with the collection of donor stock and their eventual release to the San Joaquin River." As such, the analysis of construction activities is outside the scope of this EA review (see section 2 –PROPOSED ACTION AND ALTERNATIVES). Analyses in the PEIS/R that are relevant to this proposed action are incorporated by reference in section 1.4.1. Section 2.1.3.1 identifies that the proposed action assumes that the SJRRP and Settlement will be implemented and the impacts associated with implementing the SJRRP are analyzed in the PEIS/R. The analysis in this EA evaluates impacts associated with the specific condition of deliberately adding spring-run Chinook to the Restoration Area. The EA takes no position on the impacts of the site specific projects, as the information needed to conduct such analyses is under development by the SJRRP and will be analyzed by the SJRRP under NEPA when it is available and timely.

The differences between the two groups of construction alternatives considered in the PEIS/R have been noted, and future comments relating to the PEIS/R should be addressed to the U. S. Department of the Interior.

Additional text has been added in section 4.3.1.1 [last paragraph] and in section 4.3.5 to address expected impacts to spring-run that may result if the SJRRP is not completed or the reintroduction is not successful.

Regarding the recognition of flood protection as an area to be considered in evaluating the environmental impacts of the proposed action, while the commenter is correct that section 4.6 summarizes the NEP area as including the "main stem of the San Joaquin River from below Friant dam to the confluence of the Merced River" the proposed action would extend the regulatory exceptions to all associated waterways accessible to spring-run Chinook in the NEP area and therefore would include Reach 4, as well as flood management facilities that may be accessible. Further discussion of flows through Reaches 2-5 and the bypass system can be found section 3.4.2 of the Draft EA.

#185 Comment noted.

#186 The regulation does not propose a specific method of analysis to be used in the Technical Memorandum so as to allow consideration of the best available science and technique for this assessment. Genetic testing is an emerging technique that may be considered. The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final.

The language in Paragraph (5)(ii) of the regulation has been modified to include "To the extent feasible, NMFS will develop this technical memorandum in coordination with and with opportunity for comment by interested parties."

#187 Because of the substantial regulatory relief provided by NEP designations, NMFS does not expect this rule to have any significant effect on recreational, agricultural, or development activities within the NEP area see section 4.3.5 and section 5 of the EA). Section 4.3.3 also states that mitigation to offset any impacts is being implemented as a measure under the SJRRP PEIS/R (REC-4) that would reduce these potential impacts to an undetectable level, so there will be no impact to recreational fishing as a result of the Proposed Action. The proposed rule would accommodate take considerations associated with regulated fishing when fishing regulations are developed, and the reintroduction of spring-run Chinook would not have any impact on boating opportunities on the San Joaquin River. The comment is not clear regarding pinniped depredation, but NMFS does not identify a correlation between the new regulations for spring-run Chinook reintroduction and pinniped depredation. Pinniped depredation may be an issue related to harvest of salmon, and any impacts would be analyzed at the time that harvest regulations are considered.

#188 Comment noted.

#189 Comment noted.

#190 Because of the substantial regulatory relief provided by NEP designations, NMFS does not expect this rule to have any significant effect on recreational, agricultural, or development activities within the NEP area. See section 4.3.5 and section 5 of the EA.

#191 Comment noted.

#192 Spring-run Chinook are native to the San Joaquin River. In addition the restoration of the San Joaquin River habitat will help restore native fishes to the river including native steelhead trout.

#193 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. The language in sections 5(i) and 5 (ii) of the regulation have been modified to clarify this point. NMFS disagrees that the proposed rule recognizes that there are no CV spring-run Chinook salmon in the San Joaquin River Basin. If that were the case the NEP area could include the tributaries to the San Joaquin River (see EA section 3.3.2).

All of the fish directly placed into the experimental population by the program will be tagged and/or fin clipped and have their genetics analyzed. Any progeny from these fish will be genetically identifiable due to the fact that we will know the genetic finger print of all fish placed into the river and can track their pedigree. This pedigree will be distinct from other fish found in the Sacramento River.

#194 They will be differentiated on a geographic basis and a genetic basis. For purposes of an experimental population, individuals will be considered part of the experimental populations once they enter into the geographic footprint delineated in the rule and take exceptions specific to the NEP area will apply. Progeny from reintroduced spring-run Chinook will be genetically identifiable due to the fact

that we will know the genetic finger print of all fish placed into the river and can track their pedigree. This pedigree will represent pairings that will be largely distinct from other fish found in the Sacramento River. If Sacramento River fish stray into the NEP area, they will then be considered part of the experimental populations. Because natural straying rates are low, if these fish spawn, their mates would rarely be from the same source stream, hence their progeny would be genetically linked to reintroduced fish.

#195 As identified in the No Action Alternative, Sacramento River salmonids already have access to the San Joaquin River Basin from the Merced River downstream. The SJRRP Restoration Goal is aimed largely at improving flows and conditions for fish, including salmon, upstream of the Merced River to Friant Dam. If Sacramento River spring-run Chinook get into the San Joaquin River not as a result of reintroduction through the SJRRP, section 10011 of the SJRRSA does not apply.

#196 The paragraphs of the regulation have been re-organized so that paragraph 6 of the proposed rule is paragraph 5 in the final. The language in sections 5(i) and 5 (ii) of the regulation has been modified to correlate with the take exceptions specified in section 10011 (c) of the SJRRSA.

#197 The experimental population area does not include the Merced River. The Merced River is part the special take exceptions. Language in the rule has been changed to clarify this.

#198 Comment noted.

#199 Comment noted

#200 See response to comments 107, and, 108

#201 See response to comment 107

#202 See response to comment numbers 1, and 108

#203 Comment noted

#204 Comment noted

#205 See page 2-48 in the PEIR/S as well as chapter 5 which discusses the potential fish impediments caused by the flood control bypasses and structures.

#206 See responses to comments 32 and, 34.

#207 The Deschutes 4(d) rule language names specific entities to include take coverage not only for take that may occur incidental to their otherwise lawful activities, but also to cover take that may occur as a result of research and management activities that these entities are actively engaged in to further the reintroduction of steelhead. The member agencies of the Exchange Contractors are not engaged in research and management activities to further the reintroduction of spring-run Chinook to the San Joaquin River; hence, the language of the regulation for the San Joaquin River is sufficient to address

covered activities for all entities within the NEP area. Naming specific entities in the regulation would be redundant. Section 10009(a) (3) is law and does not need to be re-stated.

Finding of No Significant Impact for the Designation of a Nonessential Experimental Population of Central Valley Spring-run Chinook Salmon below Friant Dam in the San Joaquin River, CA.

The National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. §1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity". Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQs context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?

Response: No. The proposed action is the designation of a nonessential experimental population (NEP) of Central Valley spring-run Chinook salmon (spring-run Chinook) under section 10(j) of the Endangered Species Act (ESA) in portions of the San Joaquin River, and to establish take exemptions for the proposed NEP for particular activities inside the experimental population's geographic range and outside of the designated boundary of the NEP area. The conditions placed on NEPs under section 10(j) of the ESA include that such populations be located outside of the currently defined freshwater and estuarine habitat boundary of the spring-run Chinook ESU. NMFS has determined that the proposed action will not cause any damage to ocean and coastal habitats or to any essential fish habitats as defined under the Magnuson-Stevens Act and identified in FMPs, as this designation is expected to contribute to the recovery of the spring-run Chinook ESU throughout both its current and historical ranges. Furthermore, spring-run Chinook can only be designated nonessential if their failure to become established poses no threat to the future survival of their species in the wild, thereby posing no threat to the habitats of these wild populations.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: No. Establishing an NEP of spring-run Chinook in the San Joaquin River that persists into the foreseeable future is expected to reduce the species' overall extinction risk from natural and anthropogenic factors by increasing its abundance, productivity, spatial structure, and diversity within the Central Valley. Regarding the possibility of a disruption in the predator-prey relationships found within the affected area, current fish assemblages on the tributary rivers to the San Joaquin River are similar to those found in the Restoration Area, except that spring-run Chinook are absent from the Restoration Area prior to the reintroduction of an NEP. The reintroduction of spring-run Chinook is not expected to change these assemblages, so predation rates would not be expected to change. The reintroduction of spring-run Chinook would also bring marine-derived nutrients into the system, which would increase productivity of all aquatic species, with no expectation that it would differentially affect predatory species. NMFS has determined that the proposed action will not have a substantial impact on biodiversity and/or ecosystem function within the affected area, as channel and habitat improvements within the Restoration Area would still be carried out as is mandated by the San Joaquin River Restoration Settlement, regardless of whether or not spring-run Chinook are reintroduced. Furthermore, should spring-run Chinook be reintroduced to the San Joaquin River, any spring-run Chinook removed from naturally spawning populations to establish initial broodstock would be done so only in small numbers when such collections would not jeopardize the continued existence of the species and will contribute to the enhancement or propagation of the species, thereby minimizing any negative effects to the ecosystems of these source streams.

3) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

Response: No. The proposed action does not concern or address human public health and safety issues.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: No. The proposed action will allow reintroduction of spring-run Chinook to the San Joaquin River basin, which is a critical objective for recovery of this species. Any spring-run Chinook removed from hatchery or naturally spawning populations for the reintroduction would be done so only in small numbers when such collections would not jeopardize the continued existence of the species and will contribute to the enhancement or propagation of the species, thereby minimizing any adverse effects to spring-run Chinook. The ESA take exemptions included in the proposed action will have minimal effect on spring-run Chinook outside the NEP area because the range of exempted activities is narrow. Further, existing ESA protections for other anadromous fish species outside of the NEP area will not be affected by this regulation and will coincidentally provide protections for spring-run Chinook. The reintroduction of spring-run Chinook is not expected to change the balance of fish populations in the San Joaquin River basin, such as shifting to a higher percentage of predatory fish. A return of spring-run Chinook would bring nutrients to the river that will enhance the aquatic food web, and consequently could improve food availability for all fish species. Thus, the reintroduction of spring-run Chinook would have no impact, or a beneficial impact, on endangered or threatened species and their critical habitat, marine mammals, or other non-target species assemblages in the San Joaquin River. Furthermore, critical habitat for spring-run Chinook salmon has been designated in the Sacramento River however this action does not affect that area, and no destruction or adverse modification of that critical habitat is anticipated.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: No. The effect of the proposed designation of an NEP of spring-run Chinook would be to avoid the need for affected entities to obtain ESA permits or authorizations to alter their conduct of otherwise lawful activities as a result of the reintroduction effort.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: No. Although the proposed action is controversial in that it can support the larger San Joaquin River Restoration Program (SJRRP) which would have effects on the quality of the human environment, the proposed action of designating an NEP of spring-run Chinook to be reintroduced into the San Joaquin River by itself is a separate and independent action, not thought to be highly controversial. The actual collection of fish from natural populations may raise concerns, if future collection applications do not propose to adhere to the protective standards that we have stated in this document. However, the proposed action does not authorize or require/mandate the collection of spring-run Chinook.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

Response: No. The proposed action would not impact cultural or historic resources, park land, prime farmlands, wetlands, or ecologically critical areas. Because of the substantial regulatory relief provided by NEP designations, NMFS does not expect this rule to have any significant effect on recreational, agricultural, or development activities within the NEP area. Also, there are no tribally owned or managed lands included within the experimental population area. Finally, Section 10(j) and section 4(d) allow

exemption to section 9 take prohibitions, when, for the conservation of the species, regulatory flexibility will allow greater likelihood of successful introduction and reduce landowner concerns.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: No. NMFS has determined that the effects of the proposed action would have a negligible impact on the human environment and that there are no effects that would be highly uncertain or involve unique or unknown risks.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: No. The proposed action is the designation of a NEP of spring-run Chinook below Friant Dam in the San Joaquin River. This is a separate independent action from the projects of the SJRRP. Cumulatively, the designation and release of a NEP of spring-run Chinook may further the conservation of the species within the Restoration Area. However, it would not contribute to cumulatively significant impacts to either the potentially affected aquatic, terrestrial, or human environments.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: No. NMFS has determined that any adverse effects to districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources would be negligible.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: No. The proposed action does not involve the introduction, removal, or movement of any non-indigenous species into or out of the action area. While eggs or juveniles of spring-run Chinook may be removed either from the Feather River Fish Hatchery or other proposed donor streams including Deer, Mill, or Butte creeks for the purposes of creating broodstock for the reintroduction effort, the long term goal of the SJRRP is the reintroduction of expatriated spring-run Chinook to their historic range within the San Joaquin River.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

Response: No. NMFS received public comment during the EA process that the designation of an NEP of spring-run Chinook is only one component of the environmental analysis for the reintroduction of spring-run Chinook into the San Joaquin River. The EA analyzes the effects of the actions necessary to fulfill certain requirements of the Restoration Act, and the Settlement – including an analysis of the potential effects of the establishment of the NEP (section 10(j)) area, the release of spring-run Chinook to the San Joaquin River, and the potential effects to the ESU. Adoption of the ESA section 10(j) and 4(d) proposed rules is a separate, single, and complete act that does not require the reintroduction of the species to occur. Therefore, the proposed designation does not set a precedent for future actions with significant effects, or represent a decision in principle about a future consideration.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Response: No. The designation of an NEP of spring-run Chinook is not expected to result in violations of Federal, state, or local requirements for protection of the environment. NMFS believes the designation of an NEP of spring-run Chinook will be in compliance with all federal, state, or local laws or requirements imposed for the protection of the environment.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: No. The restoration program that the proposed action supports would have a cumulative beneficial effect on spring-run Chinook. In addition, cumulative effects resulting from the restoration of the San Joaquin River would have beneficial effects on other non-target species that could use the San Joaquin River.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the designation of an NEP of spring-run Chinook below Friant Dam in the San Joaquin River, CA, and the conclusion reached in the NMFS Section 7 informal Consultation for the proposed action November 7, 2013, it is hereby determined that the proposed action will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

William W. Stelle, Jr. Date
Regional Administrator